The street as a response to human needs:
With special reference to change and continuity in Libya

by
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IN THE NAME OF GOD THE MOST MERCIFUL THE MOST GRACIOUS
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Abstract

The main concern of this study is with the most neglected part of the built environment, the street, and its importance to everyday life and the social activities that take place in it. The emphasis is on discovering how a better street environment could be created in order to meet present-day demands.

This study refers particularly to Libya. As a result of the discovery of oil, Libya has been subject to rapid urban growth. The resulting new physical environment and the upsurge in the economy have deeply affected local society. Modern built forms, with their social consequences have replaced the traditionally built environments which were considered particularly well adapted to local human requirements. The contemporary built environment is often largely inappropriate to the social and cultural needs and to the climatic realities. Furthermore, the very suddenness of the change has produced a sense of discontinuity and alienation among the inhabitants.

As the outcome of such changes is most evident in the street a greater stress has been placed on an examination of the reasons for the loss of the integrity of traditional urban design in this period of rapid urban development. An in-depth investigation has been carried out in order to understand fully the influences which moulded the traditional city and those which produced the new forms of the contemporary environment. An assessment of the advantages gained by the new environment as well as the disadvantages has been undertaken to arrive at a body of constructive proposals for future development.

The research conducted in this thesis is aimed at producing guidance which may help design the street as a vital part of the socio-cultural structure of the built environment. It is not a study in nostalgia. Rather, it is hoped to encourage the retention of the best elements of the traditional street to enhance and improve the street of today. An attempt is made to reach a form of compromise which might prove acceptable to this new era of development.
Biographical note about the author

The author's concern with this study began as one of the generation who witnessed and suffered as a result of the dramatic changes in the streets of Libya.

When as an architect, he became the head of the department of design in the Municipality of Misrata. It became apparent that he had a responsibility to study and discover a solution to the increasing dilemmas created by these changes. He felt, increasingly, the need for the study of urban design to cope with this problem. Until now, the profession of urban designer has never existed in Libya; for this reason he decided to become an urban designer. And to achieve his goal, he started studying for an M.Sc. at Heriot-Watt University in 1982.

On finishing his dissertation on "Street activity and social contact" he was awarded his M.Sc. This gave him the opportunity of studying for a PhD from 1984 onwards, leading to give a reasonable solution to the correction of the above circumstances. It is intended that this study will prove useful to Architectural Planners, Municipal Authorities and others concerned with achieving a better street environment.

To the memory of my father

To my beloved Mother

To my wife and children
Biographical note about the author

The author's concern with this study began as one of the generation who witnessed and suffered as a result of the dramatic changes in the streets of Libya.

When, as an architect, he became the head of the department of design in the Municipality of Misurata, it became even more apparent that he had a responsibility to study and discover a solution to the increasing dilemmas created by these changes. During his time in office he felt, increasingly, the need for the study of urban design to cope with this problem. Until now, the profession of urban designer has never existed in Libya; for this reason he decided to become an urban designer. And, to achieve his goal, he started studying for an M.Sc at Heriot-Watt University in 1982.

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CHAPTER 1
INTRODUCTION

Part One

Evolution, Forces and Changes

In the street

The life of the whole city is in the life of particular streets and the buildings lining them. The images which one collects of a town are evolved from particular streets. Any consideration of a city brings to mind its streets; should they be attractive the city will be interesting, should they be dull the city will be uninteresting. The social and ethnic culture of a community are evident in the streets where common interests are expressed. Moreover, if a city claims not to be attractive, a more dignified city life the streets will be the first on the list for rehabilitation.

The street is the social centre of towns and cities. It constitutes the largest area of convergence of public space in any city. Almost always it is available without obstruction to the general public as a whole. The street provides the place for neighbours to meet; here children first learn the presence of the outside world and here public opinion is so often formed. It is the mode of personal exchange and communication. The street serves as the forum of commerce, information and recreation.

When one thinks of street life, the Mediterranean cities especially the Arab ones come to mind, since in their traditional aspect they tend to have a natural bent for making their cities attractive. The need for shade in the summer heat was provided by the best use of the architectural forms, to make the warm seasons a pleasure rather than an ordeal. The contrast between the discomfort of the modern and the comfort of the traditional street is manifest, especially in the Arab countries.
CHAPTER 1
INTRODUCTION

The life of the whole city is expressed in the life of particular streets and the buildings lining them. The images which one collects of a town are acquired from particular streets. Any consideration of a city brings to mind its streets, should they be attractive the city will be interesting, should they be dull the city will be unimpressive. In addition, the character and ethnic culture of a community are evident in the streets where common interests are expressed. Moreover, if a community should opt for a more dignified city life, the street will be the first on the list for rehabilitation.

The street is the social centre of towns and cities. It constitutes the largest area of convergence of public space in any city. Almost always it is available without obstruction to the general public as a whole. The street provides the place for neighbours to meet; here children first learn the presence of the outside world and here public opinion is so often formed. It is the locus of personal exchange and communication. The street serves as the forum of commerce, information and recreation.

When one thinks of street life, the Mediterranean cities, especially the Arab ones, come to mind, since in their traditional aspect they tend to have a natural talent for making their cities attractive. The need for shade in the summer heat was provided by the best use of the architectural forms, to make the warm seasons a pleasure rather than an ordeal. The contrast between the discomfort of the modern and the comfort of the traditional street is manifest, especially in the Arab Suq.
Sadly, too little consideration has been given to the investigation of the characteristics of streets and their potential. Architects tend to confine their attention to individual building projects, without giving much consideration to the space around them. On the other hand, planners work on a much larger scale, and tend to regard streets as only traffic channels and mere lines on their plans. Furthermore, the gap between the architect and the planner can be filled by the urban designer, whose absence makes the problem worse, because urban design is the area lying between the twin fields of architecture and planning. Urban design is essentially a three dimensional concept but must deal with the non-dimensional aspects of the environment such as noise, smell and considerations of hazard and safety. The interaction between the built habitat and human activities makes up the environment. Urban design consists of, among other elements, a concern for the relationship of old and new forms as much as for the social, political, climatic and economic demands and resources available. The neglect of the architect and the planner in respect of the street, in the absence of the urban designer, has resulted in comparatively few in-depth studies of the street being undertaken. This lack of attention is to be regretted, considering the very scale of the area occupied by streets in a city. Their form and organisation as the major urban space should not be ignored.

This study concerns itself with one of the most neglected parts of the built environment, namely, the street. In particular it is directed to that of a country which was famous for the livability of its streets and suqs, that is, Libya. In the past such congenial environment was a source of pride and regarded as the natural heritage of the inhabitants. Only recently the livable streets have
The contrast between the traditional (Fig. 1.1) and the modern (Fig. 1.2) Libyan Streets is clearly shown here.
changed into roads designed for the passage of the automobile.

Libya, like any other Arab country suddenly enriched by oil, has been subject to rapid urban growth as an opportunity to make good the neglect of the past colonial era. The rate of this development has been very fast, giving rise to an extraordinary expansion of cities which could not have grown so rapidly under normal conditions. The resulting new physical environment and the new wealth of the economy has deeply affected Libyan society. It has transformed the traditionally built environment into a modern one, in a decade, while other countries have taken a century. In other words, Libyan society has changed from the medieval to the twentieth century in a very short time.

Not only does this new built environment intrude unfortunately on the Libyan scene but its very suddenness has produced a sense of discontinuity and alienation among the inhabitants. It has invoked a conflict between the need for more development and the need for the continuity of unique social and cultural characteristics. These modern built environments have replaced traditional forms which were considered particularly well adapted to human needs. On the other hand, the contemporary physical environment is often largely inappropriate to the social and cultural needs and the climatic realities as they affect the population.

Respect for tradition is commendable, provided that it is a genuine living one. As such, it is subject to growth and development. It is not a lake which has been walled up and turned stagnant but one which has been constantly refreshed by incoming and outflowing fresh water streams. Such a lake is subject to change from new currents created by these fresh inflows, subject
Fig. 1.3 is representative of a traditional street, while Fig. 1.4 shows a typical modern one.
themselves to new conditions. But it is not that one looks for tradition as an end in itself but for the appropriateness of forms to local needs. The proven worth of this tradition should be allowed to adapt and develop and should not be cut off by an unsuitable alternative.

It is fruitless for one to restrict oneself to a slavish imitation of ancient forms, that arose out of conditions which no longer pertain to modern life, for example the width of the street cannot be restricted to what would suit a donkey with panniers. Such misunderstandings arise from an inability to grasp the meaning of a living tradition. At this moment in time there are new social requirements and great technical developments which must be accommodated. These cannot be solved by a rigid adherence to traditions which arose out of the needs of a former era. New built environment must meet contemporary requirements. But this does not mean that one should ignore the achievements of the past that are still relevant. It would be folly to do so. The design, which gave our traditional built environment its livability, its beauty, its charm and character, whether achieved by thought-out principles or out of the subconscious, needs to be adapted. An elucidation of past principles would assist in solving today's problems.

If one hopes for realistic and appropriate solutions to today's problems and seeks to provide the future with an authentic continuity, the past cannot be admitted blindly, though its relevance to the present must be recognised. Deprecation of the traditional, and inability to apply the lessons and traditions of the past, leave a community naked and unarmed against all influences from the outside. The answer is a condition of mind that allows itself to be critical and selective of the traditions of the past as well as outside foreign influences.
The vast body of knowledge that has been accumulated by the West should not be neglected as it must, by all the laws of coincidence, contain much that can be of service in preserving cultural continuity. A meaningful solution to every problem may only be approached by evaluating the deep-seated realities of the situation.

One should understand and recreate the essential features of the old town in the new towns. Ancient principles should be harmonized with modern requirements, as experience of the past can give inspiration to the present and the future.

The radical transformation of the built environment has forced our cities to grow with no concern for the future and no thought of the community. The city has neglected the people and the people in turn have neglected the city. The change can be clearly seen on visiting the modern city centres with their huge streets, stores and car parks and comparing them with the traditional area with its small curving streets, suqs and open markets. It does not require any deep research to note the contrast between the villages with their livable quality of life and the modern residential areas with their lifeless streets.

The change is most acute and clearly illustrated in the street. It is unbelievable to see the extent to which Libyan streets have changed from livable environments into virtually deserted anonymous spaces, from places of activity and interaction into overlarge empty spaces, from meandering lanes for pedestrians into those highways of automobiles, from family and community streets into those filled with unknown neighbours, from easily oriented into numbered streets, from a sheltered street into an unprotected one, from the
human scale into the massive scale, from clustered areas into urban sprawl. In conclusion from a socially, culturally and climatically suitable traditional model to that of the imported Le Corbusier one.

The Libyan street today does present problems such as those referring to livability, to restoring safety and preserving the culture of the street. The outdoor space, its scale, form and organisation should not be ignored. The danger of the modern concept with its parks, meadows and fields and the idea of a city in a park is that it can lead to the disintegration of the street.

Although Utopian planners and architects have suggested, on occasions, that they considered that the street might ultimately disappear, it can be said that the street has an essential part to play in human communication, and as a locale for casual encounter. The extension of the media and communications with the film, the television and the telephone has not altered the need for the street. The discomfort and disorientation of people who find themselves in a locale without streets as distinct from motorways is explained in the need for streets for social communication. Deep down the human being who ventures onto the street has the expectation of some degree of human contact, however fleeting, as this is a feature which the street uniquely offers. Without such contact the citizen is liable to feel a sense of alienation from his own city. The cost of doing away with streets is too high and it is difficult to calculate such a social loss.

The street can be said to be a social institution created by the community. One man alone in the wilderness could not create a street unless the others wished to follow him. The acceptance by the community of such a path gives
it the name and function of a street. The concern must be to create a better street environment. From its earliest days it could be said to be the main place of public contact and passage. It allowed the ready exchange of goods and services. It is a place for play, processions, carnival, celebration and protest. Thus the street is of greatest importance as a place in which human society might be protected and allowed to develop. Today many streets suffer from a variety of disadvantages which make communication difficult.

The behavioural patterns of the Libyan are dictated by the climate as well as social and cultural mores. These produce an intimate outdoor way of life for three quarters of the year. This includes domestic activities which in some other countries might be expected to be performed indoors. In contrast to European life styles, places such as the restaurant, the bar, theatres and cinemas mean nothing to the majority of the Libyan people. For in such a country, the exterior place should be designed as a room and the built structures on each side of these spaces could be regarded as the walls of this outdoor room. These walls owe a responsibility to these rooms, and allow this open air space to perform its function.

Although the modern street is better paved and cleaner than it used to be in the past, a new menace has intruded in the shape of the motor vehicle. Today's street has been specifically designed for traffic. It has been widened and straightened to facilitate traffic flow. The fashion of widening and straightening the street is appearing everywhere in Libya. It happens even if it means destroying the dwelling houses and the community itself. The straightness and inordinate width of the street has come to be regarded as a source of pride and as a matter of prestige. Such projects have been publicly
Fig. 1.5 shows a government advertisement demonstrating one of its "achievements." It portrays the Libyan leader on a bulldozer knocking down the old houses in order to build a new twelve storey high block.
acclaimed as examples of progress. Today, people are overwhelmed and dominated by these new and enormous structures, by the motorway and its signals even more than by the car itself. They tend to be interested in keeping a vacant space rather than a garden in front of their houses for reasons of pride. Only recently have people come to realise that such huge prestigious projects serve no purpose and, instead, create problems not solutions.

Any discussion of contemporary Libyan streets must consider the misunderstanding of the real function of the street nowadays and the technological developments that have reinforced these misconceptions. Changes in Libyan lifestyles have transformed public activities into private ones. Activities which were normal outdoor every day occurrences twenty years ago have been transformed; like the daily promenade, shopping, taking children to and from school, entertainment, etc. A member of the family who then would have walked to the grocer's shop now drives to the supermarket. One must assume that such possibilities for interaction in public open spaces are not only desirable but also necessary for popular satisfaction.

Consequently, one is interested in getting people onto the street or, alternatively, out into some equivalent of the traditional street. Also, one is interested in offering the public the chance to enjoy their outdoor space in the same way as they used to. Equally there must be an interest in creating a better street environment that will satisfy socio-cultural needs and modify the harsh climate of the local environment. While one should use traditional techniques which have proved themselves over the centuries, at the same time, one must examine foreign models. But this scrutiny can lead to acceptance only if any particular solution is relevant to local conditions.
Both pictures show the same view and angle but in different eras. The upper illustration shows the traditional shops which have been replaced by the car park as seen below.
One is not enthusiastic about destroying the traditional built environment merely because of its age and as a matter of escaping from the past. Poverty is irrelevant to the past and to the old forms. The traditional architecture was not made to cater for the poor but for the needs of the entire community. At the same time, modern architecture, of itself, is not a sign of wealth. If one is looking for prestige, it can be achieved better by creating it on a human scale relevant to social, cultural and climatic needs rather than huge roads, extensive space and high-rise buildings.

The intention is not to enshrine the traditional street, rather it is to suggest there is merit in conceptions of streets that often are considered antiquated and discounted. Certain formal aspects of the traditional street are of persistent unique value and this makes it still viable. That is because of its capacity to provide differentiated quality open space. One finds the need to search for a concept of a city in which the street could be seen as a positive element. Through such streets the city could be regarded as being viable, socially and operationally as having grown out of the traditional.

This thesis is a continuation of the author's M.Sc dissertation (1984) in which he examined, in some detail, the behaviour of people in various types of street in Libya. It was a survey using the Jan Gehl method to compare the street in the old and new areas of the city of Misurata. It was concluded that the old traditional streets were more livable places than modern streets. Though, statistically, there are more people in the city than before, it has become more depersonalised, with almost everyone passing each other on wheels. In such a context person to person contact is virtually impossible.
The principle aims of this thesis might conveniently be set forth under five headings, as follows:

Firstly, one must investigate the forces in the modern Libyan street which militate against the pursuit of an active social life as found in the traditional one.

The second aim is to establish the reasons which have forced Libyan cities to change, and to evaluate the advantages and disadvantages arising therefrom.

The third objective of this thesis is to carry out the necessary research into the prerequisites required for the creation of better street environment in modern Libyan developments; in order to make them safer, more livable and full of social activity.

Fourthly, one seeks to search for ways in which traditional patterns might be of assistance to modern development. The critical concern is how such patterns can be used and renewed in future developments.

The final aim is, through this study, to rectify any misunderstandings as to the function of the street which might be presently held. It should be borne in mind that the re-creation of street life is an essential target for which city designers should strive.

Outline of the Study

This study is divided into two parts, the Analytical and the Empirical.

The First Part, "Evolution, Forces and changes in the street", is concerned with the historical background and developing progress of the street
in the context of its socio-cultural problem. There is a further examination and
description of the situation, in order to clarify the problem. In addition, the
impact of the changing Libyan economy on the built environment is also
considered. However, the purpose of the study of the indigenous street is not
only to describe the product but also to discover some aspects of the forces
which affected its progress. In other words, it is necessary to examine the
interaction and relation of man and his built environment in terms of
socio-cultural and environmental forces. This first part is divided into five
chapters.

Chapter One: contains the introduction and explains the main aims and
functions of the street along with a discussion of related subjects.

Chapter Two: is concerned with the historical background of the street,
starting from the early cities and ending with the modern. This is undertaken
so that an understanding of the real function of the street can be arrived at.
From such a study, one can learn from past experience and can be helped to
draw positive conclusions.

Chapter Three: having discussed the street generally, one examines the
Libyan street in some detail. The aim is to investigate the facts of traditional
settlement and its street structure in Libya.

Chapter Four: indicates those forces which shaped the traditional pattern.
Climate and socio-cultural factors are the main elements which, above all, have
shaped the morphology of the traditional built environment. The street reflects
rational solutions to the problems of creating a comfortable environment under
a given set of climatic conditions. The built environment was created in the
context of the complex social organisation which Libya inherited in the values and belief system of the Arab Islamic culture.

Chapter Five: deals with change and how the evolution of the traditional environment was interrupted, historically and conceptually, by the imposition on Libya of foreign influences. This chapter also examines the impact of oil revenues and their consequential problems.

Part Two "An approach to finding 'a solution": Having examined and clarified the problem in the first part, the second part gives a general solution towards the creation of a better street environment.

Chapter Six: demonstrates the need for the analysis of the street as a socio-cultural model and the importance of culture in design.

Chapter Seven: provides the guidance by which the designer can produce a livable street and create a continuity with the heritage which has been lost. Photographs have been used to convey in a more dramatic manner the importance of producing a congenial street. They may help to correct the misconception that the only function of the street is to be a carrier of traffic.

Fig. 1.8

(Where am I)
A citizen feeling lost due to the impact of an impersonal modern city, as depicted by the famous Libyan cartoonist Mohammed Elzawawy, in the Jamahiry Newspaper 12 July 1985
1.1 Definition of the term “street”

Before going deeper into the study of the street, it would be appropriate to examine the meaning of the word “street”. In order to do so, it is necessary to differentiate between the two words “Street” and “Road”.

The word “street” is often used mistakenly for the word “road”. Although the asphalt carpet which serves as a channel for the movement of cars is still called a “street”, it can retain no connection with the original significance of the term. These two words contain two contrasted tendencies.

The word ‘street’ is derived from Latin meaning a paved surface and so the word is related to the root ‘Str’ which is cognate with the Latin *Strata* and indicates a connection with building, a construction. It suggests a surface distinguished from its built surroundings. This root can be found in many languages, in Italian *strada* for instance, in German *Strasse*, in Arabic *shara*. The term suggests an area set aside for public use. It does not necessarily mean that it will lead to anywhere, indeed it may end in a square or cul-de-sac.

In contrast the word “road” suggests a movement of people and goods to a destination. The word “route” which is to be found in both English and French has the same underlying meaning, clearly brought out in the term for the main road or *route nationale* or else *routiers* (lorry-drivers) as used in France. There are many words in different languages under the heading “street” or “road”. For example, the word “alley” (in German *Allee*) implies a narrow passage, “avenue” a wide, often tree-lined street. Such terms come under the first
heading. But 'way' or the Latin and Italian via come into the second classification.

Another set of categories can be discerned in the three following word groupings concerning the street. In the first, the physical structure of the street is invoked with such a word as 'embankment', 'row', 'arcade', 'terrace' et cetera. The second grouping is connected with people on foot, as 'path', 'track', 'parade', and 'promenade' which is even cognate with the French verb to walk. The third term relates to vehicular traffic as in 'artery', 'thoroughfare' and 'high street' which all have in common the concept of passageway through a built environment.

The origin of the word, therefore, suggests a space in the built environment which is an extended area flanked by buildings. This could be looked on as three dimensional, having the properties of breadth, length and height. On the other hand, the road appears two dimensional with only width and length.

The street has associations with slower movement, especially with pedestrian activities, and a place for interactions and activities by its users. In contrast the road is usually thought of in terms of high speed vehicles. Furthermore, streets are to be found in built-up areas either in the centre of towns, or villages. They are usually associated with a sense of place and active human participation, which is usually lacking in the road.

Consequently, a street can be said no longer to exist where no provision is made in it for pedestrians or their access to buildings. Even where traffic has been excluded, as in a pedestrian walkway, because of its continued lateral associations with buildings and people, it can be, and is, still designated a
street.

At this point, it could be useful to mention definitions of the concept of "street". Firstly, Kriers' (1979) definition of the street is that: "The street is a product of the spread of a settlement once houses have been built on all available space around its central square. It provides a framework for the distribution of land and gives access to individual plots. It has a more pronouncedly functional character than the square". Secondly, Buchanan (1963) defines a street as: "a form of carriageway for vehicles, flanking pavements for pedestrians and with frontage development with direct access to premises for pedestrians and occasionally for vehicles". Lastly, the Oxford dictionary defines a street as "a road in a town or village (comparatively wide as opposed to "lane" or "alley") running between two lines of houses or shops". However, these definitions of the street lack a socio-cultural dimension.

It could be said that the street has a fourth dimension in that it is an institutionalised form of human socio-cultural movement, providing a locus for social interaction, as well as reflecting the cultural component. As such it is a potential place where the user can identify certain of his activities with a particular space, thereby personalising that area in a manner similar to the way he personalises his dwelling-house. It must be a space which is accessible to all, providing an area for activity as well as a combined system for the movement of both pedestrians and vehicles. Another function of the street is to form a link between one space and another as a preferred means of getting to a particular goal, which may be found in buildings or in open spaces next to the street, or in other streets.
Consequently, it might be reasonable to stress that the street plays a vital role in providing a locus for social activities. Indeed, it seems to function as a safety valve with its provision of a setting in which residents may gain a certain amount of freedom from the pressure of domestic life. Because of the need of the street as a source of variety of social as well as intellectual experiences for its users, it remains a constant human necessity in urban environments.

Fig. 1.9
The basic concept of the street as a place of communal activity is shown in this illustration of nomadic African bushmen moving from one place of residence to another.
1.2 Relative and Similar Studies

In consideration of literature on "the street", there exists a major gap in available studies. Traffic engineers have, of course, made many studies of traffic flow and speed. However, there are relatively few studies which concern themselves with other aspects of the street, such as social life, people's behaviour, analysis of street use and so on. This has happened because of widespread misconceptions about the street and the prevailing need to regard it as a passage for traffic only.

In Libya, studies of the street are virtually non-existent. The only data available are anecdotal, personal descriptions made by tourists interested in suqs and the people. Only recently have traffic studies begun to be made by foreign companies, in a few major cities. For this reason, the present study may be considered the first of its kind in this context.

There has been, nevertheless, a certain interest among some writers on the subject of the street as something other than a channel for traffic. Perhaps the most respected of these scant services and one which has influenced many writers on architectural topics is that of Jane Jacobs (1961).

Jane Jacobs (1961) is against modern streets as they are found, preferring the complexity and variety of traditional cities. She advocates a return to street life. She claims that a well-used street, full of residents, is less likely to harbour criminals because they can be easily identified. Such streets are safe by contrast with the deserted and impersonal open areas of modern housing estates.
She gives the example of a Greenwich village street as a model which should be emulated and preserved. In fact, it is likely that such variety in street life is due to factors more complex than she suggests, related to the origins of the residents there, and the evident social mix. Nonetheless, her example has pushed designers to fight for the street as a popular course and as an ideal in post-modern urban planning.

It can be argued that her analysis, while useful in many respects, is over-subjective. It is obsessed with the prevention of criminal violence in large cities. Instead of distinguishing the source of this problem, she launches into an attack on current planning, blaming its form for social deviations. She is convinced that the side-walk, the street and the neighbourhood, as unplanned and casual phenomena, are essential to a dynamic urban life. It is hardly realistic to set up the Greenwich Village street as a model for the rest of New York. The ideal society, which she argues for, seems to have more in common with pre-industrial agricultural societies.

Mumford (1965) has provided the best commentary on her writings in, "Home remedy for urban cancer". He points out that if Jane Jacobs was right in her analysis, then eighteenth century London's industrial slums would have been an ideal urban environment because they fulfilled all her planning requirements. He criticises her for grossly oversimplifying the relationship between architectural form and social life. It is not possible to remedy serious social ills through a few planning changes. He suggests that Jacobs has an inadequate awareness of the history of modern cities and is consequently unable to perceive where the fault lies. She ignores factors such as division of labour, poverty and so on, which all have a significant role to play in the
existence of crime.

The R.I.B.A. conference of 1910 is another source which provided useful material and observations concerning the problems of the street at that time. Many of the legal and technical papers at this conference concentrated on negative features of the street. For example, the misery and overcrowding of narrow streets in White Chapel were emphasised as support for the proposal to widen streets and construct a ring of garden cities. Harvard was concerned with street traffic problems, particularly intersections, and spoke out against mixture of uses and different types of traffic on the boulevards.

The other meaningful source is to be found in the 4th Conference of C.I.A.M in 1933, which came to be known as the “Athens charter”. J.L.S. Sert (1944) has provided the best reference in his book “Can our cities survive?” This conference dealt with problems of the urban street and the urban environment in general. An attempt was made to find universal solutions to the problems of different places and countries. As a result the proposed solutions were not relevant, specific cases. Nonetheless, the recommendations were reformist and did provide some sort of remedy for the problems of modern urban streets, while presenting this concept as essential to most European cities.

Recent analysis and regeneration programmes relating to the street and its problems have been considered in “On street” (1978) edited by Standford Anderson. In this study the street is looked at in its historical perspective. The analysis is comprehensive and treats the street as a set of spatial structures, “streets are seen as the room of the city, accommodating a wide
range of human encounters and activities as defined by communal agreement, and their "walls" are interpreted as the interface between public and private use, with certain enclaves, shops, hotel lobbies, church naves serving as semi-public extensions of the street. A safe street environment is also a central concern for Dr. Appleby, "double streets" (1961). He comments the quality of life in residential streets.

This study, "On street", outlines possibilities of increasing the worth and significance of street life. It looks at ways of reducing violence in the street and the restructuring of traffic movement. The way in which street networks affect the nature of society and family life are looked at, also how the urban fabric's continuity is maintained, how it is differentiated and disrupted.

General assumptions underlying the detailed studies of streets are stated in the context of an overview of how man has intervened in his physical environment. Streets are viewed historically and anthropologically taking into account cultural and social contexts. The street is viewed essentially as "transactional space". Notional systems are outlined for analysing streets as structures and as elements. Man's place in the environment of the street is also looked at.

The next salvo in the battle for street life is Buchanan's report 1963. He is concerned primarily with considering the influence of traffic on street life and making streets safe for people. Buchanan's first study, "Traffic in Towns" 1963, drew the British government's attention to the problem of traffic. The study was more concerned with solutions then effects. His idea was to focus on "environmental areas" by zoning cities. Plans based on this concept were adopted by various cities. Buchanan's attitude to traffic was basically a positive one, acknowledging its inevitability and aimed at organising it.
Attention shifted to the solutions proposed by Buchanan for channelling traffic along major highways so that existing environment areas could be preserved.

A safe street environment is also a central concern for D. Appleyard, "Livable streets" (1981). He considers the quality of life in residential streets and the effect on them of transportation and vehicular traffic. His main theme is how to make streets more safe and livable. He sees traffic as the main obstacle and considers how to minimize it by management and control of its negative effects.

Rudofsky's book "Streets for People" (1964) is another distinguished source, in studying the street. He considers that the function of streets has deteriorated into highways and parking lots. His ideal streets are Asian and Mediterranean. He particularly likes Arab and Italian streets and asks the Americans to learn from them. He is attracted by their environment. He does not actually suggest ways of encouraging street life. However, his descriptions and criticism have helped to correct the misunderstanding of street function.

Christopher Alexander is a figure of central importance in present architectural circles. He acknowledges a direct debt to behaviourist empiricist philosophy. In his various writings he tries to formulate an alternative approach to architecture as it is practised. His works have greatly influenced design methods. His most influential works are "Pattern Language" (1977) and the two associated volumes "The Timeless way of building" (1979) and "The Oregon experiment" (1975). In "Pattern Language", 253 patterns are described which deal with all scales from urban outdoor spaces to interior living spaces. He deals with very detailed patterns, such as the width of the street, placement
of trees, seats, monuments, traffic and pedestrian activities.

His central belief is that people create more wonderful places than architects. Therefore, he maintains that, ideally, people should design their own houses and, indeed, streets. He tries to allow the cultural dimension of design to take care of itself through the creation of beautiful buildings and urban streets. In this way he attempts to re-establish the status of a social activity for architecture. To do this he traces the history of design. This is part of his overall purpose of defining the organic and human physical environment.

Jan Gehl has contributed considerably to an understanding of a field not previously investigated. His attention is concentrated on how people use streets and his conclusions help the designer to create a better environment. His studies reveal a basic programme and a set of rules of thumb, which can be applied to design problems. Jan Gehl’s main contribution to the study of the street is to develop some activity analysis techniques as the basis for an inductive design methodology.

He is a behaviourist and in his book “Life between Buildings” (1987) he focuses particularly on the fundamental psychological and physical requirements of man. He shows that the study of the human senses, seeing, hearing, talking, smelling, etc., should be considered as much as an activity pattern, when designing urban space. He claims that the needs of people in the street are for contact, social esteem and knowledge. These needs are of great importance to the individual’s happiness and social adaptation. They should be accounted for and satisfied by the built environment. An
understanding of these needs is helpful in developing awareness of what underlies the activities of users of the built environment. The preference of people to meet together in town is thus related to the satisfaction of these needs.

Jan Gehl's technique as explained in his book, "The Interface" (1977) (a study conducted in Melbourne, Australia), is intended to give an analytical instrument to the designer or decision maker for carrying out the first analytical stage of the process. This technique was used by the writer in the summer of 1983 to study the behaviour of people in Libya. Although Libyan society is different in culture and tradition from Australia, the technique was nonetheless found to be very useful.

The other recent important study about the street is the theory of "Space Syntax" which was developed by Bill Hillier et al. (1984). He analyses architectural space, both indoor and outdoor. In analysing the social interaction of the urban area, strangers passing across the system are distinguished from local inhabitants. There is a difference between the interaction of inhabitants which is important for the community and that of strangers which is important in the policing of space. The space is policed by the strangers and the strangers are policed by the inhabitants. Awareness of others is necessary before social contact can be made. He believes that the sense of community is greatly affected by this factor. Many housing estates have no sense of community and no activity, because space by itself does not lead to social interaction. Hillier's main interest lies in the ways people can be led to interact socially, one with another.
In his book "The Social Logic of Space" (1984), he looks at the way movement patterns in a town and social interactions between individuals are affected by the one dimensional description of space. Urban space has to be seen from many points, contributing to a global approach to space organisation. Such an organisation generates, sustains and controls the patterns of people's movements. Architectural space, therefore, cannot be viewed from only one point. The ways people move through the street are greatly affected by spatial organisation. He claims, further, on the basis of the study's results, that patterns of movement are affected according to well defined principles. These principles relate to the intelligibility of space. In other words, inhabitants of a space have to be able to differentiate between the larger patterns of space and the local ones. In addition, predictability and continuity of occupation of space are important factors, which Hillier is interested in defining and evaluating precisely.

Camillo Sitte's study is one of the older ones about streets and the built environment in general. He extracts universal principles from concrete examples which old cities present. It is interesting to note the standpoints from which he generalises and the ideas that underlie his analysis.

Sitte saw city planning as an art and therefore believed that planners should obey traditional artistic principles. He considered that the old cities had been artistically developed. He therefore felt that the artist should be involved in modern town planning. The city for him was a work of art made of architecture, nature, solids and voids. He saw it as a popular synthesis of visual arts. He often compared the city to music, to the theatre, as if it were an arrangement for an exhibition. In his view, people should be able to
wander, meet outside and relax peacefully. But this was not typical of the negative image of cities generally in the 19th century.

His book "City Planning according to artistic principles" was translated into English in 1965. Sitte and his complaints about the monotony of endless streets planned on the rigid gridiron are as relevant today as they were in 1889. Contemporary planners have forgotten that a city does not just consist of comforts in modern shelter, but should foster an active outdoor social life. The physical and emotional qualities of a visual art must be developed for citizens or they will seek such things elsewhere. In other words, an aesthetic approach to city planning is essential for the wellbeing of its residents. The modern engineer's city, based on Le Corbusier's principles has resulted in a system of monotonous self-contained cells. Such cities have no symbols of the visual reason for their existence. It has become essential, now, to change the deadly gridiron into a plan offering greater freedom and more community integration. Nowadays, one wants quiet areas with broken streets and open space patterns to limit speed. One needs to combine these with the fast moving roads nearby, yet insulate them from the speed and noise. Designers therefore require to be aware of the need for social and aesthetic composition, as well as for utilities which give comfort, sanitation and safety.

Sitte's examples are generally on a small scale. This is important today, because it is now essential in urban planning to return to the scale of human comprehension. It is necessary to get away from the huge scale of the unplanned modern city and to develop community qualities. In this respect, zoning is not a satisfactory way of planning because it insists on uniformity which makes the city very monotonous.
Nowadays people again feel there must be outdoor life in the cities, that spreading, decentralised cities of "cells" are not the solution. Modern life gives people more free time so that streets for recreation are again becoming important. In this respect Sitte's ideas are extremely useful and relevant to us, giving us a better idea of how to go about this new opportunity in city planning.

Patrick Geddes, as well, added more to our understanding of the built environment. He was greatly influenced by Sitte. His chief concern was to draw attention to the importance of history and architectural expression for the inhabitants of a town. While conceding that demolition and modernisation were necessary, he held that they should be minimised and as far as possible carried out so as to accommodate many old buildings. Such buildings could be cleaned and repaired on the outside and modernised within. He felt that people could be educated better in their streets and squares in the presence of historical buildings, arts and crafts, than in museums. Geddes was not an isolationist. He never saw a local culture as complete in itself. He was always able to relate economic and technical changes in regionalism with their social and historic manifestations.

Geddes applied these principles in India. Today, half a century later, current attitudes in urban design reflect similar ideas. Many modern planning schemes now reflect Geddes's concepts. However, there is still scope for more attention to Geddes's views, which are full of potential for the creation of future human ecosystems.

Account should also be taken of the work and views of the Krier brothers,
whose analysis of streets and squares form the basis of their opposition to devastation of the urban fabric of European Cities. They were particularly interested in 16th century Italian architectural forms and their spatial organisation according to aesthetic and symbolic ends. Like Sitte they are preoccupied with the notion of urban space as a negative volume that: "follows, pulsates and reaches a crescendo around public buildings". They are opposed to the functional separation of forms and the tendency to view each building as an independent free-standing entity.

In "Urban space" (1979) Rob Krier undertakes a systematic and thorough study of streets and squares. He hopes, through studying historical precedents, to resurrect 16th century Italian notions of space as a solution to the "urban disasters" of modern architecture. He hopes to recreate a European tradition of urbanism but one which is adapted to the requirements of twentieth century society. He focuses on streets and squares as the foundation of a City's structure, categorising all urban spaces as one or the other. He attempts to make clear the logic underlying the production of urban spaces in Europe and goes on to give a short account of the destruction of the system whereby streets are viewed as rooms.

His brother, Leon Krier, has formulated a charter for the reconstruction of the European city. He suggests that a city should be reconstructed in the form of urban quarters, squares and streets. In his view, urban areas should not be greater than 35 hectares and should have a population of urban life which should be integrated. Streets and squares should appear familiar. However complex the urban topography and geography, simplicity must be the goal of the urban plan. Proportions and dimensions should be copied from the most
beautiful pre-industrial cities. A city should be built up as a hierarchy of public and domestic spaces, monuments and urban fabric, classical architecture and vernacular buildings, squares and streets.

Fig. 1.10 The many faces of the open street in Paris (Rue Saint-Lazare). The shop windows, the advertisements, the kiosks and the lamp posts all combine to provide a setting for the continual flow of pedestrians and vehicles.
"In the story of life as a whole, it is the longer acquaintance with history that gives us the best guide to the future. We cannot change the past, but we can build upon it. We cannot wholly determine the future, but we can mould it according to what we learn from the past." in a Museum at Shrewsbury.

If one takes history as meaning a concern with the evidence of the past, then the evolution of the built environment can be regarded as an aspect of history. Human environmental studies have always been linked with history and even pre-history, as have architectural studies. Since in the last few decades architectural history has suffered some neglect, it could be asked on what grounds it was necessary to examine the subject, especially at a time of pressure from rapid change.

An acceptable justification of the study of history is that one can learn from the past, that such a discipline is of value philosophically in making us alive to the complexity and overlapping of things. It can also make clear and intelligible those elements that are constant and those that change. Hutchinson (1966) observes that: "We need the rich time dimension to help us avoid the all too common triviality of living in the moment, as a continuous prelude to rushing thoughtlessly into the future". Accordingly this generation cannot prove that its problems are basically so very different and the past has no lessons for it, as no one can postulate that there has been a sudden break with the continuity of human life over the generations and all that has gone before.
Two respected authorities on the subject can be referred to with profit. Firstly, Geddes (1915) explains that: "In grappling with the problems of city and regional planning, now arising whenever citizens are becoming conscious of their needs, we can thus learn from the past. Those who do not see the significance, to themselves and their times, of the main developments throughout the world which especially have contributed to the growth of their own cities, are merely those who have never caught the gleam and romance of history, and thus of city building, greatest of arts". Secondly, Camillo Sitte (1965) observes that one must attempt to understand and recreate the essential features of old towns in present day new towns, harmonizing ancient principles with modern requirements.

A further reason for studying such history is that traditional streets and houses are a direct expression of transient values, perceptions and images while at the same time enshrining certain constant factors.

Another important element is the need for comparison of cultures and their relation to the street and houses. It is worth considering, Service (1966) says: "an intellectual encounter with man in all his varieties no matter how primitive, how ancient, or seemingly insignificant". The value of a study of this kind of history is that it provides a great range of variables in different cultures. The examination of history can form the basis for the study of other cultures. In order to get a balanced view, between contemporary and traditional building it is necessary to examine the ways of doing things, in different times and places. Seeing other methods helps one to discover the distinctiveness of one’s own.

For these reasons the study of past town systems is very relevant and
important, unlike some other cases where it is employed in a thesis merely to provide bulk. Here it is essential as the discipline by whose employment lessons may be learned and by which a reasonable solution can be created relevant to our present Libyan cities. Thus this chapter gives a broad outline of the urban street from the original to the contemporary.

Fig. 2.1
This plan of the town of Tunis shows the product of gradual evolution, with every period having its own impact from the time of the foundation of the city. The lessons learned in each previous period have always been consolidated in the next one.
2.1 The Early Street

Man first appeared on the earth perhaps as long ago as a million years as Mumford (1961) stated. Childe (1964) demonstrates the basic social unit as the family, doubtlessly as part of the extended family of traditional societies. The necessity of obtaining fresh supplies of food was the motive behind the mobility of these families. Settlements, and, therefore, streets only became possible when an economic system could be worked out whereby the producers of food brought it to the settlements to pay for goods and services which they were willing to buy or exchange for their food products. Childe (1964) states that there was no permanent physical unit until about 14,000 B.C. when: “as the last great Ice Age was approaching, men were sufficiently well equipped to evict other denizens, and themselves to find shelter in caves. There we find true home”.

Childe (1964) accepts that favourable conditions originally came to be recognised in a large area of the Middle East, commonly called “The Fertile Crescent”. If one takes a starting point on the Arabian Gulf, the area can be traced North to end at the mountains from which the river Tigris comes, thence westward across to the Euphrates river. From here the zone covers Syria and the fertile valleys and Palestine. A substantial continuation is formed on the other side of the Sinai desert in the cases of Egypt and the narrow strip of fertile land bordering each bank of the river Nile.

Mesopotamia, “the land between two rivers” as its name would imply, had the essential fertility to create the necessary conditions for urbanism (Fig. 2.2). The two rivers containing this country, known today as Iraq, are the Tigris and
Archaeology reveals that the basic urban unit was a central court or living room, around which the secondary rooms were grouped, according to requirements or available space. At first, according to Morris (1979), there were open spaces which became streets between each housing unit oriented toward the prevailing breeze. Also the tracks required to be used by flocks of sheep and beasts of burden like donkeys, as well as man, for access to fields and neighbouring communities. Where a settlement has had to be fortified the growth of population behind the fortified walls compels open spaces to be built over. The irregular spaces between single houses are filled with an unplanned agglomeration of other buildings. Any former thoroughfares that existed were reduced to narrow lanes and cul-de-sacs only sufficient to give access to most houses. Rounded corners often eased the confined flow of traffic. Because of the congestion of the housing, there were no gardens, parks or green areas left.

The walled city enclosed blocks which were separated by streets and alleyways. Such thoroughfares followed the geographical contours of the area, for easy transport and driving of animals. In the residential areas one found small temples to particular cults and spaces for bazaars. Sometimes open-fronted shops were incorporated in blocks composed of dwelling houses; these dwellings could be built round internal courtyards. Windows were built high on the outsides of these blocks to ensure privacy and security in case of attacks from the street and the nuisances that might be associated with busy crowded narrow streets.
Fig. 2.2 shows the earliest urban civilizations.

Fig. 2.3 Kahun, detail showing the arrangement of the Workmen's Camp of 2670 B.C.

Fig. 2.4 Mohenjo-daro: The street layout shows small lanes with one main street.
A typical example of this can be found in Khafajah. At first the walled city quarter appears to be planned but it is merely an economy of space that is the overriding consideration. This can be shown by looking at the quarter's tightly packed rectangular blocks. After studying the street pattern and individual housing, it becomes apparent that the only underlying principles are those of economy of space with no particular concept of planning.

Shadappum, on the other hand, probably built as a fortified administrative centre between 2025 and 1763 B.C, has all the appearance of a newly created city. If there was at the beginning the hope of a geometrical plan it was certainly never carried out. Nevertheless, one can see that a great deal of effort was put into achieving an even rhythm in the spacing of the towers, buttresses and panels of the enclosing wall.

However, there was no regularity or planning on an over-all basis; for instance, the only city gate, though symmetrical in design, is in an awkward location. The main street leading from this gate and its off-streets are not straight but are intruded upon by projecting buildings, built out on the streets.

It can be seen that the Mesopotamian architect or builder was not concerned with the overall composition but only with the individual building. Where there was space the latter was placed according to its importance or function. Planning was always from the inside out and additional buildings were squeezed into the available space leaving only necessary streets free for traffic.

In Egypt, on the other hand, architectural experts agree that there were "cities" as early as the Summerian period. The settlement of Tel-elamarna was
situated on the Eastern bank of the river Nile halfway between Cairo and Luxor. The city plan is that of three main streets running parallel to the Nile and connecting the various areas. This could be taken as an early example of gridiron planning with the sole aim of housing the key work-force as quickly as possible. The vast army of non-priority ordinary workers were only in rudimentary shelter.

Kahun appears to have been an earlier settlement of workman’s houses (Fig. 2.3). Sir Finder Petrie (1964) has observed that: “each street was of a uniform type of house, there were no gardens but each house, no matter how small, had its own open courtyard just as the present day Egyptian houses have”.

Comparable Indian towns at Harappan, grew up in earliest times with settlements by neolithic farming communities in the Indus basin which seem to have been paralleled with those of Mesopotamia. During the fifth millenium B.C., the establishment of such villages took place on the higher plains away from the actual river courses. Only after these communities had become sufficiently well organised, socially and technically, were they able to take on the challenge of farming the flood-plains. These cities were surrounded by massive walls probably as much for protection against river flooding as against military assault. They had more or less gridiron layouts, with the main streets running North and South. The east-west cross streets led to the citadel. Such a gridiron layout cannot just happen, in direct contrast to settlements which had grown organically. Such a gridiron layout must be consciously determined and erected on a chosen site.

The best documented city of the Harappan civilisation is Mohenjo-daro of
about 2150 B.C. (Fig2.4). Its site is on the right bank of the river Indus, some 5 kilometres from the course of the present river. The street pattern of Mohenjo-daro is of a modified gridiron form. The entrances to the houses were from minor lanes at right angles to the main routes. There was a wide range of house types. They varied from single room tenements to large houses. All houses were inward-looking, with no openings on to the main street. There were shops along the main street length, as well as a building which could, perhaps, have been a restaurant.

Fig. 2.5 Enbil (ancient Arbela) in North East Iraq; the tell (mound) in the centre has been more or less continuously occupied for perhaps 6,000 to 8,000 years. The close knit, cellular grain epitomises organic urban growth. Narrow streets and private house courtyards provide almost all the open spaces in the city.
2.2 Greek Streets

The Greek City was the true reflection of the way of living and the attitude to life of its inhabitants. It was the urban nucleus of the city state, and had its clearly defined limits, compact urban form and integrated social life.

The climate had a beneficial effect in determining everyday life in ancient Greece. As Kitto (1951) puts it, Greece is one of those countries which have a climate and not merely weather. Winter is severe in the mountains, elsewhere moderate and sunny. Summer sets in early, and is hot, but except in the land-locked plains the heat is not enervating for the atmosphere is dry, and the heat is tempered with the daily alteration of land and sea breezes. Rain in summer is almost unknown, late autumn and winter are the rainy seasons. This attractive situation encouraged an open-air communally-oriented attitude to life. Meetings were able to take place in the open air.

Similarly, at first, large scale open air theatrical ceremonies were performed at the foot of conveniently sloping natural auditoria. Later these were laid out as beautifully conceived architectural and landscape entities. Two factors permitting Greek citizens the leisure to enjoy representative assemblies and theatrical ceremonies were the slaves who supported the economy and the favourable climate which allowed outdoor activities.

The city was a simple united entity without restricted or independent areas. Although it might be surrounded with walls, it did not have secondary zones as in Near Eastern cities. The houses varied only in size not in architectural style. They were spread throughout the city and no quarters were reserved exclusively for members of a certain class of family. There were certain
Fig. 2.6 Gournia in eastern Crete shows mostly two-storeyed houses on a limestone ridge, with the palace facing a large public space.

Fig. 2.7 Miletus, shows the general gridiron pattern of streets with the market space in a central position.

Fig. 2.8 shows the Agora or market area in Athens in the third century B.C.
specific areas like the main square (agora) in which the majority of the population could meet and assert their rights as a single community.

The city was divided into three zones: The private areas, which were set aside for the inhabitants’ houses, the sacred area, which contained the temples of the gods, and public areas, used for political meetings, sport, commerce and theatres.

Let us now turn to Athens which is surrounded by a series of mountains (Fig. 2.8). The broad valleys between the mountains gave easy communications with the interior. The sea also gave access. Athens was also a political, commercial and religious centre which gave refuge to a sparse rural population in times of danger. This city was constructed on a human scale surrounded and dominated by the vastness of nature. The Acropolis dominated Athens and could be seen from a great distance. Approaching it one noted repeated architectural features like columns, bases, and capitals and smaller sculptural details, picked out in colour.

The streets discovered by archaeologists do not seem to follow any regular pattern, except for the “dromos” which is rectangular and runs from the Agora to the Dipylon route. If one examines the houses which have been excavated at Delos, around the theatre, one can get an idea of those of Athens. The simplicity of these houses results from the fact that their occupants did not spend much time at home. The greater part of the day was spent in the public areas, which were laid out according to decisions taken by the community assembly.

In the ancient Mediterranean cities the streets often ran in straight lines
A few main longer streets divided the cities into a series of rectangular blocks and a larger number of secondary streets crossed at right angles. All these streets were of modest dimensions. The main streets were between 5 and 10 metres wide, while the secondary ones measured between 3 and 5 metres across. The result was a grid of uniformly rectangular blocks (insulate), which varied in certain cases in order to fit in with the local terrain. The distance between two secondary streets would be large enough to accommodate one or two individual houses (often 30 to 35 metres) while a large one occupied the distance between two main streets. The layout was designed to provide enough space for an uninterrupted line of houses (from 50 to up to 300 metres) as explained by Wycherley (1962).

The special civil and religious bodies occupied space within this geometrical plan, within part of the grid. Since they took up the area of one or two blocks, the main streets were able to run alongside them. The city boundaries did not follow a regular pattern when they encountered natural obstacles like mountains or coasts. Nor did the building groups. The city walls could have irregular outlines where they encircled easily defendable areas of high ground.

Fig. 2.9

Athens, an aerial view of the Acropolis
2.3 Roman Streets

The legendary date for the foundation of the city of Rome is 753 B.C. Subsequent Roman history begins with the period of the kings from the foundation till 510 B.C. From then till 21 B.C. is the time of the Republic and from then till 330 A.D. that of Imperial Rome. Paramount urban settlements throughout this period, whether developed from the legionary camps (castra) or otherwise were standardised in design (Fig. 2.10).

Timgad in North Africa is a good example (Fig. 2.11). The perimeter is usually square or rectangular, within which two main cross streets form the basis of the street structure through the centre of the town and are bisected by a main street at right angles towards one end. Secondary streets complete the grid layout thereby forming building blocks. The forum, equivalent to the Greek agora is usually to be found at the intersection of the two main cross streets and the main streets bisecting it. This forum usually consists of a colonnaded courtyard with a meeting hall built across one end. The main temple, the theatre and the public baths were also to be found near the forum in the centre of the town. The various forums, baths and other public works in Rome provided much needed employment. These precincts also established improved pedestrian spaces (itinera), where traffic was prohibited, shopping facilities and administrative accommodation. These buildings and the overcrowding of the streets by chariots, litters, freight wagons and people served to reduce movement to such an extent that service vehicles could only operate during the evening or early morning.

The Roman planner proved himself a master of civic design; by adapting the
Fig. 2.10 A plan of typical Roman Castra or fortified camp.

Fig. 2.11 Timgad, an excavated Roman city in Algeria, possibly the most regular example of gridiron-based urban planning.
Fig. 2.12

Pompeii, this map shows a detailed plan of housing insulae (blocks) in the Western Corner of the city. It is an example of Roman grid pattern. Fig. 2.13 shows the house of Sallust.
portico, the rectangle, the square and the hemicycle he was able to regulate space and retain human scale.

Mumford (1961) informs us that the street system developed into an 85 kilometre network of winding thoroughfares, almost invariably on the narrow side. There were *itinerae*, which were solely for the use of pedestrians, *actus*, which were broad enough to take one cart at a time and *viae*, which could accommodate two carts side by side. There were only two *Viae Novae* which ran along the sides of the forum and some twenty in the outskirts. All were supposed to have a maximum width of 4.80 metres, but some were as wide as 6.50 metres. In the rest of the city the law stated that the streets should be at least 2.90 metres wide, so that the houses on either side could have balconies on the upper floors. This network which had been planned when Rome was still relatively small, became inadequate for a metropolis of a million inhabitants, especially as there was no public street cleaning service or lighting programme. Caesar, however, published an edict that made street cleaning the responsibility of local residents, and also forbade the use of streets by carts between the hours of sunrise and sunset except for those involved in construction work. The result of this was that the city became extremely noisy at night-time.

Around about 64 A.D. there was considerable planned construction in Rome which provided broad streets and spacious houses, their height restricted and their frontages protected by *collonades*. These new construction works were welcomed by many for their practicality and their beauty. However, others believed the old town's configuration had been healthier since its narrow streets and high houses had provided protection from the burning suns.
Fig. 2.14 Leptis Magna in Libya, general plan

Fig. 2.15 View of part of the ruins of Leptis Magna
compared with the new shadowless open spaces which radiated a fiercer heat.

Fig. 2.16 Aventicum (Avanche) shows another example of the gridiron structure of the Roman settlement.
2.4 Islamic Streets

While medieval culture and civilisation were still developing in Europe, in the Mediterranean world Islamic civilisation was already established, according to Benevals (1980). Islam had over-run much of the Mediterranean by the 7th century and first came into contact with Greek civilisation in cities like Alexandria, Damascus and Jerusalem. However, these Islamic incomers also founded their own Islamic cities like Kairouran in Tunisia 670 A.D., Shiraz in Persia 674, Baghdad in Mesopotamia 762 and Cairo in Egypt 969, etc. These cities from the Atlantic to India all shared the same characteristics, fundamental to ancient cities.

Thus all the structural elements of the houses, palaces and public buildings formed separate inward looking precincts. The squares and market places were the largest enclosed areas and did not form part of the street system. The streets were scarcely large enough for the passage of pedestrians and carts.

The simplicity of their new cultural code resulted in a reduction in social activity. The result was that the Islamic cities with their private dwellings, mosques and baths were less complex than the Roman and Greek cities with their fora or agora, theatres and stadia. Mumford (1961) demonstrates that: "Islam emphasised the private and secret nature of family life. The houses were almost invariably built on one level, and the cities grew into conglomerations of houses, whose exteriors gave no hint of their interior shape or their importance. The streets were narrow and formed a labyrinth of twisting alleyways which were often covered. These led to the doors of the houses. Another feature was that the merchants' shops were not grouped in a
square, but lined up along a series of streets, either covered or uncovered, which formed the bazaar, and the contrast between this irregularity and the strict geometricality of the great open courtyards in front of the mosque, made the latter seem even more impressive.

The cities became increasingly compact, enclosed by one or two walls (Figs. 2.23 and 2.24). They were divided up into various quarters (the innermost one being called the madinā). Each ethnic or religious group had its own quarter which was often entered by an imposing gate called the bab. People could meet out of the bustle of the narrow streets. Here architecture was closely integrated with a system of decoration based on geometrical figures and Arabic script.

Islamic planning was able to achieve much in Spain up till the expulsion of the Moors in 1560 A.D. (Fig. 2.17). Here it was found possible to build for communities of craftsmen, for recreational parks, polo grounds, baths and Universities in multi-storied buildings set in gardens. Bazaars were often next to the city gates or more important mosques. There was evidence of over-all planning in that these streets and market places were covered as a protection against the sun.

Advanced knowledge of irrigation, hydraulics and civil engineering allowed them to construct sewage and storm sewers. They built aqueducts to carry water to fountains, baths, residences, and water gardens as in Shiraz. Water was not only a source of pleasure and delight but also a means of climatic control as well as an enrichment of architecture, as Benevolo (1980) indicates.

Perhaps the most remarkable Islamic foundations were Baghdad and
Fig. 2.17 - plan of Cordoba, Spain, shows the narrow and twisting alleyways typical of the classic Islamic city.

Fig. 2.18 shows the Mosque and the open market which always existed near each other. Both were always the first buildings to be constructed in a new town.
Fig. 2.19 Layout of the circular city of Baghdad, planned and initiated by the Caliph al-Mansur.

Fig. 2.20 Plan of the Great Mosque in Baghdad.
Damascus. Baghdad was completed in 766 A.D. (Fig. 2.19). It was remarkable in being circular surrounded by two walls. Damascus was built to provide a road that allowed an exchange of goods where food was available (Fig. 2.21). The streets of Damascus were constructed for the kinds of traffic they would carry, mostly pedestrians, porters and pack animals. As in Medieval Islamic cities there was practically no wheeled traffic.

The layout of streets in Syrian towns still shows the influence of their Greek and Roman past. In the Middle Ages certain streets were paved to avoid mud and also illuminated at night. The colonnaded avenues gave way to suqs, that is, lines of stalls that were covered for shade from sun and rain. The first encroachment of the porticos was the shops set up between the columns. Then the roadway became filled with stalls. Facing the streets were shops with a facade two metres long opened by two shutters. They were three to four metres deep often with workshops at the back, opening out on the street in the rear. They were closed and guarded by watchmen. On the other hand, the streets between dwelling houses called darb, and cul-de-sacs known as zugag, were closed behind solid doors at nightfall. The entries to the private houses were from these zugag, as Serjeant (1980) shows.

In certain quarters the streets were covered by a wooden passageway (sagifah) linking houses at the upper storey level where there were also corbellings with wooden lattice work (mashrabiya).

In the Islamic city of the Middle Ages, there was no place specially built for public assembly. However the place for religious gatherings was at the great mosque. In town there were often small squares bounded by houses known as
Fig. 2.21 The centre of Damascus, the outline of the Arab city overlays the Hippodamian scheme of the Hellenistic city, destroying its geometricality. The monuments of the Arab city are in black while those of the Hellenistic city are represented by hatched areas.

Fig. 2.22 General plan of the city of Ghardaia in Algeria. At the centre, in the place marked by a star, there is a Mosque with a tall minaret.
Fig. 2.23 The Casbah in Algiers is an example of a compact city where each inch was taken up.

Fig. 2.24 The street plan of medieval Tunis is another example of urban agglomeration.
**rahba**, especially at cross roads. Often such squares were called after a particular trade, as for example Onion Square (*Rahbat al-Basal*).

Street decoration in medieval Islamic cities was limited to facades and gateways of buildings. The statues and columns of the classical cities were pulled down and few Roman triumphal arches survived. There were few trees in the streets apart from ornamental vines stretched on frames, especially Cypresses. Round the Mediterranean, houses opened out into the interior, the outer walls being blank without windows. These outer walls often had stone benches of different colours usually ochre and black, decorated with line engravings on which the sun could play as the shadows changed during the day.

![Fig. 2.25](image)

Fig. 2.25 A street in a residential quarter. Its width was calculated according to the kind of transport at that time.
2.5 Medieval Streets

According to Beresford (1967) there are basically three kinds of medieval towns. Firstly, those which survived Roman occupation which left a rectangular block system of layout, like Chester. Secondly, those which had grown up as an accident of history, expanding slowly from being a village round a castle and monastery. They tended to conform more closely to topographical conditions. The third kind was that of the planted fortified town in the shape of a gridiron. All such bastide (fortified) towns were of grid pattern surrounded by a fortified wall with church and market place in the middle (Fig. 2.26).

Apart from the bastides, medieval towns appear rambling and tortuous compared with the spacious products of well ordered later Renaissance and Baroque cities. However, the medieval town was in its own way planned and structured in a very definite organisation for fulfilment of the needs of the inhabitants. The deeply religious principles of medieval man may, according to Rosenam (1959) have contributed to part of the architectural attitudes, as many surviving manuscripts of the period show, preoccupation with the concept of the "Heavenly Jerusalem". It could be said that the medieval streets served medieval man and his needs. Then the street was a focus of life and livelihood as well as a place to live in.

In its market function the town was a means of subsistence. Also the spiritual, community and social needs of the population could be catered for in it by processions, games, dancing, music and social contact. This contact was particularly needed as poor or inadequate communication facilities inside and between towns made local fellowship all the more necessary. The medieval
Fig. 2.26 Eight French bastide plans illustrating their essential variations-on-a-theme character.
Key: a) Villeréal; b) Latinde; c) Castillonnes; d) Eymet; e) Villefrauche-du-Périgold; f) Domme; g) Beaumont; h) Monflanquin.

Fig. 2.27 Monflanquin, detail plan giving modern plot boundaries within the area of the bastide.
street was essentially what could be called a pedestrian walkway designed for walking in, rather than for the passage of vehicles. The twisting nature and narrowness of the street combined with a feature often found in medieval streets, that of the tendency for buildings to overhang at first floor level. This gave some shelter from sun and rain and, being a partial enclosure, heightened the affinity of the people living in and moving about in the street.

Salisbury (1948) points out that bye-laws passed in English towns of this period, in the 14th century, show the utility value of the street and how every man considered he had a common right to it. The obligation for householders next to the streets for the upkeep of the pavement and roadway opposite his property suggested that the street was very much the extension of a man's property.

Salisbury (1948) and the British Association both show that much can be learned from the study of street conditions and street life from the examination of these medieval bye-laws. For instance, when the pressure for space made itself felt in these towns and the demand of circulation needs grew in the street, many of these in-street activities were forbidden; for instance 14th century London and Nottingham restricted the keeping of pig-styes in the street, regulated the size and spacing of the merchants' tables, the dumping of materials, additions to building projections, keeping of animals, public nuisances, slaughtering of animals and the dumping of their offal in the street.

The construction of the medieval street was itself a problem as it was often surfaced without a base course with stone, gravel, sand, earth or even bundles of faggots. While these materials were adequate for its use by pedestrians the
common use of wheeled vehicles from the late fifteenth century onwards proved such materials inadequate. Stone paving was the answer, but because of its cost and limited availability paving was often restricted to the market place and to the streets leading to the city gates. To pay for these more costly street construction materials and labour, higher tolls were charged against all incoming vehicles, with iron shod wheels being liable for more than those without such rims. Indeed, by the end of the fifteenth century, it became increasingly necessary to appoint surveyors who would be responsible for building and maintaining the physical state of the streets in place of the householders of property fronting on the streets.

The centre of medieval urban life was the market place, at whose heart was the market cross, from which all proclamations and bye-laws were announced (Figs. 2.30 and 2.31). Here was not only the hub of economic and business life but the visible signs of temporal power. The town house and the hall of the guilds exemplified the commercial life of the inhabitants, while the religious life was manifest in the shape of the church or cathedral, which often got itself the best and most imposing site in the square. Social services to the unfortunate and deprived were mostly centred on the church, though the various guilds also had their resources to see to the needs of their widows as well as the aged and infirm of their craft guild members. Not only did the medieval church dominate the square but it was often to be seen throughout the whole medieval town. It acted as a community centre, not only for the meeting of people, but as the common storage accommodation for community goods like weapons. The tolling of its bell regulated hours of work and also the angelus bell proclaimed the end of the day's toll, according to Mundy (1958).
Fig. 2.30 Tabor, aerial view of the market square illustrating most of the characteristics of medieval organic growth.

Fig. 2.31 Telc, view looking south-east from the palace along the square. Each of the houses has an individual elevational design, notably the gable profiles; yet, the total effect is entirely successful, subtly expressing variations on a theme.
There was close collaboration with the town's craft guilds and in co-operation with them the clergy were able to communicate with the population at popular level through miracle plays, street pageants and processions.

Because of the access to banking facilities often available through the church, it was generally most convenient to hold the markets in the square dominated by the church (Fig. 2.28). At these periodical fairs the craftsmen would proffer their creations, foreign merchants would bring in wares and the country people would be able to come in and see to their shopping and other needs. The country required the processing facilities, goods and services of the medieval burgh.

Davis (1966) demonstrates that without the movement of country folk into the burgh to sell their products, the craftsman would have been unable to make a living from the passing trade of burgh residents alone. The tradesman's house was used not only for living in, but partly as a craft workshop and storage place. His shop was a trestle table and awning to shade his goods and himself from sun and rain.

All medieval towns had at least one space for a market, though production, distribution and commerce were not restricted to the market area. Thus the lanes, often narrow and twisting leading to the gates, were able to be regarded as an extension of the market since they hardly served as a transportation network in the absence of wheeled traffic. Street frontages were, therefore, a valuable commercial asset, especially near the gates and the markets, such that it became worthwhile to construct narrow passageways off the street providing...
a new minor street and the converting of back gardens into courts. Such development was particularly evident in the city of London.

Movement was mainly on foot, with the transport of goods mostly by pack animals. Only in the late middle ages could wheeled traffic be said to have assumed significant proportions. Waley (1969) states that street paving began quite early on, in Paris from 1185, Florence 1235, Lubeck 1310 and indeed all Florence was paved by 1339.

Throughout the period scarcity of land, for building houses on, forced many more to be constructed further on to the streets, public open spaces and even on bridges. The most usual factor cramping housing and other construction was the need to contain the town within the fortified walls for its own protection against invaders. Attempts to curb this slow strangulation of circulation facilities met with little success. In some cases the upper floors projected so far out on to the street that one could shake hands with neighbours in opposite windows.

Howard Saalman (1962) "Medieval cities" discusses the conflicting needs of private space and public access. Whether enclosed or not, such non-public spaces were controlled by a private individual who might withhold his consent to its use by the public or it being crossed by neighbours. On the other hand the necessary public areas gave almost complete access to all. Regardless of the irresistible hunger for private spaces there was the fundamental need for public spaces. These public areas often indicated their specialised market functions in their names such as Haymarket, Grassmarket, Fishmarket, etc.

Many essential users and frequenters of the medieval cities owned private
spaces within the town in order to carry on their economic life. For instance, the countryman bringing in his vital product and livestock. Obviously, a public space had to be made for food and drink; and overnight accommodation had to be catered for by inns built on private spaces. Also public space had to be available for the itinerant merchant, often from abroad, with specialised, much sought after, lines. Also travelling players, clowns, musicians had to be afforded space for their services which were rewarded by appreciative onlookers composed of towns-people. Furthermore, building of administrative and religious institutions, requiring access by the community, required public space.

Thus, this interaction of private and public needs gave the medieval town its shape and influenced the architecture of its buildings, its streets and its public spaces. These patterns and needs motivated economic, social and political behaviour. They ensured that such towns did not just grow unplanned, quaintly and charmingly. The pressures behind their taking the shape they did can be recognised.

The encroachment onto streets and bridges by builders as well as the particular breadth or narrowness of a specific street reflect the economic or political power of the individual builder or his client. This private pressure for space is reflected in the numerous local bye-laws governing width of street, maximum frontage lines, minimum height for building projections etc., which abound in medieval towns and cities throughout Europe and are to be found in their city archives.

It would appear, consequently, that the medieval street represented a
complete synthesis of human relationships. Most people in towns spent the greater part of their lives in them. It was a way of life.

By the sixteenth century the model of society based on scientific and humanistic intellect was becoming fashionable. By that time access to wealth had become a sign of power and status, and this was reflected in the desire to have a more refined and elegant environment in which to live. The streets of the towns were narrower and more winding than before, and often flanked by tall houses.

As a result, the streets were less suited to the needs of military and defence. The new streets were more suited to the needs of commerce and trade, and the houses were built higher to make better use of the limited space. The streets were often narrowed to prevent the spread of fire, and the buildings were designed to contain any fire that did start.

Fig. 2.32 A medieval street in Siena, flanked by houses of five or six storeys.
2.6 Renaissance and Baroque Streets

By the sixteenth century new ideas of beauty based on scientific and humanistic intellectualism became fashionable. By this time, access to wealth had become easier. This meant that where an elite was able to gain control of the economic, political and military power they were in a position to put their concepts into reality with spaces and streets expressing their new philosophy.

The new military tactics employed the use of cannon, backed up by cavalry. As a result the new streets were built long, broad and straight to allow their use; hence the invention of the avenue to allow the display of military might. Heavy fortifications to resist the cannon were often a characteristic of these towns.

Mumford (1961) points out for example that Palladio and Alberti differentiated between minor streets and main streets. The latter they termed viae militares (military streets) which had to be straight. Such streets allowed the image of power, dignity and civic pride. Therefore, the military needs, coupled with visually emotive design, had complementary functions in shaping these new avenues and boulevards. Such new broad avenues could permit the speedy deployment of troops and the use of artillery and small arm fire to contain any hostile crowds displaying a tendency to mob.

No longer was the street a mere access to a building plot; it was also an urban extension of the national highway, as Patrick Abercrombie (1959) points out. This new primary straight street or avenue is a Renaissance invention. It still provided access to buildings and often had direct connections with regional routes, but unlike most medieval streets, its main function was to
facilitate movement of wheeled traffic between parts of the city.

Rome is an excellent early example; during the Renaissance, it acquired primary straight streets as a result of comprehensive restructuring (Fig. 2.33). In Paris this took place in the 1850's and 1860's mostly under the direction of Baron Haussmann.

The Baroque street has been described by Rosenau (1959) as: "the embellishment of district, the axis of symmetry". The most famous of these being the avenue in Versailles which was to provide inspiration for town planners throughout Europe. Frequently this approach to space became formalised, inspiring the arrangement of the avenues round essentially a dehumanised square or monument.

The impressive impact of the avenue lies in the use of perspective to heighten the sensation of receding space and to focus the eye on some distant image of authority; as in London the Mall leads to Buckingham Palace or some purely symbolic object like the Champs Elysees in Paris leading to the Arc de Triomphe.

It is of significance that the early exponents of Renaissance painting were architects working in three dimensions with a scientific perceptiveness of form such as Alberti, Brunneleschi, Michelangelo, and da Vinci. They were capable of using perspective as a two dimensional illusion. They used perspective to enhance the scale and proportions of a building. These Renaissance architect-painters had classical architecture as their inspiration, for example, the Parthenon in Athens.
Fig. 2.33 Rome, the Piazza del Popolo and the three main routes.

Fig. 2.34 Bordeaux, the Place Royale as a statue square alongside the Garonne River.
This new architecture also showed social distance as can be seen in da Vinci's city plan, referred to by Richter, in which the high road was solely the preserve and convenience of the gentlefolk and the low level roads were for wagons, carts, etc., for the common folk.

Thus the Baroque quarter made itself clearly distinguishable from the less fashionable medieval streets. Furthermore circulation by horse and carriage clearly demonstrated a social distance from the pedestrians. The vast monumentality of buildings and spaces in the baroque quarter have an emotive image of social status by their over-life-size proportions. One cannot but be impressed on entering a building with vast doors as in some old bank buildings or palaces. These were also devices which served to make the socially under-privileged generate emotions which contributed to their feeling of an acute sense of inferiority.

The gridiron arrangement of streets is a noticeable feature of the Renaissance and later Baroque quarters. Initially they were the residential quarters added to the urban areas, or the entire layout of town extensions or else were integrated with the primary street or avenue. Because of the greater demand for space they were seldom found in Renaissance cities which favoured the more compact primary areas. The gridiron was also regarded as an efficient way of land subdivision that gave uniformity and equality in land distribution. Combined with the political philosophy of the early United States and the vast availability of virgin land it is no wonder that the gridiron has achieved greater applicability in American cities than elsewhere, though this gridiron pattern was also an acceptable form in other European overseas colonial settlements. Unfortunately, unless used with considerable inventive
Fig. 2.35 Vista: the Piazza del Popolo, Rome, by Rainaldi.

Fig. 2.36 Venice, aerial photograph of the Piazza of St Mark; it shows a marked contrast between the carefully organised massing and architectural conformity of the piazza spaces, and the organic growth pattern of the surrounding buildings.
and aesthetic ability it can be vastly monotonous.

In the Baroque town spaciousness and the ingenious use of architectural features, vistas, trees, crescents, and circuses and the use of natural features to their best effect are to be found, as in the New Town of Edinburgh. Such devices could reduce this monotony almost to nil. A good example is provided in the layout of Charlotte Square and the use of the castle vista in Princes Street.

The enclosed space is another feature requiring consideration. Three different groupings of enclosed spaces in Renaissance cities emerge. The first is the traffic space which is used for urban circulation of both wheeled vehicle and pedestrians and forms part of the urban routing system. The second is given over to residential purposes for local access only and with a great emphasis on pedestrian recreation. The third kind of enclosed space takes this emphasis still further and is normally entirely pedestrianised with a total exclusion of wheeled traffic.

Furthermore, in Renaissance cities, the enclosed space was often used for aesthetic purposes or to bring home a message by the setting up of a telling statue or monument in it or using the enclosed space to enhance the importance of a building, as with St Peter's in the Vatican, Rome (Figs. 2.37, 2.38 and 2.39). There were three kinds of buildings used in this connection; those for civic or religious uses and those usually in terraces for residential areas and thirdly buildings of a mercantile and commercial nature. Various devices were employed by Renaissance architects to enhance these enclosed spaces, such as landscaping by the employment of tree and shrub planting, or
The three illustrations show the Piazza of St. Peter's in Rome, as the first of the monumental squares. It also shows the effect of false perspective, forced on Michelangelo by the existing alignments. The unity and coherence of design have been one of his greatest achievements.
false perspectives, again, as in St Peter's. In addition the avenue, the gridiron street pattern and the enclosed space are among the greatest legacies of the Renaissance and Baroque periods. Existing buildings and natural features could be artistically integrated.

Many of the traffic spaces were located on the perimeter of towns and acted as a junction route. The Place de la Concorde in Paris is a fine example. It stands at the edge of central Paris with civic buildings on its northern flank and the other three sides landscaped. It also served as setting for a statue of Louis XV and holds an Egyptian obelisk. Its very monumental proportions can but make every user feel small.

In contrast, the residential enclosed space excluded wheeled traffic except to go to or depart from residences. Zucker (1959) demonstrates that the residential enclosed space was probably created "with no more monumental object than that of uniformity within itself; it is perhaps the most attractive contribution of the whole Renaissance period". The impact of such Renaissance architecture can be exemplified in the town of Nancy, France. London expanded on this sort of square combined with the gridiron principle. In Paris the first manifestation of this form, and one taken as an excellent example by many European architects, is the Place des Vosges (originally Place Royale built 1605-1612). Characteristically the space had a royal statue in its midst. Such enclosed spaces had attractive planted squares often with grass, trees and shrubs.

Fig. 2.40

Nancy, the detailed plan of the Place Royale.
2.7 Industrial Streets

In the compact medieval town, the street reflected the commercial and religious values of the way of life of all its inhabitants. The Renaissance and Baroque town, in contrast, was much more spacious. It was the creation of a social and moneyed elite. The values of this new elite were very different from those of the medieval town. Accordingly, the new town reflected the philosophy and values of its elite in a variety of different ways.

The street in the industrial town assumed new dimensions. The Baroque concepts of space and social distance were to an extent retained in the upper class residential areas. Out of such quarters the street became a utilitarian device that provided access to homes of the work-force of the new labour intensive economy of the Industrial Revolution.

The ever-increasing attraction of the wages paid, the impact of the agrarian revolution with its land enclosures, the collapse of home industries and the population explosion induced more and more families from the country to settle in such rows of houses. This could often mean too much over-crowding and insanitary conditions. Alternatively, the outer suburban ring of the industrial town could be given over to housing provided by builders for middle class demand.

Engels (1952) in his manifesto of 1844 discussed the squalor that resulted in working class areas in England, due to the uncontrolled incursion of the wage earners from the country into the industrial towns. There were neither the economic nor the administrative resources to cope with such an invasion.
The same pressures of population and squalor are to be found in Mexico City, Cairo and Bombay.

Engels (1952) pointed out that, in the industrial England of his time, streets were generally unpaved, rough and filled with animal and vegetable refuse. No sewers or gutters were provided. In other words, they were the same as the worst of the medieval streets. Engels stated that only a cesspit in each street was provided. These houses were never built singly, such was the population pressure, that they were often built by a single contractor several streets at a time. The layout of such houses was often back to back with a lane running down the middle (Fig. 2.44). This was not a new principle. In ancient Egypt a similar back-to-back arrangement of rows of workers' houses was used at Kahun in 3000 B.C. to house the construction workers engaged on the Illahun pyramid. This system, however, had the merit of flexibility and it could accommodate a variation in rental levels. From 1868 Acts of Parliament were passed to solve these problems. Powers were given to local authorities to demolish and rebuild slum areas. They were also encouraged to pass bye-laws laying down minimum housing standards. Such bye-laws raised the quality of future housing to such an extent that many such houses are lived in to this day. But the layout remained monotonously uniform, without open spaces.

On the debit side, these bye-law streets tended to regimentation, giving conditions totally lacking in variety. They gave no chance of allowing the practice of enlightened urban planning. These same back-to-back long rows of houses tended to disguise rather than solve the inherent social problems. These were created by the sudden demand for manual labour, since the machines on which the Industrial Revolution depended would be useless
The three figures show examples of the outskirts of English cities, built in accordance with the 1873 regulations. A desire to stretch the legal limits to their maximum led to an obsessive uniformity in these districts.

A group of working-class houses (h) with outside lavatories in Nottingham.
without the manpower to work them.

The environments and conditions in these streets were virtually the same as in the Middle Ages. Interestingly, other social and economic conditions helped to create medieval attitudes. The low incomes offered kept the population together, as commuting was not economically feasible. Added to that, the limited accommodation in the houses forced people to live more in the street. Furthermore, limited entertainment facilities prevented movement out at leisure times. Also the lack of communal buildings like halls meant that life had to go on in the street. In the absence of halls the street was the only place for social contact and it was free. Kellett (1967) informs us that the children played in the street, adults drank, fought, gossiped or simply stood around on the pavements. The ethnic and linguistic communities had their own areas in which they lived and shared their particular cultural, religious and linguistic common heritages. For instance, large areas of nineteenth century Govan in Glasgow were filled with Gaelic speakers who had their own churches and ceilidh houses.

All these forces produced a social and cultural vitality that was similar to that created in the medieval town. At this time, as has been seen, architecture was used to produce social distance. It also produced another set of habits and customs.

In the neo-classical fashionable quarters the street had also a social function for communal contact. It allowed its residents contact in its shops. It also allowed promenading as a performance which could be ostentatious. It could also be a fashionable diversion. Even to this day relics of this behaviour
Fig. 2.45 Details of new housing in Manchester from sketches in Engel's Book (1952).

Fig. 2.46 The slums of Paradise Row, London, 1853.
can still be seen in the promenading along Princes Street, Edinburgh, the avenues of Paris and the Ramblas of Madrid.

There was an essential difference between the bye-law streets and the baroque ones. With the possession of spacious beautiful drawing rooms, the neo-classical area inhabitants conducted their social and cultural life in ample elegant surroundings. There was a variation on this theme in Paris, because of pressure of population. The possession of spacious drawing-rooms was much less proportionally, than the number of residents in the baroque quarters. So, lacking such drawing-room facilities, social and cultural life tended to be based on the restaurant and the café.

Over a period, the tendency in the baroque streets was to produce a deep emotive attachment to particular streets. Mean and overcrowded, though they might appear, each street or group of streets often held its little universe. To the ethnic and linguistic minorities language, religion and culture were enshrined in the particular street area, for instance the Glasgow street areas dominated by Gaels. In old New York the various quarters were even more strikingly distinguished as between Irish, Italian and Jewish communities. In all such baroque or industrial streets the kinship motive was strong; this was produced by inter-marrying between inhabitants of nearby streets. The same attachment to particular streets was not to be found in the New Town or baroque quarters.

A third type of street area evolved which was neither that of the industrial streets nor of the neo-classical. It is called the suburb. Such street pattern areas existed in some medieval cities like London, Paris and in the Netherlands.
Fig. 2.47 London: the layout of Regents' Park (1830). The engraving shows two sections of Regent Street, the curves leading into Piccadilly Circus, and the straight line of Portland Place. Bottom right, child labour in the mines of England during the same period.

Fig. 2.48 The twin towns of Said (1859) and Port Fuad were built at the mouth of the Suez Canal.
But the suburb only achieved wide recognition in the nineteenth and twentieth centuries. The suburb grew with prosperity. Often it was a manifestation of hostility to the old industrial street. Successful merchants and professional people wished to flee the intimate, if mean, communal life of the industrial street areas. Instead of the close-knit life of the baroque street the tendency has been to isolation in the suburbs. Here the single family is the unit, not the street community.

The nineteenth century railway with its cheap "working man's ticket" allowed commuting and the escape from the industrial street into the suburb. The London underground and the Paris Metro produced the same facilities. An added pressure to the creation of the fragmentation and isolation of the suburb often lay in the kind of builder. Unlike the builder of the industrial and the baroque areas, who often built in streets, he was a much "smaller" man. He lacked the resources of scale of the other builders. He could often only afford small plots of land and offer to build a few houses on them. This suited the individualism of the more trusting and prosperous incomers to the suburb street areas. Competition was very severe between such builders so that to stay in business they were forced to produce quick and frequent sales. Frequently they did not have the resources to wait till entire streets were bought up.

Dyos (1966) illustrates this by examining the evidence of the District Surveyor of Camberwell, London in 1878 - 1880. The surveyor's monthly returns show that approximately 53% of the 416 builder's firms working in the area were constructing fewer than six houses each. The upshot was that suburban streets tended to be terraced developments, at first. Later the even
Fig. 2.49 Street view of Paris: Traffic in the Rue Richelieu, from a 1904 photograph.

Fig. 2.50 The industrial city of Middlesborough, in a photograph taken earlier this century.
more fragmented isolated bungalow became fashionable. Accordingly, the suburb tended to lose social and communal intimacy. Structurally and geographically the trend was against homogeneity.

There was another side to this suburban expansion. It allowed not only residential but also industrial and commercial expansion. At that time, one could do anything on a piece of land which one had bought, as long as it did not contravene any feuing conditions. These were contained in the Feu Charter which covered the particular area. The law of nuisance and the environment went a little way to preserving amenity. But the law of nuisance was piecemeal and depended on individuals raising actions of interdict in court. Accordingly, it was possible, in some cases, to be self-defeating. The nineteenth century and the early twentieth century had produced a notoriously dirty and often noisy means of production. So, if a manufacturer should buy a piece of ground in the suburbs without feuing restrictions the effect could be disastrous. The noise, dirt and industrial activity could blight the values of the area. As a result the market prices of the houses could collapse and once desirable streets could turn into slums.

The street from the middle to the end of the nineteenth century has many features comparable with the streets of today. For example, Paris was transformed during the second Empire from 1851 to 1870 and became the model for cities throughout the world for the second half of the nineteenth century (Fig. 2.51). New streets were laid out cutting through the medieval quarters. Certain features of this model can be briefly summarized:

Firstly, public amenities like streets, squares and railways and their utilities
Fig. 2.51 A map of the Avenue de l'Opéra, showing the line of the projected street and the properties expropriated in accordance with the 1850 law. It indicates the size of the demolition work done by Haussmann in Paris.

Fig. 2.52 The demolition to make way for the Rue de Rennes in Paris.
like sewers, and later gas, electricity and telephones were secured by control over the minimum amount of land necessary, by the administration. All else was left to the private sector.

Secondly, the boundary between these public and private sectors was shaped in two different ways, either situated directly on the street or pulled back to leave a space. In the city centres, where commerce was of paramount importance, the "corridor street" was employed where provision was made for through traffic as well as local access. This was primarily for reaching the shops on the ground floors. In this way the benefit was first given to traffic and the shops. Those above the shops had to endure the discomforts of noise and lack of fresh air. The other arrangement is to give set-back from the street to avoid those discomforts. As this also reduced the building density it was only suitable for the residential outskirts.

This new city arrangement was superimposed on the old traditional city. Where the latter was incompatible with the new it was swept aside by demolition. Where it was in accordance with the new it was retained. Part of this demolition was for street widening and straightening. However, this destruction was never total. A certain amount was retained to preserve the essential characteristics of the city. This consisted of noteworthy streets and squares. Indeed some of the old churches and plazas were used as models designed to set off the new architectural creations.

This kind of model fascinated the whole of Europe during this period of the later nineteenth century. The accommodation of the new traffic and public amenities had produced a new city which had solved many old problems only
to reveal and create unexpected others.

Modern image-making was founded on the search for the creation of new models suit to be captured by machine-of-forms. At the same time the
increased use of steel gave the opportunity to build a new picture with larger
roof spans and skylines. Associated with this emergence of electricity and the vast array of uses this power to bring about a radically
new approach such as also a transformation of a mixture in the

The arrival of motorised transport in the short distance of vans, buses
and undertakers and transport suited to electricity was used to carry these
familiar city scenes and roads and a recollection of the new amenity
electricity, of course with the expanding

Fig. 2.53 Turin, view of one of its streets
2.8 Modern Streets

Modern architecture was founded on the search for the creation of new models not to be restricted by traditional forms. At the same time the increased use of steel gave the opportunity to build a new structure with larger roof spans and skyscrapers. Coupled with this came the emergence of electricity and the vast array of uses this power could be put to from lighting, to telephones, lifts and so on. The external appearance could permit a radically modern approach as also a traditional or a mixture of both.

The arrival of motorised transport in the shape of cars, lorries, vans, buses and underground transport added to difficulties. The street had to serve these modes above and below it, not only with transport but in accommodating the new amenities of gas, electricity, telephones at a time when the city was expanding and the population on the increase.

The need for change caused by these new demands for a total reconsideration and renewal of the urban environment was evident towards the end of the nineteenth century. Since then different theories have evolved, and several distinct Utopias have been mooted. Ebenezer Howard (1898) one of these Utopians, can be credited with producing ideas which have affected the street and the city in general. He showed how workable and livable towns could be formed within the capitalist framework. To begin with there were discussions about the optimum size for towns and the conclusion advocated a cluster concept: a central city of 58,000 people surrounded by smaller “garden cities” of 30,000 people each. Permanent green space would separate the city and towns, serving as a horizontal fence of farmland. Rail and road networks
would link the towns which would have their own industries, the nearby farms supplying fresh foods.

His most dynamic concepts were evolved from a reaction against the congestion of the London of his day and the depopulation of rural England. His concepts found widespread, enthusiastic acceptance and in 1902 the first garden city, Letchworth, was founded. Its plan was a combination of landscaping informal street layout to suit topography and a main axis focusing on a town centre (Figs. 2.54 and 2.55).

The garden city contributed much to solving the problems caused by overcrowding in London. But after that its idea was misconceived. Those who created the first garden cities saw the need for open space as a reaction to the problems of London’s over-density of population. The original concept called for live towns in which the street provided enough room for outdoor activities. Those who followed the original pioneers laboured under the misunderstanding that they had to have over-ample space for its own sake. Such provision of huge parks, open space and greenery, has led to the reduction of the continuous built environment and the compactness of urban fabric.

Geddes (1915), the Scottish city planner, was not against the philosophy of the Garden City but called for more parks and spaces to reduce overcrowding rather than move the population out of the city to “make the field again on the street, not merely the street again on the field”. He gave a great deal of attention to life in the town, saying: “We have to live in towns: and on the whole, with all respect to garden cities and garden suburbs we have to make the best we can of the existing ones”.
Fig 2.54 Howard's Garden City. In the centre is a park, surrounded by a Crystal Palace, which contains the town's public buildings: the town hall, a theatre, a library, and a museum. Next are the schools, while the outer rings contain the factories, farm land, the railway station and links with main roads.

Fig. 2.55 The marriage of town and country, a street in Letchworth.
At the same time he was concerned with the prevention of urban sprawl. He also paid consideration to the problems of rural conservation and the delimitation of town growth. He maintained that improvement of the open space pattern of the city could still be part of a town planner’s function and advised the planner to think on the small scale rather than the massive undertaking in which the street was always neglected. His appeal was to a deeper understanding of the nature of cities by seeking “to enter into the spirit of our city, its historic essence and continuous life”.

Geddes (1915) advocated that, before the creation of any new city or suburbs, a social survey be carried out to establish the needs, aspirations and resources of the prospective residents. He was a traditionalist and held that: “ancient places and monuments, old time streets and houses are not swept away wholesale on this or that crude pretext of convenience or of sanitation, but are cleansed and conserved as the very nucleus of the city’s material heritage”.

Geddes’s ideas did not get as widespread recognition in many parts of the world as in India, Palestine and the United States. However, he was met with some degree of opposition to their implementation, in his own day as the prevailing concept was to open the city for cars, by making huge roads even if it meant vast demolition without concern for city life.

One of these opposing approaches emerged during the R.I.B.A. Conference in 1910, in its main discussion, which was centred on the street and its problems in the contemporary city. The district survey of White Chapel argued for street widening and a ring of garden cities as a means of alleviating the
misery and overcrowding of the area. In his handbooks of the 1880s Stubben associated road-width with traffic flow and worked out a system of road networks. The requirements of services, drainage, ventilation and greenery as well as the need to maximize the flow of traffic were placing increasingly great strains on the street.

Another important figure at this conference was Eugene Herrard, the architect of the city of Paris, who was concerned with the need for fresh air in urban dwelling-houses. In his discussion of the street of the future, besides health, he drew attention to the enormous growth in volume and the mechanisation of urban transport. He attacked the mixture of uses and different types of traffic. He advocated the separation of pedestrians, cars and trains from the lower levels for freight and service vehicles and at a deeper level long distance traffic, all to be accommodated in the city centre. The multi-level street, he argued, provides a realistic means to contain the motor car in reserved channels and to provide other levels for public transportation, power and utility services, and even movement of goods.

Herrard and others were concerned with the new problem of the motor car. Their easing of cars into the street corridors were further steps in the mechanisation of the street. Two factors have led to the mechanisation of the street, since the industrial revolution. Firstly, the introduction of the straight street which Wolf (1974) observed facilitated: “starting around 1910, the introduction of the automobile into the chaotic street ‘melange’ of people, produce, and horse drawn conveyances brought consequences which were for quite some time far from obvious. The motor car brought the inherent opportunity for ever-increasing speed of travel. Danger to pedestrians became
implicit, and separation of pedestrian and auto routes became essential as the latter slowly became fume and noise laden corridors.

Secondly, the next mechanisation of the street was developed by the modern movement of avant garde architects and planners. It consisted of the abandonment of the rigid building line and the separation of pedestrians and vehicles. It began with the charter of the Congres Internationaux d'Architecture Moderne (C.I.A.M.) in 1933, though at first it showed up in Le Corbusier's (1971) proposals for the contemporary city.

In the Athens Charter (1933) the four functions of a city were seen to be a place to live, a place to work, a place for recreation and circulation system linking these three. The street formed a major part of the discussion at this conference and the following declarations were made thereon: streets in residential areas should form a link between the dwelling houses and the community services, providing links with parking areas and main arterial routes. The same Athens Charter recommended, in the case of the commercial and financial quarters, that daily rush hour movements of traffic not be neglected, and their need for easy access to main arterial routes be facilitated.

These thoroughfares are of two kinds; firstly through-traffic streets which constitute the basic street system. Its direction and capacity are to be as laid out in the plan of the region, but with consideration of various relevant topographical features. Secondly, the distributing or secondary streets in the interior of the city are determined by the specific needs of each different district. Their buildings and open spaces will determine their location, direction, amount and character of their traffic.
Fig. 2.56

The fabric of the modern city, designed to replace that of the traditional one: a plan by Le Corbusier for the rehabilitation of an area of slums in Paris (1936).

Fig. 2.57 Le Corbusier's concept of a street.
This conference’s charter further states that busy thoroughfares be isolated from all near-by buildings, especially dwellings, by green bands. In respect of pedestrianisation, the charter calls for the separation of pedestrians and vehicles to facilitate the movement of crowds by the creation of traffic free zones. Furthermore the same charter emphasizes the need for the provision of parking spaces in all parts of the city. It made it clear that a planning system was needed for the determination of traffic movements to avoid congestion and chaos in mixed use streets. The complete wording of this 1933 Athens Charter is to be found in J.L. Sert (1944).

Within twenty years it could be seen how prophetic the concluding paragraphs of this “Charte d’ Athene” really were, namely: “Today most cities are in a state of total chaos. These cities do not come anywhere near achieving their aim, which is to satisfy the biological and psychological need of their inhabitants. From the beginnings of the machine age, this situation bespeaks the proliferation of private interests”.

The Charter of Athens was put together only after the principal experiments in urbanism had been carried out, and its ideas were reflected in Le Corbusier’s proposed plan for Antwerp in 1933. He was another Utopian whose ideas have greatly affected the street and its life.

In his writings Le Corbusier (1925) showed that he considered the most important issue in urban life was the relationship between housing, which he visualised in terms of high rise building and the urban freeway system to link their inhabitants homes and their jobs. The street was examined superficially in his proposals, and he was mainly concerned with the design of individual
Fig. 2.58 Frank Lloyd Wright's plan of the centre of Broadacre city, showing the grid pattern of streets.

Fig. 2.59 Frank Lloyd Wright, drawing of street overpass.
buildings (Figs. 2.56 and 2.57). He incorporated spaces for amenities, normally, to be found in the street, in the buildings themselves, for example parking space under the buildings. He endeavoured to transfer all activity usually found in the street into the building itself. In Algiers and in Chandigarh (in India) can be found good examples of how he worked out his concepts. Although Le Corbusier and Wright are different in their concepts, both have attempted to kill the street as a working reality.

Until recently such designers have shown a marked anti-street set of attitudes. This is exemplified in Wright’s Broadacre city (1958) (Figs. 2.58 and 2.59). In the conventional European sense his Broadacre could scarcely be recognised as a city at all, rather, a Jeffersonian version of a rural community, where every family lived on its own acre. The usual urban facilities, school, halls and churches and so forth were situated along safe motorways complete with over-passes and clover-leaves. This reflected the presumption that there was a wide distribution of car ownership and that there ought to be a shift away from face-to-face contact of residents to a dependence on common occupational interests.

Another group who paid little or no attention to the street and its life was made up of such people as building developers, politicians and civil engineers who were responsible, besides the planner and the architect, for laying-out, constructing and supervising cities. They saw the street as a two dimensional band. Their criterion was to stimulate the market for land values by accommodating efficient surface and underground transportation. The kind of buildings and the quality of life in the street were only of marginal interest.
Pawley (1971) explains that the response to the need for improved public health in English cities was to widen the streets and provide curbs, pavements and underground sewerage systems. The idea was that the street was merely a thoroughfare and by cleaning it up they would reduce infection. Often little or no interest was shown in the appearance of the street, buildings or how the street would fit into its surroundings. The emphasis was on the quality of housing and the maintenance of health standards, also the provision of a certain number of community halls, schools, parks, etc.

After the 1939–1945 war a revival of concern for the street began to manifest itself, especially in the architectural tradition. Banham (1966) shows that this new interest in the street was principally a revolt led by the younger English members of the Congres Internationaux d'Architecture Moderne (C.I.A.M) against the concepts of Le Corbusier and the other founders of that body. This new ideology or approach is best exemplified in the work of Team 10 and in the projects and building of the Smithsons in particular, as displayed by Alison Smithson (1968).

These younger architects of the Team 10 school are as one in the need to emphasise the three dimensional aspect of the street as a multiuse space. In their designs they appear to combine an admiration for the baroque processional street and the street as a place for the ordinary day-to-day activities of the street’s users and residents.

These architects found ideological allies among social scientists who now espoused positive views of the value of the street. Jane Jacobs (1961) and Herbert Gans (1962) were arguing against motorways through city centres. The
bulk of this criticism was centred on the need to preserve old neighbourhoods and the surviving social and physical fabrics of the cities.

Jacobs' greatest attention was focused on the street and she criticised Le Corbusier and the old generation of architects. In her book of 1961 she argued that the streets of large cities ought to function as cohesive communities, and suggested certain factors be used to this end. She advocated the examination of the street's physical characteristics such as its length, width, types of adjoining buildings and accessibility to other parts of the city. She was of the opinion that consideration must be given to spaces and building types provided along the street and the activities of those using these buildings. The income, ethnic background and race of the residents of the street required examination.

Specifically the post-war interest in the street arises from the realisation of its primary social function in that, unlike in the past, it has become recognised that it ought to be designed and organised for the good of the community life of its residents. Despite all such discussion and studies of the street and its social responsibilities, destruction of the best old streets and environment has often proceeded apace.
2.9 Conclusion

The reaction against the acceptability of pursuing historical studies arose as a result of the desire to escape the non-innovative acceptance of the norms of the classical Roman and Greek traditions which had dominated the architectural and urban scene for so long.

Wright and Le Corbusier approached the task in hand by defining the sociological and the technological problems and analysing the existing solution to them. After pointing out the problems and inability of tradition to solve them, they created new concepts for which they became famous. The revival of the street in more recent times, on the other hand, sought to continue to develop what was best and most relevant in traditional forms and concepts to create a better environment not to invent a Utopia in order to become famous.

Geddes (1915) demonstrated that a need existed for in-depth study and for surveys of the traditional city, and he pointed out the importance of comparison of such towns, whether small or large: “That the study of historical cities, of Edinburgh or Chelsea, of Paris or of Ghent, may thus yield fresh results, may be readily enough accepted: but it is surprising to realise how even the smallest and obscurest of old and comparatively forgotten towns may each throw some fresh and unexpected light upon the shaping of the historic world”.

Colquhoun (1972) has shown that even when designers regard themselves as relying on observation and experiment alone, they operate with some mental constraints at the back of their minds. He shows that it is better to admit this fact and, therefore, a search for street types would conserve effort by profiting
from the accumulated wisdom of tradition.

But there are difficulties in the search for original examples in that when one is dependent on the past there is a strong temptation to use such examples without qualification as the pattern for the present. The dilemma of fundamentally new social forms arising can be so thorough-going that no reasonable adaptations of the classic forms can meet these new needs. The issue of which types or elements from the past would be the most appropriate in the changed circumstances can be itself a matter of concern.

Furthermore, the architect has to be able to expound the relevant values of these traditional street ideas with confidence in order to put them into operation. These values ought to be able to be communicated to the inhabitants of today’s cities and their relevance to contemporary life made clear. While today’s needs differ to an extent from those of days gone by, the lessons of the past enshrined in the traditional street are still valid and only require updating.

Despite the differences between traditional and modern streets, there are several elements common to all. The first factor is that the street is a social reality. In its design, assumptions should be made as to what sort of residents and users will have to be catered for: what proprietors and controllers it will have. Consideration must be given to the street functions and the activities likely to be associated with it. Such streets are often a setting for religious and civil processions and celebrations. It has the purpose of facilitating casual social interaction, in conversation, recreation, entertainment and processions.

The second element is that the street has the purpose of providing a place
for different activities such as commercial or military spectacles. Although the street from the beginning was designed to accommodate animals and traffic, the emphasis was always on the pedestrian. Another function of the street is to provide a means of communication between its users, which binds the urban community together.

Thirdly, a street is a space which is accessible. It is a public place open to the population in general, though streets can be subject to laws and regulations which control their use. Although one can occasionally find private streets, even they have to allow access to all street residents and users.

Fourthly, a common element in the street is that it is three dimensional. This distinguishes the street from the road where the third dimension of height is not involved. The street is not just the space between the two facades but includes the buildings themselves and the street furniture, or features like arches marking its beginning and end.

The fifth common element is the perpetual conflict between the pedestrian and the traffic. When the pedestrian was in the ascendent, his route was to be found in the middle of the street, and traffic was pushed to each side. But when the traffic gained the upper-hand the pedestrian was forced on to the edges of the street where he is found today, on the pavements. Till the nineteenth century the pavements were on the same level as the street but in order to resolve the conflict the pavement was constructed to prevent traffic encroaching on the pedestrian walk-ways.

Sixthly, streets are to be found in compact sites in clustered areas. Only in recent times has this compaction in streets been displaced under the impact of
new forms of transport which caused urban sprawl and changed streets into roads.

The seventh common element in the street was the provision of protection from the climate for pedestrians and residents.

Finally, experience and continuity were respected. Each period has built on the adapted knowledge and skills of the previous one. Only recently has this sense of continuity been attenuated with the ideas of the Utopians of the twentieth century through such architects as Le Corbusier. There was no wholesale demolition of streets or areas. There was a respect for old buildings and demolition tended to be piecemeal. The impact of the car and the invention of the bulldozer has led to greater spatial extension of demolition.

All these elements constitute common features of the functions of the street in both the architectural and the urban cultures of the past. This chapter has provided a general examination and insight into the concept of the street. The next one seeks to extend such studies more specifically to Libyan locations where solutions can be set forth!

Fig. 2.60

Eighteenth century map of Rome indicating the ancient streets that were still in use. It gives one a lesson on how history lessons should be kept in mind although modifications and changes are necessary to meet modern demands.
CHAPTER 3
TRADITIONAL SETTLEMENTS AND THEIR STREETS IN LIBYA

It is considered important to study the interaction of man and his environment both in time and in respect of cultural influences. For this reason the purpose of this chapter is to investigate and understand the facts of the traditional settlement and its street structure in Libya. The aim is to find what patterns and regularities can be discerned and to assess what decisions can be made about them. The traditional built environment might therefore be found to have a particular relevance.

Favourable geographical factors, climatic conditions and resources influenced the location and shape of towns and villages. These settlements were founded mainly in the coastal area, in scattered oases and in the northern mountains.

In antiquity, Tripolitania was known as the land of the three cities, that is Tripolis. Cyrenaica was the land of the five cities, Pentapolis. It was the Phoenicians, who arrived in Tripolitania at the end of the second millennium B.C. who founded the three coastal cities of Leptis Magna, Oea and Sabratha. In the fifth century B.C. these three cities came under the rule of the Carthaginian Empire. Later, they came under the Numibian Kingdom. After that, they gained their independence and became allied to Rome. In 46 B.C. Julius Caesar took over Tripolitania. Thereafter, it was ruled directly from Rome.

The five cities composing Cyrenaica were founded by Greek immigrants in
Fig. 3.1 A map indicating the location of Libya.

Fig. 3.2 The main urban centres in Libya.
the seventh century B.C. The names of these five coastal cities were, Cyrene, Barce, Aesprides, Tauchera and Apollonia. Cyrenaica also fell under Roman rule. This happened in 74 B.C. From then on these five cities became Roman towns according to Shaibaub (1974).

In the south, the Garamantes established some small cities in the Fezzan region. Germa was the capital and it was the largest city (Fig. 3.6). The Romans in 19 B.C. captured this city as well as Ghadames.

The Libyan coastal cities prospered due, firstly, to successful agricultural methods and adequate irrigation. Secondly, they had flourishing commercial relations with all the Roman cities of the Mediterranean. However, by 427 A.D. the Roman Empire began to decline and by 534 A.D. the Greeks took over, under the Byzantine Empire, but the decline was not halted till the Arabs gained supremacy about 624 A.D.

Since then settlement types and patterns of classical times have gone through many changes and developments. Libya was such a vast land with poor resources and small population that under Arab Islamic rule it did not become an administrative or political centre. As a consequence, Libya became a transit area for the movement of armies and political struggles. Only Tripoli survived as a major Mediterranean port city, and was transformed into an Arab city or Madina. The population was divided between settled peoples and nomads. These traditional settled populations were of three main types.
Fig. 3.3
Roman city of Telmeta (Ptolemais Cyrenaica)

Fig. 3.4
Roman city of Cyrene in Cyrenaica.

Fig. 3.5
The market square in Leptis Magna.

Fig. 3.6
Germa Garmantes settlement in Fezzan.
3.1 Coastal Areas

The coastal areas are of mainly Arab origin. They are either urban or rural settlements, varying in size and function. The size of these settlements varies from cities or towns to villages or mere clusters of a few houses. Until recently such settlements consisted of irregular alleys with a dominant principal street. Although these alleys were irregular, the overall form was an approximation of a straight street pattern, intersecting roughly at right angles. This regularity was not absolute and did not follow a strict checker board pattern but nevertheless, had a tendency towards regularity. In the urban coastal settlements the regularity of these streets was more visible than in the rural coastal areas. This was due to the regular house plans and those of the other buildings which made up the urban pattern. In these settlements the predominant house-pattern was that of the rectangular or square courtyard type. Only in large urban areas were defensive structures like walls, castles or watch towers to be found. They belonged only to the ruling elite.

Both urban and rural settlements had a common feature. The central mosque and the market place were focal points around which the other buildings clustered. However, settlement which had developed along caravan routes evolved a linear shape.

Fig. 3.7 Typical traditional two-storey houses in Libya Coastal area.
Fig. 3.8 General view of Tripoli.

Fig. 3.9 A typical traditional Libyan village which shows that the minaret and the palm tree are the dominant landmarks.
3.2 Mountain Areas

In contrast, Abdal-Jalil (1969) shows that the fixed settlements in the mountains were occupied by Berbers. They kept up their own language, customs and culture. These Berbers lived mostly in the western mountain areas and resisted the incoming Arabs. The Arabs came from the east and obtained a foothold in the northern and eastern plain of Jefarar. But increasingly, the people of the plain showed Arab influence in their customs and culture. A mixed frontier region emerged in Bani Walid in the eastern Nafusa mountain area and in Garian, according to Shaibaub (1979). In time of peace, Nijst (1973) demonstrates that Arab social and cultural influences were able to show themselves among the Berbers. But in times of strife and conflict the Berbers withdrew into compact villages each surrounding its castle and outlook towers.

Settlements on the Western mountain area were of a special pattern. Berque (1955) explains that each clan built its own village separated from the others. The terrain shaped these villages. It prevented regular clear defined street patterns emerging such as are common place in the coastal towns. Instead, a rough crooked street led to each cluster of houses. These clusters were built next to each other. They were constructed following the contours of the terrain. All the houses were built facing the open cliff. There are two reasons for this. Firstly, in this position they are less vulnerable to attack. Secondly, the orientation allows maximum advantage to be taken of the breezes.

Streets were built wider than in the hot valleys below, because in such
Fig. 3.10 Plan of underground houses in the mountain area, Libya.

Fig. 3.11 Plan and section of one of the underground houses.
cooler altitudes sunlight was less of a problem. The house construction in the mountains was markedly different from that in the coastal or desert areas in that architectural characteristics were less developed in the mountains. Such differences were to be seen in the distribution of rooms and the allocation of space. Also, materials and methods of construction were dissimilar from these in the coastal and desert areas.

Shaibaub (1979) shows that the most striking effect was obtained in the siting of granaries. The houses were built to cluster round them as a form of defence. These granaries are the most visible structures in the Berber village. This is because they are often built on the highest point of the hamlet. For the same reasons the mosque was often built close by.

Another architectural form of housing was to be found in the Western mountains of Libya. These were the cave dwellings or dug-out houses (Figs 3.10 and 3.11). Such houses had no method of grouping, nor ordered entrances to the main village street or pathway. Furthermore, these underground houses had to be at the same distance from each other to lessen the risk of earth walls collapsing. However, some of these dug-out villages were better developed around Garian, because they showed greater regularity in disposition of the houses and the street arrangement between them.
Fig. 3.12 A general view showing the courtyard houses and the narrow streets.

Fig. 3.13 Example of a covered street.

Fig. 3.14 People are shown gathered under the arcades of the streets which provide shelter from the sun.
3.3 Desert Areas

The third type of settlement is that found in desert regions especially in the oases. Several ethnic groups are to be found there, especially in the Fezzan region. There, Nijst (1973) says for the most part, Arabs and Arabised Berbers predominate. But there are also Tuareghs and Tabu tribes to be found there. Over the centuries these diverse ethnic groups have found a uniting factor in a common Islamic culture and in similar social organisation.

There are many varied types of settlements to be found in the desert. Geographic, economic, historical and socio-cultural forces have shaped their character. For instance there are those settlements which have a specialised trading function. They act as commercial centres along the trans-Saharan routes. Their location is often to be found at crossroads or along the caravan routes. Some of these settlements have maintained a primarily trading function over centuries. Some for less time than that. Again settlements exist which operate with a balance between agricultural and commercial activities. For instance, Briggs (1958) shows that such patterns exist in Ghadames, Ghat, Gatroun and Murzuk.

According to Al-Danasuri (1967), many of these settlements were surrounded by exterior walls and had towers. They also had winding streets. Another kind of settlement was that made up of small clusters of houses scattered without plan or any arrangement throughout these oases.

The fixed Saharian settlements showed a variety of character and structure. Some had a street structure of narrow winding lanes and cul-de-sacs with a main street. Such main streets ran to the market and the mosque, as in
Fig. 3.15 Another example of arched streets where people walk freely in a congenial environment.

Fig. 3.16 The market square in a typical Libyan desert city.
Ghadames and Murzuk. In this main street almost all the town's activities took place. However, a different pattern was to be found in Ujla, Sukna and Hun. These towns all had straight wide streets intersecting at right angles.

The third type of settlement was distinguished by the structure of shanty towns and hamlets. There the organisation of streets was primitive, and lacking in organised forms, without regularity. In the first and second types of street patterns one often finds that the street was covered as a shelter from the broiling sun. These coverings allowed the continuation of public activities in the protection it provided by shielding the pedestrians from the heat of the sun.

In Saharian settlements the most prevalent architectural feature was the single or multiple courtyard house plan. Variations were worked on this theme, according to the form of the decoration employed. Further variety was introduced through the differing materials used in construction. Still greater contrast could be obtained by varying the room allocation.

The common socio-cultural heritage of Islam among the Arabs and Arabised Berbers allowed the large Muslim coastal towns to exert their influence on urban patterns.

One can best examine the urban and rural types of dwelling places and settlements in the chains of oases which stretch from east to west. In towns, there was the tendency to have higher buildings reaching two storeys. There also, one finds more dominant public buildings carrying more ornamentation on them. Compared with the villages, the towns had more public spaces used for celebrations. They also had greater defence works. Religious buildings were
more monumental, too, than in the villages.

Towns such as Ghadames, Ghat and Murzuk were able to maintain their urban character till the late nineteenth century. From then on, they went into decline as a result of the ending of caravan commerce.

Most of the desert towns show an overall unity and homogeneity in their urban pattern. In towns such as Ghadames, Hun, Sukna and Waddan, one can perceive within their agglomeration a tight and uniform type of urban habitation. However, advances in planning and methods of protection from the harsh climate also differentiate these towns from each other; Ghadames, for example, has more covered streets than the other towns.

The deepest religious beliefs often shape towns, for instance an overall humble and uniform appearance can be detected. It is influenced by the Islamic tradition which teaches equality among its believers.

Definite regularity in street pattern among these desert settlements is rather unusual. The traditional way of constructing defensive features in the settlements and climatic conditions have given rise to cul-de-sacs and covered crooked lanes.

While irregularity in village streets is clearly visible, in some of the towns the streets can be both straight and regular. A good example of this is to be found at Murzuk where the axis is both straight and regular. Indeed it has been compared to a Roman town with its straight main road bordered by porticos and arcades. In addition, at one end of this street is a monumental gateway and at the other a castle. Secondary streets divide the city into
uniform quarters.

In contrast the city of Ghat has a series of regular street patterns but of a concentric form. It could be that Berber influence and the traditions of the sub-Saharan settlements influenced this style. From the centre of the town, which has a fortified palace, six narrow lanes radiate. They lead to the six city gates. In the area between each pair of lanes a division of the town has been created.

At this point an investigation would be helpful in establishing the character of the indigenous Libyan street.

Fig. 3.17

Another example of old streets, the built environment where the human scale is paramount.

Fig. 3.18 One of the traditional suqs in the desert region.
3.4 Examples of traditional streets

In order to understand the traditional Libyan street it is useful to study two specific traditional Libyan towns from the point of view of their streets.

The investigation of the streets of Ghadames and Misurata is useful since they are both traditional towns. They have particular street patterns in common with other traditional Libyan towns. By investigating the street structure one can discover how these settlements respond to environmental conditions and socio-cultural forces.

3.4.1 Ghadames

Ghadames is situated between the sandy desert of southern Tunisia and Algeria and the stony desert of Al-Hamada al-Hamera of Libya. For centuries the economic basis of support of the population was the commerce associated with the trans-Saharan region. Thwaite (1969) states that there are, nearby, two small oases, Sinawn and Derg, which formed supporting centres in the caravan trade between Ghadames and the Sudan in the south east and the Mediterranean in the north. Complementing this caravan trade Ghadames has always had an agriculture capable of sustaining the local population.

Ghadames is a good example of a Libyan desert town in its use of a covered street system, comparable to other towns in Tunisia and Algeria which also have covered streets. Ghadames is unique in the way that space is managed. There is a variety of streets, some are wide and some narrow, some long and others short, ending in cul-de-sacs. Almost all streets are covered.
This plan provides an example of one of Ghadames' houses while Fig. 3.20 demonstrates a section of this plan.

Fig. 3.20

Fig. 3.21

Fig. 3.22

Fig. 3.21 is a plan of a square and street in Ghadames and Fig. 3.22 shows a section of this plan.
Fig. 3.23 One of Ghadames' streets.

Fig. 3.24 An illustration of the stone benches which are used here by the local children.
Fig. 3.25 General map of Ghadamis.
The main streets are two to three metres wide and on each side stone benches are attached to the walls of the houses where the men may sit and chat. Sometimes these streets lead into small open spaces which may or may not be covered.

The spaces are classified according to their uses and sizes. Some are given over to children, others to young men and some others to adults and the elderly. The classification demonstrates in practical terms the hierarchical nature of the family structure. The wider streets have also their specialised functions. Here the religious and social occasions are held, for instance, marriage festivities.

A close look at such structures in the oases town shows that three considerations dominate. There is a desire to give due prominence to the market, the mosques and the water source. Almost 100 metres west of the centre of Ghadames is the old market. The market has very few shops now since trade has moved to the new market. This new commercial centre is in a square, 20 metres on each side. It is flanked by two mosques and it has its water supply (Ain al-Faras).

There are seven districts in old Ghadames. Six are Berber and Arabic speaking. The seventh, Awlad Billel, is mostly occupied by Arab inhabitants. It is considered to be the most recent in origin.

The Awlad Billel district controls the south eastern gate of the city (Fig. 3.26). This gate opens into a long straight open street. The houses are painted white and from the street the height of these houses can be seen clearly. Because of the exposed unshaded character of the street, there is less
remaining of town walls

Mosque
Building line
Access to buildings
→ North

surveyed house

Fig. 3.26 Map of the Awlad Billel district with a plan of one of the houses.
movement and activity. Only in the evenings do the inhabitants sit on the stone benches to chat and drink tea. These benches are an important factor in the people’s social life. They are to be found not only attached to the walls of the houses in the streets but also in squares, in corners and in small alley-ways. Yver (1927) explains that they provide a social area where problems can be solved, social ties maintained and deals concluded.

In this district, Yusha (1973) states that the house is built in the form of a courtyard and surrounded by rooms on two floors. The ground floor is used for storage and the upper floor is the living quarters. At the end of the main uncovered street one passes along a covered way which bends to the right and leads into the rest of the city. This is the principal access to the main major market area which is located close to the most important well (Ain al Faras). The covered alley way which has been referred to, leads to a small open space. Within it is to be found the Ghadames leather shoe craft shops.

In contrast the Djersan district has most of its streets covered (Fig. 3.27). It is surrounded by the typical defensive wall with controlling gates which could be closed at night or in times of strife between districts. On entering a controlling gate one finds oneself in a maze of lanes, streets, cul-de-sacs and where streets intersect, small squares. Along the covered main street are to be found openings in the coverings through which shafts of light can be seen. The function of these small openings is to allow fresh air into the street and the escape outwards of bad odours given off from the agricultural products in the storage rooms on the ground floor below the houses.

The street coverings, Yusha (1973) states, are formed by the extension of
Fig. 3.27 Plan of the Djersan and Tingesin districts.
the upper level of the houses over the streets. These streets are covered with a roof of closely spaced palm trunks which rest on arches known as "Ghadames arches", because they are to be found everywhere in the town. The Ghadames arch is usually a pointed arch flattened from the top. A variation of this arch is used with decorative and symbolic devices on it. They are built using a large palm trunk frame covered with gypsum and this gives them the appearance of a conventional arch. The houses are painted white, while the doors are painted blue, red and green, with attractive ironwork handles. Some entrances have beautiful stone doorsteps.

The Djersan main street leads to a gate and a small covered square which marks the end of the district and the beginning of the neighbouring Tingesin district. In Ghadames, the streets and lanes are the property of the people of the district. But, in contrast, the squares belong to all the citizens of the city. These squares, therefore, are neutral territory where different sects and interests can gather and where social interactions can take place. One particular small square is of special interest. It is surrounded by white washed walls into which are built benches. It is noteworthy for its rich ornamentation. This can be seen in the ornate lamp niches on the walls, arches and doors. Their decorations are made up of geometric lines and linear motifs engraved in the gypsum frames.

The Tingesin district is composed of a majority of the Berber clan. However, they are closely integrated with the Arab inhabitants (Fig. 3.27). While the entrance gateway, the covered square, the arches and the houses have decorative motifs similar to those of the Djersan district the old Yunis mosque of the quarter must be noted. This is because one of its facades opens into
Fig. 3.28 shows the three districts, Teferfera, Derar and Teskon.

Fig. 3.29 Women chatting in the terraces above the houses.
the main square of Ghadames (the old market-Maidan al-Hurriya) and consequently it is integrated into the urban form of the city.

On the other side of the square is another mosque, the al-Atiq. Both mosques have squared minarets but only that of the older Yunis Mosque overlooks the market square directly. Between the Derar and Teskon districts in one of the corners of this market square is a niche of remarkable importance. It is the water measurement device, measuring the supply of water to the different quarters and to the irrigation of gardens. By use of this device the one most precious and vital commodity in oasis life, water, can be controlled and supervised.

Next to the Tingesin area is that of the Taferfera (Fig. 3.28). It is situated to the south of the Derar and Teskon districts (Fig. 3.28). All these districts have access to both of these mosques and to the central market square. Again, close similarities are to be found in this locality with other parts of the city in urban pattern architecture and street width. However, there is one important difference. Some parts of the main street are open to the sky and it leads into the gardens of the district.

To the north are the Derar and Teskon districts (Fig. 3.28). The forbears of the inhabitants of the Teskon district are believed to be the founders of the city. While the streets of these two districts are quite similar, in their dark covered character and widths, to those in many other parts of the city, there is a difference. Here the houses are much higher than those elsewhere in the town, by one or two storeys.

The Mazigh quarter is situated apart from the other districts to the west of
Fig. 3.30 A street plan of the Mazigh quarter.

Fig. 3.31 Terrace walkways.
the oases (Fig. 3.30). It is connected to the Deran and Teskon districts by a main street. This street is narrow and overhead it is covered. It is lined with benches built into the wall. This street leads one into the main square of the district which is commonly known as the Maidan al Julus or “Sitting Square”. It is also known by the large shady mulberry tree which grows in the middle of the square, that is, Maidan al Tuta or “Mulberry Square”. Though the square is small this tree makes it a pleasant and cheerful place.

Once this square was the centre of Ghadames handicraft shops, famous over all North Africa. But as this handicraft trade has collapsed these former workshops now only form part of the decorative features of the Ghadames arches which surround the square. These one-time workshops now remain only as niches set into the walls, providing seating.

In common with all Ghadames, this quarter uses the available palm tree products as construction materials. It provides planks for making doors and shelves as well as beams for roofing the houses and the streets.

Because of the influences of the Islamic tradition, the separation of the women from men is clear-cut. This need for their privacy is reflected in the construction of this town. Women are found to walk along the top of the street coverings while the men walk on the street below. The women also uses the roofs where they can meet and chat to each other without male intrusion. They also use the roofs for their social occasions while the men use the streets and squares for their activities and interactions.

In conclusion, while the streets in Ghadames are unique they are at the same time typical of the street of the indigenous settlement. Here one finds
Fig. 3.32 An aerial view of Ghadames which shows the compactness of the town.
Fig. 3.33 A general map of walkways on the rooftop terraces.

Fig. 3.34 This picture shows how women can walk above the houses in complete privacy from the men.
locally developed towns and houses in traditional style. They have a continuous link with the remote past and yet show influences of recent history. Through studying Ghadames' streets one can see the forces which moulded this pattern. These are socio-cultural and environmental forces.

The streets and surrounding built environment reflect an ingenious method of design. The available limited resources and space are used to meet physical, functional and socio-cultural demands. This design also modifies the harsh climatic conditions to the benefit of human needs. The streets in this traditional environment are a gathering place where people meet and discuss their social problems. Such traditional streets contrast starkly with the modern thoroughfare where most of the social difficulties are found.

3.4.2 Misurata

The other example of the traditional street is from one of the coastal cities. Misurata is located in the Eastern part of the Tripoli region of the Mediterranean coast.

Before the first Arab invasions of 642-643 A.D, Berber cultivators almost certainly maintained some form of settlement near the present city of Misurata. In 1051-1055 A.D, when the Beni Hilal and Beni Suleim tribes swept into the region, agriculture was well established in the coastal region of Misurata by semi-nomadic tribes during their brief summer sojourn in the area.

In 1380 Misurata had a Moslem population sufficiently large to justify the construction of a Mosque. During the fourteenth and fifteenth centuries the town became of increasing importance as a commercial centre because of its
Fig. 3.35 Medieval Misurata

Fig. 3.36 A general view of one of the villages in Misurata.

Fig. 3.37 Another part of the same village area.
proximity to the coast as a natural focus of caravan routes. The centre of this caravan trade was a small *suq* or market place. Misurata remained for a long time a small market town with a rough and ready juxtaposition of houses and shops. This served quite well as distances were short and competition for land was minimal.

The intensity of commercial activity in a traditional market town like Misurata depends, not only on the distribution and density of population within its hinterland, but also on the extent to which local specialisation creates a demand for exchange of goods. The exchange of produce between the cultivator and pastoralist is still clearly important in the economy of Misurata.

The layout and construction of houses and streets in old Misurata has not changed until recently. The basic unit was the house which in one form or another is as found throughout North Africa. It has a characteristic internal courtyard, flat roof and scarcity of windows. The house might accommodate several related families. Its design permitted privacy on the one hand, and social intercourse in the cool of the courtyard on the other. Neighbouring houses, often owned by relatives, were attached to one another. This resulted in a cubic cellular structure throughout the town.

Streets in old Misurata were narrow. They reflected the one-time importance of pack animals rather than wheeled transport. The architectural form of the streets was designed to give added protection from the sun, either by covering the streets or arcading them. Streets in the *hara* or district were narrowest of all. But, otherwise, the houses appear the same throughout the town. They were one storey high. The closely knit character of the town
Fig. 3.38 Map of old Misurata giving the location of general stores.

Fig. 3.39 One of Misurata's covered streets in the vegetable market.
persisted until the beginning of this century. By this time a number of isolated houses began to appear on the outskirts.

The street facade was very simple with bare walls and minimum decoration. This small decoration could be seen in the ironwork of the windows. The whole city was covered in one colour, white. The material used in construction throughout the town was the same. The walls were made of clay and stone. The roofs were thatched with palm fronds because of the availability of these materials.

*Maidan Nasser*, Nasser square, was and is, unmistakably, the commercial heart of Misurata (Fig. 3.38). Its axis is north east to south west. On all sides internal streets converge into this square. *Maidan Nasser* is situated between two broadly complementary sectors of the commercial centre of the town. On the north west of *Maidan Nasser* are a few streets composed of shops, workshops and markets. These markets include the grain market and flour market. There are open and covered streets, fruit, vegetable and fish markets. In addition to the usual range of retail stores this district specialises in the sale of carpets in a covered street. In contrast, the olive oil market is open. The shoe craft street has some arcades under which the craftsmen used to sit and work. This narrow street was named after its commercial function.

On the other side of the *Maidan Nasser* is *Maidan Ghardabiuya* which is an informally shaped square. It is the centre of a second complex and is situated south-east of *Maidan Nasser*. It used to contain notably the livestock market, with its butchers. There was a street market dominated by blacksmiths and hardware merchants. This area was open. In contrast, the fruit and vegetable
Fig. 3.40 Old Misurata's land use pattern.

Fig. 3.41 Misurata, Maidan Nasser (Nasser Square)
market was in a covered street.

Maidan Nasser lies adjacent to the central mosque, or jami, which commands an important position in the town. As a religious, political and intellectual centre this mosque is located near the commercial area. This parallel existence of religious and commercial facilities is reminiscent of medieval towns in Europe where market square and cathedral square are closely related. Likewise the jami is integrated into the fabric of the city streets.

In the past the town had only three days open market a week, but the shops were open most of the week. In these three days Maidan Nasser itself was used for the sale of raw wool, ropes and mats. None of such merchandise was displayed in any of the other markets. On market day Maidan Nasser was continually being crossed and recrossed by buyers and sellers, more frequently than any other part of the town. The carpet sellers had to be together to bid for the carpets when they were brought in from the countryside.

The shops themselves were typical of the Arab world. They consisted of little more than windowless rectangular rooms opening onto the street and were one storey in height. The door was usually as large as the shop itself and a double door was fitted for security at night-time. The shops were equipped with a simple counter and some shelves. Goods spread out onto the street. The shop sizes varied considerably but two main types of accommodation could be distinguished. The majority of the street-markets, and the shops in Maidan Ghardabiya, had no more than fifteen square metres of floor space. It was a common feature of such shops to have wooden doors.
and earth floors. Around Maidan Nasser the shops tended to be larger, often coming up to about 28 square metres of floor-space.

Misurata Market exhibited a remarkably uniform structure. The producers or retailers of the same kind of goods always occupied adjacent stalls or shops. Furthermore, each trade occupied one of the streets or lanes called a suq. Besides trade in the streets and open market, or suq, these areas were a place for creating social activity and maintaining a coherent community in Misurata.

People do not come to the town merely to buy things, but also to see their friends and hear the news of the other Chabila clans. One seldom finds a cafe in the town. People made their own tea in the shops and in the open market. People sat and chatted in the shops of relatives or friends. This market, along with the mosque were the only places where various segments of the urban population came into contact with each other. It was the hub of social interaction and exchange of news and sentiments among people of diverse districts. The market thus played an important role in the integration of the city and also its surroundings. The suq was not for the town centre only, but for the villages as well.

Fig. 3.42

This is an illustration of how a traditional street was always constructed on the human scale.
3.5 Conclusion

Historically, every nation has had architecture unique to its time and place. Yet, even on a national scale, there are differences between regions and communities. But all of these architectural features are no more than the reflection of human traditions and their cultural values in their various changing manifestations.

The main feature of the Libyan built environment is its adaptation to the local climate, either in or outdoors. The traditional house is ideally adapted to the climate and illustrates well the way in which the elements, when assembled together, form a coherent whole. This succeeded in creating a comfortable external environment.

The traditional Libyan house is inward looking, often one or two storeys high. The external walls are windowless and, consequently, dwellings can be built up against one another to make a compact site. The door to the street does not give directly on to the court, but onto a passage off, where the reception room is located. This bent entrance provides the privacy which is an essential requirement in Muslim society and, at the same time, protects the interior from wind, sand and noise.

Outdoors is also designed to create a comfortable micro-climate. A narrow winding street with a closed vista has the same function as a courtyard in a house, that is to regulate temperature. In a wide straight street the cool air deposited during the night is swept away by the first breath of wind. In addition, a wide street offers no shade and heats up more rapidly than a narrow one.
The streets of the old town of Tripoli were originally laid out by the Romans on a typical grid pattern, but, over the years, the intersections have been adjusted so that they no longer allow the wind to blow straight through the city. The buttresses which span the street provide shade as well as support and also give protection from undesirable breezes.

Unfortunately, nowadays, in many cities the process is reversed with wide streets being driven through traditional housing areas. These streets provide improved access, but, at the same time, they tend to destroy the micro-climate advantages of the areas which they serve.

The street is the heart of the town, spatially, socially and environmentally. The traditional town was compact and constructed on a human scale. Such features were evolved to suit people on foot and to group different activities and services together. The mosque and the suq were always in the heart of the city not only for commercial but for socio-cultural reasons as well. Such places in towns acted as the hub of the community.

There are many factors which have helped to shape the traditional environment, such as the availability of local material and the economic realities. But the main factors are the socio-cultural and climatic ones which will be discussed in the next chapter.
CHAPTER 4
FACTORS THAT SHAPED THE TRADITIONAL PATTERN

4.1 Climatic Factors

The effect of climatic factors on the indigenous population and their built environment can be very clearly traced in Libya: on the one hand, in the distribution of settlement throughout the whole country, on the other, in the morphology of the settlement itself.

Fautoli (1932) states that the biological adaptability of an indigenous population was heavily influenced by the climatic factors. Climatic forces indeed designated these areas in Libya in which it was possible to maintain life. Enrico De Agostine indicated that seven-eighths of the indigenous population lived in the coastal area. In the desert areas the population was exceedingly scanty, indeed, most people were to be found in oases. The mountain areas were the favourite sites for human habitation, after the coastal districts.

One finds that the traditional Arab quarters were cooler in summer than nearby cities which were built by Greece and Rome. The indigenous inhabitants were protected from the direct intensive heat by the narrowness of the street system and the massive compactness of urban fabric. Furthermore, in the traditional Arab quarters one finds that the velocity of the wind drops; thereby losing the dust which the wind would otherwise be carrying. This can be clearly observed in Ghadames and in old Tripoli, as Vinnacia (1942) has pointed out.

The character of the street patterns in these old cities differs not only from
modern street structure but even from that of ancient Greece and Rome. In an examination of the pattern of the streets in the old traditional towns, one sees, in their Arab Libyan traditions, an affinity with nature. As with a plant, these cities adapt to their source of water and nourishment in a method which reminds one of the roots of plants. In the same way also they grow towards their sources of light and air.

At first sight, traditional street layouts appear unplanned and chaotic, but on further examination, one finds that they were constructed to make the best use of resources and the best adaptation to the natural environment. Fitch (1976) shows that such ingenious uses and adaptations are not to be found in the nearby European colonial urban areas. In the traditional quarters each house conformed to an overall urban fabric which had been produced to respond to the local climatic factors. Instead of European colonial planning with straightness and regularity of street pattern, these old streets were narrow and the buildings faced inward to gardens and courtyards. As has been observed, in Ghadames and Misurata, whole streets were often completely shaded from the sun.

If one contrasts the traditional Arab maze of streets with the grid pattern of criss-cross streets in the ancient Roman tradition it can be understood why the Arabs, who succeeded the Romans, had good cause to prefer their own built urban patterns. Experience taught the Arabs that they must build in such a way that the intensity of the summer sun could be mitigated and the velocity of winds could be lessened, thus preventing the wind from carrying sand and dust. It was a necessary response to the excesses of sun and wind which made for zig-zag alleyways and crooked streets.
The compaction of the traditional environment as is Figure 4.1 and the narrowness of streets in Figure 4.2 clearly helps mitigate the harsh climatic conditions.
The need to maintain as comfortable a life as possible can be shown in these street patterns. They were so contrived that there were always pools of shadow to be found at all times of the day. Therein ventilation and the passage of cooler air was encouraged. Had the streets been wide and straight they would have acted as canals down which the wind could blow with full velocity carrying a maximum amount of sand and dust, but their crooked nature and irregularities of their branching lanes mitigated the effects of the wind.

A consideration of contrasting needs in street patterns can be held as relevant at this point. In ancient Rome the straight broad street had as one of its functions the symbolism of monumental grandeur. In modern streets the need is to give passage to heavy traffic. But, in the traditional Arab street pattern one finds the need to provide the most congenial climatic conditions for the inhabitants to carry out their social activities out of doors. By such construction they were able to stabilize the temperature within the whole quarter of the city by use of devices like street coverings, the use of water and trees. The design of the traditional Libyan street is more concerned with the protection of the human being. Sadly, the use of these devices was not appreciated in the colonial period.

One can note that the traditional streets have their axis structured to make the best use of cooling sea breezes. As also, the courtyards are designed to mitigate the effects of the sun by regulating the amount of air and light. Accordingly, it can be demonstrated that the traditional quarters were as fully adapted as possible to climatic conditions.

An example of adaptation to climatic conditions is to be found in
Fig. 4.3 The comparison between the gridiron pattern of the street and zigzag alleys is clearly shown here as the contrast between old and new quarters.

Fig. 4.4
The meandering form of the street greatly helps reduce the wind velocity and provide shade.
Ghadames. This city is located in the middle of an oasis. Because of the absence of the moderating effects of the sea on the climate of Ghadames, the climate is harsh and the temperature varies within extremes of lowest and highest readings. The response has been that the local inhabitants have created local climatic conditions more suitable to the needs of human beings. In addition to the creation of a suitably built environment they made the greatest possible use of two natural resources, vegetation and water.

Ghadames has been sited in the middle of fields of palm trees. The resultant associated moisture emanating from this vegetation has had a mitigating effect on the climate of the city. This would not be achieved had the city been sited in the desert, like many other oasis towns. The harmony of the humans and their animals to the environment has only been possible from time immemorial because of a strict regulation of resources.

The procedures for the distribution of water, for instance, are well established and understood. It is closely measured and distributed according to the needs of the inhabitants. The first call on water is for drinking purposes, located where the water first enters the mosque. Thereafter, it is used for the needs of the public baths in the mosque. Then the water is used for irrigation of farms, each clan and family being allotted its share as strictly laid down by law.

The built environment has been adapted to the same ends of mitigating the harsh realities of the climate. This is achieved by a massive over-hang of houses across the streets, creating a tunnel effect. The result is that the streets themselves remain cool even in the hottest part of the day. Small
shafts are left between the houses to give daylight in a controlled manner. Windows have been built to open into these shafts to allow the cool air of the covered streets from these shafts to circulate throughout the house. The entrances have also been so constructed as to capture the cool breezes obtainable from these covered streets.

In mitigation of climatic conditions none of the facades of the houses are exposed to direct sunlight. Evans (1975) states that even the flat roofs and ceilings are partially shielded by the construction of the kitchens on them. Since the ground floor is the coolest area of the house it is used for sleeping quarters in the hottest weather.

The traditional architecture employed is in no way accidental as it is the product of time and experience. It is an exercise in providing the greatest possible adaptation to climatic conditions. The close texture of the built environment and the smallness of the shafts also protect the inhabitants from the worst effects of the *gibli* winds. Many benches, as has been seen, have been built onto the walls to take advantage of the coolness of the covered streets as sitting places. Furthermore, these same architectural features prevent an undue fall of temperature and mitigate the harshness of the severe cold of winter.
Both photographs illustrate the amenity of the covered street in creating shelter from the elements.
4.2 Socio-Cultural Factors

Previously, it has been shown how the climatic forces have influenced the formation of settlements and habitats in Libya. The influence of climatic factors in their shaping of the architecture of city streets can, to some extent, be measured. The manner in which the structure of these streets interacts with the climate allows us, by deduction, to work out the principles involved in their construction.

An understanding of the socio-cultural forces that shaped the use of these streets and their surrounding habitations is also required, since one usually finds that architecture is shaped by the demands of its users. In consequence, this section seeks to show that the many social and cultural demands of the inhabitants of these cities were relevant factors in shaping the morphology and structure of Libyan settlement.

By education of the young, over the centuries, a culture evolves and adapts until sometimes it appears superficially to have changed or adapted itself out of much recognition; yet it is still the child of the culture of its early forbears. So the culture of the first Arabs who came to Libya has evolved and adapted itself, and, in doing so, made its built environment of streets and habitations conform to its cultural demands. It can be taken that man shapes his physical environment to his cultural needs and aspirations. This can be proved by observing how the effects of known culture demands affect the morphology of a built environment. For instance, the traditional Islamic culture of Libya has an entrenched demand for privacy. This is given physical architectural form in the traditional Arab quarter of Tripoli and in Ghadames where there is a clear-cut
differentiation made between public and private life.

The effect of this demand for privacy can be seen in the street system and in the house design. Such spaces were organised to meet the different needs, uses and values of the users. Ghadames shows such a correlation between social and physical space in the use of its covered streets with their benches, market squares, mosques and all physical features which serve to demonstrate the social identity of the inhabitants.

Spaces are defined by the activities that are carried out within them. Enclosures are physical arrangements in which much of the human activity is carried out, for example, eating, drinking and sleeping. Accordingly, the significance of places consists not only in their physical properties but also in the relationship they have to people. Thus environment influences people in the thoughts and significances that it tends to project into them, as part of their relationship.

Among the inhabitants of the traditional Libyan built environment there tends to be a homogeneity in their way of life due, not only to the common traditional culture, which has evolved over the centuries, but also in the realisation that all has been adapted to the best possible relationship with the environment. This homogeneity has its basis in the unspoken, unwritten taken-for-granted values and rules. The realities of the environment and the behaviour of the other inhabitants influence and lay down a homogeneous pattern followed by those who hear and observe them.

Islam is the most fundamental element in the Libyan way of life. It is not only a religion but a culture and a way of defining government. Al Barghuthi
(1971) states that Islam was introduced into Libya from 670 A.D. and must have found a receptive native population, because, within a century or two it had been virtually universally accepted.

Islam had a unifying effect on the whole of Libya. It was further strengthened by the huge Arab influx of the Bani Hilal and Bani Salim right across north Africa between the seventh and the eleventh centuries A.D. The effect of the introduction of the faith and these immigrations was to produce an Arabised Libyan nation. The impact of Islam is particularly evident in the Saharian hinterland settlements like Ghadames and among the nomads and semi-nomads. Toni (1968) demonstrates that in the basic creed of Islam there is but one God, Allah, and the ability of the Islamic religion and culture to provide a meaningful philosophy and guide to the way of life of the community and individual was the reason for its fundamental acceptance and effect on the indigenous culture. Instead of the confusing, perplexing and competing philosophies and religions in Libya prior to the coming of Islam, like local gods, Roman and Egyptian gods, Judaism and its culture, Islam was able to provide a welcomed homogeneity.

Mason (1977) points out that the Islamic Arab culture was able to integrate and come to terms with the culture of the local inhabitants who found it congenial and acceptable. The belief that “God is responsible for all outcomes” provided the inhabitants with an absolute faith in God. Furthermore, an acceptance of this Islamic religion and culture brought about an adaptation of local vernacular architectural methods in its wake.

The Friday mosque was the foundation of the new towns. Even in the
small oasis, one finds an urban way of life: for instance, in Ghadames, the way of life is, as it always has been, urban. Gautier (1921) shows that this city has its squares and open spaces for public events, often of a religious nature, such as weddings, dancing and other ceremonies. There are also many religious buildings and, as is normal, it has its market place. The public street is also provided with built-in benches for the residents to sit and discuss matters. Everyone is made aware of what is public and private by the availability of these facilities in the different residential areas. Not only in the large cities but even in the small towns, the fabric of the urban structure has been moulded by Islam.

Without Islamic influence Libyan urban settlements could not have been shaped in the way they were. One can detect the application of strict Islamic insistence on purification with the need for the construction of baths within the bounds of the mosques, or, as in the larger cities, in separate bath-houses. Another example is to be found in reference to the Quran’s prohibition of human and animal figures or shapes. The result is beautifully decorated geometric and calligraphic motifs.

The impact of Islamic common law is also a potent body of thought, moulding vernacular architecture. There were four sources: Firstly, the interpretations of the Quran, secondly, hadith, i.e. the sayings of the Prophet. Thirdly, ijtihad or the scholarly opinions of the jurists, and fourthly, tradition.

A study of tenth century legal court decrees and builders’ records of writings in Tunis points to the solution of urban and architectural problems throughout north Africa by application of the law. This of course, added to the
homogeneity of urban settlements and cities through the centuries, based on such legal decisions. Hakim (1977) shows five urban and architectural problems which were solved by the application of the law.

a. Streets and access.
b. Neighbourhood nuisances such as foul smells or noise.
c. Problems in situating doors and windows in the interests of sufficient privacy and air.
d. Ownership and usage problems of walls separating neighbours.
e. Problems of water such as usage, drainage and waste water restrictions.

In the first, application of the law which dealt with streets and access sought to find solutions in respect of what width and height was appropriate for buildings in relation to main streets, alleys and cul-de-sacs. Again, given the need for privacy, what activities were permitted in these spaces. What responsibilities and restraints were appropriate in the maintenance and cleaning of public streets. What were the criteria for identifying private, semi-private, public and semi-public streets.

A fundamental axiom of Islamic law is that harmful action against the public good is strictly prohibited. This led to zoning regulations to protect the public from environmental harm. While there was an accepted traditional allocation of land-use on a governmental level, Arab Islamic law ensured that the public was also to benefit on the community level.

The basis of the Islamic common law in respect of privacy is evident in the
construction of dwellings and habitats, for instance, visual privacy and the shielding of women from the eyes of male strangers. Again the positioning of doors and windows in respect of air rights. Also the matter of building heights to prevent inhabitants from being over-looked.

The rights of ownership and usage were clarified and laid down by the law. The rights and duties in joint ownership were also defined, for instance in such areas as the ownership of the wall, its right to use, the rights and duties of maintenance, demolition and rebuilding.

The tradition of a fundamental nature produces a most important characteristic in traditional Islamic cities. Hakim (1977) shows that in the beginning of a new town or in a new area to be built on to an existing city, the governor or amir worked out an overall plan for the area in which he would allocate a piece of land to each group or clan. There his authority would end. From then on, all future details were the concern of the particular group, allocated that area. Each group or clan, henceforth, had a clear idea as to the allocation of the piece of land according to public and private space. Furthermore, it had the monopoly of the area and the power to impose the space purpose.

The divisions between each of these group areas often provided the major access routes so that in the traditional towns, the major streets acted as frontiers between each of these areas. In time, such streets often became major commercial centres. This was no wonder as they could draw on the respective quarters which then acted as the border for custom. It appears that these major borders for streets came first, in providing access, and only after
that did the smaller accesses of the particular allocations of land areas come into being as lanes.

Within each clan or group one finds enough authority to impose the access lanes or streets which lead to the main road which served as a mutual boundary between the two groups or clans. However, this was not the only authority regulating each of these two areas which the amir or governor had allocated. The Corpus of Muslim law helped to shape the particular inhabitants of each of these groupings over and above the family and clan loyalties which were strong and relevant in themselves.

A recognised feature of Islamic law is that next door neighbours are jointly responsible for being aware of the others’ rights and duties. For instance, in a case in which properties abut, they must ensure that all obligations are carried out. The same law, while permitting ownership of private, heritable property also allows the central government or the head of the clan to pass legislative measures in the interests of the welfare of the particular community. Islamic law never prevented private ownership of property, but there has always been the tradition of having important natural resources for example, salt, under community ownership. Equally, agricultural land is rightly regarded as a vital commodity which must be safeguarded for the common good. Therefore, restrictions exist against encroachment by the city on agricultural land, thereby encouraging building upwards and compactly. Abu Lughod (1980) states that religion has provided a body of common law laying down the rights and duties in respect of behaviour of individuals, families and clans.

While the law and its penalties always formed a tie or nexus between
residents, the building force of the clan and the family was no less important as sanctions were available within it as well. The intensity of emotional ties, strongest amongst relatives by blood and marriage, grows increasingly less as this relationship becomes more diluted within the clan. The rights and duties inherent in paternal and maternal descent are also provided for. This kinship or relationship is a fundamental tie in social grouping throughout the Arab Islamic world. In Libya such ties are especially strong among the nomadic tribes and the peoples of the Sahara.

Among traditional Libyan communities such as in Ghadames, the social structure of the clan has to be taken into account as a reality, even after the vast and deep socio-economic pressures of modern times. These clan-based social structures are reflected in the built environment of traditional Libya.

While the needs of the individual are never held in doubt there is a paramount obligation for all to observe the necessities of the community and its social structure, for example, in the allocation of scarce resources, like water. The basic unit of such a structure was the natural family, followed by the extended family, then the sub-clan, the clan, then the tribe and the agglomeration of tribes. In villages and in traditional towns like Ghadames the extended family is still an institution. Here the grand-parents traditionally live in their son’s home where are also found, of course, their son’s wives and children under the same roof. In the context of the extended family with at least three generations in the one house, privacy is a greatly desired thing. For this reason, the guest area is found to be segregated from the family living area. The women too, tend to segregate themselves in the performance of their traditional duties indoors or in the courtyards. Unless a male visitor is a
This demand for privacy gave rise to the inward looking houses grouped around the courtyard. According to Ismail (1970) in the house there could be peace and retreat from the noisy taxing outdoor life of the public places. In fact, the Arabic word for a house is *Maskan* which means "peace and tranquility". The influence of Islam can be seen on the exteriors of dwellings, in that its teaching lays great store on humility. Accordingly, in the traditional quarters the external walls are simple in appearance giving no hint of whether the inhabitants are rich or poor. Social classes are not encouraged by Islam.

In the traditional towns and cities of Libya the hierarchy of the different clans had its effect on the built environment. Land originally allocated to each clan produced boundaries, mostly in the shape of main roads or streets which gave rise to a linear commercial area. Furthermore, these traditions had their own sanctions and social control which preserved them and maintained law and order at the same time. In perpetuating the time-honoured cultural and religious tenets of the community such traditional towns created their own homogeneity and identity.

Traditional cities were not only dwelling places for their inhabitants, but in the different quarters each citizen found emotional feelings exerting themselves. Each had a deep emotive attachment to his own quarter, in which his own clan stayed. This gave him a great feeling of stability and belonging. Here, in these traditional cities, growth is obtained by allocating a new quarter to a particular clan rather than in any grand total urban design. Each particular
quarter had not only kinship associations but was designed to allow every inhabitant real privacy as well as shelter and the companionship of his family.

In such towns there were inescapable influences created by climatic realities, topography and availability of construction material. In matters where man had an option, such as in decoration, architectural influences and symbols, one can find the impact of traditional culture revealing itself in geometric and natural forms. Simplicity created homogeneity, dictated by limited materials and the choice of limited colours and shapes in wall motifs, floors and domes. Tiles adorned with their decorative features and sensitive use of stucco, achieved on enhanced sense of Arab Islamic identity. These were much improved by the skilful employment of circular, spherical and rectangular shapes. Interest was added by the use of narrow winding corridors and blank facades. Another important device was the courtyard. In the traditional towns the privately owned courtyard was an oasis of privacy, public use of the same device is evident in such places as mosques, baths, inns and schools. Often in public places one finds a street leading into a courtyard and thereby forming a cul-de-sac, where certain public activities took place.

In the traditional towns the prime allocation of space was to the bazaar which started at the city gate at one end of the town and often stretched the entire width of the town to the other city gate at the other end of the town. Often the bazaar covered the entire width of the town.

A variety of factors, mostly climatic, social and cultural, manifest themselves in these traditional cities. Physical consideration, for instance, availability of materials and economic demands could be added in assessing
the sum total of the unavoidable pressures which shaped the built environments of such Arab–Islamic cities.

Fig. 4.7 The suq is not only a centre of commercial activities, but also the hub of social life.
4.3 Conclusion

Climatically modified conditions assisted in the creation of an architecture adjusted to human needs and use. The street and the houses reflected rational solutions to the problems of creating a comfortable environment, under a given set of climatic conditions. The needs of the community expressed in a harmonious arrangement of architecture were one element which modified the purely climatic considerations in the creation of the built habitat.

The built environment was created in the context of a complex social organisation; Libya inherited the values and belief system of the Arab Islamic culture and most of her cities reveal how this culture was adapted to a society which had, among other variables, a tribal system. As a result religious and customary laws such as those dealing with land ownership, water rights and privacy were further elements affecting the formation of the urban built environment.

These traditional urban patterns are the response of ordinary people to the environment in the construction of their cities. Natural growth occurs as piece is added to piece in response to the immediate needs of the persons involved, rather than being based on any kind of conceptual or visual grand design.

Principles for relating socio-cultural needs, whose roots lie in the patterns of the traditional forms of habitations will, when generated, give us the basis for defining a contemporary form of habitation which has both the continuity of the past and the creativity of the future. Traditional concepts ought not to be ignored out of hand but should always be a source of inspiration and channel of creativity and development.
The proper provision for the socio-cultural needs of the inhabitant and for his comfort is an important issue. In the past such considerations were the prime concerns of the traditional built environment, but sadly such issues have been forgotten or neglected in the modern one. Instead the priorities now adopted are those that facilitate the movement of traffic or the creation of prestigious projects. Such changes in approach will be discussed in the next chapter.

**Fig. 4.8** Another illustration of the suqs which provide a suitable environment for people to gather, walk and enjoy the social heart of the city.
5.1 Libya Before and During Independence

The most significant cultural and historical changes occurred in Libya when the Moslem Arabs conquered the country in 642 A.D. They brought with them religion (Islam), culture, language and a certain pattern of living which has dominated the culture of the country ever since.

Taking a broad historical perspective one can say that urban society in Libya did not change a great deal between the arrival of Islam and Italian colonization. Even during this colonial period there were parts of Libya virtually unaffected, though other parts were much influenced by the impact of Italian rule. However, the greatest change of all occurred when the first oil revenues began arriving early in the 1960s.

Due to political and economic instability in Libya, during the early part of Italian colonization, building activity was insignificant. It did not exceed the construction of barracks and a few simple buildings to house army officers and some administrative bodies.

In the second period, one finds a huge immigration of Italian settlers who occupied the country with the intention of symbolising their power locally and internationally, by all possible means, including visual impressions in which architecture and urban development played a large role. John Wright (1982) states that construction was planned to benefit mainly the Italian population. The old indigenous cities and settlements were left to stagnate. Their
inhabitants lacked the political and economic power to preserve them. The colonial authorities planned agricultural centres to include churches, a post office, cafe, town hall, a police station, a hospital, schools and a market place with craftsmen's shops and offices.

According to Schiassi (1942), the design of such village centres was oriented towards a main plaza around which all facilities were grouped. The architecture was bare and simple and schematically horizontal. Some of these village designs were planned in the style of typical European farm houses with pitched roofs. All these centres were designed specifically to suit the Italian life style and cultural needs.

Italian architects claimed that the forms adapted by the indigenous population over centuries had nothing to do with Arab and Islamic culture, but were created solely as a means of environmental adaptation. Rava (1929), in the cited article, expressed the conviction that Italians would be well advised to turn their attention to local Libyan architecture if they wanted to create a built environment that would fit the landscape. In general, most moderate and rational Italian architects of the colonial period became convinced of the validity and rationality of local architecture and urban formation in Libya. But this acceptance went only so far as it met environmental and climatic requirements. However, matters were different in respect of socio-cultural needs. This area remained a matter of continual conflict between the two cultures.

The Italian colonialism brought European values to Libya, but tended to establish itself side by side with, rather than on top of, the indigenous culture.
The comparison between the old architecture and the Italian can be clearly seen in these contrasting maps. The upper one shows the old quarter of Tripoli, the lower the colonial plan of Tripoli.
Thus European-type cities were built next to the existing Libyan cities in Tripoli, Misurata and elsewhere, as separate entities and without much affecting their older neighbours in a physical sense. So while the European style city was laid out with straight, wide avenues and streets, fit for rapid communication and capable even of accepting the motor car, when it came, the Libyan city, with its narrow tortuous lanes, remained fit only for the pedestrian and the beast of burden.

During the occupation, Libyans lived on the boundary of the colonial built environment. Because of the economic, cultural, social, religious and political barriers of colonialism there was no significant cultural interchange. The only contact between the two nationalities was limited to a small elite who acted as go-betweens. Their function was to help the Italians implement their plans. This was the group that assumed power on Libyan independence. They took it upon themselves to become the masters of Libya's development. Even after Libyan independence was achieved the Italians continued to reside in their original quarters. This was because of the poverty gap. At that time the indigenous population did not have the economic muscle to buy the Italians out of their homes and environments.

Probably one of the greatest problems left over at the end of the colonial period was the provision of housing for the indigenous people who had been completely ignored during the occupation. During the heyday of the colonial era it could be reasonably assumed that a policy of segregation of groups by income was actively pursued in order to give the Italians a dominant position.

King (1976) states that by the time of independence, in 1951, this
Fig. 5.3
Misurata: A colonial civic centre in the agricultural colony of Crisbi is illustrated in this plan and isometric view.

Fig. 5.4
Plan and isometric view of the colonial agricultural centre in Oliveti.

Fig. 5.5
Two isometric views of other colonial agricultural centres in Bengazi (Annunzio and Oberdan).
mechanism of segregation by income was so deeply entrenched that it was scarcely recognized. It had been taken by then to be the most natural way of doing things, so that it had become accepted without question. From the first, many of the Libyan elite began to consider the former Italian neighbourhoods as prestigious dwelling areas. With that, many Libyan government officials moved into these formerly colonial residential areas. As a consequence, such districts began to serve as a source of class segregation, based on wealth and power. This was ironic as these residents were now taking up the positions of the former colonial masters.

So unquestioningly had the acceptance of the ex-colonial residential areas become in the minds of the ruling elite that the purposes behind them were not recognized. On the withdrawal of the colonial administration a Master Plan was drawn up for most of the Libyan cities setting out future policy. Throughout this Master Plan, the fundamental outlines were uncritically based on the principles enshrined in former Italian areas. This attitude of mind, resulting in its approach to the Master Plan, came to be regarded as "a false start". Outside the elite it was realized that it did not reflect the new goals of independence which called for distributive justice, meaningful participation and cultural integrity.

The additional damaging problem which faced Libya, after gaining independence, was the economic crisis. First (1974) shows that this centred on the lack of resources or an industrial base. These issues were so serious that they affected almost the entire population. Not till the late 1950s could the economy provide adequate food, medical care, education, housing or any of the other basic services.
5.2 The Impact of Oil

A total economic revolution occurred in the late 1950s. Libya, almost overnight, became a major oil-exporting country. For a country whose total population was then about 1,500,000 the changes wrought by this sudden access to immense wealth was startling and had fundamental repercussions. One of these consequences was that agriculture lost its role as a major source of livelihood when people emigrated to the cities looking for better jobs and a higher standard of living.

The effect of this oil wealth has had its impact on the built environment. Like any other developing country, suddenly enriched by oil, Libya has been subject to rapid urban growth. The rate of this expansion has been very fast since the start of the oil revenues. This exploitation of oil has given rise to an extraordinary expansion of cities which could never have grown so rapidly under normal conditions.

As the rate of population expansion was high in cities, like Tripoli and Benghazi, it was difficult for the municipality to control it, so that planning control was lost in the process. Such was the pressure for urgent building that foreigners had to be invited in. As a consequence, matters of design, planning and building control passed to foreign architects and construction companies. Arab, Pakistani and Indian labourers were delighted to come to Libya to help in the construction of the new cities and to transform what had been rock and clay to asphalt and concrete. Roads were built to give room for the new cars. Housing was thrown up to accommodate the homeless. Beautiful indigenous mud villages were demolished by this new explosion of
Both illustrations provide examples of the massive construction programmes of the seventies. These models can be found everywhere in Libya, the upper one being a typical hospital and the lower a characteristic housing area.
urban construction. In this unprecedented boom, the new city arteries were super highways and nearly all the buildings were air conditioned.

Not only was it the coming of the oil revenue that caused the marked growth in the Libyan cities, but another factor was the relatively bad conditions existing throughout the country. For the most part there were a shortage of housing and lack of sanitation and clean water especially in the rural areas. These were probably further incentives inducing the people to migrate to the cities.

A relevant issue affecting the built environment has been the increase in population. According to Kezeiri (1986), at the first census in 1954, the total population was little more than 1,089,000. By the second census in 1964, it had grown to 1,564,000, an increase of 43.7 percent; at the third census in 1973 the total population of 2,251,000 showed an increase of 46.5 percent; and at the fourth census in 1984, the total population was 3,637,000, an increase of 61.7 percent.

The lack of infrastructure throughout the country was a source of concern when the new revenues started to come in. As a result 80% was allocated to development projects. Libya spent generously on roads, schools, hospitals and housing. No expense was spared in attracting technicians from all over the world to man its expanding amenities and administrations. Considerable inducements were offered to consultants, experts and contractors.

It cannot be denied that, in an era of unlimited boom, the Libyan government acted as wisely as could be expected. Here was a situation unprecedented in Libyan history where the pressures and opportunities for
New towns have been built in different parts of Libya. These two plans delineate the new town of Ras Lanuf which is most representative of this form.
change both existed. It was regrettable that at the time there was virtually no skilled Libyan management or middle-management to influence or control the direction of events. The other problem was that the incomers were often more interested in fast profit than in amenity or quality.

Specifically, the street infrastructure, was also undergoing development. Street lighting, which was introduced to some Libyan city centres in the immediate post-war years, has now spread to all urban areas. Piped water is another amenity which has only recently been introduced to almost every house. In the past, there were only one or two wells in each village. These sources of water used to be meeting places for women and children. Telephones at first were mostly confined to commercial premises and shops, but now they are easily installed in most houses in urban areas and in the villages. Telephone wires and electricity power cables are still overhead, only in some new towns have they managed to instal them underground. While sewage systems were, at one time, only found in the largest cities of Libya, today in almost every urban area, sewage works are in the process of construction or are complete and operational.

The modern development is expansive and there is no limit to it, as it encroaches, more and more, on the countryside. Its streets are straight and wide and they are created not only for wheeled traffic, but also for rapid transportation by motor vehicles. Their character is totally different from those of the old town, because, instead of mosques, madrases and entrances to the bazaars, one finds now city halls, schools, cinemas, hospitals, ministries, office buildings, and even departmental stores and apartment houses and high-rise housing flats. They are all distinguished not only by their size and vertical
organization but also by special treatment of their facades.

At first sight modern Libyan cities appear to have little about them that can be called Arabic. They have grid pattern streets. Within each section one finds essentially similar blocks of flats rising up above the sand. Their ground floors are normally occupied by retailing or service establishments. Some cities have no old core and apparently no central focal point. Many of the streets are of two or three lanes. There are few buildings more than twenty years old. Only the old town area provides any real contact with the past. Each town is, in many ways, an international city constructed by the international population.

Fig. 5.10 The new modern style of isolated buildings such as this has largely replaced the compact form of the traditional.
5.3 The Change in the Street

The changes which have occurred due to the impact of oil revenues over the past twenty years have transformed all sections of society.

These changes are most obvious in the street rather than elsewhere in the city and, as the street is the focal point of this study, it is necessary to discuss these changes that take place in the street as well as the buildings that border it.

5.3.1 Changes in transportation

The central structure in most towns has, through the years been influenced to a large extent, by the forms of transport and communication. When transport was conducted on foot or by horse-drawn carriage or on the back of some animal, like the donkey or the camel, the growth of the urban area was evenly distributed and compact.

The normal walking distance narrowed the margin as to how far out ordinary people could live. As a channel of traffic, the street should assure easy movement to both pedestrian and vehicles, without one interfering with the other. This was achieved more or less, as long as vehicles were drawn by animals and were few in number, a condition which lasted for centuries. Streets were narrow and still unpaved yet they served the needs of the times.

Over the last twenty years instead of old, narrow, winding alleys, vast street systems have been imposed on the city dividing the outlying areas into neighbourhood units. The evidence of such new systems is to be seen in the ring roads, double carriageways and motorways. Even some of the old city
yielded to this new street system which made it one, encompassing and joining the old to the new with the wide roads which were superimposed on the old.

The new prosperity, with its ample supply of oil, has brought the car onto the roads of Libya in such excessive numbers as could never have been dreamed of before. In one hectic decade the car has all but obliterated nearly all the physical and social landmarks of the past.

During 1965–1978 the number of cars in Libya grew by more than 700% while the population increased by 61.7%. The Secretariat of Utilities’ “Evaluation Report on Regional Planning” (1981) has forecast that if this upward trend continues there will be one car per two persons by the end of the century.

Space, cars, villas, highways and large buildings have more often than not replaced the intimate view, the courtyard, the domain of man, the human scale. The car has become glorified till now it is an urban master, paralysing the physical structure of the street. So significant has been the advent of the car on the urban scene of Libya that the change is hard to comprehend at times. Instead of the once intimate walkways there are now the vast spaces of streets, parking lots and empty areas.

The car’s appetite for petrol is easily satisfied as Libya is a supplier on the world market of large quantities of this commodity. With the revenue from this its highest export, Libya has become, if not the highest, one of the greatest users and consumers of the motor car and petrol per capita of the population of almost any other society in the world. This is a cardinal factor that must be constantly borne in mind when the subject of changing social mores and
Both figures give some idea of the typical new streets with their great width, constructed solely to facilitate the movement of cars.
urbanisation in Libya is discussed.

One can scarcely dispute the proposition that the car has become the dominant factor in planning in a Libyan city. It could be said that it is both a strength and a liability in this process. The car is one of the first things a person now wishes to buy. For most it is a status symbol, flaunting a rise in their position in the world and an expression of wealth, even if it has to be bought at the expense of domestic necessities. The lack of adequate public transport gives further motivation to the demand for cars.

The Secretariat of Utilities' "Evaluation Report" (1981) states that the accident rate in Libya is very high compared to countries in Western Europe. In Libya the current annual fatality rate is 0.3 per 1,000 inhabitants. Thus the Report foresees, with the present trends continuing, 30,000 persons will be killed by the end of the century presuming that the population has grown from 3.45 to 6.5 millions. Statistics show that personal injuries are 8 times higher in frequency than deaths. Using the same hypotheses in their 1981 Report it would mean that a quarter of a million inhabitants would be injured before the end of the century.

Accident frequency has been found to be highest where different kinds of traffic are mixed, as with pedestrians, lorries and cars. Equally, high accident incidence occurs in areas with a large number of side streets and unregulated parking. Towns with modern street conditions are where most accidents occur. Especially serious accidents take place where highways pass through towns. Outside towns accident rates are clearly lower.

Although there is no serious traffic congestion, the response of the
planners to this traffic problem is to keep increasing the width of the street, even if it has remained unchanged for centuries. Most municipalities have occupied themselves solely in the widening of the narrow streets of their central districts as the answer to the problem. In recent years many municipal technical departments have brought out street-widening schemes involving numerous old streets.

In a typical example where an old narrow street is reckoned to be due for widening, sometimes only one side of the street is demolished, more often both sides are involved. It is frequently the practice to demolish part of a house or other building so many metres back, leaving the rest of the building without treatment. The municipality pays no attention to what is left of the building. If what is left is big enough for the family to remain in, they do so. If not, it stands derelict. If demolished, it is quickly used as an unofficial car park. Although this demolition has changed the facades and the activities of the street completely it does not radically alter the plan of the street, nor does it ultimately solve the traffic problem. The street is only wider.

"Improvements" of this nature are usually achieved at an almost prohibitive expense. The space gained by widening is quickly absorbed by greater volumes of traffic. The number of street crossings have remained unchanged, with the result that congestion actually increases at these crossings because of the higher number of vehicles carried on the widened street.

Otherwise, the municipality on many occasions intersects at right angles, imposing a grid-iron pattern of wider streets on a traditional quarter, without consideration of, or following the axis of the older streets, cutting through
Fig. 5.13 It can be seen how large areas of towns have been demolished to provide places for car parking.

Fig. 5.14 The international style of the modern city has largely replaced the traditional Libyan one.
houses in doing so. The only aim is to create straight wider streets, solely for the cars.

The social effect of this street widening and the imposition of the grid-iron street pattern on the older areas can have unfortunate consequences. Once their homes are demolished some residents move out to high-rise flats. Some, who have benefited by the compensation, build their new houses on the outskirts. This leaves the street deserted by its inhabitants and without any normal social intercourse. It becomes only a thoroughfare for traffic, and the old street community is destroyed.

The clear effect of giving cars first priority can be amply verified by noting what was done at the corniche area of Tripoli. On the sea-coast there used to be a pleasant picturesque promenade along the sea-front, which was very popular, since people could spend the evening strolling along the seaside. Then the entire sea-front was reclaimed and filled in to provide a huge car park to a nearby new hotel. This destroyed the amenity utterly.

The streets one sees in Libyan cities today cannot be identified with any particular function. They have all become arteries for heavy traffic whether they are in residential areas or in commercial or industrial districts. To all these streets may be applied a universal description; the middle of the road is reserved for vehicles; at both sides of the road are pavements for pedestrians, and, lining the pavements, are buildings or small spaces in front of the buildings.

Despite all that has been said on the debit side in respect of the impact of the car in the Libyan city there is also, undeniably, a credit side. The car has
given individual citizens mobility, freedom and a sense of individual power to choose where they want to live, work and play. The problem is how to find ways and means of reducing the negative aspects of this new mode of transportation.

5.3.2 Changes in retailing

Retail activities in Libya, have recently undergone important changes. Instead of the small shop one finds now the large governmental supermarkets and big stores. Recent years have seen the gradual disappearance of the open market. There have also been changes in location and distribution of the shops, even changes in consumer behaviour and in the goods themselves.

The most important cause of change has been the impact of the use of the motor-car for shopping purposes. This has allowed shoppers a far wider choice of shops than before. The increasingly varied demands of shoppers can now be met by their travelling to relatively remote specialist shops or large shopping centres. The customers need no longer rely on local retail outlets. This trend has led to important changes in the locational policies of retailers, many of whom now regard good car access as essential.

The new problem of inaccessibility is another factor which exerts its own influence. As the population of the city grows, the central area faces more traffic and parking problems. The response is to move the retail locations to the outskirts. By doing so, department stores and multiple retailers hope to contact the largest number of customers. This locational change is a significant factor in precipitating a shift out of the town centres which leads to their decline.
It need not be demonstrated that the *suq* and shops are often the hub of a community's social intercourse and relaxation, equally the street cafes of France and Italy perform a similar function. The social and recreational aspect of shopping has now gone with the larger government controlled supermarkets. Here profit is the sole motive. Therefore they are encouraged to become larger and larger, but the price of such vast expansion is the diminution of personal service, and, at the same time, the larger they become the more difficult it is for the small shops to survive.

In the traditional quarters the old shops are often quite small, no more than five foot square with just room for the shopkeeper and the customer to stand. Till recently the stock of commodities was displayed largely on the pavement outside the shop. The old shop was placed in such locations as would most conveniently serve the customer proceeding on foot; but the new ones are specially placed in the main arteries for the convenience, not of the pedestrian, but of the car owner.

This new state of affairs has had a considerable structural effect on the street facade. In the past, the small shop had an open front, so, in walking along a street, every few yards one passed the open front of yet another small shop. Now the entire street can be taken up by the blank outer walls of the supermarket pierced only by one entrance.

The other main trend is the gradual disappearance of the local shop in the villages. Such shops served to integrate the neighbourhood community as the centres in which local residents could meet and sit.

Furthermore, a deep change has overtaken the habits of the shopper. This
Fig. 5.15 The new huge supermarket has almost entirely replaced the old traditional suqs. This prefabricated model has been built in all major Libyan cities with the same design, surrounded by a huge carpark.
trend is clearly due in part to changes in retailing methods, particularly the introduction of self-service and discount stores. There is now an increasing consumer consciousness as to the price of goods and decreasing attention is paid to the standards of service provided in the shop. The stores have become far more conscious of the need to reduce costs of operation. This has been achieved by using more economical methods of selling goods, like self-service and also operating from larger premises in which certain economies of scale are possible.

The external environment has changed with these new massive stores, as the street frontages have become one large solid block with few openings, instead of the small single unit shops, which are completely open to the street. The municipal institutions which administer the general pattern of activities of retailers and consumers have also changed with the times and have introduced planning control to combat overdevelopment of the commercial area, for instance, they no longer make provision for the open market in the centre of town, and at the same time discourage small shops.

Consumer behaviour has also changed in several very broad ways. There has been a considerable growth in real disposable income. Commodities which could be regarded in 1960 as luxury goods became essentials by the 1970s, television sets and furniture for example. At the same time expenditure on food and some other household necessities has scarcely risen in real terms. Such trends have affected the retail sector. Food and household goods have undergone a severe decline while there has been a significant increase in durable goods and clothing retail outlets over the same period.
In Islamic culture the market holds a higher position than in many other traditions. Indeed, in the past, the market has been the means by which great cities have been founded and on which they have survived over the centuries. The location of the market has arisen on the basis of its convenience for its commercial activities. Blake (1968) shows that, though marginal differences existed, in accordance with local customs and needs, its commercial and social aspects have always been virtually identical.

Over the last twenty years such traditional public markets have declined in number and importance. They have either been entirely taken over by supermarkets and big stores, or else their function has been deeply eroded by them. The stress on level of price by these newcomers at the expense of service has often gravely reduced the social interaction in the markets which were once the obvious place for gatherings, the place for exchange of news and the place for public announcements.

Government policy has not encouraged the continuation of these markets since it is alleged that such places are unhygienic compared with the supermarket. Municipal authorities have often alleged that the reputation of the market has become so unsavoury that any attempt to close it down is to be applauded. Secretariat of Utilities: Evaluation Report (1981) shows that over the last twenty years the only area of retail distribution which has remained more or less static has been the food retail outlets. They have also shown that agriculture has suffered a decline. These trends can be reflected in the closing of some markets and the overall narrowing of the spread of variety of products distribution. For instance, there has been a considerable drop in demand in the market place for products like grain, dates, olive oil and wool.
This official acceptability of the supermarket has made sure that the expanding modern markets, as, for instance, in electronic products, have not formed alternative retail outlets to compensate traditional markets for the fall in demand of these traditional products. Nowadays, the only surviving municipal markets, in most cities, are the fruit market and the livestock market and they have, in most cases, been removed from the city centre.

The retail outlets which have survived to date may have to face another threat in the future, in respect of their traditional organization. Consideration is being given to fully implementing nationalisation of shops so that after payment of some compensation the shop-keeper will be put on a monthly salary and may be transferred to duties in the supermarket. This change of policy may affect service and distribution of domestic necessaries. Some of these shops may face closure. As a consequence the city centre must be affected by such closures and will become a deserted area, as the new supermarkets are almost always located on the outskirts of the city.

Street life in the city centre is most dependent on the shops to engender activity and livability. The shop size, scale, elevation and the way goods are displayed constitute an essential factor in creating a livable city. This issue will be discussed in detail in Chapter Seven.

5.3.3 Changes in housing

When the first revenues from the oil began to arrive in the early 1960s the Government was in a position to do something to solve Libya’s housing problem which had been a constant difficulty for centuries. About half the population at the time lived in shanty towns, huts and tents.
However praiseworthy the ensuing housing programme undoubtedly was, it tended often to over-emphasise quantity at the expense of quality. The standard of living has, in the last decade improved and is likely to continue to rise in the future. This rapid growth has seen a significant expansion in demand for consumer durables such as domestic appliances, furniture and TVs.

Prior to 1963, housing in Libya was left entirely to the efforts of the private sector according to the United Nations Mission for Housing in Libya (1969). About the same time the Government established a Ministry of Housing to formulate, develop and implement appropriate housing programmes. In June 1963 the Government commissioned consultants, Doxiadis Associates to carry out a study of conditions and problems associated with housing in Libya. Their remit was to present the government with recommendations and programmes aimed at improving housing conditions and the development of housing strategies.

The Government responded to the recommendations that Doxiadis Associates (1964) eventually produced by inaugurating a national housing policy with some basic aims, namely:-

1. The reduction of the average occupancy rate.
2. The replacement of obsolete houses and shacks.
3. The checking of migration from villages and cities.
4. The provision of community facilities.
5. The extension of public utilities like drainage, electricity, water and telephones, etc.

The (1964) national census showed that 44.3% of the total number of
Fig. 5.16 Typical examples of modern housing in Libya.

Fig. 5.17 Plan of highrise block shown in the picture upper left.
dwelling units throughout Libya were classified as marginal housing units such as shanty towns, huts and tents. Almost a decade later the 1973 national census showed a significant improvement as only 19% of dwellings could now be classed as marginal housing units. When one takes into account the population increase, over the same period, one can appreciate that the drop in percentage was in real terms greater than it might at first appear. This improvement was mainly due to an increased provision of public housing. Between 1964 and 1970 the annual average of dwelling houses constructed was 3,500 while from 1971 to 1973 this annual average had climbed to 16,850. The Government publication “The Economic and Social Transformation Plan (1976-1980) (Housing Sector)” shows that about eleven dwelling units were built per 1,000 of the population between 1971 and 1975.

Ward (1976) showed that the rate accomplished in the early seventies tended to be within the range of six to ten dwellings per 1,000 people. Britain, Italy and East Germany were among the nations with the lower level. Sweden produced nearly 13 units and Japan 17 but both these were exceptionally high levels.

However, “The Economic and Social Transformation Plan 1981-1985: Housing Sector” shows that Libya has more or less maintained this average of 11 units per 1,000 of the population throughout the seventies, despite the high rate of population growth. According to Essayed (1981) seventy percent of house construction is directly attributable to the public sector and the remaining thirty percent to the private sector.

The basic and fundamental traditional social unit was the extended family.
Its demands formed the structure and layout of houses. The result was that compact houses were built as a direct response to social needs, to the realities of the climate, available building material and the constraints that they imposed. The main feature of the traditional architecture was its compact homogeneity with similarity in structure, spaces and building materials.

These houses were compact in order to fully utilize the limited urban space available within the city or town. There were several other reasons, namely, the conservation of agricultural land, the capturing of the most favourable view, the obtaining of the benefit of every cool breeze, but also, and more importantly, the provision of sufficient living space for the traditionally large extended families.

These traditional cluster plans are now considered obsolete by municipal authorities and they have considered the grid system for area planning more satisfactory for people in cars. They aver that with such a grid system it is much easier to provide a street infrastructure. These new houses, on the other hand, stress individuality and uniqueness. The impact of new forms of transport encourages Municipal authorities to set their backs on traditional house layout. Conventional planning control has failed to operate in Libya today. Houses are scattered everywhere. They are built wherever a car can go. Electricity, piped water and other services will follow them. Libyans build their houses wherever they can purchase or inherit a piece of land. The new villa is to be found everywhere with its complicated facades and mixed colours.

Uncontrolled speculation in house building is rampant. Land most suitable for housing is often left unbuilt on, for long periods of time, either where
The new prefabricated office and residential blocks which have been largely built of glass and concrete. No consideration has been given to climatic mitigation.
Both pictures illustrate characteristically Soulless modern housing units.
individuals wish to hold it as a saving to achieve higher prices, or where it is inherited by so large a group that none is interested in its use, as his portion would be too tiny.

Another problem is that, with these scattered building lots, it is difficult for public housing to be constructed in an orderly manner. Private housing is often built in such a scattered uncontrolled way that it bears no relation at all to urban development plans. Recent legislation has been passed in an attempt to deal with these problems.

It has been enacted that from now on, no one owns any land except the one piece of land on which his house has been built or will be built. In certain quarters the response has been clandestine land sales. It is probably too early to gauge the effect of this legislation. It seems that law is not workable or appreciated unless the people as a whole accept it and are committed to it. A considerable element in influencing public opinion and the degree of acceptance, is the culture and religion of the population concerned.

The Libyan preference is for one or, at most, two storey dwellings. The people are unused to multi-storey flats and, although, in the first instance, families may be satisfied with such flats in contrast to the unsatisfactory living conditions they have left, it is not long before the disadvantages are realized. Discontent, for different reasons, returns. Such discontent applies particularly to families, as children need more immediate contact with the ground and a minimum of danger.

Such high-rise blocks are scattered everywhere with huge open spaces between each of them; every one is separated from the other streets carrying
heavy traffic. The inhabitants of such high-rise government-built blocks come from different parts of the city or even, at times, from different cities. They have almost no relationship of dependence on each other. Thus, the family and the community as a whole, are fundamentally affected by the planning, design and layout of houses. Further discussion will ensure dealing with the problems inherent in the high-rise block and its relation to the street.

Houses are now designed by professional people who trained in colleges and universities, trained in producing houses with different plans, facades and layouts from the traditional ones. The courtyard house plan has been replaced by different European designs. New buildings in Libya now, for the most part, look outward directly into the street. This has caused two problems, that of privacy loss and of heat gain due to the greater exposure of wall surfaces to solar radiation. Houses now depend on air conditioning and there could be substantial energy and cost savings were traditional techniques employed to mitigate climatic conditions.

To meet the pressing need for more houses, in Libya, prefabricated houses were introduced as a quick construction solution to the problem. Prefabrication of houses has not proved to be successful on all occasions. It has almost invariably led to repetitive and undistinguished design. Only cosmetic surface treatment has been used to emulate the traditions of Libyan architecture, without gaining any of the benefits inherent in such traditions.

The new type of house is open directly into the main street; arguably much has been lost in this new arrangement. In the traditional entrance to a house there is a gradual transition from the public pedestrian main street, via the
semi-private dead-end lanes into the apartment. Since there is no through traffic possible, these are places where children can play safely and where women can chat. Further discussion as to the solution of this problem can be found in the next part.

Fig. 5.22

The height of a building and its isolation have become the norm where it is sought to enhance its prestige.

Fig. 5.23
5.4 The Consequences of Change

The traditional period between an old established form of society and a new one is never easy for those who have benefited most from the old, and there are difficulties also for those who benefit from the new. If the pace of change is fast, the problems are greater, for traditions and habits formed over many generations cannot readily be changed overnight or new ones established.

Libya has been experiencing a period of rapid urbanisation, following upon the recent momentum of economic growth. By 1985 most of the country's population was living in urban areas, the greatest concentration being in the few very large cities. According to Kezeiri (1986) the total population in 1984 was 3,637,000 of which 2,800,000 were living in urban centres. The impact of these recent developments on Libya's urban centres is indeed enormous, creating almost an entirely new living environment.

As a result of the rapid growth in the urban population, the consequent rise in educational standards, income levels, increased car ownership, the introduction of modern technology, the exposure to foreign cultures and new ways of life, the physical as well as the social structures of the old urban areas have undergone dramatic changes. This has created a period of painful transition. Traditional style houses have been rapidly replaced by modern detached villas or blocks of flats constructed of cement, concrete, steel and glass. The old narrow winding streets have been widened and new broad avenues have been constructed to accommodate the ever-increasing automobile traffic. Residential social subdivisions have sprung up on the urban
fringes at farther distances from the old, built-up areas, in order to satisfy the needs of the affluent and growing urban population, many of whom have left the central city areas for modern, spacious houses in these uncongested low-density residential environments. It is the old central parts of the cities that have experienced most of these recent changes. Elegant houses have been destroyed to make room for street widening, parking spaces and other non-residential uses. Neighbourhoods once occupied by a whole range of socio-economic groups now house mostly low-income populations and recent rural migrants. As a result, a new pattern of residential development has arisen in which the differences in the socio-economic status between city residential areas and the outer areas have become very apparent.

This rapid urban growth has produced a rash of problems such as noise and traffic accidents. As is the case in most countries, the rapid population growth in Libyan cities has also resulted in housing shortages, rent increases, rising land prices and a lag in the provision of community services and facilities. Advances in communication and transportation facilities have made it possible for people to live further away for their jobs, relatives and commercial services. This, in turn, has stimulated residential dispersion and urban sprawl which, aside from the other problems it creates, is difficult and costly to maintain.

The patterns of built-up areas have not been geared to amenity or visual appearance. Because of the uncontrolled urban sprawl the costs of construction have been much higher than they need have been specially with the expense of providing the normal services. What went wrong here was that the mediocre quality of site-planning and urban designing, and the mislocation
of otherwise well designed complexes of buildings resulted in a great waste of what might have been wonderful architectural opportunities. In Libya, there is a chronic water shortage, a factor that should have led the town planners to think of compaction, instead of wild expansion, if only to provide shelter and shade. Instead, large surfaces of asphalt do nothing to alleviate the heat. Nothing exists of appropriate scale or aspect to relieve these harsh urban townscapes.

The socio-cultural aspects of Libyan society were inadequately surveyed and only superficially researched by those responsible. Even if a more responsible approach had been taken to surveying and research, the lack of sufficient supply of trained local professionals might still have created a problem.

In a manner of speaking, decolonisation took place only in a symbolic sense. Like their colonial predecessors, the new planners and architects tried to modernize the built environment without giving due recognition to the socio-cultural foundations of Libyan society and the climatic realities. The original culturally created environments were considered "old" and therefore out-dated. The colonial built environment was considered "modern" and therefore desirable. The new housing projects reflecting this drive to achieve modernization also ignored the peculiarities of local conditions, culture and lifestyle as expressed in the former use of space. The emphasis on quantity rather than on quality has produced unnecessarily large built-up developments which incorporated none of the features of the traditional housing patterns, and thus failed to meet fully the socio-cultural needs of the inhabitants.
As has been shown earlier, the overriding principle in the formation of traditional urban habitats and settlements was that forms must be accommodated to human needs. This principle always governed the layout of street patterns, public and private spaces, so that the interrelation of all these elements ensured the preservation of the need for privacy. The transitional spaces from public to private areas were arranged to meet this need, as in the placement of doorways. Monumental structures in the traditional urban formation were not isolated from the rest of the urban form but were integrated with other private and public structures and so designed as to create a city pattern which served the general public requirements.

The simple traditional architecture always worked within the framework of local, social, cultural and economic realities. Such indigenous architecture underwent a constant but slow development in response to the major changes in the social, political and economic conditions of the community. Only since the 1960s has this process been interrupted by foreign influences which were unsympathetic towards it. After the departure of the Italians, Libya found itself (in the field of urban development) in a state of confusion because of the imposition of foreign concepts on its indigenous architectural style. The foundations for the development of a new architecture have yet to be laid.

The increase in the national income and efforts to develop the country have helped to provide adequate housing for people of low and moderate incomes. Policy makers turned to the West for ideas in the field of housing design. But the desire to be modern and progressive has resulted only in the building of high concrete housing blocks, especially in the urban areas. Some of the blocks have suddenly appeared in the midst of quite traditional communities.
Their appearance has created many social problems, such as the invasion of the privacy of the open courtyard houses. Within the high-rise flats themselves, social problems have occurred because of the lack of privacy, and the inadequate space allowed for family activities. It should be borne in mind that the Libyan family, especially one of moderate or low income, still follows the traditional way of life. Several generations live under the one roof; married sons may bring their wives to live in the family home. Guests may not, with very few exceptions, see the female members of the family, which means a reception room is essential; and the women, who do the bulk of the housework, need both interior and outdoor private spaces. Occupants expressed a clear preference for living in separate houses rather than in high-rise complexes; even though these new structures afforded better bathrooms, better finished walls and floors, and larger rooms. People in the blocks of flats confined to a compact box-like dwelling, have had to give up most of their cultural values and traditional ways of living.

Because of these problems associated with blocks of flats, families have become isolated from each other, and neighbourly co-operativeness has diminished. Such flats, with their balconies, do not afford sufficient space to provide for the essential outdoor activities of the Libyan family. The contained outdoor area represented by the courtyard has always been a very important feature of the Libyan domestic lifestyle. It was the centre in which the family entertained and the housewife carried out her domestic work.

The changes which have been mentioned have also taken place in most of the other countries of the world, but in a different time span and have brought more or less similar consequences in their train. Libya represents a laboratory
case through which the process was introduced and institutionalised within a time-span of less than twenty years, while in other Arab countries, such as Egypt or Syria, this took more than 100 years. In Libya, however, these consequences have been so much more drastic because they came about in a very much shorter space of time. These changed Libyan society from a traditional one to a modern one. They changed the city and its street life from a medieval atmosphere to a 20th century environment.

As was mentioned previously, society in Libya had remained closed and traditional, changing and adjusting but slowly over a long span of time, until recently. The social order of Libya was homogeneous, and firmly based on its religious traditions. Constantly drawing upon the resources of Islam, the country was well integrated, unified and life was simple and austere. Thus the traditional social order and its concomitant urban and architectural forms, as has been noted, were truly compatible.

Whereas the traditional society of old Libya had always been able to adopt and assimilate foreign influences without losing its distinctive compact structure and identity, the new society could no longer cope with the immense encroachment of foreign values. Thus within approximately two decades, the culture of Libya as a whole and of its urban centres in particular, has changed into a complex and less-integrated one, thus losing much of its former simplicity, homogeneity and compactness.

Such change has been too rapid and too unguided with two inevitable results. Firstly, no form of coexistence has developed between the old and the new modes. Instead, they have lapsed into a state of constant conflict.
Secondly, social discontent and psychological displacement have been too severe to be ignored. These were the first symptoms of a cultural and social discontinuity, which later became very conspicuous in the urban life of Libya. Because of the strong ties existing among family members, the basic nucleus of Libyan society seems not to have been too greatly affected by this social transformation; although the typical phenomenon of the large extended family, living together in one large house, has been progressively disappearing. Some members of the family have had to take jobs in other remote cities, while among the younger generation there seems to be a common preference for a private life after marriage. Younger Libyans now wish to have a home of their own and to form a husband and wife family group, independent of the rest of their main family. This relatively recent trend has been further promoted by the extensive use of the automobile, which facilitates continued close contact between the separate homes of various family members. Thus, the need is growing for more, but smaller, homes to house the same number of people. In addition, affluence has brought wider choices. This has created an increased desire for more and better recreational and general amenities.

Although the social change has been almost too violent and relentless for the older generation in the towns, it has been regarded as generally too slow to suit the younger generation who have no appreciation or understanding of the social mores of their ancestors. Rather, the young protest against a mode of life governed by traditional habits, customs and too many seemingly arbitrary and meaningless conventions and social red-tape, which they feel, if eliminated, would not disturb the social equilibrium and cultural heritage in any decisive way whatsoever. The younger generation is questioning the taboo
against any criticism of the traditional order, and is against the inhibition of purposeful change based on general moral principles rather than on vague values.

Fig. 5.24 A general view of the new small town of Al Maraj built in the sixties.
5.5 Conclusion

Changes in Libyan life styles that have transformed public activities into private ones, have reduced street use in existing neighbourhoods, and all but obliterated the street in many new developments. Some of the important daily activities that once had a less private reference were shopping, entertainment, incidental conversation, trips to school, weddings, religious festivals and the traditional promenade. Twenty years ago a person would walk to the local shop. Now he drives to the supermarket, thus confining all social contact to the market itself and none to the trip. Where entertainment was once a public event, it is now dominated by a singularly private mode of communication, with the introduction of the new technological contrivances and gadgets such as TVs, videos, stereos, etc. The home has come to replace the street as the centre for social life. In many Libyan towns children are driven to school by their parents. Telephone calls have largely replaced the neighbourly chat, and even the pedestrian promenade has, in many Libyan environments, been replaced by the automobile roads. The question is whether or not social interaction in public places comes to be so negative as to force a shift to private activity.

Since the streets are where most of our children are reared, and where most old people spend their lives, they are, outside the home, the most important part of our urban environment. But today, most urban residential streets are dangerous, noisy, impersonal domains, about which their residents feel able to do little. The situation on most residential streets is one of acute frustration. Residents are unable to control traffic intrusion, or to organize themselves to create clean, pleasant sociable environments.
It has been recognized for some time that the street is one of the most important places associated with the development of children. Yet the greatest part of the area immediately in the vicinity of their homes is forbidden territory; forbidden because the street is primarily available only for vehicular traffic. This is the fundamental fault of the present approach. Most of the accidents in which a child is killed occur in the immediate vicinity of its home, on the streets. The socially most important activity in residential areas is, not the movement of vehicles, but children playing and people walking about or sitting around. What is required is to organize residential areas so that all can use the available space effectively, the users including the car drivers, the pedestrians and children at play. Residential areas should be so organized as to facilitate a great combination of individual and group activities. It should be possible for people to sit, to walk, to run, to look, to meet, to wait, as they wish in public places. Available space should offer a variety and range of choices for everybody; for the child, for the aged, for the adult, for the cyclist, and in so far as this is possible, for the motorist as well.

Rudofsky (1964) and Jacobs (1961) present an idealized picture of streets that have a lively and visible communal life. The street should be like a party, inviting one to join in. All this was typical of the old Libyan streets, but completely lacking in the new street. In many ways the old street presented a picture of a thriving, bustling world of intense human relationships filled, as it was, with the gossip, humour, interdependence, and sense of community solidarity, that the new streets have completely lost.

Can one retain or somehow recreate this nearly lost form of urban life? The family lifestyle has changed, and the little old neighbourhood, which met
the various local needs as Jacobs (1961) argues for are having a hard time surviving. Street open-air markets hardly exist any more. They have been replaced by supermarkets and big stores.

The street with its human activities promoted its role as a social condenser and as a locus of communal interests. Similarly, the most popular street and the city centre came to symbolize the collective interests and values of the surrounding community. Today, these public spaces have often been reduced to automobile rights-of-way. The satisfaction of the demands of private transportation and the management of traffic have usurped the principal role of the urban street and that of promoting an open setting for communication and social exchange, and transferred this function to building interiors.

The automobile streets of our city today should not be taken as models for future Libyan streets, as these streets could be regarded as dead places from the social viewpoint. This may seem a drastic judgement, but it derives from the author's previous study. Besides, he has drawn heavily on his own experience as one who has lived in such a locality from childhood. These modern streets with their excessive width and the opportunity of achieving high speeds offered to their automobile users, have been cleared of pedestrians. Such a street model can hardly be regarded as appropriate when considering the small automobile population of Libya, where no serious traffic jams occur.

The streets of modern cities are extremely wide and straight. Scarcely a pedestrian is to be seen. Many do not even have pavements, or if they do, they are cut up by driveways, entrances to petrol stations, and parking lots.
They are not places for the man, woman or child on foot. The model for such automobile streets has been borrowed from abroad. The Libyan designers have largely derived their inspiration from the American highway example.

American highway engineers has a reputation for being among the finest in the world. Their manuals are often admired and copied. In many sectors of the engineering profession it is looked on as a means of enhancing one's status to meet American standards or even to exceed them. Three main considerations could be said to be involved in the uncritical acceptance of such models.

Firstly, there is an attitude held in municipal circles that a city gains in prestige if it has wide streets and huge roundabouts, even if they are relatively empty. Their provision of ample space and generous vistas gives a sense of efficiency, order and opulence.

Secondly, most education text-books and manuals available are similarly automobile orientated. As a considerable shortage of planners and architects still exists locally, their jobs have been taken on by civil engineers and surveyors who carry out design according to such manuals. On the other hand, such work might be done by foreign firms who have applied their own standards, which were uncritically accepted, although such criteria could be shown to be inappropriate to local socio-cultural needs and climatic conditions.

Thirdly, the problem of the lack of the urban designer is clearly visible in Libya. Even where there is some availability of architects and planners, there is still the need for the urban designer. The constant tendency is to show too little consideration for the potential afforded by the street. Architects often
tend to immerse themselves in individual building projects ignoring any responsibility for the surrounding spaces and streets. On the other hand, planners tend to work on such a large scale that the street is only perceived as a traffic channel. Both of them often fail to recognize the social and cultural factors involved, either because their scale is too small or too large. This gap might most profitably be filled by the urban designer who can emphasize the human dimension in the street.

The automobile can be seen as a satisfier of private needs, demands and whims. It has created an almost insatiable demand for access. A whole profession of engineers has both served and further stimulated that demand. The result has been cities with street systems dedicated to the automobile to the virtual exclusion of all other considerations. But this vehicle of our desires, does not simply dominate the right-of-way itself. Its power extends over the surrounding areas and neighbourhoods. Its noise, emissions, and vibrations intrude into the houses of street dwellers, causing residents to withdraw, to close their windows, erect defensive fences, draw their curtains, and restrict their children’s play habits.

The automobile perpetually needs more space for parking, right up to its destination. So the fabric of cities has been blown apart to make space for car parking. Buildings have become isolated, surrounded by parking lots, sometimes they are fenced around, making it virtually impossible in some cities to walk between different areas of land use. The lessening densities have reduced the number of people on the street and in the parking lots, leaving those places dangerously susceptible to unobserved criminal activities. Those who do not possess an automobile, the poor, the young and some of the
elderly, are relatively deprived and frustrated.

On the other hand, there is a positive side. It can be argued that this automobile city has brought more benefits than liabilities. It has given individual citizens mobility, freedom and a sense of individual power to choose where they want to live, work and play. Relationships depend less on the propinquity, more on the choice of like-minded people. Economically, these cities have thrived on accessible and cheap space and convenient parking lots. But the costs have been formidable and are growing. Not only have these cities spread over valuable agricultural land and natural landscapes, but their citizens have very little street or public life. While encouraging diversity and individuality these automobile cities have reinforced isolation, loneliness, alienation and segregation. The kind of public life that streets knew, some decades ago, scarcely exists any more, as different groups become more distant from each other.

Other considerations ought to be taken into account. The present uncritical acceptance of the supremacy of the automobile is scarcely valid. The city is not just a place for cars and their access, but must be an environment where one can live in reasonable safety, comfort and health. It should be a place where individual inhabitants and social groups feel they have a role to play. It should be comprehensible and meaningful to its inhabitants.

Streets can be instrumental in serving each of these goals. They are the chief means of providing access. They can provide or withhold a livable environment. They are the entrances, arteries and centres which give a city much of its identity and meaning. They contain the city’s outdoor public life.
Unfortunately, a street model which might define such an acceptable livable environment does not yet exist in Libya. It would help to provide guidelines and patterns for those who design Libyan streets. Instead, today, one finds a street environment dedicated to meeting the requirements of the motor vehicle without giving any real consideration to the human needs of the resident and street user. These needs call for considerations such as climatic mitigation and socio-cultural values which require attention just as much or more than those of the motor user.

This new model should provide access to all users, an environment which is livable and safe, a place where the individual inhabitants and social groups can feel at home with a role to play. Such a model should encourage residents to participate in community life that should be accessible to all; a model that fulfils social and cultural needs and climatic requirements; a model which helps to provide a good quality of street environment.

During the time of rapid urban development one could not imagine the overall outcome of the new changes. But Libya is now in a state of relative stability and the results of the transformation of society have become clear.

Besides the changes in the built environment, other changes operated simultaneously in different fields, such as in transportation, education, health and private consumption, etc. Therefore, it was difficult to pinpoint the consequences of change for each factor alone, far less to establish which one played the major part in altering Libyan society. Although there has not yet been a study in depth, the mood of most decision makers, planners and architects is that the new built environment is the main factor in transforming
Libyan society.

The gap between traditional and modern values in Libya today has become so wide that, inevitably, certain internal conflicts have arisen. Firstly, the present physical environment in the Libyan city is totally different from the traditional one. As a result of this difference, a sense of discontinuity and alienation has developed among the inhabitants of cities. Secondly, no form of coexistence has developed between the old and new modes. Instead, they have lapsed into a state of constant conflict. Thirdly, the scale of social discontent and psychological maladjustment has been too severe to be ignored.

These were the first symptoms of cultural and social discontinuity which later became very conspicuous in the urban life of Libya. This has led to the present conflict between traditionalists and modernists. The former blindly accept the authority of the past, the latter neither accept the past’s authority nor its authenticity as a standard for the present. Both positions seek to remove themselves from the present. The former by withdrawing backwards in time and the latter moving elsewhere in place. Neither of them appears to be actually dealing with the problems of the present.

Before one suggests a model for the future of Libyan streets, there is a bigger question to be answered. Has one to turn to modernism or to tradition, or is another approach available to us?

The following part is about creating a sense of continuity between the past and the present. That is a reinterpretation of the past in a way that is useful and suitable for the present. Can one suggest some approaches towards re-establishing a sense of continuity with the past that stems from our needs
In the present and our aspiration for the future? From this base guidelines can be worked out for the assistance of the designers in order to help them in the creation of a more appropriate street environment.

Fig. 5.26

Fig. 5.25

These two photographs sum up the changes which have taken place in the past two decades in Libya.
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Part Two

TOWARDS CULTURAL CONTINUITY

In previous chapters the development of the traditional Levant built environment was discussed along with the forces which had shaped it. The contemporary physical environment was also examined and its difference from traditional forms noted. This contemporary physical environment is also totally different from the traditional. As a result of such a sudden change a sense of uncertainty and alienation has developed among the inhabitants. Two attitudes concerning this change have emerged. One group wishes to take a stand in support of the past and those who are committed to it. They are in a state of confusion.

In order to re-establish a sense of cultural continuity one requires in this chapter to answer the question: how can cultural continuity be achieved? But before trying to answer this question one must achieve a broad understanding of the culture: its role, its meaning, its relationship with the built environment and its variability.
In previous chapters, the development of the traditional Libyan built environment was discussed, along with the forces which had shaped it. The contemporary physical environment was also examined and its difference from traditional forms noted. This contemporary physical environment is also totally different from the traditional. As a result of such a sudden change a sense of discontinuity and alienation has developed among the inhabitants. Two different perspectives have arisen as a consequence; those who take a stand in support of the past and those who are adamantly modern. They are in a state of confrontation.

In order to re-establish a sense of cultural continuity one requires in this chapter to answer the question how can cultural continuity be achieved? But before trying to answer this question one must achieve a broad understanding of the culture, its role, its meaning, its relationship with the built environment and its variability.
6.1 The Role and Meaning of Culture

The study of cultural aspects of a society could help designers to provide more adequate solutions for a specific group of people, to create environments that permit the development of the society and to promote the satisfaction of its needs.

"Every different race of men had their own peculiar forms in using the production of this architecture, and their own mode of expressing their feeling or aspirations by its means. When properly studied, it consequently affords a means as important as language for discriminating between races of mankind, often more so, and always more trustworthy and more easily understood."

The failure of modern architecture shows that to consider buildings just as shelter is not enough. Architects and urban designers need to look beyond shelter, that is, to take into account the inhabitants and their experiences of the environment, and then to focus their attention on the psychological, social and cultural aspects related to the structuring of the built environment.

The relation between physical environment and cultural demands that the change in the built forms should be slow, gradual and continual. Too much novelty may produce a rupture with the cultural values of a society and provoke psychological maladjustment of people as is the case now in Libya.

The popular vision of the ideal society with its cultural values is what ought to decide the form of the built environment. That is, after due consideration has already been given to the particular climate, the obtainability of materials
and the limitations and capabilities of the available level of technology.

The built environment ought to reflect the many socio-cultural forces at work within the community such as religious beliefs, means of obtaining a living, family and clan structure, social organisation and social relations between residents. As a consequence, the ultimate ideal solutions should be much more complex and varied than those which consider only biological needs of the inhabitants, climatic imperatives and appropriate technology. If one were to add to these considerations how in some cultures one of these aspects might be more dominant than in others, for example, the more perfect a climate the less attention need be paid to it, then one might approach the ideal solution.

Buildings and streets are the visible expression of the relative importance given to different aspects of life and the different ways of perceiving reality. The built environment tends to show that communities share certain broadly accepted goals and cultural aspirations.

But what is one to understand by the term culture? While anthropologists agree that culture has a central part to play in any evaluation of human beings it provides a variety of definitions. The anthropologist Herskovits (1952) offers a simplified definition of culture as: “the man-made part of the human environment”.

Amos Rapoport (1980) has summarized general views of culture. In the first instance, it is defined as a way of life, typical of a group, in the second as a system of symbols, meanings and cognition transmitted through codes and in the third as a set of adoptive strategies for survival related to ecology and
The definition of culture that might best suit our purposes could be drawn from the four components constructed by Altman and Chemers (1984). Firstly, culture includes the popular belief of what is truth, what is good and bad and what acceptable and unacceptable. This is extended into a set of values as to how to behave and how to do things.

Secondly, it also includes shared feelings and behaviour within a group of people in a broad consensus. They need not be articulate in such agreement but must have common views of the world and how to conduct themselves.

Thirdly, culture also means the passing on of these shared beliefs, values and behaviour, especially to children. Indeed education and socialization of new members of the culture perpetuate the consensus from one generation to another. Thus children and converts learn religious beliefs, the way of life and the traditions of the group even though successive generations may produce changes or development of the culture. Except for wars, revolutions, or other major dramatic upheavals, these cultural changes or developments tend to be slow and evolutionary, possibly since so much of culture is implied though not plainly expressed, difficult to define and taken for granted.

Fourthly, culture, as manifest in a group’s beliefs, values and behaviour is more than a mental process or way of life. It shows itself in a physical way too, in tangible material things and in the built environment where it is clearly and fully expressed in streets and buildings.

It can be said that culture exemplifies itself in many ways from abstract...
philosophies of how to view the world to material things such as behaviour, the built environment and the education of children.

The question is how these different aspects of culture affect, and are affected by the physical environment. In order to understand this relationship the next subject under discussion will be culture and environment relationship.

Looking at the literature on the effect of the built environment on people one can find considerably different attitudes. Their diversity tends to lead us nowhere and indeed makes the situation more confused. This is one of the factors which leads to the paucity of information and study material on the city and its street. The difficulties encountered in researching this field perpetuate the problem.

In the first instance, one has to look at existing views. The main attitudes are those of determinism, compositionalism and subjectivism.

Determinism: Determinism is a traditional belief that transformations in the built environment were led to major changes in behaviour. This attitude holds that city and urban life can act directly on people in negative ways, in the deterioration of social standards, in an increase in crime, in disintegration of the family unit and in the falling off in physical and mental health. Tönnies (1935) was of the opinion that the heterogeneity, density and high stimulation afforded by cities tended to create attitudes involving detachment and a lack of interest in others, their personal feelings and welfare. He contended that this could lead to a breakdown of family and social ties, mental breakdowns and mental illnesses due to stress.
6.2 The Relationship Between Culture and the Built Environment

Any attempt to understand the meaning of the street and its role in the matter of human interaction and communication requires an insight into the nature of the relationship between man and his environment.

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In the first instance, one has to look at existing views. The main attitudes are those of determinism, compositionism and subculturalism.

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In addition he contended that there was a tendency for developments of particular localities or quarters to occur haphazardly with ensuing weakening of overall community feelings. Where a dramatic loosening of family and community links occurred individuals felt more alone and could develop an anti-social attitude.

Compositionism: Compositional opinions have been voiced by a number of sociologists such as Gans (1962–1967) and by anthropologists like Lewis (1959, 1961). Unlike the Determinists they held that heterogeneity, density and size of cities had little attributal effect on the average person. This was because everywhere people carry on their lives in small groups such as those of family, extended families, neighbourhoods, family relationships and small communities. Even where there was the presence of strangers the vital parts of their living were generally tied up in small groupings of family and relations, neighbours and friends.

Both the determinist and the compositional views unite in agreeing that the social environment is of importance in affecting behaviour and the experience of individuals. However the Determinist adopts a negative pessimistic posture, while the Compositionist sees urbanism as having no serious direct effect on groups or individuals.

Subculturalism: Subculturalism represents a more moderate viewpoint which integrates the Determinist and compositional points of view. It agrees with the latter’s attitude in that urban residents, for the most part, live out their lives within particular ethnic, occupational, religious and other groupings. However, subculturalism disagrees with compositionalism in that it holds that
the size, density and heterogeneity of cities do have an influence on people.

Fischer (1976) noted that complex interactions operated between various ecological qualities of cities and subcultural groups. For instance, he puts forward the theory that large urban agglomerations could help to produce subcultures and neighbourhood enclaves by allowing the development of people with common interests and values, or as he calls it “critical mass”. Such subcultural groupings may provide emotional relationships and social support among its members. Some of these subcultural groups can be unusual, as for instance these of criminals which seldom arise in less populated areas because of the absence of a “critical mass”.

Thus the subcultural view is close to that of compositionalism in that it holds that urbanism of itself does not bring about mental collapse and a feeling of estrangement. It also argues that city dwellers are integrated into viable social environments just as much as country dwellers. On the other hand, subculturalism adopts an attitude closer to that of Determinism in that it holds that cities do have an influence on social grouping and individuals and that differences do exist between urbanites and rural dwellers which have causes other than ethnic, economic or life-style.

The subcultural attitude would appear the most relevant in that it emphasizes the mutual influence of environment, culture and social processes. But the attitude which has emerged is that the cultural and the environmental factors interact to such an extent that they function as a unity. Thus people in their cultural and physical environments form a social system all of whose parts work together in an integrated fashion, as a unified system. Since
streets, houses and such environmental factors touch on so many areas of human living they cannot be understood from any one perspective alone, but require an interdisciplinary perspective.

It can be said that an analysis of cities and communities needs an understanding of the history of their urban design and of archaeological, political, sociological and economic elements in their functioning, as well as environmental design process and the cultures within which these cities are firmly constructed. One must take some cognizance of the physiological factors involved in urban and community life. However, one cannot be expected to become expert in each of these disciplines nor can one wish to examine a particular question from within the bounds of one specific discipline alone.
6.3 The Need for Consideration of Cultural Variability in Design

There are many levels of culture from broad aspects of society to very small social units, from continental culture, to national, regional, city, clan, and family culture. The differences between the cultures are based on varying perceptions, cognition and environmental evaluation, images, values and socio-cultural traditions.

Cultural differences have mostly been neglected in discussion of urban forms. It has so often been presumed that the Western city has been the high criterion, giving an over-generalisation of human needs. Generalisations based on one set of data may not apply elsewhere, thus Western Theory may not be wholly relevant in non-Western contexts.

Examples of cultural differences are called for. Brown (1973) showed that there was a relevant contrast between U.S. and Moslem cities. The American city usually sought to maximise movement and accessibility while the Islamic limited movement and controlled behaviour by its hold over mobility.

According to cultural manifestations, which are taken for granted, people have different meeting places. For instance, in Chinese or Punjabi villages one finds people congregating in the wide part of the main street. In North Africa it is the well for women and the street or the coffee house for men. In Libya meeting takes place in the mosque, the street, the suq and the local shop. In Isphahan, the coffee house, bazaar and mosque are the meeting places for men. These are the equivalent of the all-male public houses in Australia. In contrast, the cafe in France is used by both sexes and all ages. There informal business, intellectual discussion and entertaining, regularly occur.
Consequently, the cafe affects the use of the dwelling and the street. In the Bantu villages of South Africa the meeting place is between the animal pens and the walls of the living compound. In Italy it tends to be the piazza, galleria and the cafe. In some other countries the tearoom plays an important part as in the Korean city.

Abu Lughod (1969) shows that in the city of Cairo the coffee house tends to be a club for its own group. Women there, however, usually meet and socialise in the streets and children play there and in courtyards where laundry is done. On the other hand, in many cities the laundry or the laundramat still continues to be a locale for meeting and socialising.

Cultural differences can even be seen in the different classes of children and their respective playing places. Schak (1972) shows that in China working class children play in the street and middle class ones in their backyard, since the middleclass parents stress the importance of good manners and choose their children's playmates who are invited in to play in the backyard. In Paris on the other hand while working class children can be expected to play in the street, the others are taken to parks.

Variations in the way children are brought up are to be found in different groups, for instance, Sprott (1958) in discussing the extent to which children are included or excluded from the house and male company. In Liverpool, for example, boys above the age of twelve seldom spend much time in the house unless they are ill, and the meeting of males outside the house is a conspicuous feature of social life. Suttles (1968) points out that in some slum areas in the USA boys tend to frequent the company of the gang and the
street is very important for them. In many lower class areas in the U.S., males often do not feel at home in the house and favour congregating at street corners or public houses.

Pillsbury (1967) contrasts two forms of square found in Pennsylvania, that of the medieval associated with English settlement, as a space separated from the street, and the classical deriving from non-English colonists, as an extension or widening of the street. He goes on to explain (1970) the indicators of different cultural areas found in this American state in several types of urban street pattern, namely, the irregular, the linear and the rectilinear. These are cultural indicators of the predominant ethnic origins of the particular settlers in each area.

A potent example of how people have made an intimate match between their personal feelings and their environment can be seen in the Mbuti pygmy tribes in the Congo’s Ituri Forest (Fig. 6.1). The pygmies, who survive by hunting, travel from place to place, setting up camps during their hunts. The location of their huts is closely tied to people’s emotional attitude toward each other. If someone likes his neighbour, he’ll face his entrance toward him; if not, he’ll face his entrance in the opposite direction. If he already has an entrance and changes his feelings about a neighbour, he’ll sew up the entrance and make another one. And if someone really dislikes his neighbour, he’ll pick up his hut and move it to another part of the camp. According to Turnbull (1968) “the composition of each camp is ad hoc, responding to the needs of the moment rather than any preconceived plan, or to any notion derived from tradition. The ways the camp is broken into groupings are never the same; the reasons for division are nearly always personal”. These findings describing the
pygmies' use of their environments contrast sharply with Western concepts of architecture.

In all these examples it can be shown that it is the process of the individual that is important though many people are involved. Rather than considering the city as a whole, it is the personalisation of individuals and groups, their concentration and distribution which is important.

Hall (1966) was among the first to recognise the cultural variability associated with the use of space in such respects as the need for privacy, overcrowding and tolerance of noise. Alexander Kira (1967) particularised this recognition in his study of personal hygiene. While these remained a constant, the various different manners in which they have been coped with have varied greatly, depending on cultures, and the cultural values, beliefs and fears dominant in a particular area at a specific time. He discusses how these cultural attitudes to cleanliness, privacy and odours prevailed rather than purely utilitarian considerations, for instance, the preference for showers or baths.

The significance of Kira's study can be taken to show that even when faced with universal biological characteristics consideration of various cultural approaches is essential. It is important for designers to consider the various cultural attitudes to facilities and design forms rather than take it for granted that new and even more efficient environmental designs are automatically generally acceptable.

Working along the same general principles, Rapoport and Watson (1967) show that physical standards that have been institutionalised in a society can vary significantly. They take such standards as being definitions of what
constitute acceptable levels of daylight, heat, noise, room and furniture sizes depending on the culture of the particular groups. To some extent these standards have been the product of studies carried out by building research organisations in each country, although in large part they are also derived from unconscious cultural processes coming out of each country.

Rapoport and Watson (1967) give examples of standards in different cultures, such as the American habit of drinking at a bar and eating at a counter to which no reference is made in the standard textbooks of India. Standards have been known to vary widely even when they apply to similar conditions, not only to the space standard but also to heat, light and noise. This proves that "biological needs" of human beings are different. Values and culturally based choice greatly affect physical standards. Therefore, for this reason, an awareness of the cultural dimension that exists in standards concerning biological factors is important to architects and designers practising in different nations.

Despite the acknowledgement of cultural variability much urban theory, planning and urban design has been based on the Western tradition, neglecting the non-Western. Understanding of the cultural values and needs of the groupings involved is necessary. This will lead to major changes in urban design and planning as such variables have not really been considered in much depth to date. However this heightened awareness of very different cultural systems should not awaken a desire to imitate but rather a means of raising the level of awareness about a range of possibilities.

Besides the difference in cultures, the stages of transition within cultures
can vary greatly from small stable groups into more unsettled larger societies. An example in the Libyan context is that the small agricultural and sparse nomadic societies have been exposed to 20th century technology which has incorporated them rapidly into urban environments and social system. As has been seen in previous chapters it has resulted in often dramatic changes in relation to people and their environment and their social and cultural pattern.

The question is how new built environment can be made compatible with cultural values. The problem is to design or redesign the built environment in such a way as not to violate the indigenous culture, but make it compatible with the ethnic, socio-cultural heritage. This 20th century technology and its consequent social impact have direct implications not only for the built environment but also its relationships with the people's culture.

Because environmental designers have not always been aware of the intimate correlation between culture and the built environment the relevance of the cultural dimension has often received little or no attention or understanding on their part. The tendency to interpret the world in terms of one culture; forces on others what is taken for granted in that culture. The danger then arises of superficiality in interpreting the culture and values of the imposed-on, receiving society by assessing them solely through the perspective of the dominating culture.

This often causes misunderstanding and inappropriate design. For instance, architects from the Eastern part of the USA built a school for Navajo Indians in the south West in the shape of a 'hogan' regarded as a holy religious place to these people. They refused to use it, as to do so would be sacrilegious.
Similarly foreign companies built a new housing scheme in the Libyan town of Ghadames. But the local people refused to move into it, although their own houses were in a very poor state, because the new scheme did not offer the same terraces where women could walk separately while the men walked on the ground.

Given such complex problems one might ask whether any guidance exists as to enable a meaningful and acceptable contribution to be made in the development of a better built environment.

Firstly, an analysis of the cultural behaviour and needs of the users of the built environment is required. This ought to be the first consideration of urban designers. But this guideline is not always followed and some designers only apply ideas of their own, neglecting the concepts and behaviour traits of the users. So, often, designers direct their efforts to pleasing or impressing other designers. Others try to design and create famous buildings to attract magazines and architectural journals in order to achieve publicity, forgetting the people for whom they design. Some become so specialised (as with hospitals or schools) that they become set in their ways. They adopt approaches which neglect the solutions appropriate to local settings. Often, they employ attitudes which they believe to be true without questioning their applicability and with little investigation as to the workability of the design. This can be particularly damaging when one designs for another's culture.

The environmental designer should learn the cultural values and behavioural practices from the perspective of the user. One should avoid imposing one's own assumptions and orientation and one cannot achieve an effective built
environment unless one has a thorough-going and general appreciation of the culture of the ultimate user. Frequently, decisions as to the future built environment have been made only by technological experts such as architects, urban planners and engineers. Yet an extension of participation in the process at the diagnostic stage could be greatly enhanced by the use of consultants from the social and behavioural sciences. The introduction of such consultants is particularly important in the early stages of the design process especially if other cultures be involved.

However, there has been an increased awareness of the important contribution of the user to the design process. Such participation is as necessary as the skills of technical and social science consultants. It has been found that this user input has made the analysis of needs more relevant.

The second stage of the design process calls for alternative proposals which should take into account the relevant needs, values and practices brought out in the first stage. The proposals should be formulated and re-formulated over a series of alternatives. Several different consultants should contribute to the process.

Although the environmental designer must be a central figure in the development, the consultant can evaluate the design, drawing on his knowledge of the culture. The user should have a role to evaluate the final design, using his own different experience. Such a system produces a series of balances of all the technical and socio-cultural interests involved.

Thirdly, the implementation of the project on actual construction is important. Too often the designer and his team rush off to another project
before or soon after the completion of the building, whereas they should continue to educate residents about how they could best use the environment and how it fits into their cultural needs. So often people need advice on how best to use their new built environment, especially in such countries as Libya where the impact of technology has often been too swift to allow a natural adaptation on the part of the consumer. Such a transitional process would be important in allowing the user to achieve the goals important to him in his adjustment to the new built environment.

Particularly, in respect of a people in a state of cultural development, the process of education can alleviate confusion and the problem of adjustment. It can, at this stage, be most helpful if they can be shown how the new built environment is responsive to their cultural values and behavioural pattern.

Finally, the need for evaluation arises in the design process. That is, it is now necessary to find out how well built environments have worked, in the short and the long term. Questions come to mind such as, how have the users adapted this environment to better fit in with their way of life? How could the environment have been differently designed to take such answers into consideration? How effective, in other words has this new built environment really been?

The need to fulfil the demand for new projects and economic imperatives often force the developers to give little thought to looking back to consider how well the built environment he has created worked. But if the future is to gain by experience it is necessary to have some insight into past inadequacies and success.
The looking back into the past leads to the bigger question which has been asked in Libya for some time. What is the most relevant consideration for Libya today, the past or the present? Are they mutually compatible? In the following section, it would be relevant to analyse the different attitudes of modernism and traditionalism in order to discover to what extent this mutual compatibility exists.

**Apa Lelo**

Changes in hut shapes indicating personal friendships and hostilities

Wife moves and builds new hut on arrival of husband's sister's son

**Key**

- = Day 1
- = Day 2
- = Day 3
- = Day 5

This communal hearth moved on day 12, following re-alignment of hut "Q"

Moved on day 11, Q

First built day 2, left day 3, reoccupied day 5

Moved to sub camp after Cephu's arrival

Fig. 6.1 Mbuti pygmy tribes in the congo's Ituri Forest

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6.4 The Compatibility of the Past and Present

Neither the past nor the present can provide all the solutions to the future. Both represent resources which increase choices immeasurably. The traditional shows how similar difficulties or questions were solved in the past or how similar issues could be resolved in different times and places. The interpretation that society gives to its past provides the present day with its validity and continuity.

If one hopes for realistic and appropriate solutions for today's problems and seeks to provide the future with an authentic continuity, the past cannot be admitted blindly but its relevance to the present must be recognised.

Karl Popper 1968 asks: firstly, how does tradition arise and persist? Secondly, is the function of tradition in social life amenable to analysis? He argues that tradition arises because of our need for a certain predictability in social life. In this way, tradition provides order and regularity in our natural and social environment. It gives a "means of communication" and a set of conventional ways and thoughts by which one can operate. Thus the function of tradition according to Stanford (1970), is "explanation and prediction". The need for maintaining a predictability in social life makes tradition persist.

Popper compares by analogy the need for traditions and science. "Scientific theories", he states, "are instruments by which we try to bring some order into the chaos in which we live, so as to make it rationally predictable. Likewise, the rise of traditions, like so much of our legislation, has just the same function of bringing some order and rational predictability into the social world in which we live".
For Popper (1968) the analogy goes further. "As scientific theories [can] become the object of criticism, and ... [can] be changed; so too traditions have the important double function of not only creating a certain order or something like a social structure, but also giving something upon which we can operate: something we can criticize and change".

Bearing in mind that the word "tradition" has a clear connotation implying imitation, it might be asked, how can it be that tradition changes? Could one see it as the same tradition? The answer is the need to establish a continuity in tradition.

Pocock (1961) said: "Awareness of the past is, in fact, society's awareness of its continuity". That is, societies are organised to ensure their own continuity and, in doing so, preserve something of the past. Thus, a society's structure is often the most important means of preserving a continuity between its past and present. Therefore, the community often regards the past in a manner most likely to ensure the continuity of its structure.

The Libyan built environment evolved over many centuries with a dominant form of architecture which became accepted as the norm. Despite natural change a sense of continuity persisted in this tradition.

As has been shown earlier, a vastly different physical environment has been created, of recent years, throughout Libya. As a result of this sharp difference, the main concern is how to re-interpret the traditional in such a way that it is relevant and apposite to the problems of the present day, in order to re-establish a sense of continuity. By doing so, as Fathy (1974) points out: "One should hope to end the break with the past and the sense of
dis-continuity that has resulted from the new environment.

An adequate understanding of the past opens up a large number of well tried options which would otherwise not be available. The question might be asked why the present should be inspired by the past.

The conflict between traditionalism and modernism is not a new one. It has existed all over the world at different times. But it is only recently that such conflict has taken place in Libya, and that after the transformation caused by the finding of oil. Firstly, the attitudes engendered by both concepts must be understood before any discussions about continuity can take place.

The modernist point of view is to reject categorically any idea that the past might have any relevance or reality for the present day. Laroni (1976) has analysed the modernists’ position as follows, in that their basic assumption is that tradition is an irrelevance and that: “Progress is necessarily an intervention from outside.”

Such an attitude would cast doubt on the validity of the part played by a traditional culture and population. This must lead to the implication that some cultures are inferior to others. The next logical step, following on such a premise, is to clear away everything and begin all over again from scratch or, as Popper (1968) says: “to clean the canvas” and bring in as much technology and materials as possible and that, uncritically, since, presumably, they came from superior cultures.

This attitude of the modernists gained the upper hand at the beginning of the change in the last years of the 1960s. At that time pulling down the
traditional building was seen as the only acceptable solution. The bulldozer was seen as the only cure for the inadequacies of the past's physical environment.

In contrast, the traditionalists take the opposite point of view, namely, that the re-assertion of the past can be the only guide to present realities and difficulties. In doing so they abstract themselves from contemporary needs, demands and requirements. "Such a stance will admit the past as the only authority for the present and will not allow innovation and change. This attitude only produces traditionalism", according to Bahi (1959).

This concept is the current view which is finding increased acceptance in Libya today. This mood came to be manifested only after development became stable, the surrounding built environment was totally new and its consequences became fully realised.

Neither the modernist nor the traditionalist alone are capable of solving the problems of the present day. Both are seeking to remove themselves from the contemporary situation: the modernists by not recognizing the relevances in time and place, the traditionalists by withdrawing backwards in time without seeing any merit in the present.

The correct standpoint is to accept the reality and the demands of the present day without blindly wishing to impose the past's authority. At the same time the resources and the value of the past must not be ignored.

Popper (1968) sums up the position in that: "you may create a new theory, but the new theory is created in order to solve these problems which the old
theory did not solve”. Yet the old theory cannot validly be dismissed out of hand, as if it never existed. Equally it is not acceptable to sanctify anything merely because it has come out of the past. Rather, the past should be regarded as the prime source of our knowledge and a foundation upon which one can best base thoughts and actions. In other words, while tradition is not authoritative it is a store of value.

Thus tradition must not be regarded uncritically and should be open to evaluation. Stanford Anderson’s comment in (1970) was that: “tradition we prize is not a mere accumulation of knowledge, an undifferentiated catalogue of past events, but rather, a vital body of ideas, values, mores, and so forth that we have, as yet, found resistant to criticism”. In this sense, tradition becomes a choice rather than a destiny.

As was demonstrated previously, the introduction of the new built environment caused problems of relationship with the structure of society. What till then had been taken uncritically as the rules of conduct were questioned and sometimes defied. New rules were introduced to cater for this new habitat. Like the new built environment itself, these rules tended to be of Western origin.

Previously, the reason behind the introduction of the new built environment was discussed. Here an investigation would be relevant as to why the traditional environment was abruptly discontinued. There appear to be three main reasons which helped and encouraged a disappearance of the indigenous tradition. Firstly, there was the almost universal acceptance of certain philosophical attitudes which are discussed below. Secondly, the change in
scale and the introduction of a new technology. Thirdly, problems which existed in the field of architecture and design.

Firstly, in dealing with the philosophic standpoint of the traditionalists, one finds that they tended to hold an unimaginative attitude, requiring imitation of the past only. They contended that the relatively undeveloped state of local technology at the time resulted from a grave decline in standards of behaviour. According to them, moral reform was the answer.

On the other hand the modernist point of view was that the traditionalist standpoint stood in the way of the essential realisation of the need to raise the living standards of much of the population, now that the wealth was available to attain this desired goal. Further, they believed the necessity of this betterment justified all cultural considerations being swept aside. As a consequence, the belief arose that the only way that such goals could be reached was by starting afresh. This was a widely accepted attitude uncritical of ideas and technologies from outside and from different cultures, as held by Laroni (1976).

The only point which both positions agreed on was the need for technology. The traditionalist could see the need for the betterment of society by the utilisation of technology. The modernist, at that time, was obsessed with modern technology, giving the implied assumption that all problems could be solved through modern technology. Since this technology came from the Western World, it became popularly and uncritically agreed that everything Western was modern.

These two attitudes have produced a duality of systems, one based on the
traditional past and the other on borrowing from the outside. Such schools of thought have tended to run parallel without converging. An example of this parallelism can be seen by the way one encounters a tent used as a habitation in an area surrounded by cosmopolitan street blocks. Secondly, in respect of change of scale and introduction of technology, one finds that the sudden demand for urban development found traditional techniques unable to cope with the immensity and suddenness of the demand. Modern technological methods and systems were called in and developed a momentum of their own. The vast housing programmes, the necessarily large governmental structures to house the much extended administration and the new towns that were sought were so overwhelmingly massive that foreign firms had to be brought in for design and construction.

Large scale organisation was required to get such a massive building project started and, thereafter, to keep it maintained. The implications of this momentum were not realised at the time. But, considering the huge demand for the creation of a new country in such a short time, this was beyond the resources and skills of the local building techniques. Massive organisations produce specialisations, each interacting with the other and all together producing a whole. The running of this huge building programme called for technocrats and bureaucrats to staff it. Such specialists acquired power to guide the country, to make plans, to draw up rules and decide on criteria. Toffler (1980) described the outcome of the activities of such specialists as: "They fitted the pieces of society together". Such specialists, who were not always infallible, ousted the people from their position of setting up their own standards. An example of this can be seen in the new master plans of most
Libyan towns. The specialists set out the objectives to be followed and then went on to create the plans to carry out such objectives. The vision of the city was that of the architect and designers and, often, it did not coincide with that held by the public image and desires.

Thirdly, as to problems in architecture and design at the time of the technological introduction; there did not exist any significant body of analytical studies on the traditional Libyan or Arab city. Those studies that did exist tended to be descriptive and lacking in any cogent reference to physical development. The subject of urban studies, at this time, tended to be almost entirely confined to the West. As a result almost every Libyan city and its physical development tended to be studied on the basis of these Western models. Urban studies in the West had been a development of modern social science which grew out of a study of urbanism in the West. Accordingly, it was not entirely unexpected, in the face of such a body of philosophy, that the professional planners and architects involved would come to think that, inevitably, in some way or other, the Libyan city would move towards close approximation to the Western model.

Modern architecture on the grand scale developed about the same time as modern technology in the West, as a result of access to ample funding and clear demand. As a consequence, this school of architectural thought adapted itself to the demands and opportunities that presented themselves. Given the sudden availability of great wealth from oil and the very clear demand to raise the living standards of the population, it was not unnatural, in hindsight, that such architectural models should have been borrowed in a totally uncritical manner.
This era could be regarded as a disjunction of normal continuity of development. Now that the dust has settled, it could be considered an appropriate time for re-appraisal. What can appropriately be considered is not traditionalism nor modernism, but continuity which can protect and develop Libyan architectural and cultural traditions.

In making this attempt, it is appropriate to look at what actually constitutes present day reality. To begin with, one should define the problems and produce solutions as well as examining the implications that these very solutions may have for the future. In such an approach the clash of the former attitudes would be ended. Imitation, whether of the past or of another culture, thus becomes irrelevant. In its place, it can be expected there should now be encouragement of independent judgement and personal initiative. As a consequence, one can no longer regard tradition as having authority but as a valuable resource from which one can draw.

A definition and understanding of the function of Arab and Libyan urban forms is required. As Grube (1978) held: “It is no longer enough to study the appearance and physical characteristics of these forms, such as mashrabiyyah, arcade, dome, etc. without ever attempting to find out the reasons behind their use”.

As a result, it is essential to understand their relevance to the socio-cultural context in which they existed and to which they would be relevant today. If one takes the demand for privacy as an example of a socio-cultural need in private houses and their streets, it can be seen that, although various types exist, they all conform to the same rules of conduct
demanded by society.

The socio-cultural need, in its context, will indicate the type of physical environment relevant for selection from the traditional source as discussed in the next chapter. Such an approach is much more constructive than merely flinging in a dome or arch in the name of preserving continuity with the past.

As demonstrated previously, different kinds of Libyan streets exist as a consequence; no set form can be attached to the Libyan street or its components. But certain guides exist, such as to how the individual should live and interact with his neighbours and the community as a whole, as well as how people should be protected in such a way as to mitigate the harshness of the climate.

Continuity is necessary to preserve and develop our cultural identity. It stems from our needs in the present and our aspirations for the future.
6.5 How Can Cultural Continuity be Achieved?

In the past, the question of modern versus traditional was irrelevant to Arab and Muslim professionals. The tendency when man is confronted with a sudden bewildering complex of changes can often be to think of past traditional environment in somewhat simplistic terms. In this instance, the same reflex operated. Tradition was remembered only in the design of mosques.

In time, however, the potentiality and relevance of historical forms as a source for contemporary design had become more evidently relevant. Although the issue has been extensively examined in recent years throughout the Muslim world, no single answer has emerged. Each country tends to produce a somewhat different answer due to the variety of their cultures. Furthermore solutions and adaptations depend on that country’s particular interpretation of the Western image and its interface with local realities.

While contemporary practice is questioned in comparison with tradition, the most developed technology is right in the midst of the Islamic world. The Hajj airport terminal at Jeddah is a case in point, from which a revaluation of tradition could be gained (Fig. 6.2). While a traditional shape of tents was used, the materials were prefabricated. This kind of construction has been a good example for the architects who search for an identity with the past in harmony with the contemporary scene.

One might ask why the Egyptian architect Hassan Fathy, one of the most respected among the younger members of his profession in the Arab world, has scarcely built anything in his own country. It may be because he is a
champion of cultural identity, because he is most critical of the unthinking total acceptance of Western technology by the more unimaginative members of his profession. Also it may be because he is a champion of cultural identity under threat.

The unimaginative designer, on the other hand, has only one source of inspiration, that of Western technology and the Western model. Such an architect is so thoroughly imbued with this source that he will tend to re-create it, no matter in what country he finds himself. Indeed, if he is called upon to derive inspiration from the traditional, his visual imagination will only be able to reproduce in terms of the West. No matter how he might wish to re-create through his own cultural identity, his visual imagery will be that of the West. Because he has not imaginatively absorbed his traditional architectural heritage, he finds the pull of the West too strong to avoid.

However, it is not always the architect who plays the dominant role in deciding the architectural model. The client will usually have the upper hand and will be responsible for the final choice of overall design. His choice will often have been influenced by such factors as what he sees to be fashionable, what he has observed on television or in magazines and what appears to him to show off his wealth or status.

The question requiring to be answered is whether it is possible to define and develop an identity in the face of the impact of the Western media. This influence is not that of a passive model. It is intrusive. In most cases they construct our built environment and then define and interpret it in their own publications. Indeed most written analyses of the Third world are made by
scholars of the West.

Architectural firms are only influenced in part by culture, but, nevertheless culture has an important role to play. Kevin Lynch (1972) said: "The physical environment is said to be a mirror of culture". The main constituents of culture which have come down over many centuries amount to all the arts, beliefs, social institutions and behaviour patterns characteristic of a people.

The comparative suddenness of the appearance of industrial society has often caught countries unprepared and unaware of its implications. It needs a great deal of investigation and reconsideration. The analysis to this end could best be a study in observation of people's behaviour in a modern built environment. This should reveal the change that modernity has wrought on their socio-cultural habits and attitudes. This is in contradiction to the approach adopted by many architects who prefer to take, as their point of departure, the architectural forms and their institutions, rather than consider socio-cultural habits and behaviour. The argument of traditional and modern, or East and West, is not only an architectural problem but it has to be basically resolved before the designer begins his work.

One might argue that techniques applied to solve problems from India to West Africa were almost identical. For example, in self-help housing based on traditional techniques, the young Indian and Iranian architects proposed the same solutions as French and African architects in West Africa. Yet, one must ponder, why similar architectural conclusions were proposed in respect of forms and techniques, although the situation and problems varied greatly from place to place? Are the traditions of central Asia, Indonesia, Pakistan and West
Africa so similar? It is clear that the similarity of approach is not because of the uniform nature of the problem throughout such a varied geographical area. No doubt the similarities are the product of a common professional approach. The origin of this approach is the product of Western culture, techniques, education and publications. Through these processes stero-types have grown up in concepts of urban planning, methodology and architectural vocabulary.

The problem can be traced back to the early education of the professional groups. From his earliest years the content of his education, technical and scientific, alienates him from his cultural and folk roots. This must lessen a sensitivity to that of the average user. A movement to give back confidence must, of necessity, be based on the cultural roots of the people.

While there is a strong urban tradition in Arab countries, it must be recognised that probably eighty percent of inhabitants have their recent origins in the country districts, some having, till fairly recently, led peasant or nomadic lives. Their cultures and traditions tend not to be fully catered for or adapted to their new urban environment, with a dilution of the total cultural environment. On the analogy of the countryside, constant reseeding of these cultural roots is essential.

Architectural and spiritual continuity is as much a part as most other manifestations of continuing culture. A full practice of all traditional cultural values will enhance the architectural heritage passed down and still visible to this day. Such Libyan architectural experience can be enriched from the great reservoir of Arab architecture which is from a homogeneous tradition cognate with that of Libya. This approach would generate confidence and provide an
arsenal of alternative solutions and inspirations to architectural needs which would mean that the Libyan architect would no longer be metaphorically naked against Western architectural practices and technologies. He would be able to select from his own cultural resources. The spiritual continuity with the past is a problem of interpretation, not a problem of cultural identity. He would have an architectural vision to sustain him.

The meaning of continuity is the integration of the past into the present. It is not the blind application of certain principles, for example, the concept that applying arches, magically makes a building Muslim. A thorough natural practice of the traditional gives a meaning to us which must express itself in the present organisation of form and space.

This is a subtle art which is not easily amenable to measurement or immediate identification. Like all culture it is recognisable in its end product, because architecture, properly applied, is art: modern and traditional architecture although opposite to each other should agree to their own mutual benefit. This subtle art must be built on confidence of understanding the past and not on the blind imposition of a few "typical" stereotypes, like an arch or a dome.

The rejection of the past and the uncritical wholesale acceptance of the West are blocking the emergence of genuine development of a new architectural style. Kenneth Clark (1969) in his book "Civilization: A Personal View" says "civilization requires a modicum of material prosperity - enough to provide a little leisure. But for more, it requires confidence - confidence in the society in which one lives, belief in its philosophy, in its laws, and confidence
in one's own mental powers."

This want of confidence caused by a lack of cultural strength and a feeling of unsureness in the Arab make-up prevents the formation of the necessary belief in itself and its traditions which would allow a flowering of Arab civilization, such as European culture developed in the Renaissance and in the nineteenth century.

Fig. 6.2 The Hajj airport terminal at Jeddah is a good example of the use of traditional shape and the indigenous approach to climatic mitigation.
6.6 Conclusion

The past and the contemporary should not confront each other in the simple dialectic of past and present, or east and West, but rather there must be a process of digesting the impact of the West and the essential essence or intrinsic nature of the traditional. By such a path may cultural continuity flourish.

A respect for all that has survived past generations, all examples of human imagination and creativity in all fields of life need to be cherished. Instead of contemptuous rejection, such traditional manifestations ought to be approached with a sense of humility and the firm intent of understanding their creative potential in the world of today. The accumulated wisdom, sensitivities and experience of the past should be absorbed, in order that contemporary man may enrich himself in his own life-time and pass it on for future generations. Deprecation of the traditional, and inability to apply the lessons and traditions of the past, leaves a community naked and unarmed against all influences from the outside. The answer is a condition of mind that allows itself to be critical and selective of the traditions of the past as well as those of the West. The vast body of knowledge that has been accumulated by the West should not be neglected as it must, by all the laws of coincidence, contain much that can be of service in preserving cultural continuity. A meaningful solution to every problem may only be approached by evaluating the deep-seated realities of the situation.
CHAPTER 7
TRADITIONAL PATTERNS AND THE STREET OF THE FUTURE
GUIDELINES TO THE CREATION OF A BETTER STREET
ENVIRONMENT

The recent change that occurred in Libya happened so quickly that it was difficult to control, especially when there was not enough experience and insight to be found locally.

At that time no guidelines existed. Now, however, general guidelines exist in accordance with the master plans of each city. But guidelines on the smaller scale, at the level of urban design hardly exist in most Libyan cities. This lack of guidelines has produced towns that are basically little more than a collection of streets and buildings. Such towns are often wasteful of land, devoid of identity and bereft of townscape. Too often this has resulted in lifeless streets and squares where little human activity is to be found.

The problem of the existing guidelines is that they are for the most part unsuited to the local situation. This is not surprising since almost every one of them was copied from those of a foreign country or compiled by a foreign company. Such lack of consideration for local reality has resulted in an environment without cohesion and livability.

In consequence, this chapter seeks to provide guidelines in respect of the Libyan street, drawn selectively from past experience and modifying the old models to suit contemporary needs. Before discussing such guidelines it is important to give a justification for such regulation.
7.1 The Need for Design Guidance

Design guidelines can supply a framework to control the direction of urban development. This allows a community to evaluate and control the design aspects of development. The purpose of such guidelines is to ensure that future development is in tune with the needs and aspirations of the local people, providing maximum benefits to individual users and the general community.

Further reasons exist; for instance, to control any haphazard urban form which has come about through rapid and often unplanned modern building development in order to modify the extremes of climate and meet the cultural needs of the residents. Most modern cities in Libya, since the end of the initial frenzied building programme, have shown some interest in the establishment of guidelines, because the urban design aspects of many new buildings have been found to be unsatisfactory. New buildings of development projects have been, in many cases, a source of regret or even contention in respect of how they have failed to fit into their surroundings and existing built fabric. Disappointment has often been expressed over how these new buildings have not succeeded in relating functionally and visually to the pedestrians around them. The rapid pace of building in Libya has made it more difficult for city planners and architects to match new building with nearby development.

One might argue that traditionally, there were no guidelines. In fact, there were unwritten ones inherent in the system, which were adopted by builders according to what was considered fitting in the culture. This resulted in producing a cohesive built environment; from its appearance one could see
that it had a strong controlling influence exerted over it.

The need for a coherent policy is even greater today than in the past because, traditionally, almost all the builders shared the same culture without any great amount of outside influence. The materials were also obtained locally and tended to be homogeneous throughout the whole country. Guidelines were also established by the comparative smallness of each development in the past. Even if in former times the new building was completely unsuited to its location it would not be as unsuitable as those built today on an immense scale. The need for guidelines is greater now than in the past for several reasons.

Firstly, it was often the case that the design created by different foreign companies, every one of which suggested its own solutions, produced a vast and often inappropriate welter of inharmonious design. Foreign influences which, due to modern media, are much more penetrating, have produced a confusion of influences in the popular mind. Unsympathetic university education has heightened this alienation of traditional values, because the staff and their textbooks have been imported from abroad.

Secondly, guidelines are needed more than ever before in the matter of scale and time, because there is a need for big projects or even large areas of town construction. In the past, this need was not so urgent when an individual building was the normal size of a project. Furthermore, such huge projects are usually completed in a comparatively shorter time than in the past, when towns took a long time to grow. For such reasons guidelines to control development are vastly more needed than in the past.
Thirdly, in respect of materials; in traditional times only one or two suitable local materials were available, now, the range is vast. The need to master the selection of materials calls for policy guidelines.

An additional reason for this study of guidelines is that in Libyan cities there is a great need for a planning tool to help co-ordinate urban design aspects of development. For example, when the master plan for a new area of a town is developed, such guidance will ensure that any project will follow the master plan when it is parcelled out to different developers over a period of several years. Likewise, as small sites or individual building lot developments proliferate, guideline regulations are required to ensure a coherence or consistency among buildings, to produce a harmonious design for the area.

Zoning will be discussed in greater depth, later, but suffice it to say that it is a planning tool which has been used recently in Libyan cities to give some measure of control of land use and density of development. In effect this often means control of building setbacks and building heights. While zoning has produced a set of controls in respect of quantity of development it can be said to lack any interest in quality of development. Typically zoning takes no interest in factors such as street landscaping, street furniture, building aesthetics and building in context to fit into the area. Nor does it provide a means of co-ordinating new buildings with old. Appropriateness in zoning is another factor requiring consideration as it is often adopted uncritically. While it might be relevant and fitting in its foreign land of origin it can be irrelevant or unsuited to Libyan conditions.

Another important consideration is the need to devise a set of building
control and planning regulations, since, if one leaves such matters to individual planners and architects, the temptation will always exist for the successor to scrap or greatly undermine the guidelines drawn up by the previous architect or planner. This is important in Libya where the rate of job change is often greater than elsewhere. At the moment, young people often occupy posts of great responsibility and, lacking experience, are liable to produce an unsympathetic environment in the absence of guidelines.

Guidelines can provide the overall framework to ensure each project can produce and protect the form and the character of the city. Such regulations can save time, because the delays associated with judging each project on its merits is no longer required. They can also help the inexperienced designer and architect in evaluating the project. The framework often results in reducing the cost or preventing conflicts. The sight of some uncompleted building, as is often to be found in Libya, can be avoided, if such regulations can give the architect clear guidance.

Furthermore, new buildings and redevelopment projects affect not only the individuals concerned but also the entire community. Guidelines are intended to reflect a community's goals, needs and desires in the co-ordination of future development. This is required in order to improve and protect the physical aspects of the city.

Such guidelines are not intended to restrict architectural work or to hamper the functional aspects of new buildings. Rather they can provide a framework to influence development so that the urban potential of a particular area or site is maximised not only for the benefit of the public but also the individual users.
Since there is a great need for this kind of planning tool in Libya, in this part of the thesis one has to suggest some guidelines. The goals and objectives of such guidelines are to help achieve the stated aims of the study, that is, to create a better street environment. The main consideration is given to the street and its surroundings. This restricts and particularises the extent of the guidelines sought, by emphasising the pattern which will help create a better livable street.

In summary, the main objectives of such guidelines are:

1. To provide some pattern in order to help the designer create an appropriate outdoor environment that will satisfy cultural and social needs as well as respecting local conditions. The goal would be to achieve new development which is high quality cohesive and functional.

2. To encourage the planning authority to set out in appropriate form its policy for areas and sites in local plan documents.

3. To illustrate in clear outline the community interests in respect of its past in order to regain a confidence in its traditions; and integrate these with contemporary needs.

4. To provide a framework to co-ordinate the design of the physical environment of an area, not the design of individual buildings. To co-ordinate incremental building development so that individual buildings can reinforce the city's goals, policies or development plan for the future growth of an area.

5. To enable the planning authority to influence the designer during the conceptual stage of a scheme by giving an indication of the standard of development required before time and money have been expended and
before attitudes have hardened. The ultimate aim is to reduce the
number of abortive submissions.

6. To allow the planning authority to concentrate on those small scale
aspects of design which, though important, are almost always forgotten in
general guidelines, such as street landscape and street furniture.

7. To give the developer's architect a lever in persuading his client to erect
a more appropriate building than first intended. This can be achieved by
demonstrating conditions that must be satisfied in gaining planning
permission.

8. To help the planning authority to achieve a stable planning policy over a
long period of time. This prevents a change of planning direction taking
place on the succession of a new head of the planning department, as so
often happens in Libya today.

9. To provide guidance as a general concept that will be helpful in giving the
developer some certainty in preparing his proposals and the general
public a guaranteed minimum standard of environment.

It has been demonstrated previously that, in order to achieve cultural
continuity and livable environment, one must recognize the relevance of the
past to the present. At the same time, modern needs should not be neglected.
This entails the modification of the traditional pattern to cope with
contemporary requirements.

For this reason the main source of these guidelines must be the traditional
pattern, because it provides a solution of proved validity over centuries. The
relevant pattern selected from the traditional requires adaptation to suit the
new needs of society. While not neglecting the experience of other countries, such guidelines benefit from suiting local cultural needs and environmental conditions peculiar to Libya.

Besides providing policies for future development, this part will seek to discuss and supply solutions to the pattern of conflict within the socio-cultural values and climatic conditions.

These guidelines are flexible. They should not be used in isolation of one guideline to another. The wholly implementation, rather, will help to achieve the already discussed aims.

Such guidelines are written not only for the architect but also for everyone responsible for the creation of livable streets, such as the policeman, housing development agencies and the politician who usually has to make major decisions about the environment. It is to be hoped that many of those who read and use this guidance will try to improve and extend them.
7.2 The Need for Open-ended Design

While the need for adequate guidelines has been called for, before discussing them in detail, one important point ought to be drawn attention to: namely, the need for open-ended design, in that such guidelines should not lead to a tight-fit built environment. Rather, opportunity should be given to the individual to express his own personal predilections, values, cultural needs and lifestyle.

Open-ended design can give scope for a wide range of tastes and requirements. It ideally creates environments which allow more degrees of personal freedom. Modification in the environment can be evaluated positively or negatively. Although people become involved in the modification of their built environment this is immensely more satisfactory than a policy of laissez-faire. One might be able to evaluate cities and buildings in terms of the extent to which they do or do not permit the maximum amount of action, involvement, and active creative adaptation by the citizen.

With few exceptions, however, the consensus among architects and planners is that everything needs to be controlled and planned. They often view personal expression by individuals or groups, as being for the most part messy and ugly, so that one must get away from what they often consider as the haphazard way of doing things and make sure that everything is planned down to the last detail.

Lunn (1971), who is on the side of a reasonable amount of freedom, pointed out that not only is it impossible to plan "down to the last detail" but it is also undesirable to attempt so to do. The unexpected needs to be able to happen.
Improvisation and expression as well as the humanisation of the environment needs to take place. Specific cultural landscapes need to develop. Rapoport (1967) explains that the modern tight-fit built environment, where materials are restricted and space inflexible, is in danger of ignoring or severely inhibiting the individual's need for self-expression.

The design of dwellings, as of so much else, is no longer created for the individual. Increasingly, it is being done for generalized categories of people. The result has been the development of large-scale projects instead of the individually designed houses or that done on a speculative basis. The latter gives the residents some degree of control, as the building is constructed to be responsive to the demand of the market. The project, on the other hand, is usually much less answerable to market forces, and tends to impose a greater physical control and intrude to a greater degree on the life of the inhabitants than the single custom-built house or that erected by a speculative builder.

Cohen (1951) explained that old dwellings, which new housing is meant to replace, are often rather easy to change and personalise, as the vernacular house is characterized by immediate and direct responses to changing needs. As the traditional houses, in Libya for example, needed frequent maintenance, each time these could be modified to give adaptation to changed circumstances and express personalisation.

When people move into housing designed for a generalized type the values enshrined therein may not be wholly congenial or even alien to them. In such cases plans may have become standardised due to economic limitations and technical problems. It is therefore important that such design be loose-fitting.
to allow differences and preferences to be expressed. Adaptability may suit future residents as buildings can be expected to outlast the original inhabitants. At the same time adaptability is required to meet the changing tastes and demands of the first residents. Neither the first nor future residents have any say in generalized housing design unless a conscious attempt is made to allow personalisation.

There has been a marked tendency to ignore the need to allow personalisation. One reason is that an architect's success, and therefore his advancement is judged by the approval of his fellow architects or the satisfaction of his clients, neither of whom are users of the buildings. Designers are usually hired by the developer, manager, authority or committee and are often isolated from the user. This has led to a search for the greater understanding of man and his built environment and a realization that the user must be consulted.

The variability of local areas and the chance for people to express their own preferences at group or personal level helps to establish group and district identity. This will create noticeable differences and complexities and help orientation. It will also help prevent the sterility of planned cities. The success of the traditional city lies in its rich diversity. The open-ended design leads to cities which are rich and more pleasing with a sense of human involvement and history with the capability of showing change over the years.

Bauer (1951) spoke of the need to avoid 'rigid uniformity', pointing out that monotony is the worst danger of any large-scale housing and that there is a requirement to recognise varied needs. She says that there is a widespread
disinclination to uniformity. There is a want for individuality, or as she calls it, “The sense of unique and personal qualities, pertaining to each dwelling ... and the charm of historical accretion and personal craftsmanship.”

The exterior of houses can be regarded as a medium for personal expression and there is much general evidence to support a growing interest in this form of expression. Cowburn (1966) states that only recently has any attention been given to the conflict between the desire of people to personalise the house and the rather ‘closed’ designs which they are given. The front fence provides another aspect of such exterior expression. While it can be used to provide visual privacy and can be of interest in acoustic terms it also defines private territory and is one of the few elements where difference can be expressed. The fences themselves can often be varied. In Europe the front space can be personalized by the selection of shrubs and flowers used. Yet many projects do not allow such planting and, where gardens are provided, there is frequently no way of visibly changing them. In Libya the shape of the front fence and the shade of the gate are the main elements through which people often represent their degree of personalisation.

Barley (1963) shows that the front yard is the public and entry area designed to be pleasant and welcoming, demonstrating the difference between the front garden and the back. The front is designed to be pleasing with flowers and grass. The back, in contrast, is the private, family domain, for drying and washing clothes, the children’s play area, etc. This crucial distinction between front and back use, however, is very largely at variance with the strong tendency of many architects to give equal attention to all around the house. Housing layouts should provide for these very important
distinctions in expression.

Yet, instances can be recorded in both public and private housing where there is enforced anonymity and a lack of any opportunity to adapt or personalise the buildings or the landscape, where it is often forbidden to paint exterior woodwork in colours of their own choice. In some instances, the sole means of self-expression is the kind of flowers put in the windows as the only place to express any individuality.

Personalisation is an acceptable objective of people in the built environment and the user ought to be considered a participant in the design process. Although his position is, of course, controlled, he ought to be an active participant whose choices are known and respected. Designers have been known to go further than ignore the choices of the user to the extent of pressing for total control and the tighter fit.

Each different culture and society has its own form of self-expression, so no one can lay down rigid guidelines for personalisation. Research in this field would be expected to provide some answers, such as which and how many elements need to be changeable.

However, some of the problems associated with allowing choice can be recognized. Firstly, the range of choice may outweigh the practicalities of the situation and, accordingly, the participating user ought to be provided with some degree of advice and guidance. Secondly, since the choices can only be made on the basis of what is known, some degree of education of interested parties is vital, as by pilot projects, experimental environments and exhibitions.
The post 1960 lack of use of construction in the traditional built environment in Libya has stunted its expression. There is a way between the extremes of laissez-faire and absolute control and that is to provide directed opportunity of expression and change. The duty of the designer is to guide people not coerce them.

Some countries have gone further in the provision of user involvement. In Hong Kong, for instance, multi-storey platforms have been provided on which people build their own enclosures in different materials. In Mexico service cores and walls are provided with the residents or their builders building the rest. Given such opportunities for the user, the architect's role and responsibilities must not be diminished, his supervision is particularly essential in such cases.

Having discussed the need for guidelines or frame-works, as well as the need for open-ended design, the following sections provide such guidelines in detail, bearing in mind that the motive for this study is to find a way to create livable streets in Libya. These frameworks are mainly concerned with the street and its surroundings and include a discussion of most of the elements which can assist in furthering the aim of re-establishing the congenial street created to cater for the human needs and wants of its residents and users.

Such factors can be divided into several headings:

1. Clustered built environment.
2. Creating pedestrian streets.
3. Climate and the physical environment.
4. Street layout.
5. Landuse mix.

6. Creating an attractive street.

7. Street furnishing.

8. Openings and connections between indoors and outdoors.


10. The need for preservation.

11. Propinquity and balanced social mix.
7.3 Clustered Built Environment

One of the main features of the traditional Libyan town is the way its buildings were grouped together in what one might describe as a clustered built environment. As has been noted above, Ghadames is a very fine example. It looks like one building when one takes a panoramic view of it.

This compaction did not happen haphazardly. It came through experience and was retained because it met the socio-cultural needs of its inhabitants and provided necessary protection from the harsh climate.

The first and most important lesson that could be deduced from such a traditional clustered built environment is that it helps to encourage social life in the street. Such an enhancement of social life is important in a country as huge as Libya with such a comparatively small population.

Before examining the advantages of compaction it is useful to look into the pressures which tend to accelerate urban sprawl.

1. The rising standards of living permit a movement to the suburbs and even further to live in villas with large gardens, which become symbols of prestige.
2. The automobile has become more available allowing increased commuting and is regarded as an object of pride and sign of prosperity.
3. The city traffic problem encourages movement away, out of it.
4. Population increase.
5. The location of industry outwith the city centre.
6. Municipal services, e.g. cleansing, water, electricity, etc., are now widely available rather than being confined to the city centre, as in the past.
7. In some cities, building materials had a limited life-span and when rebuilding was required this was carried out away from the city centre.

7.3.1 Why the clustered plan is necessary

While the interiors of dwellings, shops, offices and restaurants have become increasingly pleasant places to frequent, there can be negative aspects to outdoor city life. These can lead to dangerous situations, time consuming delays and inconveniences often resulting in unpleasant conditions and increased costs.

An acceptable aim would be to reduce each of these negative aspects of the streets to improve the quality of urban life. While enhancing these aspects which have come to be regarded as desirable, streets and neighbourhoods ought to be made more lively places which are safe and relevant for children. This new street environment could learn from the past in making the street more lively again, but in a way which would be compatible with modern life.

Although Frank Lloyd Wright (1958) has not himself worked in Libya, his model, decentralized city which he called "Broadacres" was implemented to a certain extent in Libya. This took the form of the large villa in its own grounds. Such areas had one large road but no centre.

At the same time Le Corbusier's plans of highrise flats with huge spaces between them are to be found in some Libyan cities. Both of these architects have neglected the human scale. For this reason a study of compaction and its relevance needs to be undertaken so that it can be given consideration in the Libyan context.
Compaction, however, does not mean highrise building nor crowded areas with roads prone to traffic jams. Rather it could be described as house-clustering with compact city centres and village areas. Here all the activity and facilities are grouped together to make a place where people can meet and see each other and where most of the action happens in the same way as in the suq or open market in the old areas.

Compaction makes more effective use of space and time to provide a better quality of life and livable urban streets. The central theme and basis of compaction is to allow residents in a few minutes of travel time to leave their homes and arrive at the school, the place of work, the shop, etc. It allows them to choose their own mode of travel, be it walking, bicycling, motoring or public transport. In such a compact system one can establish livable urban streets rather than roads dominated almost exclusively by automobiles.

Such compaction is of economic value as it allows construction and maintenance to be carried out at less cost. The amount of agricultural land in Libya is strictly limited and any compact system conserves the land available in probably the most economic manner.

Such concentration of people permits social, cultural and economic interaction. An environment of this kind makes the street, once again, an exciting place in which to live. The essence of compaction is to curb urban sprawl with all its destruction of natural environment.

Jacobs (1961) is concerned with the need to provide in cities streets that are safe from street robberies, theft and other forms of crime. She has observed that whenever streets are lively with people and activities there are
always people watching the activities of others, since they feel responsible for what happens on their block. They act as if they owned the street. This interest helps to keep the peace as the would-be criminal is constantly aware of potential witnesses who could convict him in court.

7.3.2 The consequences of urban sprawl

The consequences of urban sprawl merit examination, thereafter an investigation of how some pattern could be evolved which might enhance some of the good features of urban planning while at the same time avoiding some of its negative aspects.

People now spend a considerable length of time each day in their cars going from place to place, for example the daily commuting to and from work, the taking and fetching of children to schools as the streets are unsafe and distances have become too far to be covered on foot. Instances of people even having to drive far for a loaf of bread are not unusual, as today the decision about where to shop is often based on the convenience of driving and parking.

Streets have become dangerous places. Roads which have been built to avoid accidents often create many other problems, as has been discussed before. Even in the village areas in relatively quiet streets much effort is spent to keep small children from being run over by cars. For this reason gardens and houses are often fenced in, separating neighbours who used to live as one family.

Many city centres have become deserted, with the flight of their citizens to suburbia. This taking out of the vitality of the city centres has often
encouraged slum conditions in such centres. The replacement of such run-down areas by worse problems has been demonstrated. In practice the changes in the city centre altered the structure of city life and not always for the better.

A further difficulty experienced as a result of urban sprawl is that of adequate provision of water supplies. The chronic water shortage is a factor deserving much greater attention and one most likely to be best tackled by compact urban form rather than uncontrolled expansion, if only to provide shelter and shade and to mitigate the harshness of the climate.

7.3.3 How compaction may be achieved

While compaction can be relevant to many parts of the world the special socio-cultural imperatives and need to mitigate the excesses of the climate make compaction essential to the Libyan situation. Accordingly it is necessary to show how compaction can be carried out. Although the main responsibility lies with the architect, planner and urban designer, it is a task which needs co-operation between different sectors of society. One of the main factors to be considered in achieving this clustered environment is the grouping of the city centre.

Grouping the city centre

A comparison of old and new Misurata gives an idea how grouping buildings, activities and facilities is a major factor in creating a livable city.

As has been shown above, in old Misurata's compact site all activities were grouped together. Suqs were adjacent to each other. In the past when one
had arrived at the city centre it was obligatory to park one's donkey before entering. There was no need for internal transport since one could walk freely from one *suq* to another.

If old Misurata shows compaction, new Misurata, in contrast, is a clear example of urban sprawl and disorganisation. Here *suqs* and offices are, as it were, thrown about in disarray. Seldom does one find two *suqs* near each other. One has to travel by car from one to another. Even government buildings are located far from each other. This urban sprawl was occasioned by wrong sites being chosen by professionals who had given no thought to the advantages of compact facilities. Nor had they given any consideration to the pedestrian. The site had been decided on, not for the convenience of other offices, *suqs* or other activities; but merely that of the car users.

Even the master plan for Misurata did not provide for any urban unity or coherence. Indeed it went further to destroy the old city centre by imposing a grid-iron of major roads on it.

In examining new Misurata it can be seen that, because of the urban sprawl the population is too thinly spread and there is no point of concentration such as would sustain activities and interaction. A lot of time has to be spent inside the car driving from one place to another for daily shopping and business. Since there is no convenient public transport the old and the children are restricted in their movements as they are almost entirely pedestrian.

What one would like to see would be some human activity and interaction in the city centre of new Misurata as was evident in the *suqs* and open markets of old Misurata. The only way in which this could be achieved is by
bringing facilities and therefore activities together. By encouraging social life in grouping people together, a place is created of which they can be proud. There they can visit, enjoy and earn in a safe atmosphere to their mutual advantage.

Since an age-old strong tradition exists in Libya by which people prefer to live their lives out of doors such clustered environments are not alien. The facility should ensure such a relation to its different parts that it is easy for people to walk from one building to another in shaded short pedestrian walk-ways without the need for their cars or the necessity of walking long distances in empty streets in a harsh climate.

In making a compact study plan for the city centre it could be considered necessary to group facilities together. In other words the new site should be chosen in close relation to adjacent building and activities not scattered at random where there is empty land.

Choosing sites away from the city centre can hardly be an acceptable solution to traffic problems. These could best be solved by the implementation of a general traffic plan applicable to the whole city and by making use of good traffic management and providing an adequate system of public transport.

Adjoining buildings

In order to create a compaction there has to be an elimination of all wasted space between buildings so that one can bring into being a positive outdoor space.

There is a deeply held belief now that a building must be an isolated
structure with unutilised space around it. For example recent government buildings are isolated and free-standing with great areas of surrounding asphalt mainly used for carparking and often surrounded by high fenced hard walls.

According to Alexander (1977) "In a town where buildings lean against each other physically the sheer fact of their adjacency forces people to confront their neighbours, forces them to solve the myriad of little problems which occur between them, forces them to learn how to adapt to the realities outside them, which are greater, and more impenetrable than they are". On the other hand connecting building together encourages people to walk, making walking easier, and more enjoyable. By contrast isolated buildings have been seen to produce symptoms of withdrawal, and are costly to build and maintain because they have more elevations.

The disadvantages of constructing a building in the middle of open space could be said to far outweigh any advantages. Local climatic conditions must be considered. Such a building is exposed to the sun making it difficult to keep cool. It is also unprotected from harsh winds like the Ghibli. Further consideration should be given to the person on foot who must find his way between cars: he ought to be able to approach the building without unnecessary danger or inconvenience.

If one recalls the description given of Ghadames it can be seen that all contiguous buildings there are connected to each other wall to wall or by arcades no matter how important the building. Even the mosque is connected on three sides, without setbacks, making use of every metre of ground available.
While Fig. 7.1 shows the compaction of the old towns, Figure 7.2 illustrates the fashion of constructing a new building in isolated space.
Empty plots

Besides having examined the problem of waste areas created by design, one could examine other quite different waste areas in the city centre caused by neglect.

The reasons why such empty land lies unbuilt is often the unsolved problem of ownership. On some occasions the plot of land is owned by so many people that no one person feels it concerns him personally. Even if it were sold his share of the proceeds would be so tiny as to be of little interest. In other cases the owner has not enough money to develop the land. On the other hand the owner of this land may be waiting for a good price.

The issue becomes more confused since private business is prohibited. The other obstacle is the present law which lays down that there can be only one flat per family with the prohibition against owning more then one, excess property being confiscated. This conflict can make it difficult for people to build a single storey house as municipal planning regulations demand high-rise building.

The present policy of Municipalities is to do nothing to solve such problems. This may be due to lack of powers and incentives. At present they can only compulsorily purchase the site if it has been decided to construct a government building on it.

A solution to such problems could be to give adequate powers to the Municipality to encourage people by offering them advice, and by giving them loans with a certain specified deadline by which time if not taken up, powers of
purchase or sale may be invoked, for the benefit of the community as a whole. An added solution would be the founding of a development agency to give financial counselling and incentives like grants and guarantees.

**Maintaining the old village**

Enlightened Building and Planning control is very badly needed in Libya today. The old village and hamlet cluster plans are left to die. People over the last twenty years have been building their houses away from traditional villages on a piece of land they might buy or inherit from their families. They usually build these houses on the major roads as a kind of prestige symbol. Even the schools and hospitals are built without any groupings on major roads as if they were a form of propaganda.

The problem of indiscriminate siting of buildings is that it has a very bad influence on village social life. The effect has only become recognised after the buildings have been constructed. The village sense of community becomes lost. People are separated from each other and need cars to visit one another. Normally women, children and the old do not have cars. Furthermore, with the large numbers deserting the old village, those who remain are too few to sustain any meaningful activity.

Professional planners should learn a lot from the old villages; how the houses were built next to each other for social and climatic needs. During the writer’s M.Sc study observation of several old villages in the traditional style he had difficulty in entering them. Every one was staring as if he was entering a private family circle.
In the interest of social cohesion Municipalities should have a general plan for the city and surrounding villages as well as a detailed plan for each village. Such plans should encourage future building on and around each of the old villages. An effort should be made to group facilities like the mosque, the school and the suq together. In this way people would come to feel that there is some place to which they can resort and enjoy, of which they can feel proud and where they can experience a sense of belonging.

People should be helped to rebuild their old houses. The plans should show the limited areas within which people may build. The Municipality should have the power to prevent people building outside the designated zones. In this way the old village and its surrounding agricultural area might be protected.

Furthermore, the village should be protected from the new major through road which usually cuts the village in half. Such roads make the centre of the village a place for fast cars, and separate families from each other. Major by-pass roads to take through traffic away are urgently required as long as they have facilities for easy access off the main road to the villages.

The implementation of such improvements needs co-operation between different sectors of local government especially between the Municipality and the Road Department.

The Municipality concerns itself only with the over-all plan of the city. The Road Department, on the other hand, does not build according to the Municipal plan, especially outside the city centre where there is usually conflict between both authorities.
The problem confuses the general plan of the city since the Municipality finds itself having to follow the new road built by the Road Department rather than follow the municipal plan. Matters grow more out of hand as people build along this main road and require infrastructure facilities to be laid on.

Rather than having two authorities often at loggerheads with each other, the best solution would appear to be in bringing the Roads Authority under the command of the Municipality which would itself come under the guidelines as discussed above. All authorities should work according to the city plan and should co-operate and co-ordinate to control the future development of the city.

Fig. 7.3 Empty spaces, such as this, in the central city of Misurata, have become a wasteland
7.4 Creating Pedestrian Streets

Another point worthy of consideration which one can take from the traditional built environment is how such a city was a place for people on foot. Although current traffic problems did not exist in the past, consideration for the pedestrian is even more valid than before. The present "pedestrian revolution" which exists in the Western world is derived from the traditional city.

The car is the product of our time and brings with it its own advantages and disadvantages, among which are its speed, accident-rate, its numbers and the volume of space it takes up.

As was shown earlier, in respect of Ghadames and Misurata, the city centre is a pedestrian area. It might be argued that it was pedestrianised because at that time there were no cars, but animals and carts were prohibited from entering the city centre, although they are not dangerous like cars. There was a parking area for such forms of transport, outside the city centre.

These old cities provided every opportunity to encourage walking. The opposite is true in our modern cities which promote the use of cars. This factor ensures that today's city does not function as it ought to.

The question to be considered is why should walking not be encouraged?

Walking encourages social interaction, fostering community life. The very naturalness of the act of walking tends to obscure its great advantage. It is a common place to expect the street to be a place of meeting. Persons of like interests get to know each other in walking to their destinations. Such contacts are virtually impossible in contemporary cities because the car shuts
off its driver and passengers from the outside world. Since it has become the common form of transport in Libya it ensures that isolation is the common lot of persons passing each other.

Furthermore, walking makes a major contribution to public safety not only from accidents but in the provision of a guidance free environment for children, and general security from crime, as pointed out by Jacobs (1961). In addition to producing safe livable streets, walking helps to reduce energy costs and ensures clean air. At present in the absence of pedestrianised streets it would require several thousand more cars to satisfy a demand for transport which could be provided by walking.

The street comprises a large percentage of the total built environment. It provides a facility for movement and the main public places. Jacobs asks one to think of city and what comes to mind. Her reply is "Its streets. If a city's streets look interesting, the city looks interesting as well. Improvement of streets proves proportionately directly beneficial to every one of its citizens as they go about their daily lives. Pedestrianisation of streets is not the product of poverty. It is the working out of the enhancement of the human environment. Without the chance to walk one cannot enjoy the richness of urban life. If one wishes to know a city one has to walk through it. People should be accorded the right to walk, under safe and healthy conditions for business and pleasure."

At the same time the car cannot be disinvented and banning it entirely from the streets would be totally unrealistic. Few people today have not felt their lives enriched at some time by the car.
The issue is to make the best use of the pedestrian and the car, discovering the specific environments in which they respectively operate best. The areas in which the pedestrian operates at his optimum are the city centre, residential zones and villages where the distance to his destination is short. This gives the car priority in any inter-city travel. It should give the pedestrian and the driver each his own conditions by which he can function at his greatest capacity.

Thus when as much in the way of attention is accorded to the pedestrian as is now given exclusively to the automobile one can find, as Mumford (1968) puts it: "The greatest self-propelling vehicle of all."

7.4.1 How walking can be encouraged and pedestrianisation achieved

Pedestrianised streets cannot become a fully integrated issue in municipal and traffic departments without commitment to the needs of pedestrians as a major concern.

Initially suitable streets need to be identified wholly for conversion to pedestrian walk-ways, in close consultation with local people.

Secondly, an examination of the nature and volume of pedestrian and vehicular traffic on streets is required. Thereafter, the impact of traffic on pedestrians can be considered, bearing in mind the character of the area and the availability of alternative forms of transport.

Thirdly, designation of streets with high pedestrian concentrations is required as first choice for pedestrianisation.
Finally, essential to the success of pedestrianisation certain questions require an answer.

1. Is the timing right?
2. Is the pedestrian street the only solution to this problem?
3. Can the necessary financial, municipal and popular support be drummed up?

Furthermore, close consultation is essential. Generally speaking, this would take the form of questionnaires, meetings and observation. Specifically, it would mean discussion with local people, traffic officials, drivers, and shopkeepers. Such discussion ought not to be confined to the initial planning period, but continue through to the end of the trial process and its evaluation.

Before starting construction, one could examine whether this street were suitable for pedestrianisation by the simple expedient of erecting wooden police barriers across it. Should the results prove positive, then constructions of a more permanent nature can be embarked on. If negative, modifications may be needed.

One must prove the success of pedestrianising of the street. Such proof can be by use of films or photographs before and after the experiment along with statistics on the impact on sales in business. Such evidence is necessary to justify closing the street to cars, since shopkeepers always fear a drop in sales.

The total strategy of movement in the city should be studied, as Mumford (1968) observes "To have a complete urban structure capable of functioning
Fig. 7.4 Walking can be encouraged by making the place attractive and mitigating the effect of climate.

Fig. 7.5 Two pictures of Nassau Street, in New York. That on the left shows the street with traffic; on the right, it is pedestrianised.
fully, it is necessary to find appropriate channels for every form of transportation: it is the deliberate articulation of pedestrian, the mass transit system, the street, the avenue, the expressway, and the airfield that alone can care for needs of a modern community. Nothing less will do”.

To achieve this degree of success there must be co-operation within the relevant sectors of local government, architects, planners and the local community. By such co-ordination a pedestrian street can bring new life and liveliness to the area. It will attract people for what it offers not because it is the only alternative.

Pedestrian streets, while improving the quality of urban life, are urgently required to solve some urban problems. They should form an integrated part of a general plan able to solve the technical and human problems of providing transport for workers, shoppers, and residents with the greatest degree of comfort by the use of low-cost alternative public transport.

A conventional objection to the provision of pedestrian walk-ways is that elimination of cars from some streets merely obliges them to be driven on adjacent streets. This is not borne out by the evidence. A study referred to by Ritter(1964) carried out in 1955 on the effects of restricting traffic in certain specified areas was as follows: “The amount of motor vehicle travel in any area is, in part, dependent on the amount of available space”. This simply means that if there is less space for cars there will be fewer cars. The same report indicates that “rather than building to a standstill congestion will reach a maximum point where the average speed in a central business district decreases to eight miles per hour. Beyond this point, traffic disappears.
People turn to other kinds of transportation. Therefore, reducing the amount of vehicular space will not create a monumental traffic jam. It will simply reduce the amount of vehicular traffic”.

However, the widening of streets, which most Libyan municipalities see as the solution to traffic congestion, makes the problem worse as it brings more cars onto the street.

Creating a pedestrian street helps to improve the quality of urban life but it is not everywhere that a pedestrianised area can be constructed. While it is desirable to separate pedestrians from cars, one should answer the question as to whether everyone wishes this separation, with highest incidence among the old and children, for young people seem to love their cars. The writer’s M.Sc study noted that most young people’s activities and interactions were to be found near crossroads where they can see a lot of cars.

While separation of high speed movement from pedestrian activity may obviously be necessary, total separation is often harmful to street activity. Cars and pedestrians often need each other since a large number of activities take place where the two systems meet.

Though important, cars should not be allowed to use their power to frighten or subdue people walking. To prevent this, good design of pavement, road and street crossing places is of paramount importance. Pavement widths should be dictated by pedestrian needs. Sufficient space ought to be available for goods’ display outside shops, as well as room for benches and lamp-posts. A pavement must be high enough to prevent cars intruding onto pedestrian walkways and in their height allow people to feel some sense of domination of
the cars as they walk.

The other important factor is the need for the pavement to function at a desirable maintained level. Where it is necessary for a car to park in a side building or garage, a cut in the kerb at the edge of the pavement ought to suffice in allowing the car to enter, instead of creating a depression in the pavement in favour of the car.

In Libya where there are a lot of careless drivers, street crossing can be the most dangerous undertaking facing the pedestrians. Here most accidents take place. Existing methods, such as painted white lines, zebra crossings or traffic lights, do not work successfully in making them safe for pedestrian users. In this case raised zebra-crossings in high density areas would work better as they would force drivers to stop.

7.4.2 Car Parks

In almost all Libyan cities there is no lack of parking facilities and everywhere these are free. This happens because many of the municipalities have built huge parking areas in the centre of the cities. Besides that, many empty plots of land are used for parking.

One of the problems is the immensity of the parking areas themselves; such large areas of asphalt do not make them environments for human use. Furthermore there are no pavements, which forces people to walk between cars. Nor is there a shaded area which makes them intolerable in the summer heat.

The same error is perpetuated in the notion that free-standing buildings
have vastly enhanced prestige if surrounded by fenced-in parking areas. This makes it difficult for the pedestrian to enter the building, because pedestrians feel overwhelmed in an environment given over to the car. Even when the car park is empty they feel that this is not a place for them and they have no right to be there.

Certain important factors could be taken into account. There should be a general plan of car parking in the city, according to the number of car-places needed in the city centre and for each particular building. The car parks should be distributed round the city according to where they are needed. These car parks should be designed in as small units as possible and should be connected by paths which would make it safe for pedestrians to enter buildings without fear of their lives and without suffering an acute sense of inferiority. It should be a matter of policy to reduce the area of asphalt in the city. This can be achieved by mixing land uses by working at different times of the day. Thus, for example, a parking lot could provide space for a Municipal Department during the day, doubling up for a cinema in the evening. By such means it would be possible to maximise the use of the carpark.

The car park ought not to be regarded as a source of pride but as an under-used resource. In this sense the building ought not to be surrounded by the car park, nor should the parking area be surrounded by a fence, but should serve the parking needs of surrounding buildings.

### 7.4.3 The need for traffic management

The paramount need for street safety and for the success of pedestrian streets requires an adequate system of traffic management. It could be said
Fig. 7.6 This huge carpark in the centre of Misurata has dehumanised the heart of the city.

Fig. 7.7 Here it can be seen that the lack of traffic signs leaves the pedestrian in a state of confusion and danger.
that most traffic problems in Libya are caused by the lack of traffic studies. Although it is not the task of this thesis to find solutions to traffic problems they have relevance to the street and have considerable impact on the lives of street dwellers and users. Control of traffic can create better street environment, especially in the central areas of cities. Part of the strategy would be to look for ways which would discourage private vehicles, such as provide a comprehensive public transport service. In other countries the increase of parking rates and the institution of time restriction on parking have added considerably to the reduction of traffic and parking in the city centre. But the need is not to force people out of the city centre rather to invite them to come in. People ought to be able to spend their time as they want without the fear of a parking fine.

A standard solution to such a problem is the elimination of through traffic. This should be possible as Libyan cities are surrounded by ring roads which allow different degrees of access to the central areas. The function of the inner ring roads, should be to allow circulation around pedestrian zones, with the use of existing roads to serve as loops to accommodate service and deliveries to the centre.

A solution for the residential area could be found in the traditional built environment where most of the streets are designed to cut down unwanted through traffic by making use of dead-end streets or cul-de-sacs. Here local streets provide access to houses and make a safe environment for residents.

For the success of the pedestrian street an adequate public transport system is essential. Public transport provides the easiest access for everyone.
Several elements are required, firstly, an adequate bus service, requiring an increased frequency of services, with additional bus stops where necessary. Also the creation of lanes reserved for buses has to be taken into consideration.

Secondly, the provision of reasonably priced taxis especially shared taxis, seems to be working in some cities.

The emphasis in small towns has to be rather on the reorganisation of traffic problems rather than on the reduction of the number of vehicles. Accordingly, pedestrian streets would need to be created in conjunction with revised traffic patterns. The quest would not be the elimination of the car but rather the separation of vehicular and pedestrian movement where appropriate. Consequently the number of streets crossing the pedestrianised area would require to be cut down. This would involve a certain amount of re-routing of traffic crossing the city in order to ensure that major streets did not, as far as possible, cut through pedestrian zones.

In order that the city centre may viably compete with supermarkets on the perimeter of cities, the provision of adequate parking facilities would be necessary, to give easy access to the shops and offices.

To help in providing a solution to traffic problems, one can look at other ways which have been proposed in different countries. A certain degree of caution is required because the aim is not to copy but to find the appropriate answer.

Buchanan (1963) provides a study from which one might draw informative
lessons as a basis to encourage discussion and the formulation of further ideas on how to solve the particular traffic problem. Buchanan's report has given the groundwork for active debate on the problem of traffic congestion and the importance of environmental quality. He does not see traffic and buildings as being separate but part of one problem which must be considered together. It is necessary to integrate every new building with traffic arrangements as new structures generate traffic. Consequently, a positive policy of comprehensive development is essential in the search for a solution for this traffic problem.

So far, discussion has been centred on the creation of the pedestrian street. But this pedestrian area will not work successfully unless several factors be considered. These will form the basis of discussion in the next sections.

Fig. 7.8 Buchanan's "cellular concept"
7.5 Climate and the Physical Environment

It has been noted already that climate is a vital factor in shaping the traditional built environment. Lessons can be learnt from how the use of building construction mitigated the effects of the climate and at the same time encouraged social interaction and activities out of doors in the past.

Building construction can also take full advantage of natural climatic factors at no extra cost to supplement or diminish the need for reliance on mechanical aids like air-conditioning which create their own problems of cost in installation, running costs and maintenance especially in Libya where there are not enough qualified technicians.

Our concern here is with outdoor spaces, which have been of late shaped by other factors. If the climate be the main factor in shaping the traditional city then the traffic is the factor shaping our contemporary cities. The climate has been completely forgotten in the design of our cities, either outdoors or indoors. It is the task of the architect and the urban designer to bring about the forms and ideas which can produce climatic amelioration which the old cities succeeded in doing.

Although Libya has different climatic zones the whole country is in the geographically hot arid zone, according to Konya (1980). The main climatic problem is that of excessive heat and glaring sun. The other is the gibbi wind which is loaded with suffocating sand that makes the air seem like an open oven and turns the atmosphere to a desert reddish brown. This wind is the most undesirable feature in summer.
In the author's (1984) dissertation it was found that the street was deserted during the hottest hours of the day. The population was found to have chosen areas affording shade and protection from the wind. Selected patterns from the traditional forms still in use could be employed to produce a new built environment capable of providing suitable climatic conditions for residents.

Lessons can be learned from the plans of old Ghadames, Misurata, or Tripoli as in most traditional cities the street pattern has a common character. These cities did not conform to this pattern as a result of mechanical planning or by formal regulations but as a reaction against climatic imperatives.

Thus the wind and the solar factors contributed to the crookedness of the streets and zigzag shape of the alleys. These were constructed to prevent wind canalisation and to create various areas of shadow at all hours of the day, and to take full advantage of ventilation (a necessity in the hot climate). In order to maintain a comfortable life, streets were created to offer quiet, cool and shaded areas for outdoor activity all day long through such devices as canvases in the street or small rooms built over the street which stabilized the temperature within the whole quarter. This experience was totally ignored in the modern built environment where the street is considered a place for cars and one ends up with an unsuitably built environment especially for pedestrians.

The pattern of compaction is, as has been seen above, important as it gives protection against the climate. This agglomeration of houses provides shade as well as protection from the gibli wind as it loses its dust content.

Another important factor for consideration in this grouping of buildings
discussed above is the way in which the amount of building facades exposed to the sun is minimised, thus bringing more shade and comfort to the pedestrians on the street. The tightness of the traditional urban form as well as the minimal width of its street not only protects the streets and houses from the harmful climate in the summertime but in winter prevents the temperature from dropping to an uncomfortable range. The huge asphalt and concrete areas of the modern city environment and the absence of vegetation foliage increase the heat.

7.5.1 Street orientation

Street orientation is another factor that ought to be considered in relation to the new street design. An interesting justification of the traditional form of urban street structure can be obtained in Tripoli. Here one can compare the new colonial quarter plan with that of the traditional Arab district plan which are adjacent to each other. The most important considerations in comparing these contiguous quarters is how the problems of solar and wind orientations are handled.

For reasons of optimum comfort, as far as mitigating the effect of the summer sun and the gibli wind is concerned, the street must be situated in the direction of the sunrise and sunset on 21 June. There must be an attempt to minimize the solar heat of summer and, at the same time, these streets must be orientated to use the maximum of solar energy in the cold of winter. This requires the above orientation with regard to the summer solstice, producing a perpendicular to that of the winter solstice of 21 December.

In studying a map of Tripoli and its sun and wind direction one finds that
Fig. 7.9 The old town of Tripoli.

Elsewhere can be seen the Italian Colonial style.
the direction of its Italian planned main street (Umar al-Mukhatar) does not take this optimum orientation into consideration. Indeed, it shows itself to be out by 28°, since it departs to this extent from the east to the north and a similar angle from the west towards the south. Also the perpendicular streets of Saidi, Mizzran, 'al-Migarief, First of September and Amr-benal-as, can be seen on the city map to be 28° out. Indeed, a study of wind direction shows that these streets run in the same direction as the gibli winds (Fig. 7.10).

Street orientation should seek to take advantage of the cooling north east winds in the summer. This is in order that these winds can be induced into the houses to produce maximum cooling. On the other hand the gibli winds are notorious for carrying heat, sand and dust. For this reason, streets ought to be structured to avoid them entirely. These gibli winds blow at an angle of between 0° and 22° - 30°. At 20° these perpendicular streets still fall within the range of these gibli winds which blow from the south-south east. Furthermore these streets are on a 6° deviation from the violent rainbearing winds of the north east. The Tripoli colonial plan shows that the street orientation instead should follow the principle axis identical to that followed by the sun's orientation of the winter solstice as at 21 December and the summer solstice of 21 June.

In contrast, it is clear that the orientation of the traditional street in the adjacent Arab quarter took full advantage of this solstice axis (Fig. 7.9). This meant that it took full advantage of the cooling sea breezes. The quarter's urban form also took advantage of all the climatic factors.

One can note that the traditional streets have their axis structured to make
the best use of nature as, also, the courtyards are designed to mitigate the
effects of the sun by regulating the amount of air and light. Accordingly it can
be demonstrated that the traditional quarters were as fully adapted to climatic
conditions as any structures could be.

7.5.2 Street covering and arcades

One feature of the old city of Ghadames is that it is almost entirely
covered. Covering the whole modern city seems impossible but consideration
should be given as to which streets are most adaptable to complete covering
and which to partial covering.

A choice of shading ought to be available either by street covering, arcade
or trees. In the old city of Misurata almost all the side streets are covered with
openings at both ends. Walking through such side streets gives the pedestrian
the pleasure of going through a more acceptable atmosphere.

It ought to be borne in mind that such shading, particularly in pedestrian
streets, provides protection not only from the sun but also from the occasional
downpours of rain. These occur somewhat seldom and are relatively short in
duration, and for this reason the need is greater because the average citizen of
Libya will almost never carry an umbrella.

Almost the whole of the traditional towns are so cloistered that one can
pass from one place to another through the streets without being exposed to
rain or sun. As has been noted above, streets in old Misurata are either
completely covered or are arcaded from one side at least.

Although arcades have not been completely forgotten in the new
Fig. 7.11 Street arcade columns should be simple and less bulky. They should not obstruct view and pedestrian movement.

Fig. 7.12 This street section illustrates how the arcaded space can help to integrate the outside with the interior.
architectural forms a sustained effort is required to make use of the arcade. The arcade should be designed for its function and not for appearance alone. The building of some arches in the name of calling it an Islamic building does nothing to fulfil the function of an arcade. The height of the arcade should be carefully calculated to protect people from the climatic elements. It does not work if too high or too narrow. Neither is it necessary to build to the level of the ground floor ceiling slab.

Another consideration is the need to connect arcades so that the pedestrian has continuous covered walkways throughout the whole city, whether between shops or government buildings. Arcades should be designed as an extension of the building to create a dual purpose territory between outside and inside, linking the privacy of the building with the publicness of the street; thereby making the building less inimical.

To maximise the beneficial effect it is necessary to have a large number of openings from the building into the arcade. These must consist of doors and display windows, and half-open walls. This would help to draw people into the building and out to the street as well as having an important social role to play in increasing the life of the street. Not only does it allow passage but also a comfortable place to chat and to sit. Its columns even provide a place to lean on.

A final quotation by Sir Osbert Sitwell referred to by Rudofsky (1964) on the subject might conveniently end the discussion of the arcade: “The most charming feature of the city is the universality of its arcading and the effects of perspective thus induced.”
The difference between the new illustrated above, and the traditional below, is obvious.
7.5.3 The use of water

The other factor which should not be neglected in the new built environment is the use of water, to cool the atmosphere. It is difficult to come across a fountain in our new cities, not because Libya has a water shortage, because water can be used again and again, especially with the new pumps, but because this traditional feature has been virtually forgotten.

In addition to the water making the climate more favourable to man the fountain structure and its water pattern can create a monumental scene, stimulating a sense of delight. It also breaks the monotony of the building; especially since statues and any other such monumental features are prohibited by Islamic law. Traditionally fountains are used as a meeting place and a place for various activities. Furthermore, the use of water should also be considered as a cooling agent, not only in fountains but it can take the form of canals, streams. Islamic traditional use of water in Al Hamra in Andalusia, is a good example of how water can be used for tempering the climate, as well as for aesthetic reasons.

Since most Libyan cities are located at the seaside, it is desirable and possible to construct canals and lakes filled with this seawater, as ornamental and cooling features. Every use of the seaside should be made. An example of unwise planning was shown in Tripoli recently when the traditional sea corniche was filled in to become a car park. This corniche had been used for a long period of time as a popular promenade, and an evening rendezvous. Since for cultural and social reason not everyone wishes to spend his night time indoors as in a cinema or restaurant, the loss of the corniche was deeply felt. The provision of a corniche or seaside promenade is essential for the
other Libyan cities as well.

Traditionally there is a deeply ingrained custom of water drinking from public fountains as well as washing hands. This is not strange considering the excessive heat of the summer. It has been argued that this way of drinking is not healthy but so many modern means of water purification exist that this argument is scarcely tenable. Water plays such a fundamental role in a human body that one needs a constant access to pure water. Water should be available on the street and the public ought not to be compelled to seek water in cafes and indoors.

7.5.4 The use of trees

There is a need to reduce the area covered by asphalt and concrete in the new streets. The pavements could well consist of soft material like grass, shrubs and other kinds of plants. However, such growth would usually need continuous watering and maintenance. Since there is a shortage of water in Libya, it would appear that trees which only require watering in their initial stages would be most suitable.

Trees have the greatest relevance to countries like Libya as they give protection from the sun and wind and help to create enclosures. Trees also appear to be, therefore, the most effective means of changing the street ambience from the present sterility of asphalt and concrete to a more natural environment. The excessive alterations of temperature in the city would also be lessened as Tyrwhitt (1947) explains in discussing Geddes. "Everyone appreciates shade, but few realize how a great secondary service is performed by a tree in absorbing not only the radiant heat and light from the sun but also
from the buildings and road surfaces all around it."

Geddes's work in India has provided a good example of the benign effect of the use of trees in streets. He planted whole streets and avenues. He argues that: "instead, the old lanes should be widened here and there, as occasion offers, into homely little thoroughfares, opening now and then into pleasant squares containing a tree and a shrine". Geddes also points out that trees grow dusty, but dust catching is also useful. Better dust upon the leaves of the trees than in the lungs of the citizens.

The judicious planting of trees may also increase breezes, instead of impeding them. Currents of air flow, as in a stream, faster and stronger round the side of obstacles. By planting a dense mass of foliage as Geddes (1915) pointed out: "We can increase the breeze on either side of it and even a little way beyond it, for the air flows in rolling waves over the obstacles as well as in swift currents around each side."

Trees have also the potential to create various kinds of social places. In the Misurata suq for example, the seven trees in Maidan Nasser act as a meeting place and most of the suq activity takes place under these trees. They reduce the width of the space and add the amenity of the general perspective of the suq which would be quite different had not trees been planted there. Trees properly planted can cover an otherwise stark elevation and their appearance can be modified when cut into different shapes.

Although the palm tree does not provide much shade, its appearance softens the atmosphere of an otherwise hard and unsympathetic building. The palm tree has a monumental quality about it and is the landmark of the
traditional city, giving a pleasing effect at close quarters and an enhanced aesthetic appearance to the city as a whole when a panoramic view is seen from afar. The palm tree and the minaret give character to the town, from which one can recognise the traditional Libyan city.

Certain important considerations ought to be given to the planting of a tree.

1. The location of the tree demands care; the tree should be planted where it is needed and where it can best fulfil its function and where one may get the maximum use of it. It might as well not be there if it is not in the right place.

2. The choice of trees ought to take into consideration the local climate and give the maximum shade. Evergreens have proved themselves suitable for all reasons.

3. The care of the tree should include sympathetic pruning and shaping and provision of protection from animals. A periodic wash of the tree is needed to take the dust off.

In addition conservation of old trees is vital as they often have special significance and are a source of many memories to local inhabitants. It need hardly be argued that they took many years to grow and would require as many more to replace. The practice in Libya today is to flatten an entire site with a bulldozer and knock down all trees on it before erecting the building. Then trees are planted after the building has been finished. This is in contradiction to architectural approaches in many other countries where old trees are retained and have been known to influence the shape of the building to accommodate them. Generally cutting down trees should be avoided. They
should be surveyed as part of the site.

Furthermore the tradition of growing vines near the entrance to houses could well be encouraged, since they grow quickly with the minimum care and require the least possible attention once established. Geddes also advocated the planting of greenery in the front gardens as Defreies (1927) pointed out.

In conclusion, one could agree that the best solution to the problem is to devise a system where everyone could enjoy his life to the fullest, in the circumstances, both indoors and out of doors. By considering the effect of climate on the environment during the design process one can, at no extra cost, create a city which can offer its residents a pleasant and healthy habitat.

Fig. 7.15 The use of fine leafed trees to filter the desert wind.

Fig. 7.16 The use of water can enhance the quality of urban space.
7.6 Street Layout

Earlier in this chapter there has been an attempt to humanise the street, and the city as a whole, by making them compact and, where appropriate, pedestrianised, while still taking the needs of the motorist into consideration.

It can be taken that the street is a milieu which seeks to satisfy human needs. It is a place that protects its residents from harsh climatic conditions and encourages most social activities. In consequence, the search for a form which can, arguably, encourage the provision of such needs is required. In this pattern there is the need to look for the suitable and most apt kind of street form.

Throughout Libya developers have recommended breaking away from the traditional curved, dead-end, cul-de-sac and narrow forms of street. Instead they have promoted the straight wide street forms which they have associated with better residential living. According to these developers such street patterns lend themselves to more economical solutions. For them the important consideration is to give effortless flow to traffic and easy access for the car. Their premise is that such street prototypes increase the flexibility of water and sewerage systems and are an easy and quick way of construction.

In the author's M.Sc it was found that most dead-end and cul-de-sac streets promote more neighbourhood familiarity and interaction then those of the through traffic streets, but this may be related to different factors especially the number of cars passing along the street. Accordingly, attention might be relevantly focused on the alleged popularity of the cul-de-sac street. Smith (1973) claims that the special social characteristics of the cul-de-sac
result in more privacy, personal identity, pride and personal belonging and an ease of orientation.

The cul-de-sac has long been assumed to enhance neighbourhood cohesion. Lynch (1962) states: “A cul-de-sac will focus a neighbourhood group”. Perry (1929) believed that the cul-de-sac would keep children safe from traffic and promote neighbourhood togetherness. He stated that cul-de-sac residents in a current new town report prefer an increase in through streets but this might be due to the fact that the cul-de-sac contained fewer houses.

A contrast exists between the cul-de-sac street compared with the straight or curved linear street. In the latter two forms, the relative infinity at the ends of the linear streets allows residents to identify with the street in its relatively limitless extent. On the other hand, with the cul-de-sac this particular shape of street serves only the small neighbourhood looking on to the cul-de-sac itself.

Various other writers have discussed the pros and cons of the cul-de-sac. Willmott (1963) in his studies of Dagenham, England, suggested that such a kind of court produced a more distinctive social atmosphere and sense of community than other forms of design. As if in corroboration Willmott and Coonly (1963) said that shorter narrower streets tended to encourage more lasting relationships. Indeed more cul-de-sacs should be used in housing but not to the exclusion of other forms.

Festinger (1950) notes that grouped courtyards can simulate the cul-de-sac and promote friendliness when combined with close proximity and suitably placed building entrances. Willmott (1963), on the other hand, indicated that: “a
Fig. 7.17 The use of the cul-de-sac can provide security, privacy and traffic control.
cul-de-sac tended to overcome people and filled them with a wish to move out, as they felt that they had too much contact with neighbours."

In contrast, Kuper (1953) states that people living in cul-de-sacs were less satisfied with their housing than those living on conventional roadways, induced by a sense of lack of privacy where there was a cross exposure of windows and doors. Interestingly enough, Gallion and Eisner (1963) suggest that the linear street pattern divides property in a monotonous manner and the curve only results in a special kind of discord. The curved street gives an absence of orientation and though picturesque the curve causes confusion. Indeed, according to Gans (1967) straight or gently curved streets allow people to ignore all but next door neighbours.

Bevis and Nutter (1977) have found that street forms such as cul-de-sacs could deter burglary rates. Also where ease of travel (on foot) increased, by the same token, burglaries tended to decrease.

Topography is important in making the maximum use of the land. Since the straight street is the only form used in Libya today, at certain points it neglects the physical requirements of land. This can have unfortunate consequences as it can cause disputes between neighbours, as when a linear road is laid down without consideration of how it cuts through plots of land. For instance the road bisects a plot of land leaving one or both sides too small to allow a building to be constructed. Neighbours on the other side can often be most anxious to purchase the truncated plot so as to get access to the new road and to clean up the strip to annex it to his own land, in order that it should not revert to being a rubbish dump. In addition to the need to respect as far
as possible localised plots of land, old paths and lanes require consideration to cut down the number of disputes that arise as a result of the new road.

These paths or lanes have existed for a long time and people use them because they provide the best access. All street forms should be considered, to meet physical requirements. The singular use of any one street form will eventually neglect the physical needs of the terrain.

It is held as axiomatic that the sides of streets must at all times be parallel to each other, also that such parallelism is the only way to meet our contemporary needs and impart a special beauty to the street. However, considering the needs of the street today, there appears to be no reason why there should not be a curving in, on one side of the street, or indeed a concavity where required. Such curving in would be a distinct advantage at bus stops, public seats; kiosks and other street furniture, which a parallel street cannot offer the place to accommodate.

With modern traffic straight through-streets are necessary. However, the purely mechanistic construction of such roads which take no cognizance of local terrain and local circumstances might be regarded as inadequate. While the straight through-street could be described as monumental and the meandering lane more picturesque, no monopoly should be granted, each being considered according to circumstances. Modern city construction could well give consideration to the particular character of each district and its needs, without abusing the incidence of either of these street forms.

Brown and Werner (1985) in their discussion of cul-de-sacs have noted that, probably, such street forms do not influence residents into becoming
more sociable unless this underlying tendency has already existed. Similarly living in a through-street does not of itself prevent social interaction but it certainly makes it easier for people to avoid each other. Given that the inherent nature of residents plays an important role, it can be said that the built environment plays a significant part in enhancing whatever behaviour is occurring.

Altman (1975) has argued that instead of regarding people and their environments as separate entities it would be more profitable to regard them as a single transactional whole. Behaviour should be viewed, rather, taking place over time in a dynamic whole relationship involving time, persons and environment. In his view, behaviour should not be seen as a single static event or "snapshot" but rather as a process which also includes the person and the environment.

Thus the person cannot be understood unless regarded as a resident in the street, nor can the street be seen as a neighbourhood except in terms of its residents. The quality or character of these residents can be further defined in respect of their degree of openness or aloofness when it comes to making new friends and acquaintances. The neighbourhood can be allotted a quotient in respect of their facilitation of the achievement of these goals.

Thus the nature of the physical environment enhances or discourages the tendencies for social contact among residents in their development of neighbourhood relationships. As discussed previously, designers cannot influence behaviour directly through the built environment or through street forms. They can only provide a set of choices for the people who use the
Fig. 7.18
The top picture, the University of Constantine, designed by Niemeyer, shows free-standing building with associated depersonalised space. In contrast, the lower picture, of a traditional area, shows the retention of the human scale.
street or those who are home buyers.

The grid system of linear streets has been found to provide an inefficient traffic and land use pattern. This may have been caused by over-emphasis on one particular form. The other street forms might be found to be equally inefficient, if used exclusively in residential areas.

Because of the interest in the linear street there has been a tendency to neglect the cul-de-sac. Nevertheless, an over-emphasis on one form will not be effective and all forms should be encouraged, where relevant, in order to maximise choice.

7.6.1 Human scale and street

The term “human scale” has recently come in for more discussion as, for some time, it has been largely neglected. This term is used in two contexts, that of the social context and the physical context, referring to the visual form of the built environment. The social context could be defined as where a group exists in which everyone knows everyone else, at least by face and by name. The physical context is the one in which the human being should be visible.

The part of the field of vision occupied by an object is defined by an angle formed by the rays from the eye to the outline of the object. The smallest difference that can be detected by the eye is an angle of one minute. This would mean that no object can be made out at a distance of more than 3,450 times its size.

Taken together, these two observations would indicate that the greatest
Fig. 7.20 This is another example of the lost human scale, shown in this design by Robert Matthew Johnson-Marshall and Partners (R.M.J.M) of the vast new central square, Misurata.
distance at which a person could be expected to be recognised would be, on average, at about 30 to 35 metres. It has been observed that the ratio at which an object can be perceived easily is that of 1:2 between its size and the distance from the viewer. This gives a maximum angle of $27^\circ$. Further, this limitation is more important in the vertical direction than in the horizontal, as two thirds of the normal field of vision is above the eye and one third below.

Working on such measurements, it is possible to arrive at the dimensions of a building constructed to a “human scale” taking the distance at which a person can be recognised as 32 metres. This would determine the maximum width of the streets and give 7.5 metres as the vertical dimension and 16 metres as the horizontal. But, if an urban designer wishes to provide a visual relationship by which he can give people the opportunity of knowing each other, then he must give dimensions such as would allow the expression on their faces to be clearly discernible.

Such considerations would produce a street about 15 metres wide with buildings 6.5 metres high and 7.5 metres horizontally. Gibson (1968) contends that the distance at which the presence of a human being is still able to be perceived is about one kilometre of uninterrupted vista, beyond that a feeling of emptiness and tiresomeness is induced. He also indicates that the angle of perception deserves to be taken into consideration as there are limits to the angle from which an object can be clearly and rapidly perceived. If an object is seen from a ratio of 1:1, that is from a distance equal to its dimension, it is easier to analyse its details then have a general view of it.

If the ratio is 1:2 or the angle is $27^\circ$, that is, from a distance twice as big
Fig. 7.21 The horizontal and vertical fields of vision.

Fig. 7.22 This diagram shows the relation between distance and object.
as its dimension, the object appears as a whole. At a ratio of 1:3 the object is seen in relation to its surroundings, though it still dominates the picture. But at a ratio of 1:4 and more the object is seen as part of a bigger whole (Fig. 7.22).

The relative dominance of vision over the other senses seems to vary from culture to culture and from person to person, but as has been seen in the diploma study by the author (1982-3), as a rule the following measurements have a reasonable amount of universal acceptance.

Thus, as a general rule, a person’s figure can be recognised at 1000 metres. It is possible to tell whether it is male or female at 70 to 100 metres. An individual can be recognised at between 30 and 35 metres. A face is clear at 15 metres and there is eye contact at between one and three metres. Outdoor distances tend to be intolerably close at from one to three metres, intimate at 13 metres but still within the human scale at 35 metres. The clear field of vision is 35° high and 45° wide. But the useful view from which information is gathered is restricted to 6° in the immediate vicinity of the fixation point. The field of view of a head is roughly 180° horizontally and 150° vertically (Fig. 7.21).

In order to control the dimensions, planning authorities would do well to decide whether the environment is to be on an intimate or on a monumental scale. Such considerations do not imply any conflict or exclusiveness, as by their contrast, both scales can complement and reinforce each other. However, the monumental has to be related to the human scale as, by ignoring this consideration, the result will tend to be self-defeating, producing a gigantic and
inhuman dimension.

A comparison between the huge modern street and impressive small historical one would indicate how important the human scale is; since over-great dimensions produce a weak spatial impression and streets devoid of character. There seems to be a definite upper limit of size if one wishes to create a street or square of character. If the monumental is sought, the ratio cannot be more than 1:3 as larger distances cannot be compensated for by making the buildings higher.

The huge width and straightness of the street are the fashionable contemporary ways of construction. According to Gans (1968) visual contacts tend to be transformed into social ones when the distance between neighbours is small. Whyte (1965) has shown that acquaintanceships have tended to be formed more readily between residents in central positions in blocks and between those with adjacent driveways. He also points out that with minimal street width and minimal traffic across-the-street acquaintance ships tend to be greatest.

Those relationships of a resident to his neighbours which are significant enough to affect interaction, have been formulated by Appleyard and Lintell 1972 and Gans 1967. The tendency for visiting has taken place either across the street or immediately on either side, with the physical social inter-relationships bounded by offensive and unco-operative neighbours.

In the authors M.Sc (1984) Survey it was observed that most cross-street chat happens in the old area where street width is minimal, especially in chat between women who are dependent on such verbal contact as the main daily
conversation outside the home.

While the aforementioned visual human factors are important in deciding the width of the street, others exist which require examination.

1. The street density in traffic and pedestrian use.
2. Street function and its land use, whether it is commercial, residential or mixed.
3. The street location in respect of the general map of the city.
4. Protection from the climate, such as shade and orientation.
5. Social and cultural factors, such as the need for privacy.

Based on past discussion it can be seen that in order to maximise social life the street width should be minimal. In such contexts people can see and hear each other quite clearly. One should be able to speak in normal conversational tones without needing to shout and the noise should not be so great that one has to invite the others indoors to hear them.

The street, however, should not be made standard in width and shape throughout Libya or in a particular city. Rather its configuration ought to be decided carefully according to all the aforementioned factors. Each street should be taken as a separate case choosing its width and configuration according to surrounding circumstances.

One problem with contemporary streets is the mistaken belief that great width in their construction necessarily gives prestige to the city. Indeed it has been seen that there are many cases of street frontages being demolished to create wider streets. These are often so wide that one can hardly see the
other person on the other side of the street, far less hear his conversation.

Set-backs between the buildings and the pavement were originally to be used, possibly, in the future, if street-widening were required. These features were also intended to protect public welfare by giving each building light and air. However, such set-backs ought to be avoided or regarded with considerable trepidation as they have tended to destroy the street as a social place.

7.6.2 Speed and street

The features of a pedestrian street can be expected to be different from one given over to traffic. The different speeds make different demands. There is a clear distinction between the pedestrian and the driver in the fast lane. Generally, the higher the speed the less information is needed in respect of the environment.

A few people walking slowly stay a long time in view and the pavement appears to be lively. If the same number are moving fast, each will stay a short time in view and the pavement appears to be rather dull and lifeless. Speed and scale play a part in the perception of the environment. For example, it can be predicted that pedestrians and motorists will differ greatly in the way they perceive the city.

Driving is not only fast, but it needs continuous concentration, leaving no time or capacity for appreciation of the environment. On the other hand, pedestrians have a much better awareness of the subtleties of the environment, a clearer idea of significances and activity in the city. Because of the lower concentration demanded by lower speed, the pedestrian is aware of
more differences in architectural features and activities. Accordingly, pedestrian streets require to be designed differently from traffic streets. While the former require to be rich, full of complex detail and small scale elements, the latter, because of extra speed, needs simple large scale signs and more widely spaced elements.

It is noticeable how the planners and designers have neglected to consider the relative effects in differences of speeds. As a result, one can find areas with wrong levels of complexity, that are either excessive or inadequate for their relevant requirements. This causes the motorist to lose a lot because of the complexity of signs on the road, and the pedestrian from the relatively plain appearance of his pavement environment. The upshot is that people on foot are increasingly forced to ignore the environment and have less concern over its design.

In considering the vastness of the city, the many levels of complexity must be accounted for and their appropriate relationship to the context. In the city, design can be made to reflect these areas of complexity and their activities. The importance of these areas must be recognisable as well as the speed at which they can be perceived.

The effect of bends and changes of direction in streets is to give a sense of uncertainty, as a result of increasing the perceived complexity. The more information that seems to be given the longer the street appears in time taken to traverse. The more information and interest aroused seems to shorten the distance and time. High information complex streets seem shorter but are remembered as long. As an applied example, one can say that complex rich
urban streets can often enthuse one sufficiently so that one can walk long distances without feeling tired. In contrast walking the same distance through a parking lot can seem endless because of inadequate rates of information.

The grid pattern of streets affords interesting information. It could be said to allow a greater number of alternative street directions but as it gives less information and is simpler it has higher redundancy. It can be noted that the grid system of streets tends to manifest itself in an authoritarian atmosphere and tends to disappear when this authority and power are withdrawn.

Another feature that should not be forgotten is the making of the best utilisation of slopes and crests. Although most Libyan cities are flat, it is still possible to find opportunities to create or make best use of such differences in levels. The use of contours gives a variety of impressions and views. Edinburgh by the many ways in which its architects have taken full advantage of natural features, can be considered to provide good examples of this technique.

In the traditional town of Ghadames, as already noted above, some streets widen at some point to form a larger space in the form of a small square, either on one side or on both sides of the street. These places seem to be necessary especially when the street width is minimal. In this case the street can be divided into two areas, one for “dynamic” action the other for “static” action, or pleasure, according to Alexander (1977).

In the case of a person proceeding along the middle of a reasonably narrow street his focus of attention tends to be balanced left and right. His attention decreases evenly as smaller amounts of information reach him.
On the square or wider and enlarged streets and such areas of static action, because of their more ambiguous spatial quality, there is a focus of attention on a narrow band with oscillating attention about the centre. In this case attention is primarily on the foreground and middle ground.

Recognition patterns in both cases tend to differ. While in the movement places the tendency is for the attention to go up and down smoothly, the static places tend to produce a series of s-curves probably due to the need for supplementary information and due to the ambiguous nature of the place.

The pedestrian street could have two forms of space, each having its own perceptual characteristics. In movement places the attention should be directed and centred on the middle distance. Were such streets narrow and winding they would, by their hidden views, encourage the pedestrian to saunter. Places of static action tend to be wider, and appear to encourage visual exploration from a standing position. They act as a stage for people who become the objects of interest.

7.6.3 The irregularities of streets

The straightness of streets is typical of modern planning but it is not an inevitable feature and in certain conditions might even be regarded as undesirable. The typical irregularity of old streets indicates their gradual development over a period of construction; this piecemeal expansion was one of the main causes of such irregularity. Considering that these old streets and squares do not have a displeasing appearance, it is strange that one has become so conditioned as to grow upset with the slightest irregularity in modern city plans, especially as on the ground such irregularities pass
unnoticed. They are evident only when seen on paper.

However, the ancients did not conceive their streets on the drawing board, but constructed them so that they arose bit by bit in a natural manner. Accordingly, such buildings were governed by that which struck the eye and they did not stop to correct any asymmetry which would not have been evident anyway except on paper.

In all examples, one can see clearly the tendency to create spaces in depth in front of a monumental building facade, to provide a good view for important events. An examination of various spaces in the traditional town offers proof of this, for example, the front of the mosque in Ghadames. The street symmetry of geometric exactitude is largely irrelevant to pictorial and architectural effect. The irregularity of the old areas is such that it readily gives the illusion of regularity, though it would not be noticeable on the drawing board. Architects have tended to differentiate between symmetry and proportion. Proportion should indeed be considered more important than symmetry, rather than the other way around. Camillo Sitte (1965) states, "Modern triangular places have been failures because deception of the eyes is impossible and the intersection of the blocks of building is not easy but awkward. To improve them it is necessary to make all three sides irregular, resulting in islands and pockets of statues".

Thus the modern concern with street patterns is merely technical; street patterns are indeed only for communication and not for art. This has always been true because they can only be perceived as a whole on the drawing board not when looked on by anyone in their midst, as there is only a part that
can be seen by the eye. This part is all that is artistically important.

Thus, any street network can be the basis for artistic expression if not too strict in form. While some streets could be functional, the architect can make a town much better if he can design main streets and squares that are special. Traffic and sanitation needs are important and must be taken into consideration, but beauty need not be forgotten.

7.6.4 Street enclosure

The enclosure of the street and the open space are important features in the traditional town. Such features should not be neglected and require to be taken into consideration when one designs the street in order to create positive outdoor spaces.

The problem of the new street is its usual lack of curvature and its limits are not readily clear. For instance, wide cross streets help to break the enclosure, leaving widely separated blocks of buildings, tending to create a negative aspect. In the older cities one experienced a limit to the street in the shape of a curve or a T-junction.

One could say that people require a certain degree of enclosure to feel secure. This is true inside and outside, at work and at recreation. Cullen (1961) described such enclosures as providing a complete private world which is inward looking, static and self-sufficient. Thus, open spaces are enclosed and, in addition tend to open on to one another so that one leads to the next. People ought to be attracted into the street rather than pushed out of it. In other words, the street shape should be centripetal rather than centrifugal. The street should be recognised as an outside public hall in that it has a degree of
Fig. 7.23 An example of street enclosure.

Fig. 7.24 A diagram showing a street enclosure where the eye's gaze is not lost in infinity.
enclosure.

Since one feels more at ease where the eyes' gaze is not lost in infinity, one could say that the ideal street has its limitations on each side, and consequently, the more one's vision is contained the more it fulfils its ideal. The street of the ancient city conforms to such specifications admirably. Although the continuance of the street was not interrupted too often, due to the comparative lack of side streets, and the street's own narrowness, the element of containment was not lost in such a street. This was due to its winding character which kept limiting the perspective at each bend and at the same time offering the eye the variety of a new view at every turn.

In our own day, one has seen the windings and turnings of so many of such streets wiped out. While the designers in the ancient cities were not as skilled at tracing straight lines on drawing-boards as those of today, it cannot be said that they designed these streets without very practical reasons. Nor can one ascribe arbitrary folly to the original inhabitants in accepting such street designs, rather it could be said that their acceptance was based on their appreciation of enhanced beauty. There was a variety of cogent practical motives for such street design, often it was in respect of the terrain or it might be to avoid a stream or existing buildings.

An examination of street patterns in the modern city shows that intersections of streets are usually at acute angles. Such street design was almost unknown in the traditional cities. Furthermore, one finds in the old cities an avoidance of intersecting several arterial roads at the same point. This was achieved by curving the line of the street so as to avoid a junction,
and to create another opening. This had the added bonus of easing circulation and forming good plots for houses. A further reason for such curvatures was to prevent the wind carrying dust and debris along the street, something the straight arterial road does not avoid, as it provides no obstacle to the forward rush of the wind.

However, mere imitation of the medieval or traditional Islamic street will not, in itself, necessarily recreate the liveliness of the Middle Ages. One must attempt to understand and recreate the essential features of the old town in our modern cities. Ancient principles must be reconciled to modern requirements. A compromise must be struck in accommodating all interests using the street. While not forgetting the street function as a social place, a compromise between traffic requirements, picturesque qualities and climatic needs is essential.

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Fig. 7.25 An example of street irregularities and enclosure.
7.7 Land Use Mix

As important as the patterns mentioned so far is the concept of mixed land use as it is applied to both district and street. It can be assumed that, in general, diversity increases satisfaction and participation. Diversity allows greater opportunity for people to interact with each other and engage in public contact. Additionally, city safety is sustained. What one should be concerned with are combinations or mixtures of uses, rather than uses as essentially separate phenomena.

As has been demonstrated previously, Misurata was characterised by mixed land use throughout the city centre. One could observe a variety of activities and facilities: commercial, administrative, leisure and residential. These were all mixed together in a compact city centre. The place was consequently always lively, catering for all needs. It was a place where one could go to buy something or do something or just walk through the suqs, meet people and hear the news. The many facilities were located near each other so that people had to pass through or by other facilities to get to what they wanted.

In new Misurata, as in other new Libyan cities, by contrast, mixture of land use in a district or street is not apparent. Facilities are located quite randomly without any thought as to their relationship to other land uses. Buildings are entered and left. The distance between them may be considerable and there is no central focus where a person can wander or pass through.

There are certain essential conditions for a healthy street life to be generated in any city. Most importantly, every district and street should be so organised as to fulfil a mixture of functions. This helps to ensure the presence
of people going outdoors for a variety of purposes and sharing common facilities.

A district or street should have a variety of uses apart from its primary function. When such uses are effectively combined, the outcome is socially stimulating because people are there at different times of the day. In addition this stimulates economic activities. Such a street will preserve its basic foundation of mixed land use, provided the uses are fairly stable and enjoy mutual benefit and inter-relations.

In such a situation, where a variety of consumer needs and tastes are provided for throughout the day, many specifically urban and specialised services and shops can exist. This process is self generating. If there is an intricately and economically mixed pool of users, then there are more services and shops to serve them. Consequently more people are attracted. Enterprises that grow in response to the presence of primary uses should be encouraged.

To generate diversity, use mixtures must be successful. This means firstly that those who frequent the street at different times must actually use the same street. If the same street is not used then people’s paths are separated from each other and in reality there is no mixture at all.

The second factor in such success is that those people using the same street at different times must in a certain number of instances share the same facilities.

The third characteristic of success in this context is that there must be a
reasonably proportionate relationship between people frequenting the street at one time of the day and those coming at some other time. A lively town centre is likely to contain residential buildings within it or close by. This means that uses attract these residents into the street to enjoy the activities and patronise the facilities.

Finally, it should be remembered that a building’s ground floor is extremely important as an area of public contact. The kind of land use which should be on the ground floor, should be related to the frequenters who have come in off the street. Offices should not be accommodated on the ground floor since their frontage consists of a blank wall. The ground floor is rather the appropriate area for shop displays and trade exhibitions.

In respect of schools in Libya there tends to be a blank high wall, often covered with unseemly graffiti encircling the school playground. Such a big high wall gives a sterile aspect to the street. In the city area of the urban centres, the effect of this wall could be mitigated by fronting it with shops or some kind of small facility.

In the light of these observations one can criticise the new government administrative complexes as a bad example of land use mix. Their location in most cases is badly chosen; they are usually positioned far from any other facility at the end of the city centre. Those who work in such complexes do so from 8 am to 2 pm which means that the area is almost deserted for the rest of the day. It is difficult to find any other activities there. The car park is used at only one period of the day. If such buildings were located in the vicinity of different activities distributed in small buildings round about, the result would
be quite different. They should be located with other facilities such as shops, operating for longer hours and at different times. This would help ensure maximum use of the street and not just by people entering the building and leaving by car.

Street land use, particularly that of the ground floor of buildings should be planned to complement the other street land use. This should help to maintain effective diversity of street use. If the result is not satisfactory it should be possible to make changes.

In general small individually owned shops should be encouraged, as should open markets and suqs. These traditionally provide maximum diversity of land use. In such places all kinds of activity are to be found in close relationship to each other and operating at different times. One can easily walk round and between facilities in such markets, transport being unnecessary.

The suq is a traditional place of enjoyment for many people who rarely go anywhere else. Indoor facilities such as cinemas, bars and theatres mean nothing to such people. The appearance of government and privately owned supermarkets has killed the city's street life. Activity has moved indoors, the street frontage is blind and solid, discouraging any outdoor activity and thus contributing to the deserted character of the street.

To encourage the development of open markets and suqs there are certain prerequisites.

1. The location should be carefully selected with regard to the surrounding land use. Suqs should be grouped together in order to ensure diversity both of people and land use. The surrounding land uses should be
different and facilities should be available over an extended period of the
day.

2. There should be no restriction on commodities. Both goods produced
locally and those imported should be permitted since *suqs* are not only
for traditional handicrafts.

3. The Municipality should provide certain facilities and services for *suqs*,
such as lighting, good pavements, adequate street furnishing and
cleansing.

4. *Suqs* should be protected from the hazard of cars and through traffic. A
suitable car park should be provided in the vicinity.

Finally and most important there is a psychological factor to bear in mind.
*Suqs* are not a sign of poverty, but of a successful, functional city.

Something else to be considered in the context of the street is the role of
individually owned shops. Small shops have traditionally contributed much to
diversity of street life. A variety of commodities is available and this ensures
differences of land use. The traditional shopping street has a very small shop,
big enough only for shelves containing the commodities and for the
shopkeeper to stand. Usually these commodities are spread outside taking up
part of the street space.

The role played by such small shops lies in increasing opportunities for
interaction and maintaining street safety. This role is made possible because
such shops have a big opening as large as the shop's facade itself.

Alexander (1977) says that: "When shops are too large or controlled by
absentee owners, they become plastic, bland and abstract". In this respect government supermarkets are responsible for changing street life completely. Certain factors are mainly responsible: the street facade is too solid and the fact that it occupies a large area results in a reduction in the number of shops and street land uses. Furthermore those activities and interaction which once belonged to the street have been pulled indoors.

In order to encourage traditional shops government legislation policy and understanding is required to obtain change in present practice. However the shops should not be very wide, and should extend back from the street rather than sideways, so that the small side faces the street. In this way a street may have many shop entrances and different land uses. As much as possible of the facade should consist of a display window or an opening.

7.7.1 Density and land use

There must be a sufficiently dense concentration of people in a street for whatever purpose they may be there. The pattern of clustered environment suggested earlier is most useful here in order to ensure diversity in the streets.

It does not of course follow that all areas of high density are successful. Density alone is not sufficient condition. It is also important to avoid over-standardisation of buildings preventing mixture of land uses. It is nonetheless a fact that a necessary condition for successful city diversity is density of population. It follows that where people live there must be dwellings and the denser the population the denser the dwellings, which constitute the principal land use. Other factors which also influence the degree of diversity are not significant if there are not sufficient people in the first
Conventionally, high city densities are regarded as undesirable and low city densities as desirable. But this attitude is not justified by the evidence. One reason for the misconception is that high density of dwellings is often confused with overcrowding of dwellings. High density means large numbers of dwellings per hectare of land. Overcrowded means that the number of people living in a certain area of land is too great. More specifically overcrowding means too many people for the size of a dwelling and the number of rooms it contains. This confusion between high density and overcrowding has led to the misidentification of the problem in Libya. Generally Libya's difficulties are concerned with low density. Although there is a random location of buildings one finds at times overcrowding inside these buildings with several families living in one house.

As mentioned earlier streets become unsafe if density is too low. In other words empty land between buildings, whether planned or unplanned, huge carparks, etc., are undesirable features. At the same time high density streets are to be found where highrise buildings result in long blocks, or blind walls on both sides of the street. This is equally undesirable.

High density, or high ground coverage is not an advantage when the land is not broken by frequent side streets ensuring variety. Street densities should be calculated on the basis of a network of interconnecting streets. The location, function and cultural life of streets should not be neglected. A specific street should not necessarily be planned to carry a set density of buildings. It is important that all the above mentioned factors and patterns are
applied and considered correctly. Desirable densities should be achieved for a
group of streets or a district. In other words the overall proportions must be
balanced with regard for the functions of the elements involved. The right
balance differs in specific cases.

7.7.2 Side streets and land use mix

As has been pointed out the presence of frequent side streets cutting a
solid, long block helps to generate diversity of land use. Where adjacent
streets are interconnected by small back streets or side paths the people can
engage in a diversity of activities. Isolated street neighbourhoods or city
centres, by contrast, are usually socially and economically disadvantaged and
unsuccessful.

Parallel streets without frequent side streets interconnecting them result in
the isolation of neighbours. Long walks are required to gain access to the
neighbouring street so that residents of one hardly know the residents of the
other. This physical segregation encourages the use of cars. In addition it is
harmful for diversity of activity and interaction between people. The fabric of
intricate cross use permitted to the users of a city neighbourhood by
frequently intercrossing streets constituting short blocks is very valuable for
flexible, growing and diverse land use. Nothing positive can be achieved
through long blocks. Repressive zoning and regimented construction prevents
diversity. It is not the frequent streets themselves which provide the diversity.
It is the fact that they attract a mixture of inextricably linked and reciprocal
uses along them which leads to their success as generators of diversity and
street life.
In traditional cities the main streets have frequent side streets often small in width and which may be covered with arches at both ends. These help people to recognise the entrances through their distinctive and familiar shapes. Such side streets usually provide connections between more than two streets and facilitate a mixture of land use. Furthermore such mainstreets are not straight nor do they run parallel. Consequently they often meet and can be easily connected. The advantages of this irregularity of street shape are further increased by irregularity of street frontage. This helps to maximise diversity of street activities by providing different sorts of sizes of space for different activities and land use. Thus places are available for sitting, the placing of newspapers, cigarette, ice cream and sweet kiosks. Such examples of varied land use are vital to generate a desirable degree of diversity.

The following excuses are given by certain Libyan Municipalities when applications for licences for various purposes are refused.

1. The activity proposed is not according to the city plan.
2. It would look ugly and would constitute a sign of poverty.
3. It would cause traffic congestion.

It should be pointed out that such excuses are quite irrelevant to the reality of the Libyan city today. They operate merely as obstacles to diversity in the urban street scene.

First, the matter of the city plan. Zoning regulations, as they have been applied recently in Libya, have been used as a basis for drawing up city centre plans. Such plans have caused the greatest harm to diversity of land use in these cities. This has resulted from the introduction of boundaries between
areas of different land use based on the Master Plan. The second cause is the rigid restrictions applied to each zone, such as itemisation of height and number of floors, size of structure and open spaces, lot coverage and population density. However, the most influential factor has been the restriction of land use according to the zoning regulations. Each street or district is permitted not more than one land use. This rigid segregation of land uses was introduced with the intention of separating residential areas from industry.

The Municipality should encourage people to introduce a variety of land uses by permitting licences not on the basis of the zoning regulations, but according to the need of each street and a land use map designed by the Municipality on the basis of the considerations suggested earlier. If zoning regulations are to be applied, they should be carefully considered in the context of the need to generate diversity within the city, not by introducing strict segregation between land uses.

The excuse that a mixture of land use looks ugly and constitutes a sign of a city's poverty and lack of hygiene can be disputed. The argument that diversity of land use in a city is inherently messy in appearance implies that homogeneity of use looks better. Homogeneous land use fits in better with aesthetic treatment of a desirable and systematic nature. It can equally and more convincingly be argued that homogeneity, or sameness is dull, if orderly. However, it can further be argued that sameness betrays a fundamental kind of disorder in that it conveys no sense of direction. Moving through such areas one appears to get nowhere. The only sign of arriving at one's destination is the street name and number.
In such areas of homogeneous land use it is not uncommon to find deliberate and contrived difference of appearance among buildings. However, these distinctions arise merely from the desire for things to look different not from any genuine difference of land use. This gives rise to further aesthetic difficulties. The greater the homogeneity of use in a street or district the more this is likely to occur. Diversity of use, on the other hand, gives rise to genuine differences of content, which in turn result in an interesting and stimulating variety of appearance.

A further objection to licensing businesses is that of hygiene. The proposed activity may be considered likely to cause hygiene problems for the surrounding area, given its designated land use. Such reasoning is frequently applied where application is made to set up such small businesses as bakeries, or other light industrial concerns in the city centre. The truth is that such activities do not necessarily cause pollution or a hygiene problem if there are proper controls. The problem is that the Municipality has no proper administrative control. It is, therefore, easier to refuse a licence.

It has been shown that in traditional cities most light industry was to be found in and around the city centre. Such activity as a bakery, for instance, even contributed an agreeable and interesting smell to the area. These are the kinds of characteristic features which new cities typically lack. In answer to such arguments about hygiene and pollution one has only to raise the matter of cars which can add to such environmental problems; yet cars are not only permitted but encouraged.

The Municipality should have regulations to ensure hygiene and public
safety. Strict laws should be imposed on shopkeepers with regard to such matters. Banning them from the city centre is not a solution. *Suqs* are not a sign of poverty. They are an essential part of a local culture which should be protected and valued with pride. What is required is the development and implementation of adequate regulations and control over such matters as keeping the market clean and hygienic.

Traffic congestion is the final objection used to justify refusing licences leading to mixture of land use. The earlier pattern "Creating pedestrian streets" provides the answer to this objection. In reality Libya does not suffer from traffic jams in the true sense of the word, but from bad traffic management and confusion. Such problems can easily be solved using a variety of means of control. The existence of large stretches of wide, already constructed roads in a country with a small car population means that no serious problem need exist.

Furthermore, car-parks can be maximally exploited through mixed use. In other words parking may be for one activity in the morning such as office workers and for others such as cinema going in the evening. In fact, mixture of land use does not cause problems. On the contrary, it leads to a better street environment through a diversity of people and activities. This was the case in traditional cities and is precisely what new cities lack.

Requests for licences for such activities as those already mentioned should not be refused. Shopkeepers normally choose carefully where to open their shops before committing themselves. If business does not thrive, they are quick to move elsewhere. The most likely cause of failure for a small business
is lack of diversity of land use and lack of clustering of buildings, since it is diversity which attracts a variety of people to a place.

The need is to develop a specifically city life for urban people; they require to be housed in concentrations which are both dense and diverse enough to allow the development of a satisfactory street life.

Fig. 7.26 A typical traditional street where different land use encourages livability
7.8 Creating an Attractive Street

As has been discussed already, it is important to group people together in a certain place, but this grouping in itself is not enough. One has to make the street attractive so that people stay there and do not just pass quickly through it. Furthermore it must be attractive enough to invite people to go outside and leave their homes. One should make the street more enjoyable to give people an excuse to go out and to spend more time outside.

In this part an attempt will be made to shed some light on this problem, and to look for ways and means to improve the attractiveness of modern streets, how to make them livable places full of activities and interactions. Furthermore consideration will be given to the question of how to generate maximum activities at least to the level of traditional city streets, also how to design activities which give maximum amenity to the streets.

7.8.1 Attraction in streets

Attractions may be described as objects or experiences of an attractive character because they offer particular possibilities of meeting human need. Gehl (1987) in his studies observed that urban spaces were warm and lively when two conditions were met: first, "something happens" and second, "it is nice to stay there", meaning there is something attractive to look at or get involved in. There is a pleasant environment.

Activities in a street are closely connected with the presence of human beings, human doings. Where there are people, there is something to experience and the presence of many people in urban streets gives an individual the soothing feeling that right there it is worth while to be present.
"Other people" is the paramount matter of interest and a large number of urban functions gain their popularity by way of their ability to attract people and initiate all kinds of activities.

Among urban attractions, trading activities hold a prominent position. They draw the attention of people and offer something to look at, but they do so to a largely varying degree. The influence differs from one category of goods to another and from one shop to another, but regardless of the rate of sale and of frequentation it holds true that activities and consequent attraction value are centred around the entrance area. To an even higher degree this is the case in connection with public buildings, banks, offices, etc. The display windows may provide entertainment, but the doors are the centre of activity.

An urban space with many small shops and many entrances is varied and animated in contrast to a space with big shops and administrative buildings where the activity is placed indoors and made inaccessible to the people who pass by. To them and to the town trade from stalls and pavement displays is much more valuable because both happenings and merchandise are easily seen and experienced.

To the number of attractive urban spaces also belong the service industries such as cafes and restaurants which all have the common trait that they provide the possibility of staying in the area under pleasant conditions: seats, warmth, shelter, food, drink, etc. Often these places provide the only available acceptable facilities of settling in the place. The attraction is enhanced through the diner's opportunities to watch the passers-by and the chances available to them to view the cafe patrons.
It is a specific quality of these attractions and of other urban places of entertainment that they function and are active at all hours of the day. The feeling of activity is closely connected with doings and movements, but may, on the other hand, be supported by more or less stationary objects. For instance, such features as lights, colours, sounds, fountains, pigeons, story tellers and so on may be employed. Equipment, space and shape of buildings stimulate the feeling of activity and further the illusion of the active, urban street, as the furnished room does in contrast to the bare one.

The urban street should be lively or at least give the feeling of activity, but it is also nice to stay there. To make such kinds of streets or places certain considerations are important. These factors form the background and stimulating frame of the "stay-in" street.

1. One of the most highly valued qualities of the urban street, particularly in a country with a harsh climate, is physical shaping. This feature is vital for the arrangement of positive climatic elements such as sunshine, heat, wind and rain, with shelter and protection against them.

2. Extreme sensory impressions, such as that of traffic in new towns, cause severe physical and psychological strain. Protection against such features as cars, smoke, noise, odours, air pollution, danger and criminality is vital.

3. Artistic features of the street, can also help to provide interest, for example landscaping, architectural features, sculptures, etc.

The degree of magnetism provided by a particular phenomenon depends very much on the nature and demand of an individual's requirement. Different age groups are attracted by different things. However, for all groups activity is
Fig. 7.27 People are always interested in observing others.

Fig. 7.28 Different activities can lend life to the street.
the most important element in any phenomenon in generating attention, activity being more important even than well-being.

Activity is the first priority. This should not, however, lead the planner to neglect the feature of protection and aesthetic quality. A combination of inconveniences may well result in a space being bounded with respect to its intended use. A hazardous or unpleasant street will be avoided, or at least as little time as possible will be spent there. Such a situation may be caused by a single or only a few impeding factors, even if the street offers other allurements. Nothing, in this context, is unimportant. Anything which does not support activity is harmful and results in a reduction in the attractiveness of the place.

7.8.2 Street action and activities

Having discussed what makes a street an alluring place, an explanation is required of what kind of actions usually take place in outdoor spaces. On the assumption that basic human actions are universal, Gehl’s (1966) classification of actions is appropriate and can therefore be borrowed. He lists five major categories: looking, walking, standing, sitting and talking. These actions, however, usually occur not in isolation but in combinations of two or three. Adequate supports for all these actions to occur as naturally as possible should be ensured in designing an urban street. Consequently the detailing of urban street furniture is of great importance. Clearly each of these actions has a major role to play in the social life of anyone.

1. To walk: walking is the easiest way to be present. Walking along a shopping street needs no other pretext. The importance of walking has already been discussed in the clustered pattern.
2. To look: most information one gets from his environment is transmitted through the eye. That is why the action of looking is considered to be the most important of all. One can realise, without any deep research, that urban spaces with a sight barrier are deserted in favour of these with a good view.

3. To stand: standing is an action that tends to occur in specific places, close to any urban furniture; lamposts, traffic signs and alongside building facades.

4. To sit: more conditions are needed to carry out this action; although there are many common points with the action “to stand”. People tend to sit along the periphery of urban streets to gain a view of the activities taking place within the street. In the author’s M.Sc dissertation (1984) it has been noted that people sit in different places; old people usually sat in irregular facades to protect themselves from the climatic conditions. Young people were to be found at the cross roads where there is car movement. Children were to be found everywhere, the middle of the street being their favourite place.

5. To talk: when the conditions for the action “to sit” or “to stand” are met, the situation is favourable to make a conversation, particularly when there are activities around to talk about.

There exist another three important factors characterising the human senses, as observed during the diploma course, which should not be neglected in designing streets. These are:

1. Seeing: facial expressions and emotions are seen only at very close distances 0.5 – 3 metres. Faces are recognised at up to 22 – 25 metres.
Actions can be made out at distances of up to 70 - 90 metres. As seen earlier, human vision is limited vertically to 45° above and 55° below the horizontal at eye level, and is about 180° from left to right on the horizontal plane at eye level. But details are picked up only in the middle part of these two angles. When a person is walking the eyes are directed 10° below in order to see the ground he intends to step on.

2. Hearing: two way discussions can take place at a maximum of 7 metres.
One way communication can be carried on at up to 35 metres.

3. Smell and touch: these are important but are only possible at very close proximities.

It is of the greatest importance for good quality of urban environment that the designer takes account of these human characteristics in his aims. By providing the right conditions for these actions, the designer provides substantial support for the citizens using the street.

Impressions gained for images do not rely only on static, spatial features. Dynamic processes are also involved. Prominence is given to a street in the mind of its observers through a particular concentration of use or activity along it, according to Lynch (1960). Landmarks may be created by the association of a simple element with an activity. Activity and space are thus interconnected, enhancing each other. Cullen (1961) interprets this relationship in the following way: "Where people foregather, in market place or forum, there will be some expression of this to give identity to the activity. Market place, focal point, clearly defined promenade, and so on. In other words the outside is articulated into spaces just as is the inside, but for its own reasons.
Consequently, instead of a shapeless environment one has an articulated environment resulting from the break-up of flow into action and rest, into corridor, street and market place, alley and square, and all the minor devaluations“.

What in fact happens in these spaces is what Cullen (1961) termed “the possession of space”, which means that a territory is occupied for specific purposes and activities such as the the market (which involves a great number of persons), or on a smaller scale for the activities of a specific group. The usual causes of possession Cullen (1961) mentions are shade, shelter and convenience. Following Cullen's terminology, possession in movement is possible in those spaces which are designed not only for a specific movement, but rather for a specific occasion with no interfering activities as well. Taking the case of a promenade, it is comparable because of the inherent movement design, but it serves also for other activities such as sitting, and consequently cannot be possessed in movement.

The fact that people immediately notice if an activity associated with a particular area has moved to another space may be explained by the strong associations between space and activity noted by both Lynch and Cullen. Ground level activities, such as construction work, seem to make places memorable in Lynch’s (1960) view. Variations in amount of activity are noticeable and as such helpful for orientation. The degree of intensity of use of a particular path is perceived as a directional quality in the opinion of Lynch (1960). Newcomers to an area are likely to benefit from such clues.

The unity of a space is perceived not only through its layout and spatial
arrangement, but also because of the activities going on and their various intensities. Space here refers to conceivable space sizes. Thus, a very long stretch of street is likely to be divided up into shorter conceivable spaces linked to the interaction of space with activities.

There is usually some dominating activity, not necessarily taking place in the public open space itself, which affects and gives sense to other activities in the space. This activity may take place in the adjacent buildings or even the surrounding area. This activity, especially its state and intensity, has repercussions for the other activities in the public open space.

7.8.3 Relationship between time and activity

If there is no time there is no activity. As a time-consuming phenomenon, activity depends on time. Indeed an activity is often a means to express time consciously. Duration of an activity varies greatly, from less than a second, as with the blink of an eye, to a considerable period of time.

In general, particular activities occur at particular times in seasonal, monthly, weekly, or daily cycles. Consequently the occurrence of a specific activity may act as a sign, even as an expression of the time of day for instance. The interaction of earth and sun has a crucial influence on the timing of activities. Seasonal and daily cycles, e.g., sunrise and sunset, create the underlying rhythm for most of one's activities. The sequence of major activities through the day, such as working and sleeping is determined by this cycle. Shops are open at certain times, so are offices and indeed cafes for socialising.

A certain degree of fixedness and routine in timing is necessary for
individual behaviour to avoid disorientation according to Lynch (1972). In addition, however, the individual body has its own inherent rhythms, of sleep, exercise, attention and mood. To provide for the possibility of increased diversity and choice it may be necessary to interfere with natural or normal time cycles in order to conform to individual rhythms. Thus the volume of services and facilities required in large cities, as mentioned by Lynch, permits them to be open on almost a 24 hour basis, using statistical regularities to predict the periods of greatest use. An individual's behaviour can always fit in with a sufficiently large group for his time preferences to be accommodated. For example morning and evening people can co-exist, but each can transfer to the other's time pattern if so desired.

The three elements of space, activity and time are important factors in the life of any city, as concluded by Lynch (1972). “Until recently environmental design was preoccupied with the permanent physical artefacts: buildings, roads and land. But the human activities occurring among those artefacts are of equal or greater importance to the quality of a place. With this principle in mind, physical design has been broadened to become spatial design, planning the form of behaviour and things in space. But if it is to deal with behaviour, it must consider the temporal as well as the spatial pattern and it becomes an art of managing the changing form of objects and the standing patterns of human activity in space and time together.”

It is time which ultimately defines the kind of activity taking place in the context of daily rhythms. During a day a place will change considerably: at times it may be busy, at others empty, the purposes it serves may differ greatly.
7.8.4 Designing for activity

In order to design attractive pedestrian activities, certain steps should be taken.

**Firstly:** Necessary information should be gathered and analysed.

1. enough knowledge should be gained about the pedestrians and their preferred activities,
2. activities should be classified into main groups, such as walking, standing, playing and so on,
3. activities should be further classified according to necessity, usually into three categories:
   a. necessary activities, such as walking to buy bread. Such activities take place more or less under practically any conditions,
   b. free choice activities like walking or sitting to enjoy oneself. These activities need favourable conditions,
   c. low degree of necessity such as standing to look at shop windows.
4. the timing of each of these activities should be found.

This list of steps is useful to make possible a more exact picture of a pedestrian street. On the basis of such a classification of activities one can consider those which are predictable or desirable as contributing to the liveliness of a space or street. This sort of analysis would, for example, obviate the designing of empty and open, unsheltered streets connecting two points of importance.

**Secondly:** Planning scale.
Urban environments should be planned on three levels as follows:

- large scale, i.e. the town
- medium scale, i.e. the street
- small scale, i.e. the building

A general map of the town’s activities should be available, with more detailed maps for particular streets and buildings. Care should be taken to coordinate the work of all parts of the planning process. In this context landscape planning should be given particular attention. For successful creation of an active environment, not only must all the necessary conditions be fulfilled, but in addition it is important to pay due attention to work on the small scale as well as the large. Small scale work is likely to contribute critically to the planning of activity for the whole scheme.

Thirdly: Attraction elements.

In addition to the above two factors, it is useful to consider what types of activity to plan for. In this context, Jan Gehl’s table for planning activities is highly relevant. By considering the kinds of questions included in this table, it is likely that the designer will have considered all the most important elements for an attractive street.

Fourthly: Sequence of activities.

Urban designers are now familiar with the importance of creating visual sequences in the street. In the same way they should plan for activity sequences. An activity experience is relevant to the person walking along a street in so far as he is visually aware of it. In other words it must fall within
his field of vision.

The other important factor of street attraction is the provision of street furniture, which acts as a powerful activity generator. This is the next pattern to be considered.

**A. TASK ANALYSIS ~ DECISION ~ PRIMARY PROGRAMME**

**B. PROGRAMME**

**C. DESIGN**

**Fig. 7.29 J. Gehl table (designing for activity)**
7.9 Street Furnishing

The character of a city is transformed rapidly by the provision of street furnishing in open spaces. According to Halprin (1966) "Attention to the detail and design of objects in its streets is as important to the qualities of a city's aesthetics as its buildings themselves. As the people eddy and move in a multi-faceted series of actions the furniture in the street becomes the fixed point which can guide and enrich their movements."

Street furniture functions at two levels, that which may be called "primary" and another less obvious or "hidden". Each is important and requires attention. Indeed it is the "hidden" functions of street furniture which appear to a large extent to dictate the success or failure of public open space. The use of a space in this respect is estimated both quantitatively and qualitatively.

In recent years, particularly in Europe, many pedestrian schemes have been introduced. Due to expert design some of these appear to have been very successful. The provision of abundant street furniture and other generous provisions have brought about rebirth of the street.

In contemporary Libyan cities street furniture is demonstrably lacking, as has been shown in the author's M.Sc (1984) dissertation. Where furniture is provided its positioning appears deliberate yet thoughtless. The potential value of street furniture is not generally recognised by designers. It tends to be seen as a sort of decoration device.

It is essential to improve both the utility and quality of the public environment. The most serious difficulty, however, lies in the lack of
understanding and agreement as to what the real problems are and how to go about solving them. Furthermore certain facts further complicate the situation. There is an almost total lack of research facilities for conducting analyses of the type mentioned earlier. In addition there are no urban or landscape designers. These are usually the people who take care of the intermediate scale planning. Planners tend to see streets as lines on a map. Architects are preoccupied with buildings. Thirdly there is a lack of cooperation between the various city departments. Fourthly, vandalism is a problem as it gives the Municipality an obvious excuse for not providing any street furniture.

7.9.1 The relation of activity to street furniture

Street furniture may be defined as an institutionalised object which can support or obstruct those interactions and activities which may occur in a given open space or street. It is then necessary to explain how an activity can be supported or blocked by such a piece of furniture. How activity may be obstructed in a particular place is easiest to explain. An example would be a fence or wall preventing people from entering a place. Street furniture which supports activity does so by improving the conditions for it by inviting and stimulating the given activity, rather than just tolerating it.

Generally speaking, street furniture tends not to support or obstruct activities directly. The stimulus is often effected indirectly, possibly even without any physical contact. In other words, street furniture may be seen as an unrecognised but constructive element of city life. Spaces without street furniture are less comfortable and pleasant places to be in. Equally too much street furniture has a negative effect. Street furniture ought to be there as and where it is needed.
Street furniture consists of necessary accessories in urban space which are of public use. The following seven categories of use may be identified.

1. Communication - includes all items serving the direct (visual, spoken) or indirect (written) communication between two persons, such as telephone.
2. Control - includes all items performing controlling functions such as parking meters, ticket machines and so on.
3. Illumination - such as lighting.
4. Information - all items designed to inform, such as signs of any kind including traffic signs, clocks and so on.
5. Protection - all items protecting against something such as extreme weather conditions or traffic, for example, bus shelters, trees, bollards and so on.
6. Pleasure and relaxation - such as seats, plants, items for playing, fountains and so on.
7. Public facilities and authorities - such as water, police-cabins and so on.

Reality and theory have no direct correspondence. An object may perform a function for which it was not originally designed and intended. This is very true of street furniture. For example, a staircase is made for moving but may well be used for sitting on. Indeed street furniture typically fulfils many more functions then it was originally designed for and consequently makes a significant contribution to street life. The absence of objects of street furniture in public open space means a corresponding absence in activities, of the sort previously described. The open space thus becomes merely a passage from A to B.
In Libya the most common item of traditional street furniture is the stone bench. This was normally built in a suitable place with protection from sun and wind where it could not violate the privacy of nearby dwellings. In the author’s M.Sc (1984) dissertation, such stone benches were found to function as an inviting place where people could meet. Wherever activity was observed in a street, it was usually around these stone benches. These benches are long enough to accommodate a group of people. In addition they can be used to sleep on. They are low enough for old people to use comfortably, old men being the principal occupiers of such seats.

Another traditional form of street furniture is the movable chair. Such chairs are normally provided by shop keepers for themselves and for friends or clients. They are often put out in front of a shop and are most popular in the evening when there are fewer shoppers and the temperature is suitable for sitting out. They function, in fact, as side cafe seats.

As has been previously discussed, Libyans like to spend their time outdoors. They are not dependent on such forms of entertainment as cinema, theatre, clubs, discotheques, etc. Their preferred pastime is usually visiting others, walking in the streets and suqs, sitting in cafes. If there is a choice between sitting outdoors or indoors then outdoors will be preferred specially in the evenings.

Cafes are a typical part of any traditional street scene. To be successful such cafes must have outside seats and tables. Such facilities should also be encouraged in modern streets. Cafes should be designed to function outdoors as well as indoors. Space should therefore be provided round about and a
Fig. 7.30 A cafe's outside seats are always preferred, if it is properly placed.

Fig. 7.31 Street furniture enhances the quality of urban life.
good view of what is going on in the street.

The mixing of people is facilitated by such cafes which complement home life. Most Libyan men prefer to take coffee outside the home. The activity of coffee drinking in this context is related to various other factors which contribute to the pleasantness of the experience. Such cafes are an essential feature and should be included after careful consideration in any city plan.

7.9.2 Factors to be considered in design of street furniture

It is important that items of street furniture appeal to everybody and are lasting and of a stable construction. Items should be located where they are most needed or in close proximity. The stable design and placing of such items means necessarily that street furniture should usually not be movable. For example a lamp is used at night and this supports people’s activities in a specific place. This permanence in itself attracts and focuses activities. Such items have varying degrees of importance as generators of activities.

The area served by such an item is not usually very big. People do not willingly walk far to make use of such items. In other words it is important not to overestimate the role of such activity generators. They should therefore be related to the other activities occurring in the space. A judicious combination of different kinds of street furniture supporting each other functions in much the same way as mixed land use patterns.

There has already been mention of some reasons for activities. Many factors have a role to play. This is particularly true of optional activities which occur only if the external conditions are favourable. Of particular importance in this respect is the micro climate. The best thermal conditions for human
comfort occur between 18 - 23°C with a related air humidity of 40 - 55° according to Manley, (1952).

Different preferences result from different prevailing climates and seasonal variations. Libyans need to escape from sunshine most of the day in summer. They prefer shaded places or cool breezes. In winter morning and evening sunshine are enjoyed, while protection from the wind is sought. The micro climate has a prominent role to play in the occurrence of activities, especially optional ones. This affects considerations about placing of street furniture, which contribute to considerably improving the prevailing climatic conditions.

In general, landscaping plays an important part in street design and should therefore be considered carefully. Thus, for example, decisions about the choice of suitable trees for the climate and place also their appropriate positioning, may be critical. Differences in level are also an important factor. It is quite unnecessary to reduce streets to one level, as municipalities currently do by means of bulldozers. Differences in street level should be preserved or created and can be used to divide a space, thus giving greater attraction to the area. In addition such level differences can function as stair-seats providing a convenient surface to sit on, or a means of cutting the long street view. Colour can also be used to give variety to the appearance of a space or subdivide it. The predominant ground colour of grey concrete and asphalt should be alleviated by the introduction of other colours.

Space is divided by distinguishing here from there. Through the manipulation of these two elements the drama of spatial relationships is developed. Cullen (1961) pointed out: ‘The outdoors is not just a display of
individual works of architecture like pictures in a gallery, it is an environment for the complete human being, who can claim it either statically or in movement. He commands the drama that can be released all around him from floor, sky, buildings, trees and levels by the art of arrangement. The crucial point here is that objects should be interrelated so that there is a dramatic experience for the observer whether standing or moving.

Of course, building and topography have the main role to play in this drama. However, the street furniture also has its contributions to make, albeit less prominent and spectacular. Their importance lies mainly in their appeal on the human scale and their fulfilment of an immediate task (e.g. a seat) or as an obvious decoration (e.g. a monument). Street furniture is thus crucial as a link mediating between the observer and the framework of buildings.

Street furniture can also subdivide open space. This can happen through a punctual indication in an almost "two dimensional" way, where an object (for instance in the middle of a square) mainly marks out a spot and a certain height. It can "dominate" a place in this position on height and volume in relation to the surrounding buildings. The repetition of an object, on the other hand, allows basically two different interpretations: if objects are located at certain intervals within a longitudinal open space (e.g. a fountain in the middle of the street) then a rhythmic sequence of conceivable space is distinguished, whereas the repetition of an object at short intervals and within the same plane gives the impression of a transparent division (e.g. bollards or a row of trees). There is eventually a consequent division when objects are added close together, or when a fence or a wall is put up, be it to enclose a quiet area or because of a change of level. This division can be of limited height, thus
banning physical but not visual contact. It can be of a varying height as well, thus screening out some vistas and allowing for others. There is indeed a full range of opportunities.

Trees, in fact, are very special items of street furniture, characteristics of interest in this context being; first of all their three dimensionality which allows one to pass underneath and to experience even the almost tunnelling effect of an alley. There is furthermore, depending on the kind of tree, a seasonally varying screening effect, which at the same time might allow for a certain transparency.

A special way of dividing space occurs at night by means of illumination. The areas endowed with light tend to be of heightened importance, whereas those remaining in the dark are almost as if not existing. This emphasising and picking out of specific spots tends to create a new impression even for a well known area; so the scale of space may be experienced in a very different way at night. Cullen (1961) suggests that: "What one needs to do is to integrate street lighting with the fabric and the character of a town, both by day and by night, to manipulate light and the light sources in the full knowledge and love of our towns and cities."

The scale of installations should be considered as well. They should be in scale with the street and the surroundings. Design involved in the microscale of street furniture will have to pattern the streetscape according to the low speed of the pedestrian; it will have to define the changing rhythm of visual variety and even the layout of the item; but it should in fact provide a framework which invites comparison most of the time by the users. Rapoport
and Kantor (1967) pointed out that at some level there is a need for life-giving ambiguity in the environment. This suggests that the environment must be open-ended, unfinished to a degree so that the necessary completions, the expression of many different people, will result in a degree of diversity, and hence complexity and interest, not possible through conscious design.

An item of street furniture, whether a monument, a tree or a fountain, frequently serves as a landmark, because it has outstanding features of position, form and even meaning. Essential continuity within a changing world is provided by such items. As Lynch (1972) says: “One prefers a world that can be modified progressively against a background of valued remains”.

The contribution of street furniture to urban scenery is much greater than might be expected. Items of street furniture attract and assemble activities. Thus they act as activity generators to a varying degree.

A space may be defined essentially by the street furniture located there. Since its prime function is to appeal to people, it operates on the human scale. As such it functions as a mediator between man and the framework of buildings which constitutes the urban environment. Its role in this context is, however, limited. The positive influence of such an item will be lost if there is an obvious discrepancy of scale resulting in an overpowering space.

The creation of a lively street depends on the contribution of street furniture. For a street to perform its function of providing an informal meeting place for people, the street-scape must be attractive and inviting to the pedestrian user.
Most of the studies carried out in urban pedestrian areas indicate that people are more interesting to people than any other item. Weather, shops, space and architecture are only contributing factors of interest. The main source of interest to individuals will typically be other people. Space, buildings and furniture form the framework for essential urban activities. A good frame supports, while a poor or bad frame hinders human interaction and communication which are the primary function of urban spaces.

Fig. 7.32 Street furniture used to express monumentality, as proposed by Cullen for Russell Square, London.
7.10 Openings and Connections Between Indoors and Outdoors

Most streets in a town centre are dependent for their success on easy interaction between inside and outside. In addition the success of a business within a building depends on its exposure to passers-by.

The sight of action acts as a stimulus for action. People’s world is made bigger when they are able to see into interior space from outside, in the street; it is enriched, the observer is presented with new possibilities for learning and communication.

Many means exist to connect interiors with the street, such as glass, entrances, windows, balconies and so on. In this part each of these patterns will be considered. Some ways will be suggested to help create continuity between the interior and the street exterior so that the two spaces work as one. Traditional forms will be considered, as examples of how to create maximum exposure where it is required, as for shopping, or a minimum connection to protect privacy, as in traditional residential streets.

The modern method of connecting inside with outside is usually to use glass in the wall along the street. This is supposed to provide a view of some interesting activity going on inside which passers-by are invited to look in at and in many cases to enter the building. Alternatively, the wall can form a show window advertising what is inside the store. This use of glass is helpful to soften the hardness of the large, solid wall of many big stores. Furthermore, such windows help to increase the time spent by people in the street. They are encouraged to go more slowly, since they are invited to stop and look through the glass into the show windows where they hope to find something
interesting. Their projection into the street also gives a feeling of contrast and variety to the street frontage.

However, the advantages of glass are offset by certain drawbacks. The involvement of the passer-by with the interior space is rather passive. In addition, glass window fronts are not suitable for a climate like Libya’s. They generate too much heat within the building. They are too costly given the problem of vandalism. Finally they permit only visual connection. Sound and smell are lost.

The traditional type of connection between interior and street is a huge entrance as wide as the interior shop space itself with sliding doors and shutters. This permits a far more involving and valuable connection. It is easy to step inside the opening at any point. One can hear and smell what is going on inside and chat with the occupants of the interior space.

As has been mentioned before that small shops have recently disappeared in Libyan towns. Instead large new supermarkets have opened. These are very large, with huge, hard walls without windows of any kind, and very few and small openings. These supermarkets have, not surprisingly, played a significant role in reducing the attractiveness of our streets, making them less enjoyable.

Through this neglect of adequate connection between interior and exterior space, the streets look dull and function as two separate spaces. This is a great inhibition to street activity and interaction.

The necessary connections therefore should be encouraged by reducing the blind wall area and increasing the number of entrances, making them as large
as possible. The street frontage could thus be made more interesting when shops are open. In addition good design would make it more attractive even when they are shut. To this purpose shop window and entrance design should be given attention. Spaces should be provided for small shops with large openings and arcaded fronts, providing shade and comfortable temperatures. At the moment air conditioning is used; costly and unhealthy. For it to function effectively entrances have to be reduced to a minimum size and doors have to be kept shut. This results in deserted streets.

The best kind of connections are where the activity is not only open to be seen and heard, but actually spreads out into the path, so that passers-by have to walk through it. A typical example of such a connection is where a shop actually straddles a pavement with goods displayed on both sides. Workshops where skilled craftsmen can be seen making things are another example of an interesting activity which may spill on to the pavement. In such a situation passers-by don’t have to make a conscious decision to enter, they are quite likely to find themselves inside. Designers should not see the street interface as combining two places, but should design it and treat it as one place.

7.10.1 Entrances

The position of main entrances controls the layout of the whole building. They should therefore receive careful consideration according to the function of the building and the street activity. Movement to and from the building is controlled by and all other decisions regarding layout are thus determined by them. If entrances are badly placed the rest of the building is adversely affected. Where the entrances are correctly placed, the building’s layout appears to open out naturally and easily. Correct and clear positioning of main
entrances is therefore vital.

In the case of offices and public buildings it is important that entrances are visible from a distance. In order to bring people together, entrances should be grouped together as much as possible, so people use the same street, instead of coming and going from different places without seeing each other. Another factor to be taken into consideration is climate. Entrances should be positioned in shaded places, or the shape of the entrance itself should provide shade so that people can wait there and meet each other.

In residential streets the entrances require more careful consideration, especially with regard to privacy, this being the most likely subject of dispute between neighbours. Traditionally, house entrances were carefully positioned to protect the privacy of the residents. Doors were placed at the side, never opposite other doors, and at a suitable distance away. This avoided inconvenience caused by direct overlooking. Where there were shops their openings were very carefully located, usually so that the shopkeeper and shop-users were not visible to nearby houses.

Another feature of traditional residential streets was the small transition space usually found just inside the main entrance of a house. The junction of this space was to create a “transition” between the private inner world and the public outside. This space is necessary because of the narrowness of the street to prevent abrupt invasions of the inner sanctum of a private interior.

It is essential that this transition space is given a physical realisation, between outside the front door and the building’s interior. This physical place may be a passage at a sharp angle or a special formal space for receiving
Fig. 7.33 A series of examples of Mosque entrances showing the passage through transition space.
guests. This is traditionally the space where visitors and relatives wait until they are invited inside. Such places help to reduce the problem of positioning entrances, since visual contact between the private interior and the public exterior space is prevented. If such a transition space is provided then front doors can be left open during the day, as was the traditional custom in villages and towns. In modern housing, however, people are obliged to keep their front doors closed at all times.

Keeping doors open helps to encourage street interaction and social life especially for women and children who prefer not to wait out in the street before being invited into a house, but to stand in such a transitional area which is not public. It is a favourite place for children to gather and to play during the hot period of the day because it is cooler and yet accessible to the street.

Such a transition place can be provided both inside and outside a main door, as in the case of public buildings. Where the front door is set back to form a transition space between it and the street, the effect is very satisfactory. Consequently most people prefer to have some sort of space in front of their entrance between their door and the street. The outside transition may be effected by different means such as light, changes of direction, surface, or level, gateways can provide a change of enclosure or even just a change of view. If the transition on entering a building is too abrupt there is no sense of arrival and the feeling of privacy in the building is lost.

Behaviour appropriate to the street is different from the kind of behaviour suitable for the more intimate character of a house. People moving from one to the other need space and time to adapt this behaviour.
destroys the momentum of closeness, tension and distance, appropriate to street behaviour, so that people can prepare to relax as they enter the privacy and intimacy of the house.

The problem of privacy is often a source of argument between neighbours which the Municipality have always had difficulty in resolving. Such problems are time consuming for the staff of the technical departments. The cases usually end up in court where one of the neighbours is ordered to alter the plan of his house, notwithstanding the fact that he was given permission by the Municipality to build it in the way he did.

Such problems could be avoided from the start by the provision of such small transition places inside the door, also by placing doors to the side of opposite doors and at an adequate distance. Such provision should be provided by the Municipality itself as a duty, to avoid such family disputes which tend to be long lasting and damaging to the well being of the community.

To conclude this discussion of entrances, certain points may be summarised:

1. Entrances should be designed according to the function of the building which differs from one to another. In the case of shops, maximum entrances should be provided, in the case of houses privacy should be preserved as a maximum priority.

2. Entrances should be well placed so as to be seen clearly.

3. Entrances should be grouped together, as far as possible, in order to strengthen the relationships between people.
4. The privacy of neighbours should be protected. Good design can prevent dispute between households.

7.10.2 Windows

Windows have a considerable and unique contribution to make to the connection of inside with outside. They are vital both for the street and interior. No one wants to be in a street without windows because it's blind and therefore frightening. At the same time, no one wants to live in a house without windows because it is unhealthy and unpleasant. It is necessary for people indoors to have windows through which to see a world outside which provides variety and refreshment and with which the viewer can interact if she or he wishes. People outdoors, as has already been said in the context of openings, need windows for their social and psychological comfort.

A further indirect function of windows is that they support street safety, since people watching from a window exercise a policing role, thus helping to reduce vandalism and keeping an eye on neighbours. The inhabitants of a house cannot manage for very long without feeling the wish to look out of a window especially if that person leads a solitary existence. A window allows people to participate in the life outside for as long as they wish, to observe changes in time of day and weather.

In a public place like a cafe window seats are usually preferable places to sit, because the street can be seen. A good view from inside contributes to the success of such places as cafes and restaurants, so much so that good window views are a characteristic of expensive cafes.

Windows differ from one building to another depending on its function and
Fig. 7.34 Goods are shown hanging outside over the pavement.

Fig. 7.35 Another example of using the pavements for connecting the exterior and interior spaces.
the need for exposure to the outside world. Shop windows and house windows are therefore very different in function, the former facilitating maximum exposure, the latter necessitating maintenance of privacy.

This factor of privacy, which has already been discussed at length as being of crucial, social significance, is largely neglected in recently built environments with respect to windows as well. Where neighbours are able to look into each other's windows, confidence tends to be lost. Traditionally the problem of overlooking was controlled by such elements as ensuring that house windows opened into an interior courtyard, restricting vertical building and the size of windows, good placement of both doors and windows, and finally, by use of the mashrabiya.

In contrast, in the contemporary built environment, lack of privacy is suffered in both high-rise flats and villas which are surrounded by a courtyard, where balconies are placed, and where windows are large. The Municipality will discover eventually that they must find solutions to such complicated problems arising from lack of privacy.

The task of this study is not to suggest ways and means of solving social problems, a topic for further research study in the field of housing. However, it is possible here to connect inside and outside with a view to making people's lives more pleasant. Shopping street windows have already been discussed. Their function is to connect indoors and outdoors as one space. No problems of privacy will arise in this context provided the street is used mainly for shopping, with each shop having maximum exposure to the street.

Problems of privacy have arisen typically in residential areas specially where
there is a mixture of residential with office accommodation and other land uses. Traditionally watching from upper windows was severely frowned upon. This attitude found expression in the old built environment and thereby helped to preserve the privacy of the private house. The modern built environment has shown itself largely unaware of the deep resentment experienced by most Libyans on the invasion of their privacy. On the other hand, watching the street is a popular pastime with some women and girls, especially those who spend large parts of the day indoors. This can be an enjoyable recreation where it is possible to talk to neighbours and exchange news through windows. The problem is how these conflicting interests can be accommodated. The answer would be to provide a facility by which the watchers can continue their activities unseen by those below, who have a right to feel that their privacy is not being invaded.

In looking for a solution to this sort of problem the *mashrabiya* immediately comes to mind. Its reintroduction would permit the maintenance of privacy while the window could provide its function for the residents, because a viewer can watch the street without being seen. A *mashrabiya* is a pierced screen with a small hinged shutter fixed in. The solid areas provide bright colour, contrasting with dark gaps in between. The whole prevents anyone seeing into the interior. Anyone looking out thus has a good view without being visible. It permits air to circulate, but reflects the heat. Daylight can enter the house, without glare. The higher portions can be constructed with larger gaps to permit more light into where no one can see.

Sometimes a combination of shutters and glazed windows is used. The shutters are closed and the windows opened when it is desirable to keep out
Fig. 7.36 A mashrabiya from the inside, providing a combination of privacy and light.

Fig. 7.37 The mashrabiya from the outside, showing how such features can enhance a building's appearance.
the heat yet allow air to circulate. When air needs to be excluded then the windows are closed. In such cases attention should be paid to the external wall and roof construction to make it attractive.

In Saudi Arabia, for example the mashrabiya has been reintroduced with great success. This proves the validity of traditional solutions. It helps preserve the traditional character of cities. To conclude it can be suggested that the mashrabiya be reintroduced in Libya to help solve the problem of privacy in residential streets. Girls and women would thus be able to observe street life so that they would not feel so isolated.

7.10.3 Balconies

In modern built environments there is hardly a building without balconies, be it offices, public building, or private dwelling. Balconies have become a sort of fashion. They are often even added after construction, as aesthetic elements.

For cultural and social reasons these balconies are hardly ever used. In the author’s M.Sc dissertation it was found that the only people to make use of balconies were children. They were also used for clothes drying. These balconies have exacerbated the privacy problem because people are afraid of being watched from the courtyard by their neighbours. The only solution offered by the Municipality when disputes arise is to shield off the balconies to protect neighbours and, or inhabitants.

The construction of balconies should be restricted to a minimum since they are not used and only cause problems which are unsolvable. The space thus freed would be better added to the inside. Most public and office buildings do
not require them anyway. They should be built only where their use is assured and does not cause problems. Buildings can be made beautiful without balconies. To deal with the climate, there are other, preferable solutions as already mentioned.

Connection of outdoors with indoors is an important element in street design which requires careful attention. It is to be lamented that the modern techniques being introduced in Libya take little account of traditional solutions which are being abandoned. Technically and thermally adequate solutions are necessary, but these will not be satisfactory if they are implemented at the expense of cultural needs. For the satisfaction of these elements text books are not adequate for the architect or designer. Knowledge of the local traditions, Islamic way of life and needs is required.
Fig. 7.38 One can hardly see any activity taking place in these open balconies, except for clothes drying.

Fig. 7.39 People shield their balconies in order to make use of them.
7.11 Pattern of Conflict With Culture in the New Built Environment

As has been shown in the previous chapter, a major factor in the development and shaping of the traditional built environment is the socio-cultural one. This factor has been largely neglected in constructing the new built environment. This absence of attention is not altogether surprising, since plans for our new cities derive from a different, often alien cultural environment. The methods and approaches evident in these plans have been developed and applied as a solution to local and culture specific problems, generally quite different from those of the Libyan environment.

In this part the objects of study are those patterns which are in conflict with local Libyan cultural and social values. In particular, patterns which relate to the street will be analysed.

7.11.1 The master plan and its implementation

In Libya master plans are implemented by the appropriate Municipality. A Municipality typically believes that the master plan will cure all planning problems and in particular that it will control the spread of rapid development. There is a blind conviction that the master plan should be implemented as it stands, without reservation.

In fact, such master plans in their implementation have created more complex problems than they have solved. This is hardly surprising since these plans, as already indicated, have been prepared by foreign companies without any knowledge of the local situation and its cultural context. Such companies invariably prepare plans far from the site, in another country, with at best only a few visits to the site concerned. Even if these plans were prepared on or
near the site, there is still the problem that the designer is a foreigner who has little or no understanding of the local situation and cultural context with their associated problems. Generally speaking the plan which is presented to the Municipality is well produced in terms of general appearance. However the representatives of the Municipality are usually young and inexperienced. They are therefore unable to give guidelines to those preparing the plan. Furthermore they have difficulty engaging in constructive discussion of the plan either during the design stage or after. The reasons for this lack of communication are not only lack of professional experience but also a language barrier. The municipal representative may have limited English; the designer is unlikely to have Arabic and may not even be a speaker of English. In this situation municipalities may have recourse to yet another foreigner as their representative in discussions with the company concerned. Such representative employed to scrutinise the proposed plan will, typically, be well qualified, but again ignorant of local factors.

If one takes Misurata as a typical example one finds that both the regional plan and the master plan for the city were prepared by Polservice in Poland. A more detailed plan for the city centre was prepared by Robert Matthew, Johnson-Marshall and Partners in Scotland.

Another factor contributing to the predictable failure of such master plans is the lack of data and survey information relating to the cities concerned. Clearly any good master plan must be based on extensive and reliable data.

In addition there is no developed procedure in Libya for public consultation. The Municipality simply uses force to implement prepared plans. No attention
These three drawings indicate fixed street widths designed by a foreign firm to be implemented in Misurata without any consideration of the existing width.
is paid to the consequences of such implementation. There is no opportunity for local residents to consider and discuss these plans let alone object to them. The Municipality has an army of bulldozers whose duty it is to demolish any building or area of buildings which contradicts the plan. Demolition goes ahead according to plan, even though the rebuilding may not be carried out for years. Consequently some cities look as if they had been damaged by war; there are large areas of total wasteland which remain for long periods. To aid some municipalities further in their implementation of master plans, central government gives them the right of "eminent domain", which means that land and buildings can be requisitioned without consultation and with almost no compensation.

Here one has to focus in more detail on the recurrent elements which are a contradiction of socio-cultural values and local reality. These arise as a result of changes to the physical environment brought about by the implementation of the master plan.

It is important to bear in mind that it is not the intention of this study to criticise these master plans in detail nor to look for alternative solutions. It is intended, rather, to emphasise those patterns which have an effect on the character of streets. In this respect the following factors will be considered in detail; zoning regulation and the introduction of social classes; the imposition of new plans on existing built-up areas, street widening and the setting back of street frontage and finally the role of eminent domain.

Zoning regulations

Zoning regulations as they are applied in Libya are not in themselves a new
idea. The idea developed in the late nineteenth and early twentieth centuries in Western Europe and the United States. It was used for a specific purpose: to protect single family residential areas from invasion by undesirable activities and people. The value system which constitutes the context for this development is radically different from the value system of Libya.

Two issues are of particular interest in zoning. These are value and planning. With respect to the former, zoning is used to improve the value of property. Every piece of property should be used in such a way as to give it its full value without damaging the value of other nearby property. With respect to planning, zoning is seen as its instrument. The validity of an ordinance is viewed by its degree of consistency with the plan on which it depends. Babcock (1966) points out that no attention is paid to the results of specific activities or to how local residents are affected.

An example from the country of its origin might serve to make this clear. Delafous (1969) explains that in the U.S.A., in the eighteen-eighties, zoning regulations were used to exclude Chinese settlers from the city. Since they used their laundries as social centres, such laundries were declared a nuisance and a fire hazard.

Another case of discriminatory legislation occurred in 1913 in the States of Wisconsin and Minnesota as Scott (1971) has noted. Residential districts were established because home owners and estate agents wanted to ban manufacturers and commercial establishments from residential areas. Since there were no city plans, districts and residential zones were designated in response to the request of property owners to solve the problem.
Makielski (1966) shows that from early this century most cities have followed these examples and have introduced comprehensive zoning. Such zoning helped to protect home owners because the neighbourhood could be of a certain standard. None of the cities' expansion plans was contradicted by these zones. As a result they tended only to minimise gross disorders, and ignore long-term changes that might be socially desirable.

In general zoning law consists of three main elements. Private land is assigned to particular areas or zones on the basis of a specially produced map of the city. Restrictions are listed with regard to each zone. According to Warner (1972) these regulations control height, floor number, structure size, lot coverage, size of yards, open spaces and population density. These restrictions on private property are justified as the best means of protecting citizens' safety, health, morals and general welfare. To this end overcrowding should be prevented, transport facilitated, value of existing property preserved, adequate light and air in living spaces guaranteed.

These zoning ordinances have been copied by cities with similar problems. Other cities, also, especially in Third World countries with quite different cultures, climates and very different problems, have adopted them.

Clark and Perlman (1948) point out that one important result of the institutionalisation and sanctioning of zoning has been segregation by income, national original and race. This has been brought about by the interaction and collaboration of these laws with estate prices. Allowing the establishment of one acre minimum lot size as opposed to quarter acre, to protect single family homes had powerful social effects. These zoning restrictions resulted in more
Fig. 7.44 Part of the Misurata Master Plan, showing "The Central Area."

Fig. 7.45 Zoning can be seen to regulate the use of each part of the city plan.
there is a master plan with a package of zoning regulations. These regulations dictate densities, building heights, lot sizes, street width and set back requirements. They are dictatorial rather than prescriptive of certain patterns of conduct, as the traditional social conventions were. The traditional approach means a reciprocal and acceptable relationship between the conventions of use and the physical environment. Regulations based on prescriptive physical conventions allow nothing other than what is prescribed. The variety of urban forms thus becomes severely limited. With this approach comes a determinist attitude toward the relationship of form and use.

Let us examine this difference in physical terms by looking at the street types within traditional contemporary cities. Within the traditional city these different types of street differ in their form and in their arrangement but all subscribe to what one calls rules of conduct. With the present prescriptive setback requirement in the city there is only one model which cannot be deviated from.

Another issue that is important to point out here in regard to the prescriptive physical conventions is the fact that most of these conventions developed in a different social context. They pertain to and are based upon conventions that are alien to the residents of Libyan cities. In some cases these conventions are based on ideals and notions that even run counter to those of Libyan society. Such has been the case with the introduction of social classes.

The introduction of social class

Social class distinction must be assumed to be an undesirable social
disease which every country is working to get rid of. This disease has only recently begun to affect Libya. However, different social classes can now be seen in some Libyan cities and other Arab Muslim cities even though it is fundamentally abhorrent from the point of view of both culture and religion. In Islam there is no difference between people. Indeed all people are seen as the same; they should enjoy the same way of life and have the same opportunities. There should be no segregation either socially or economically.

Social segregation is brought about by many contributing factors. However, it is clear that the built environment has played an important role in fostering and identifying social class. Distinctions between social class should be minimised by the built environment, whereas in fact they have been reinforced.

Poor people are grouped in certain areas with special models of housing being built for them. This social group is thus identified and labelled as poor.

Certain factors contribute to the development of a class system through the built environment.

Firstly, the limitation of land lots. The size of a land lot depends on its location on the city’s master plan. Each zone has its own regulations controlling minimum and maximum size of land lots, also height and size of buildings. Decisions relating to the limitation of land size and built-up areas are usually justified by municipal officials on the ground that they promote the general welfare of the community by protecting the character of the physical environment. In reality the result is to exclude certain people from certain areas which has the effect of classifying and segregating the population on the basis of income.
Secondly, the distribution of land area and amounts of loans to build houses according to people's income. The only factor used to decide how much land should be given to a family for the purposes of building a family home is income. Families with a large income get a larger lot. Factors such as size of family, number of children etc., are neglected. The banks use the same criterion to decide what size of loan to give for building a house.

Consequently, people who have limited income are obliged by these procedures to live in certain areas where the land lots available are small. As a result they end up with small, usually unfinished houses. They can only live in certain areas dictated by the master plan, preparation of which was, in turn, carried out within the constraints of the zoning regulations.

Thirdly, public housing and Municipality land divisions. A recent development in Libya has been the extensive building of public housing to accommodate the homeless as quickly as possible. These houses are usually provided free to poor people. The accommodation normally takes the form of multi-storey flats. The buildings are often grouped together in a designated area according to the city's master plan. These districts are usually easy to recognise because the buildings are of standard elevation all over the country.

The people who occupy such accommodation stay on a more or less temporary basis until they find or build their own house. The only people who stay permanently are the old and widowed. This separation of the family is particularly harmful for the old people who have brought up their children as their life insurance. They are very dependent on them since caring facilities for old people, such as old people's homes, have never existed and are
unacceptable in Libyan society. Traditionally, old people live near or even with their adult sons and their families in the same house.

Socially and culturally it is not acceptable for a man to abandon his old parents and to go to live far away from them. Minimum land lots and zoning have made it necessary for people to leave their parents since there is not enough room for the whole family. They often cannot get land near their parents nor even near their relations.

These public houses have cost a lot of money, but the only people to benefit from them are the contractors. Wherever one goes one is aware of the bad reputation of such districts. People are ashamed to be residents in such areas which are known scornfully as "people's homes". There is thus a psychological barrier which makes such houses appear undesirable; even though they are free people still do not wish to live in them. The extension of such housing to cities all over Libya has been a mistake. This is now accepted by representatives of the housing department even though the programme is continuing.

Some Municipalities have found a partial solution to these problems. They distribute the budget available for the public housing programme as loans to people in need, allowing them to build by themselves on a site of their own choice. However, they are not free to design their house as they wish. The government housing department provides a standard design for such houses with standard elevation. Consequently, the house is distinguishable as that of a poor family. This solution has reduced to some extent the social problems attached to mass public housing. However, the remedy would have been more
successful if there were no fixed design for the houses and those accepting loans had the same opportunity as families with private means to build as they wish.

Municipalities operate a policy of land division which results in the grouping of low income people together on the one hand and high income people together elsewhere. A Municipality may have control of a huge area of land. This area is divided into land lots which are given or sold to people for the purpose of building homes. There are two main categories of land and these are located in separate and confined areas, well apart from each other. The larger lots are generally sold to high income buyers, while the smaller lots may be given to people of low income. This segregation is the main factor to be considered by the Municipality when land is distributed. This type of segregation results in the clear identification of the poor so that they become isolated in certain areas and high income families are protected.

Ways and means of reducing the outward and visible signs of social class difference should be considered. These ways and means may be summarised as follows:

1. Size of land plots distributed and bank loans offered should not be based on people’s income. Other important factors such as the number of children or size of family should be considered.

2. Mass public housing should be reduced to a minimum. Social and cultural factors should be carefully considered in locating such housing. Building design should vary from place to place according to the location of the site plan. Standard elevation and design should be avoided, as should standard size of land lot in any area. There should be a deliberate
policy of dividing areas into different sizes of land lots.

3. People should be encouraged to build their own houses on a land site of their choice, near their family and friends.

4. Facilities should be available everywhere no matter who the residents are. Areas already built up with public housing can be improved through the provision of certain facilities and mixed land use.

5. Land prices should be controlled instead of being allowed to rise. This would avoid a situation where low income families are unable to afford large land lots.

In order to reduce social class distinction a great deal of co-operation is required at various levels including planners and architects. Unless there is a sustained effort by everyone involved these latter will be unable to change the situation adequately. Municipalities are still making zoning decisions without the slightest concern for the outcomes of their policy. Such zoning has produced serious problems not only in Libya or Arabic-Islamic cities but in the countries where such policies originated.

Egalitarianism, public modesty and respect for fellow Muslims as equals have traditionally played an important role in the development of housing in Islamic society. Conspicuous grand facades opening on to a thoroughfare or a public urban space are unacceptable because they would represent a challenge to the fundamental equality of Muslims. Architectural splendour in housing has always been hidden behind thick blank walls. Such interiors facing into a courtyard within the building were never seen by the public. They would be admired only in strict privacy by the residents. Such absence of public
ostentation signified respect for the resident who could not afford such luxury. The Muslin is motivated to be very cautious and prudent about expressing publicly and physically his social and economic status. As a result, the traditional city is secret and mysterious. It looks inwards and appears therefore indistinguishable or neutral. It thus expresses the religious and cultural belief of its inhabitants. Clearly such an ethos is effectively ignored and violated by the consequences of the policies of land lot size and divisions, public housing and zoning which have just been described.

7.11.2 The imposition of new plans on existing built-up areas

In most of Libya's towns new gridiron models have been driven through the traditional compact irregular street pattern. This dreary and conventional plan is quite disastrous for the old homes and for the neighbourhood life of the area. It leaves fewer housing sites and these are mostly narrower than before. The large population which is thus expelled is, as usual driven apart and family and friends are segregated. Since the Municipality has no plan to accommodate people together in one area, every one has to live where he can find available accommodation. Some people may be moved forcibly by a new plan. Indeed they have to move again and again. There is no general plan for accommodating these people together. The whole neighbourhood community is destroyed. Often only the old people are left, who have a strong sense of belonging to their area. Furthermore disputes are created about the ownership of land left over. Shapeless bits of land remain because all these next to them want to add them to their own house or land and will not allow anyone else to have them.

This distraction is very costly since the Municipality has to pay a lot of
Both illustrations show new wide streets imposed on the existing area to implement the new regulations (see Figs. 7.41, 7.42, 7.43).
compensation to satisfy the people. Usually this cost is at the expense of other facilities which the Municipality ought to offer the residents of an area.

By increasing street width the planners think they can solve the traffic problem. But even if it is solved by such means, bigger social and physical problems arise. The worst effects are on the old areas where the houses are built without any setbacks on the street. In these cases the additional width has to be taken from the house, leaving not enough room for the family to stay on the remaining land, so that they have to move. The street becomes a deserted place which is only a road for cars. The demolition of the street frontage does not concern anybody. The residents have left their homes, and the Municipality has implemented its plan. The elevation is consequently left without any treatment. There is not even a compromise to reduce the specifications of the master plan. A lot of new buildings have been pulled down to gain some few centimetre of width. What makes this obsession with master plan specifications more harmful is that the Municipality usually takes the additional width from both sides of the street, claiming that this is fairer to each party on both sides of the street.

Another fact which worsens the issues and makes the rest of the houses uninhabitable is that the building material is from clay and stone. This material is very weak specially when the demolition is done by heavy machines such as bulldozers. Consequently the whole house or the area may have to be cleared.

The system implemented by the municipalities is inefficient, and has had such disastrous effects over the last decade, that they are hardly equalled by the savagery of war both physically and socially. Surely the awakening of
Fig. 7.48 The plan shows where buildings were demolished to implement a new street junction.

Fig. 7.49 The plan, also from Misurata, shows how a whole area is to be demolished to provide space for a multi-storey car park, in the middle of the city, where there is no real parking problem.
public interest is overdue.

The main ground put forward by the advocates of these new thoroughfare recommendations appears to have been what can only be described as providing perfectly straight streets. These same advocates are not prepared to make a slight deflection from the straight line when they want to avoid a certain friend's house because they are afraid of being accused of corruption. Since, as has been mentioned above these plans form a part of the master plan which has been prepared abroad, away from the studied area, it is not surprising that the new plan looks as if it had been drawn for an empty site. No consideration is given to the social and the physical structure of existing areas or to the economy. Buildings are pulled down, both new and old. The Municipality armed with its bulldozers destroys any building which contradicts the master plan and is concerned only to create wide, straight streets.

Usually, the clearance of such areas is encouraged and ordered by the civil sanitation and survey engineers who only think of traffic and sanitation. These not only operate when the street is straight, but could operate as well in the case of crooked and zigzag streets. This should have been learned from the experience of other countries.

Possible ways of avoiding the whole demolition of a street

In respect of street preservation a generally conservative approach is needed. Local reality, both physical and cultural must be respected and held in regard. Existing problems must be solved, but a much greater degree of understanding and sensitivity is needed and solutions should be avoided which create further serious new problems.
For such an approach one can look at other countries with more extensive experience of similar problems. The most obvious example is to be found in the commentary by Tyrwhitt (1947) on "Conservative Surgery" by Patrick Geddes, as applied in India. One must not forget of course that India is a very different country from Libya with its different, and specific, cultural characteristics and problems. Nonetheless, it would be true to say that Geddes' caring and careful approach is what is needed now in Libya.

Geddes's "Conservative Surgery" was based on a set of quite simple principles as follows. Firstly, new streets are not really required. By simply enlarging and widening existing streets, ample communication can be ensured. Secondly, by adding a few vacant lots and by removing a few of the most dilapidated and insanitary buildings, the existing streets can be greatly improved. By conservative surgery the total expense can be reduced to a minimum and at the same time the community can be protected (Figs. 7.50, 7.51).

This conservative method, however, is not without its difficulties. Work cannot be done in an office using ruler and gridiron parallels. Instead, plans must be sketched out on the spot. This requires a great deal of walking and tiring effort on the part of the designer. Often the environment and street conditions are difficult to endure. Before starting to draw or even think of a solution, one should walk through the district concerned. If a new plan is simply drawn in an office, then it might as well be drawn abroad. Furthermore, detailed and exact maps of any plans should be prepared. This is not normally required for municipal use at present.
The second stage is that of demolition. Careful calculations should be made both on the economic and the social plane. The merits of demolition for each building should be considered. Why exactly should this building be knocked down? The answer should be convincing, based on positive reasoning and practical advantages, not just in order to straighten the street or to impose uniform degrees and angles on the line of buildings.

All cases should then be considered in the light of the whole area and the treatment considered appropriate.

A great deal of space can be gained by clearing small slums from the front and back of houses. This would provide room for more houses. Or the spaces can be preserved in order to function as squares or to widen out a presently too narrow and crooked lane.

The strategy should be carried on at length bit by bit till gradually a new plan evolves. This plan can be expected to provide for as much space as possible, while avoiding wholesale destruction which results inevitably in displacement of people and whole communities.

One hopes to achieve the best of town life without losing the advantages described above, it is from this standpoint that one should prepare plans for urban development. One aims to improve the standard of dwellings and social life without losing business and indeed while increasing and improving it. It is vital to ensure street, social life and therefore the space needed to encourage it. For street social life to continue, wide, straight streets are not needed, indeed they are undesirable. Libyan traditional forms make use of narrow lanes. Since these provide shade and quietness they are more acceptable.
Designers of today should differentiate between main routes of communication and access to and from residential areas. It ought to be possible to locate each kind of street in the right place instead of damaging both by imposing on each the limitation of the other. In other words each type should be planned according to its specific function.

What can be done to remedy the situation where streets have already been widened in the destructive way which has been described? The new thoroughfares dreamed of at the beginning of this destruction will not be completed for years, if at all. The question is then how can the large scars inflicted on the town be disguised and healed, so that gradual reoccupancy and revival of the community with its old, or new activities can take place. If any frontage space is available the neighbours should be permitted to use it to construct a new front or restore the original. Irregular spaces should be used for planting trees. These would help to fill empty spaces and conceal the accidental or irregular shapes of boundaries between lots. All the patterns mentioned previously should be applied to make use of as many vacant spaces as possible. As the proprietors alter their buildings to make new entrances and outlooks the overall appearance will improve. Such an approach would help to make the best of the existing unsatisfactory situation.

How can street frontage be improved? One approach is to prepare an overall design for treatment of the whole street front. Residents should be helped to rebuild the facades of their houses. The Municipality should ensure that part of the compensation, paid for the demolition of the street, is used for rebuilding of the frontage.
Every household has its own preferences. One may want an arched entrance. Another may want a balcony. The next family may prefer a plain facade. This is a desirable situation and should be encouraged to ensure variety and contrast in the street frontage. In addition freedom of choice gives people a pride in their home leading to overall improvements in the standard of frontage through a sense of competition.

For such improvement to have its full value, the work should be done comprehensively and within a short period of time. It is desirable for improvements in the physical condition of the street to be on a scale that is observable and appreciable by residents. One should avoid the improvements being piecemeal and unintegrated in which case the benefits are not noticed or valued. They cannot, therefore, stimulate the residents to further efforts in improving the street.

Modernisation and demolition are no doubt necessary, but they should be carried out carefully without destroying what could be kept. Many old buildings can be modernised successfully by alterations and improvements, putting in sanitation and so on. Such solutions are more wise than wide scale demolition and destruction of existing buildings. Preservation of our cities and towns is necessary before wholesale destruction takes place. The need for conservation will be examined in a later section.

### 7.11.3 Street frontage setbacks

Building line and setback requirements were introduced to provide light and air for all inhabitants for the protection of public health, to avoid the dangers of fire and to reduce overcrowding. In Libya this concept was introduced with
the arrival of master plans and their implementation. According to these plans setback is calculated according to the height of the building and street width. Consequently a lot of space is left vacant both in front of a building and to the sides.

Other reasons for the development of setback and building line requirements by modern zoning in Libya have been either to anticipate future street widening or to accommodate aesthetic interest. The justification for setback requirements by zoning has always been based on the contention that the assurance of large space between rows or residences promotes public health, safety and general welfare.

The situation in which setback requirements has developed in the West is quite different from that of Libya and Arab-Moslem cities generally. The cultural traditions and climatic conditions are obviously quite distinct. In Moslem culture visual privacy is a crucial issue compared with Western culture. In the modern Libyan city setbacks allowing for the opening of windows result in continuous violation of privacy with the result that the owner cannot use his property fully.

In the Western city front, side and rear yards constitute desirable features and are easy to maintain and use because there is plenty of water for gardening and sunlight is not excessive and is therefore appreciated. In the Libyan city such open space is very difficult to maintain and is unlikely to be utilised fully if indeed at all because the climate is hot and arid and water is in short supply.

Generally speaking, therefore, there appears to be little justification for such
setback regulations, especially at the sides and rear of buildings. Even future street widening needs cannot adequately justify them. The regulations, however, are applied to all areas, including residential ones with very large lot sizes and therefore no danger of overcrowding. The street width is considerably greater than is necessary. Furthermore such problems as those mentioned above could be adequately dealt with by other means, such as percentage of lot coverage, floor area ratios, etc. As a result of such setbacks in residential areas most street elevations consist of solid wall. The building facade is completely hidden by this huge hard wall erected in order to create privacy for the residents of the house within.

It is clear from this example that the whole issue of differences in cultural context has been ignored by those who have imported these regulations. The consequences in Libya are quite different from the west which has wide streets, with an open view and green gardens on both sides. The result in effect has been something quite different and undesirable, that is the blank wall on both sides of the street. The actual result of such setback requirements is an unattractive street. In the author's M.Sc (1984) dissertation it was found that in most of the streets which had hard walls there were less activity and interaction. In those streets with soft interfaces there was much more street life.

7.11.4 The role of eminent domain

In modern times government can authorise the confiscation possibly with compensation, of private property, for public use. This right is called eminent domain and is used to ensure that master plans can be properly implemented. This procedure is new to Libyan culture and violates religious tradition.
Islamic law the right of eminent domain can be used only for the provision of services and utilities, or right of way. It cannot be used to confiscate property for the purpose of urban renewal or for the development of commercial zones within a government programme.

Eminent domain should be applied only where the public good is clearly being served, as already stated for right of way, utilities and services. A second use of eminent domain in the Libyan context relates to urban renewal and slum clearance. Here zoning regulations are involved, especially as regards non-conforming lots, uses and structures.

In the case of the use of eminent domain for the right of way or for the provision of utilities and services, the public interest seems to be very clearly established and, in such cases, its use has been challenged only on the basis of just compensation. As for the second case, the use of eminent domain for urban renewal and slum clearance or for implementation of zoning codes, two issues are involved. First, the public interest is not always so obvious and hence the constitutionality of the act is often challenged, and secondly, there is the issue of who will use and benefit from the property once the reasons for its taking have been removed, that is whether the government, when confiscating a property, has the right to give away this property to someone other than its original owner.

Serving the public good cannot come at the expense of injury to individuals. These decisions were based on the desire to alleviate danger to the community. Decisions favouring the public good could not be injurious to them as well. This suggests that urban renewal has been and still is a justified
public purpose in a Muslim context; however, the means to achieve it as they have been practised and established in Islamic tradition differ from those practised elsewhere.

However, a lot of empty land is still unused especially in the small towns, because the Municipality used its power to confiscate it from the owners. People don’t want to build their houses on such lands since this would increase disputes between the residents. If the government wishes to help people own land and build houses, there are other ways of doing it which do not violate cultural and religious tradition to the same degree. People could be left to find suitable land for themselves and then given loans to buy it and build their house.

At the moment there is a situation where people who wish to build on government-held land have to pay twice the market value for the plot. The first sum is paid to the Municipality to legalise the transfer of ownership. The second sum is paid to the original owner according to Islamic law which states that the previous owner must be satisfied.

Control of land prices is very important in order to protect low income and young families. In fact, a part of the loan intended for the building of the house is in reality used to pay for the land. Consequently the remainder of the loan is not sufficient to build a whole house of adequate size, so the family ends up with a small unfinished house.

What is required is a degree of confidence by the residents in the law. This law must, therefore, be more stable so that it can be applied consistently to protect both landowners and purchasers.
There is no doubt that the master plan is a useful instrument for the control of rapid development in the cities. However, its preparation and execution should not lead to neglect of either long term or immediate problems. Certain recommendations can be made for the production of master plans which can solve existing problems without creating new and generally serious ones.

1. The problems of the city concerned should be clearly understood and sufficient data through surveys should be made available at the appropriate stage.

2. Imitation of solutions found for foreign situations should be avoided unless it can be shown that the problem really is the same and the eventual results are seen not to have undesirable consequences. Imported ideas and solutions should not be rejected out of hand, but should be chosen carefully to fit the local situation and solve its unique problems. Lessons should be learned from the local traditions and built environment.

3. Socio-cultural values should be respected. The team responsible for the preparation of the plans should, preferably, be Libyan, professionally qualified and educated with an awareness of local problems and traditions. They should at least be from a similar culture with similar existing problems as are typically found in other Arab-Islamic countries.

4. The local climate should not be forgotten and should be considered as a crucial factor in all plans whether small or large scale.

5. The existing built environment should be carefully considered. A master plan should be prepared locally in the same city, or at least within the country. There should be sufficient site studies to ensure minimum
destruction and increased use of old buildings.

6. The master plan must be flexible, in order to meet the changing conditions and problems of the city. Furthermore, people should have the right to discuss any plans affecting them.

7. The street and other open spaces should be regarded as placed where city life carries on. In other words a street should be seen as three dimensional, not as a line on a plan. It should be seen not as a road for traffic on a huge scale, but also as a place for people on the small, human scale.

8. Land use should not be restricted and more variety and mixture of uses should be encouraged.

9. Traffic flow through the city should be studied carefully, both on the large and small scale.

10. Compaction should be one of the main aims of master plans.

11. Preservation of a Libyan character for planned towns is a high priority. This special character must not be sacrificed while meeting present and future needs.

A duality has developed in the system of planning Libyan cities both generally and in the regulatory mechanism. This has happened because the physical conventions for this system have been borrowed from other contexts and applied without adaptation or reservation. The result has been confusion and contradiction of the regulatory level.

An example of this duality is the issue of privacy in the modern city. A resident is permitted to open windows on the second floor, provided that there
necessary and was justified on various grounds. It became necessary to accommodate large numbers of people coming into the cities from rural areas after the industrial revolution. This urgent need for accommodation was exacerbated by a rapid increase in population. Similarly more food and other resources became necessary. In order to avoid congestion through this rapid population growth, traditional housing forms were found to be inadequate in respect of most requirements. Sanitary problems which arose in situations of over-congestion and which brought with them danger of infectious diseases had to be solved. Sunlight and air were recognised as important factors to support human life. At that time it appeared that the only way out of this dilemma was high-rise building since it was calculated that these would not only solve the aforementioned problems, but could also maintain density while dealing with overspill. Furthermore by this means, agricultural land could be preserved along with more open space. The time and cost of travelling could be reduced by concentrating these buildings near the factories and city centres.

Subsequently criticism of such high-rise buildings became common from the 1970s on. Their negative effect on the social and physical environment became more clearly understood, and this was widely recognised in the West. At the same time Libya, oblivious to this criticism, began to regard these tall buildings as a symbol of modernity and the best solution to the pressing problem of accommodating immigrants to the cities. The types of building used were usually the same as those being criticised elsewhere in the Western World.

As a result these high-rise buildings could be seen in most Libyan cities, even in small towns of 20,000 inhabitants. They were especially to be found
High rise buildings to be found in Libya, in the top picture, can be seen to have been inspired by Le Corbusier's work, as seen in the lower illustration.
on main roads and on the way to the airport as propaganda and marks of prestige. Although these buildings were not as high as in some Western countries, about 10 storeys or less, their social and physical effect was more harmful to the Libyan habitants. The residents of such flats used to be nomadic people from rural areas for whom ground was very important. Due to poor design these flats acquired a bad reputation. They became signs of poverty, crime and vandalism which barely existed previously. Nobody wishes to live in these buildings. Those who do remain do so for as short a time as possible while trying to find a suitable house.

Traditionally for these people family activities take place outdoors on the ground. However, these flats provide no suitable area for such traditions to continue. Even the interior space is very limited, exacerbating the problem. The number visiting has commonly to be reduced because there is not adequate space. Cultural tradition requires that visitors bring all their family including children with them on visits.

Such interiors are based on plans imported from abroad. The interior space is generally ill-designed without any consideration for cultural tradition. The design is in fact suited to a European life-style not the Libyan one.

These flats have brought social problems in their wake, particularly the separation of families one from another. Social patterns are being forced to change from extended family to nuclear family. Old people refuse to live with their sons because of lack of space and because they refuse to live in such "boxes". It is children, however, who suffer most severely since their parents cannot let them out. This is because there is no means of keeping an eye on
Women suffer similarly because they are often left alone as the men escape in their cars. They are now deprived of the strong, village community with its social contacts and friends.

The writer’s M.Sc dissertation (1984) has shown that old type streets with one or two storey houses are more lively places than streets with high-rise flats. The latter have a greater density of population but people were seen coming and going without stopping, using their cars which were normally parked as near as possible to the entrance of the residence.

The introduction of high-rise flats has seriously destroyed outdoor space, turning streets into roads. These boxes have been positioned randomly often with huge spaces between them. These huge spaces have subsequently become rubbish dumps since landscaping is difficult and expensive in a harsh climate with a shortage of water.

The absence of semi-private, semi-public space in high-rise estates, results in the lack of a neutral zone between the completely public areas and private dwellings. All approaches to private dwellings are open to the public and are used by them. As a consequence residents have no territorial feelings towards these areas and therefore do not defend them; there is no surveillance of front areas or staircases, strangers are not questioned or even watched. There is a lack of personal concern by the residents. It is unlikely that the perpetrators of crimes will be caught. In high-rise buildings the areas outside the flats are no-man’s lands, neither public nor private. Lobbies, stairs, lifts, and corridors are open and accessible to everyone. Public streets are well peopled and surveyed continually, but the interior common areas of these high-rise buildings are not satisfactory. However, in
buildings are little used and impossible to supervise. Consequently they are dominated by fear and crime.

The above shows that such buildings are not satisfactory. However, in addition, empirical evidence has demonstrated that such buildings can actually damage people's minds and feelings. Fanning (1967) points to a direct correlation between the height of people's apartments above ground and mental disorder. The correlation is strongest for those people who spend the most time inside. It is not just a case of people likely to suffer mental illness choosing to live high up. The correlation was strongest for women who spend most time at home and less so for children who spend the least time in the apartments. The observations are likely to be even more true in the case of Libyan families who are used to spending most of their time with friends and family. High-rise living takes people away from the ground and the casual, everyday society of the streets. They are left isolated in their apartments. It requires a conscious decision to go out for some specific task, so most people stay at home. The result is individual breakdown. In "Mental Health and the High-rise" Dr. D. Cappon writes (1971): "There is every reason to believe that high-rise apartment dwelling has adverse effects on mental and social health."

The form of high-rise building commonly found in Libya is that with the common feature of a colossal volume dominating the space and the environment. In our age of mechanisation, mass production and industrialised building, this results in simplification and uniformity of shape and size. Consequently buildings tend to become humdrum up-turned boxes and faceless filing cabinets. Lack of harmony between the high-rise buildings is becoming more and more prominent; so also is the relationship between
high-rise buildings and old, conventional buildings. Hence the skyline and the
townscape of a city is visually destroyed, especially in our cities where the
mosques with their minarets have long defined the character of the Arabic and
Muslim cities. This feature has disappeared amidst the high-rise buildings.
Not surprisingly many capital cities like Amsterdam, Brussels, Paris, Prague,
Rome and Washington, have never permitted any new buildings within their
historic centres.

These buildings have no consideration for human scale. One should be
able to walk comfortably down to the street, and from the windows one should
still feel part of the street. One should see details in the street of the people,
their faces, shops. With such high-rise flats the visual detail is lost, people
speak of the scene below as if it were a game, from which they were
completely detached. Their connection with the ground and the fabric of the
town becomes tenuous, the building becomes a world of its own.

These high-rise buildings do nothing to mitigate the extremes of climate
and afford no protection from rain, sun and wind. Such buildings help to
increase the air flow, particularly round the corners of buildings. It is a fact
that velocities occur at the leading edges of buildings, both top and sides
where high and low pressure zones approach closely. This is particularly
harmful when one takes into consideration the gibli wind. Even indoors such
buildings are hot because the elevation is exposed. People have to use air
conditioning to survive.

The building as a free standing element developed by Corbusier became a
very influential concept. Corbusier's "Metaphor" was seen as object-like
buildings on piazzas in isolation, or in parking lots. The public or street space around them was not well designed and often literally left over. This idea is in marked contrast to the traditional concept of buildings and street as a mutually reinforcing network. Public urban space has come increasingly to fulfil a strictly utilitarian purpose, getting people from one place to another. The new tall buildings have no relationship to their context. Consequently, the integrity of the street space is destroyed. The iconic function of public, urban space is often forgotten. Only interior space is seen as having any utility. The buildings themselves have acquired this iconic function. Urban space has ceased to have any value. The result has been a central city which is a waste land, more like bombed ruins than a twentieth century Utopia. This is a reverse of Corbusier's plan of the park-like city.

**Should one continue to build high-rise flats?**

From the point of view of the foregoing discussion high-rise buildings should not have been introduced in the first place. They appear to have no advantages and furthermore they contradict socio-cultural values and damage the physical environment. Even disregarding the socio-cultural aspect, the very appearance in Libya of these buildings is without justification. There is no land shortage and no overcrowding. The technical difficulty of constructing such buildings is great; local developers can easily construct one and two-storey houses but such high-rise blocks are not within their experience. They have to be erected by foreign companies. They are neither quick to build, nor economical.

There is a mistaken attitude that these high buildings are prestigious as a
sign of the development going on in the country. In fact they are a sign of carelessness and represent a major social disaster. Houses should be designed with positive factors in mind. People's needs should be considered including their culture and their requirement to create an inhabitable environment. One should learn from the experience of others. So Libya should have learned from other countries' experience of high-rise flats. While such buildings are costly to erect it has been found in several countries that where the maintenance and social costs are considered prohibitive, demolition is the only answer. For such reasons, from the start, one is advised to examine all surrounding circumstances and potential difficulties.

As Alexander (1977) has pointed out, high-rise buildings have no genuine advantage other than speculative gain for banks and landowners. He summarises the disadvantages: "They are not cheaper, they do not help create open space, they destroy the townscape, they destroy social life, promote crime, they make life difficult for children, they are expensive to maintain, they wreck the open spaces near them, and they damage light and air and view." Although such high-rise blocks of flats are not usually viable, it has been found in America that they can be acceptable when made available to high-income residents.

For all these reasons high-rise buildings for residential purposes should no longer be permitted. This should be effected immediately before further damage occurs. The past should be regarded with respect and lessons learned. The traditional house forms of Libya with their courtyards have proved their validity over the centuries and should not be abandoned in this way. What is needed is a belief in Libya's past combined with a consistent research effort to
Both figures show how the location of a building can increase wind velocity.

Fig. 7.54

Fig. 7.55
modernise the old forms and provide for society’s modern needs.

It would be more sensible and economical to give those people requiring homes, loans or grants. They could then chose to built or buy housing which they might find congenial, instead of being obliged to live in high-rise flats.

Houses should be built with as few storeys as possible. They should be built on a more compact site. As has been explained before, cities should be compact in order to sustain activities and produce a livable environment, provided the density does not produce negative consequences. There is no land shortage in Libya which is ten times larger than Britain with a population the size of Glasgow. Agricultural land must of course be protected but there are many ways of doing this other than through high-rise buildings.

Low-rise housing can produce a reasonably high urban density as has been demonstrated in certain countries. For instance an estate at Harringey has achieved density of 110 p.p.a. by using two-storey houses plus a few flats for old people. A Southwark estate built in four-storey flats and maisonettes has achieved a figure of 173 p.p.a. On a 3 acre site belonging to Westminster City Council (Lillington Gardens, Phase 3) a density as high as 254 bedspaces per acre has been obtained through medium high buildings. These examples show that low-rise building can produce desirable levels of population density just as easily as high-rise building. Due to daylight, spacing and open spaces considerations, the density is only little more than trebled when buildings are increased from 2 to 20 and less than double when they are increased from 4 to 20, according to McLoughlin (1976).

It has been proved that for high-rise structures to be a rational and
economical proposition, land prices have to be very high. Concerning the cost of construction, lower buildings are more economical than high rise ones. For a given density and a given area of land cost per unit area of usable net space increases with building height. Similarly operating costs favour lowrise building. Furthermore, highrise construction does not encourage the involvement of local companies and workers. In terms both of technology and manpower the local workforce could be effectively utilised in national housing programmes and projects. The introduction of high-rise residential building has been based on Western trends and perceptions. These, as has been argued, are already being abandoned in those countries where they originated.

There is no rational argument for high-rise residential buildings in Libyan towns and cities. Contemporary solutions can quite successfully incorporate traditional, local, environmental design elements.

Some countries have already gone as far as to knock down some of their high-rise buildings. However, such a drastic solution is not the only way to deal with the problem. Some of these ways can be summarised as follows:

1. Continuous maintenance of buildings both inside and outside.
2. Provision of better and more caring facilities for the area, especially street cleaning and regular rubbish collection.
3. Landscaping should receive a higher priority to reduce the impression of the whole area as a parking lot. In particular more tree planting could reduce the huge spaces and provide more protection from the sun and wind.
4. Different land uses should be provided, specially shopping, mosque, community centre, school and so on.
5. Protected shaded paths could be developed to connect buildings, thus more visibly facilitating interaction between them.

6. Special halls could be erected as a place for people's social activities, in particular weddings, funeral rites. The ground floor of a building would be quite suitable for this. At present there is no space indoors inside people's flats for such activities.

7. Steps should be taken to encourage people to own their flats, not to rent them. In this way their homes will become more important to them, and will be better taken care of.

8. Inhabitants should be educated in the correct use and enjoyment of this kind of living environment, through school education, T.V. and the media.

9. Doormen should be provided to take care of each building, prevent vandalism, crime and keep an eye on the children.

10. Residents should have a say in choosing the building and their neighbours. Relatives and friends should be given priority to stay near each other.

11. Surveys should be carried out to discover the exact problems of residents. These could help in the design of future projects.

12. Streets should be closed to through traffic.

The above mentioned factors would be of crucial significance in improving already existing high-rise areas. They would contribute towards creating a stronger sense of community, pride and affection for the area.

It is of great importance that such buildings do not become vacant for any period of time. This is costly and results in demolition of the building. The
housing department must face up to the big task which confronts it and produce a housing policy. Society must be convinced that the mistakes of the past will not be repeated and that large buildings will not be erected at the expense of amenities. What is required is attention to quality rather than quantity. In future buildings must be more carefully sited, more imaginatively designed and better managed.

In conclusion, as has been seen, the importation of architectural concepts from abroad has often proved less than satisfactory or relevant to local socio-cultural and climatic conditions.

Equally unhappy have been the omission and neglect of Western attitudes which could be regarded as useful and relevant to the Libyan scene, namely the preservation of buildings of historical or architectural interest. Most European countries today enshrine such concepts in their planning legislation.

Fig. 7.56 People have left their high-rise buildings in the background, preferring to live in shacks in the foreground.
Finally, it would be appropriate to give a worked out example of how one can reduce the number of storeys and yet keep the same density. Currently, Libya there exists a mistaken belief that building vertically is the only way to achieve high density. By giving the following example, one might hope to correct this attitude. At the same time, one can demonstrate that there is no need to build vertically rather than horizontally, if one can get the maximum use of the available land.

The site under consideration is located in the Goushi area, (Fig 7.56b) in Misurata. The site is entirely residential, made up of blocks of flats each of four storeys and of a similar design.

**SITE DATA**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Total site area</td>
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<tr>
<td>Density</td>
<td>54 flats per hectare</td>
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<tr>
<td>Number of Floors</td>
<td>4 storeys</td>
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<td>Total Street Area</td>
<td>30,570 m.sq</td>
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<td>Service and designated garden area</td>
<td>4,000 m.sq</td>
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<tr>
<td>Number of Flats</td>
<td>472 flats</td>
</tr>
<tr>
<td>Each Individual Flat Area</td>
<td>140 m.sq</td>
</tr>
</tbody>
</table>

As has been mentioned earlier, most Libyans prefer houses on the ground floor, ideally covering a plot of land of about 200 m.sq. Consequently, there are two objectives to achieve, firstly a reduction in the number of storeys from four to one and, secondly, an increase of the 140 m.sq. flat area of 200 m.sq. house area.

On studying the site layout and its street percentage, it is obvious that this
percentage of street area (35%) is too high. If one looks at other studies one can see how it can be reduced. The Scottish Housing Handbook (No. 3) (1977) proposes that for such a density (54 flats per hectare) 31% is an acceptable norm. This includes roads, garages, parking areas and associated hard landscape. However, considering the harshness of climate in Libya, a compact site with the narrowest street width is mandatory as also a minimum landscape, because of water shortage. These essential differences between Scottish and Libyan conditions allow a reduction on what the Scottish Housing Handbook considers an acceptable norm. Yet Buchanan's (1963) study suggests that these same elements can be included to serve an area where the street percentage has been cut to 25%. This reduction can be achieved by eliminating through-traffic, using cul-de-sacs and accurately estimating the volume of traffic needed to serve the area.

Another reliable reference is the theoretical work of Martin and March "Urban Space and Structures" (1972). They show ways in which one can maximise the use of available land by changing the arrangement and geometry of the building form, omitting unnecessary cross streets, cutting through-traffic and using cul-de-sacs and narrower streets. They outline a possible solution through placing the houses around the perimeter of the area. By applying their idea, a rough calculation shows that the street percentage can be reduced to about 20%.

Having studied street percentages generally, it is now necessary to calculate each percentage in specific detail, bearing in mind that the same streets, service and designated garden areas of 4,000 m.sq. are retained as also the number of housing units of 472. The number of storeys is reduced
from four to one.

FIRSTLY - the 35%

The net area which could be built on is:

\[ 87,350 - 30,570 - 4,000 = 52,780 \text{ m}^2 \]

Thus the area of each house would be:

\[ 52,780 \div 472 = 112 \text{ m}^2 \]

SECONDLY, the 31%

The 31% street area amounts to 27,079 m².

The net area which could be built on is:

\[ 87,350 - 27,079 - 4,000 = 56,271 \text{ m}^2 \]

Thus the area of each house would be:

\[ 56,271 \div 472 = 119 \text{ m}^2 \]

THIRDLY, the 25%

The 25% street area amounts to 21,838 m².

The net area which could be built on is:

\[ 87,350 - 21,838 - 4,000 = 61,512 \text{ m}^2 \]

Thus the area of each house would be:

\[ 61,512 \div 472 = 130 \text{ m}^2 \]

FOURTHLY, the 20%

The 20% street area amounts to 17,470 m².

The net area which could be built on is:

\[ 87,350 - 17,470 - 4,000 = 65,880 \text{ m}^2 \]

Thus the new house area would be:

\[ 65,880 \div 472 = 140 \text{ m}^2 \]
Although the 20% calculation does not give us the required 200 m.sq. house area, it would appear to be the best and most acceptable percentage as it helps one apply certain factors which have been previously discussed as being socially and climatically desirable. Such a site would be compact, with its streets shaded and protected from the wind and sun. The streets would also be safe because of the absence of through traffic. The narrowness of the streets would help create more livable environments since such streets would facilitate social contact between neighbours. The advantages of a traditional area can be applied in these circumstances.

Consequently, on choosing 20%, the maximum house area achieved is 140 m.sq. The best solution would be to build 40% (i.e. 189) houses of one storey and the remaining 60% (i.e. 283) on two storeys. This would increase the house area. That is:

\[
\text{the number of ground floor houses needed is:} \quad 189 + 283 \div 2 = 331 \text{ houses}
\]

Thus the new house area:

\[
65,880 \div 331 = 199 \text{ m.sq.}
\]

This area of 199 m.sq. would be more appropriate for people presently living in high rise blocks of flats as they usually have large families. Another preference of the people is to have their houses as near the ground as possible each with its own main door. In order to provide the facility it would be more appropriate to build the 60% into a form of duplex accommodation, each with rooms on the ground and first floor and each with front and back courtyard. As Martin and March suggested, these would also be constructed round the perimeter of the site.
In conclusion, designers and planners would be advised to look out for all possible alternatives in order to choose the most appropriate solution in the circumstances. By being more ingenious, it can be seen that there are acceptable alternatives to high rise blocks of flats.

Fig. 7.56B
The Goushi area site is delineated black with a scale 1:5000
References


7.12 The Need for Preservation of Surviving Buildings of Interest

Recognition of the traditional architecture of the world has progressed fitfully in the present century since architects have often been slow to acknowledge buildings of historical or architectural interest. Institutions hardly exist in Libya along these conservationist lines. However, a body of opinion has recently come into being concerned with the documentation and preservation of old buildings, for instance, the attempt to demolish the old town of Tripoli was thwarted because of the pressure from some architects as well as the residents.

Because of the absence of such conservationist bodies a lot of old buildings have been cleared away without much thought of conserving them or any real attempt at documentation. In the hurry to increase the quantity of housing stock, the bulldozer found no opposition to the demolition of any building which hindered the implementation of the master plan of the city. At the same time most of these master plans neglected to take historic buildings into consideration.

The central government in the form of the Ministry of Municipalities has to a large extent disregarded any attempt at formulating a general policy for conservation. They have not even listed ancient monuments and historical cities. As a consequence the local municipalities have not felt obliged to do so either. For example they have not named buildings of historical or architectural interest within their boundaries. As they have the power to build new structures they have concerned themselves with construction and modernisation only, and have tended to regard demolition and starting from...
scratch, as the only solution to achieve these goals.

Here one has to clarify what is meant by “conservation”. It is not the mere prevention of change and the careful husbanding of limited resources, but also the protection and maintenance of old buildings and areas, with careful consideration to keeping their shape and appearance while making them a living, useful and enjoyable part of the city. The Royal Mile, Edinburgh, is a good example of what is meant by conservation.

A change in function should not be ruled out and the building should be occupied for some use to keep it alive, not as a mere museum piece. In this concept of conservation, what is preserved must fit into the active life and the structure of the ever-evolving city.

While it is often necessary and desirable to preserve old buildings here and there, it is much more preferable to conserve whole streets and areas, for instance the old town of Tripoli. Geddes (1915) expressed the need to conserve the character of the area around the building in addition to preserving the cathedral itself.

If wholesale reconstruction is inconceivable in historic cities then it is obvious that one has to accept some degree of discipline and establish a clear division between those streets required by vehicles and those required by people. At the same time vehicles should not be totally excluded from the old quarters of towns.

In historical towns or quarters change is inevitable, but it should be allied to conservation and controlled so as to enhance rather than diminish character.
In these areas conservation should be studied simultaneously with the other aspects of planning, traffic, pedestrianisation, trading, work, recreation and the general prosperity and well-being of the area.

At this point, the question ought to be asked: why is it necessary to conserve? The answer is, as Konrad Shigrieliski said: "A city without old buildings is like a man without a memory" as referred to by Ward (1968). The streets or buildings which should be conserved are significant as a part of history, a reminder of the style and ideals of another age. Using a theatrical analogy, it could be said that a lot of the play has been acted out before one has appeared on the stage, and as in a play, there cannot profitably be a divorce from what has gone on before or what will go on in the future. Earlier generations have sometimes brought civilisation to a higher degree of perfection than can be achieved today as well as an attitude to life, and have expressed it in their buildings.

The ability to criticise contemporary aims and assumptions depends on one's appreciation of the achievements of the past. Keeping in touch with the past, which is so powerful a means of renewing the present, becomes more and more difficult as the material evidence of the past disappears. No material evidence is more persuasive, more convincing of the possibility of different ways of life, than the living places of the people which are often taken for granted. It is a tragedy when fathers have swept away so much of their own parents' traditional built environment that their sons find only a few scraps of their heritage intact.

Conserving historic towns and cities is the best way of ensuring the
individuality of the urban inheritance; of seeing that the towns which are the
legacy of the present generation are of themselves different from each other
and from those of other countries. This tangible link with the best of the past
can be seen through the buildings, streets, spaces, mosques, trees, suqs, views
and the way a town fits the landscape. All these make up the total personality
of a place.

Though the recording and preservation of old buildings and quarters may
be primarily the concern of historians, architects are generally involved in the
work. Architects also make their own contribution to the conservation of
traditional buildings they admire by acquiring and converting them. The
survival of the few old buildings which have so far escaped destruction needs
to be assured. On account of their scarcity these buildings urgently require
preservation.

The question of cost loses its meaning in the long run when one considers
the advantages, for example, in the way such traditional towns help the
development of the economy through tourism. Edinburgh is a good example of
such a proposition in action since it has the important advantage of offering an
interesting and attractive built environment, as a town with something
distinctive and cultural to offer. Ward (1968) explains that tourism contributed
a great deal to the national economy of Britain and it is such historic towns
and buildings which many overseas visitors come to see.

If Libya is looking for other ways of supporting its economy, it is the tourist
who can help. The basis is to be found in the early Roman and Greek remains,
such as Leptis Magna. For the foreign tourist who wants to see something
different from his home built environment, some old cities such as Ghadames still survive in Libya offering a distinctive environment. One has to ensure that the modern built environment is highly sympathetic to the traditional forms. This is an important factor in encouraging the tourist in the future.

No body of thought, philosophy or attitude of mind can be permanent without its own institutions. In order, therefore, to maintain conservation as an existing and lasting feature of Libyan society, official bodies and institutions have to be established. Proper facilities, premises and funding as well as freedom to form policy and guidelines are essential to allow such bodies to carry out their responsibilities to conservation.

Many countries now have official bodies deeply concerned with the study of traditional buildings and towns. In Scotland there are, for example, the National Trust for Scotland, The Royal Commission on Ancient and Historical Buildings in Scotland and so on.

There should be, in Libya, a comprehensive national framework of the country at the national level as well as at the local. All institutions locally and nationally should co-ordinate their efforts and policies so as not to lead to a fragmentation of responsibility and to ensure that no area if conservation is ignored.

The question of what should be conserved is best left to the conservationist. His problem would be what bases of evaluation he would choose, whether on architectural, planning, historical, structural, aesthetic or other grounds. He has to take the decision about whether to preserve the best or the most representative, the finest example of architectural genius or the
anonymous but truly characteristic without outstanding features. The postulate expressed here is that there is an urgent necessity to give consideration to the preservation and conservation of the comparatively few surviving examples of the Libyan traditional built environment which have interest and benefit for the whole nation. The establishment of local and central institutions is necessary to implement such a policy as well as to build up the climate for conservation, which is now starting to evolve in Libya.

A policy of preservation becomes more necessary and more meaningful in a country like Libya where the indigenous architecture has already declined in use, where record and survival of examples become a matter of urgency. Unfortunately this climate of conservation presently developing in Libya did not manifest itself before the wholesale destruction of the traditional built environment had begun. It was hard to imagine a policy of preservation and record having any support when the Libyan was besotted with modernisation.

Although the institutional framework and the policies are important they must be enshrined in legislation with appropriate sanctions. Through such legislation thoughtless destruction can be prevented and Municipality involvement can be assured, to guarantee proper maintenance and repair.

Listing of monuments and buildings of value is the first essential task to be carried out. Such a programme of conservation has been carried out in most European countries. In most it is coupled with a system by which the owners of the listed buildings must give notice of their intention to demolish or alter, so that the relevant authorities may consider prevention of such steps along with the provision of advice and grant aid. Consequently the municipalities
must be given the wherewithal to make defined discretionary grants as also building departments must be staffed with personnel skilled in such a field. The universities on the other hand need to provide the expertise, training facilities and support of the conservationist atmosphere among their students and the public. Because, of course, no law is of much value if it does not have public understanding and respect. Nor is it of much value without finance to carry out its positive provisions.

A conservationist policy, to be successful, must deal with areas as well as individual buildings. For instance, one ought to be concerned with the enhancement of the quality of the rundown area for its inhabitants. It must be improved commensurate with the whole.

There is no doubt conservation is now essential in Libya before a complete destruction of the traditional built environment takes place. World experience can provide basic thought for such a needed conservationist approach. Two good reasons are apparent in choosing Tunisia as a good example for Libya: Firstly, a successful programme of conservation has been carried through in that country. Secondly, a similarity in the traditional built environments can be found in both countries.

Since a great number of modern techniques and ideas have been imported from European countries it would be reasonable to make use of their wide knowledge and experience in the field of conservation. Furthermore, there is need for appropriate skilled management in building and conservation, because successful planning is based on reliable, sensible and inspired management.

One might end with Geddes (1915) who said that he disliked museums as
places for history and art. He felt people should live with historical buildings and that art and craft should be in the streets and squares of the town. In this way people could be better educated.

Fig. 7.57 The revival of Islamic architecture is demonstrated by these locally produced Mashrabiya which enhance the entirely modern construction.
7.13 Propinquity and Balanced Social Mix

Propinquity and residents' characteristics, no doubt, have a great deal of importance in affecting the social relationship between neighbours. While propinquity and its role in such relationships is clear, the kind of social mix of the society is a very complicated question. Propinquity could be created by the clustering of the built environment as has already been demonstrated. The question remains whether one should accept homogeneity or heterogeneity. Each has its own advantages and disadvantages. While some authors such as Lewis Mumford, Wendy Sarkissian, Alan Evans and Patrick Geddes have decided in favour of heterogeneity, others like Amos Rapoport, A.S. Ehrlich and R.C. Eidt have promoted homogeneity.

To take this argument further, one has to understand and discuss both homogeneity and heterogeneity as well as their relationships to propinquity. In addition, one must investigate as to what characteristics one should advocate as most likely to lead to successful and intensified interaction among groups.

As the main task of this thesis is to try to create more lively streets, it can be assumed that the stronger and the more positive the relationship between neighbours, the more interaction and activity one can expect in the street. What happens indoors has its effect in the street. If the neighbours have a more intensive relationship, there will be more social life in the street. People can be expected to spend more time when they see each other, and a lot of visiting will take place. On the other hand, when the relationship is cool, the time spent in the street talking is usually shorter. The chat will be of a more formal nature such as the state of health of persons, or the weather, Again, the
parties might even avoid seeing each other, and their children may be banned from playing with each other.

The reasons which one might accept as to why traditional Libyan village streets are more lively places than those in the modern neighbourhoods, are besides the close built environment, the relationship of each neighbour. People in such villages have known each other since childhood and, as a consequence, visiting takes place frequently without the formality of knocking at doors, indeed the doors are kept open during daytime. The street is seen as the living room of such families. In contrast people in modern streets have less contact with each other, indeed may not even know their neighbours’ names. Such a relationship tends to be very cool, as they come from different places. They need time to know each other. This tends to be particularly the case when they do not have children. Their future relationship is more dependent on character.

At this point it would be appropriate to discuss each of the three elements involved, starting with propinquity.

7.13.1 The role of propinquity

While propinquity cannot determine the intensity of the relationship between neighbours, and one cannot say whether it will be either positive or negative, the reduced physical distance results in visual contact. The outcome is social contact which may be either voluntary or involuntary. This change from visual to social contact is only possible where the distance is so short as to produce a face-to-face situation. This is enough to encourage one or both parties to turn this into a social encounter. In the next-door-neighbour
relationship the closeness of the physical environment is important. This is especially true where their respective front doors face each other or where they share the same gate. In such circumstances visual contact is inevitable.

Where people live horizontally next to each other, visual and social contact is much greater than when they live vertically as in high-rise flats. In such circumstances the contact is reasonably often where neighbours share a common hallway; but much more seldom when they live on different floors, because there is little chance of contact. Accordingly, one can say that propinquity works out better on a horizontal level as where a residential area is laid out in narrow streets, cul-de-sacs and courts.

Age is an important factor in the consideration of social contact because of propinquity. Children usually choose their playmates on a basis of propinquity; though this tends to decrease the older they get. Women in Libya often find their female friends nearby, because most of the time they stay at home. On the other hand, men tend to choose their friends away from the street as they usually have to go away to work and often have motor cars. The car has helped people to choose and visit friends away from their districts. However, in Libya people usually still visit relatives, even at great distances.

The relationship between propinquity and class is also an important element. Although class distinction is blurred in Libya it is an emergent factor. The tendency for people in the lower classes seems to be one of less mobility and the likelihood of choosing their friends on a basis of propinquity. Generally the higher the class the greater the mobility for visiting.
7.13.2 The role of homogeneity

Propinquity not only brings about social contacts of varying concentration but, as well as creating the conditions for relationships, also has a crucial part to play in continuing less concentrated ones like polite chats about health to more important ones like close friendships. A great incentive for the maintenance of positive relationships is the mere fact of neighbours living quite near each other. But, as one has seen, the characteristics of the people are the determining factors in the degree of intensity involved. The degree in a relationship will most likely be more vigorous between neighbours who feel compatible and are homogeneous. This is likely to result in at least more than the mere exchange of greetings.

Gans (1961) states that: "If neighbours are heterogeneous the relationship is not likely to be intensive, regardless of the degree of propinquity." This might be best observed among the residents of a newly settled environment who do not know anything about each other. Here propinquity can be seen to play a larger role, as they are all homogeneous to the extent that they are all strangers. At first such social contacts will be amongst almost every neighbour within physical and functional range. However, in time, these new neighbours start to discover their similarities and incompatibilities.

Friendship may result between homogeneous neighbours but, with heterogeneous ones, any visiting will often cease eventually and may be replaced by formal greetings and other formal relationships. Accordingly, one might conclude that the characteristics of neighbours are more important than propinquity in determining the intensity and durability of their relationships. In the long run such relationships can be expected to be changed to some extent
by the comings and goings of the population and the new friendships that
neighbours may have outwith the area.

Homogeneity is needed most with children of equal age and especially with
the younger, since they usually choose friendships on the basis of propinquity.
Such homogeneity is even more important in creating lasting parental
friendship.

If people discover their dislike they tend to minimise their social contact. In
order to prevent disagreement and conflict they tend to enter into unmentioned
agreements which could ensure that the relationship is not permanently
damaged or, as a last resort, move out of the environment. Various factors at
different places and times have been assessed as a basis of homogeneity but
compatibility in religion, class, race, kinship, place of origin, language,
education, occupation, age and life style, are vital. From census returns one
can discover many facts, such as age or income, which though similar are too
superficial to allow an assessment of how homogeneous relationships, have in
fact become, because relationship between neighbours cannot be gauged on
statistical data, but rather on subjective considerations, experienced by the
participants.

Lazarsfeld and Merton (1954) agree that the more important criteria for
homogeneity are what neighbours think and do as well as their behaviour
habits, values and interests. These transcend background factors. It can be
said that the typical Libyan village is a balanced community. Not only have the
residents grown up together, but they share the same religion, language,
interests, etc. These outweigh heterogeneous considerations such as income
and education. Some elements seem to be much more important than others in assessing whether like factors outweigh dissimilar ones. Homogeneity in Libya could be said to depend on certain factors more than others; such as religion, language, place of origin, etc. The Berber have their own neighbourhoods and towns. Though they are Muslim, they speak a different language and originally come from a different place. The Jews speak the same language as the bulk of the population but have a different religion and culture, so, likewise they have their own neighbourhood apart from the others. The Italians, in like manner, have their own quarter or even towns apart because they have a different religion, language, place of origin, culture, life style and behaviour patterns. Other variables could be said to be unimportant in traditional circles. Here people continue to live amongst their relatives even when disparities exist in income, education, occupation or age.

Even now when people are given the choice they prefer to be amongst their families and friends. Even if they become richer they tend to stay in the same area rather than move to a more up-market locale. In contemporary situations conditions can be more difficult, when people are forced for considerations of work and trade to live away from their relatives in places they would not otherwise have sought. There, they feel different. The most extreme example of such a situation is that of the nomadic people who want to settle in town. Up till now they have usually been placed among other residents, with different education, and life-style and so on. Not unnaturally, their relationship with their neighbours tends to be distinctly cold. There is often a higher than normal disagreement ratio. They prevent their children from playing with those of their neighbours. They limit their social contact and
there is the inhibiting factor of limiting conversation to eliminate topics that might result in conflict.

Whyte (1959) in "The Organisation Man" shows that the residents in larger courts are inclined to have more formal relations with their neighbours which might even tend sometimes to be unhappy. In contrast, he found that those of smaller courts were often friendly and very happy indeed; unlike the larger courts these neighbours were often so busy exchanging visits that they ceased to be active in the neighbourhood at large. These observations support the findings in the author's M.Sc (1984) dissertation. It was found that in the old villages, where the streets were not wide, people visited each other quite often, while in modern broad streets, this was a very occasional feature. These observations suggest that there was, besides the physical environment, another factor to be taken into account, namely, the homogeneous character of the people.

When neighbours are especially homogeneous, as in such traditional villages, they can become friendly regardless of the size of the district, although the larger area usually divides itself into several social groupings. The small area may feel itself more cohesive because all sociability takes place within the one grouping. The existence of several groupings in the larger quarter tends to prevent such cohesiveness despite the fact that each of the groupings may be as friendly disposed to each other as any one of the smaller areas.

Gans (1968) shows that while some traditional ways of "knowing" people disappear, homogeneous neighbourhoods become more important in
compensating for this trend, as the individual in them is able to identify himself as belonging to a clearly defined grouping based on apparent homogeneity. The argument for homogeneous areas needing to be reasonably small can be based on the need for individuals of varied groups to be aware of others.

Propinquity by itself does not necessarily lead to interaction; there is no guarantee, indeed, that it will not lead to avoidance or conflict unless the neighbours feel that they have something in common. Hence it can be argued that there ought to be homogeneity within the neighbourhood and that people in adjacent areas ought not to be too different.

Up to this point, the discussion has centred on homogeneity, but, in order to give a balanced appraisal, an examination of heterogeneity is called for.

7.13.3 The role of heterogeneity

Heterogeneity has been held by some authors such as Wendy Sarkissian, Lewis Mumford, Patrick Geddes and others, as being more acceptable. They have argued that:

1. It encourages people to see other ways of life, thus the proximity of scholarly neighbours might influence a child from a family not given to reading into adopting a more studious attitude to learning. It is argued by such writers that homogeneity freezes neighbours in their own ways.

2. It is held that a heterogeneous collection of neighbours tends to promote tolerance of social, cultural and political attitudes as well as encouraging a more democratic ambience between neighbours. Homogeneity, on the other hand, it is argued, increases attitudes of isolation between neighbours and the rest of society.
3. In addition, they contend that homogeneity produces a demographic balance which enriches the lives of the neighbourhood giving access to important social resources such as the wisdom of the older generation. They argue that homogeneity, on the other hand, has a stultifying effect.

4. Homogeneity, they argue, tends to inhibit the child's understanding of other classes, ages and races, resulting in making it more difficult for them to form meaningful associations with others in their mature years. Heterogeneity is said to produce a broader educational milieu, teaching the young tolerance as well as the existence of diverse types.

Heterogeneity, as has been shown, in respect of diverse class and characteristic groupings at best tends to produce a cool social climate lacking in consensus and intensity of relationship. Far from producing mutual enrichment, at worst it may produce avoidance or even antagonism.

Class and intellectual differences may produce both bad and good consequences. The propinquity of disparate groups may cause envy and better endowed parents may feel that they or their children may be harmed educationally or otherwise by association with uncongenial, less well endowed neighbours.

However, heterogeneity on an age basis, can produce beneficial results, in that children do tend to learn a lot from their elders and the old, and it often creates a sense of regeneration and youthfulness among the old.

One of the authors strongly against homogeneity was Mumford (1938) as expressed in his book “The Culture of Cities” (1938). He argued that what he
called artificial divisions which destroy cultural unity were bad for society. He stated that: "The city, if it is to function effectively, cannot be a segregated environment: the city with the single class, with a single social stratum, with a single type of industrial activity, offers fewer possibilities for the higher forms of human achievements than many sided urban environment". He contended that "the balanced personality" required for socio-psychological reasons "a capacity for self fulfilment and social co-operation". His contention was that, without variety, innovation would be stultified. This variety he said had to be consistent in a dissimilarity of occupations, environment, and social groupings. Without it, he contended, innovation would be stultified since without "The essential human need for disharmony and conflict" human psychological growth could not occur.

Thirty six years later he was of the same opinion. This is revealed in private correspondence of his dated 1974 when he asserted that: "I regard mixture as one of the main functions of the city, but lacking in the village or in the modern segregated urban neighbourhood". Mumford admitted that many of his ideas about heterogeneity and the community were derived from Patrick Geddes. In personal correspondence of 7th December 1974, Mumford stated that: "My contribution to neighbourhood planning was to give the neighbourhood some of the attributes of the city". Indeed it was Mumford who scaled down the heterogeneity of the city to that of the neighbourhood, the English village and New England Puritan village. The concept that physical planning should encourage and facilitate the growth of fellow-feeling was derived from a wish to bring to reconstructed society the sense of togetherness and lack of social barriers to be found in traditional community
life. This caused an awakening of interest in the "social balance" at
neighbourhood level.

Having discussed the advantages and disadvantages of homogeneity and
heterogeneity, as one has observed, each has its positive and negative aspects.
For this reason one is advised to look for a balanced social mix.

7.13.4 The balanced social mix

It is clear now that neither homogeneity nor heterogeneity can be totally
accepted without qualification. Complete or near-complete homogeneity where
everyone has the same type of employment, income, education, etc., is not
viable today. It is also incompatible with existing culture and traditions. On
the other hand, total homogeneity is likely to be so uncomfortable that only
those who wished to avoid any social contact with their neighbours could find
it bearable. Even then it would not be fully acceptable except in tenements
where visual contact among neighbours is at a minimum. It is rare to find any
unadulterated application of either homogeneity or heterogeneity within any
actual community.

Accordingly, in constructing planning norms, one needs to concern oneself
with the more moderate forms of both homogeneity and heterogeneity. The
answer would be an amalgam drawn from each which would ensure the
inclusion of the characteristics required to meet the needs of the problem, viz:

Firstly: where residents are not averse to making friendships in the
neighbourhood which will eventually provide mutual visiting.

Secondly: a degree of relationship which might or might not be so intensive
but sufficiently productive as to encourage them to meet the common needs of the property and their duties as neighbours.

Thirdly: in the final analysis, the least that one could hope for, in a relationship as neighbours, is for them to have sufficient consensus to ensure that they would not come into conflict.

This solution should provide enough of both elements to ensure diversity as well as positive social benefit. Sufficient for the theory, but, one might ask, which characteristics would be required at the operational level to provide a balanced community? To obtain relevant and appropriate answers it would appear of advantage to study the solutions, which have differing degrees of homogeneity and heterogeneity. In Libya, this must be the product of original research as no such studies exist on the subject to date. The results of any investigation of mixing people should be analysed to help in providing detailed evidence that might guide future planning policy.

Thus it would appear most appropriate to provide guidelines for the study of population mixes which would be best avoided as they have been seen to produce undesirable results. This would rule out any great degree of interest in population compositions in specific dwelling units.

In a study of traditional villages in Libya one can find a beneficial mixture of both elements; heterogeneity exists in respect of income, education, occupation, age, etc., and at the same time there exists homogeneity in religion, language, place of origin and so on. Accordingly, there are some limits that can be drawn from this state of affairs, namely that homogeneity in respect of income, age, education, etc., should never be imposed. Such
variables have been seen to produce the desired amount of heterogeneity in an otherwise homogeneous community. So, the variables can be defined and need not be left to random selection in order to produce a balanced community. The desirable mix in appropriate variables between homogeneity and heterogeneity is already to be found in the traditional village.

Thus one ought not to create a community homogeneous in respect of income, education or any other such pattern. A further reason for refraining from such action lies in the fact that studies show that, by doing so, identifiable social classes would become easily distinguished in certain areas which, however deplorable in sociological respects, also run counter to all religious and cultural values found in Libya. The traditional social mix helps to ensure a substantial degree of equality in such societies and provides an uplifting means of improving the life of the poor.

The factor determining the intensity and quality of relationships between residents must, in the final analysis, depend on the characteristics of the neighbours involved. Yet, the planner can have a significant input, sufficient to create meaningful relationships if the inherent qualities exist already. The designer can create the necessary propinquity by determining which houses are adjacent, thus creating the relevant visual and initial social contacts to set the process of relationship to work itself out, one way or another.

The intensity of relationships need not be on such a massive plane as that of planning considerations, because the emotional and social costs of settling people into a new neighbourhood can, at the worst, produce an atmosphere of mutual dislike, coolness or even conflict, that would best be mitigated. The
agencies responsible for the distribution of land and dwellings could be encouraged to give consideration to the problems involved. People should have the choice of becoming friends or merely polite neighbours. Each kind of relationship has its positive and negative qualities. Too much social contact can destroy or greatly impair the degree of privacy which human beings require in varying degrees. On the other hand, too little social contact can cause psychological problems leading to nervous stress, and breakdowns with all their inherent social problems.

The question then is, what are the desirable limits of social contact, if, indeed, any such criteria can ever be worked out? No answer has to be given here. This question needs further research study.

It is presumptuous and counter-productive for anyone to plan another's friendships since it is such a personal process. A pattern of friendship which might suit one person might not suit another. People should have the opportunity of finding their friends without being forced into any friendship not of their own choice. Therefore houses should not be so isolated that residents find difficulty in keeping up friendships or social contact with neighbours, as in the case with the modern built environment in Libya.

Conversely, heterogeneity, should not be pushed to such an extent that one finds difficulty in making friends in the neighbourhood. However, excessive homogeneity can be a limiting factor if it precludes residents from socialising outside their street, and may create social segregation. In order to provide a choice for the residents the site plan ought to make provision for a variety of dwelling houses. Some should be aimed at accommodating those who wish to
be open to a great deal of social and visual contacts, as well as others more concerned with privacy and isolation. The designer should avoid the construction of dwellings so close to each other as to put privacy at a premium, so much so that the inhabitants are thrown into too close proximity to each other.

An example could be the over-small courtyard into which all the windows open. In such circumstances the problem of noise can be a great drawback. Sound can be a source of embarrassment, as in a family quarrel or dispute.

Since a feature of Islamic tradition is an emphasis on good neighbourliness it is important not to forget this precept, and more emphasis should be given to sustaining and protecting such values.

The spread layout which is fashionable in Libya should be discouraged as it prevents all visual and social contact especially with low density large plots which prevent neighbours meeting each other. Such large plots are sought after by those who are determined to raise their status, according to their own lights, but they can carry their own disabilities. Such isolation can create loneliness especially for women who are left behind during the day and it can take on an atmosphere of solitary confinement for them.

What is needed is a moderate degree of homogeneity; the difficulty, though, is the definition of this degree and of how it should be put into practice. The designer cannot provide by himself the degree of homogeneity that is needed. Other different sectors should help him, for instance, the Housing Department of the local authority and the state agencies.
The traditional village community, since it appears to be more or less successful in its social mix, could be taken as providing acceptable guidelines. Once accepted, the question whether one has the power to recreate such a community structure is relevant. Various factors, though, in modern life make the implementation difficult, such as education, occupation, income, life style, etc. The gap in each factor can be so much wider nowadays, for example, that between the rich and the poor, the educated and the illiterate, etc.

However, a certain degree of population balance could be created by the agency responsible for the distribution of lands and houses, with the help of the designers and planners. A policy of greater attention to the needs of the people whom they rehouse and greater in-depth study of the subject would be a constructive step forward on their part.

Some points might be profitably examined in the creation of the desirable social mix:

1. When people are in the process of being re-housed for any reason, they should be given the chance to choose where they want to live.
2. Where a whole neighbourhood or street is being rehoused, as is often the case, people should, if they so wish, be given the opportunity to be rehoused in the same area either by giving them houses in the same new area as the others or by being given land and adequate loan facilities to allow them to have their own houses built. In this way they would protect their old community and save it from destruction.
3. People should have the right to choose their neighbours when being rehoused in public (council) flats or when they have been given land. In
other words, they should not be segregated because their income will not be sufficiently high to allow them to live in a particular area.

4. The size of each land lot should not be identical in each area but should be varied within each district.

5. People should be encouraged to live near relatives. This would allow benefits to accrue such as a caring atmosphere for the old and the provision of a strong social relationship.

In conclusion, designers would be advised to cease treating planning ideas as a modern phenomenon. Rather, it would be of value if they made themselves aware of the long history of design concepts, where they have neglected such study. This might induce a greater degree of humility and understanding which would deter them from producing simplistic solutions where complex problems demanded otherwise.
Chapter Seven: Summary and Conclusion

The creation of livable streets needs time and effort to evolve. At the same time co-operation between the several municipal departments is required, as well as a sincere attempt to work together on the part of the residents, shopkeepers, office workers and all the other local users. But, above all, there is a need for good management as Insall (1968) points out: "Good planning is only good management". The designer's task is fraught with difficulties if there is no co-operation and adequate management. After the designer's job is finished it is important that continuous supervision and control is maintained.

The traditional built environment has provided innumerable examples of the creation of livable streets and the provision of congenial outdoor space. This study has therefore drawn heavily from past experience and noted the positive forces which were responsible for the creation of such livable environments. Such traditional patterns have been modified to suit contemporary needs and the experience of other countries in similar circumstances, has been taken into consideration.

In order to invoke an environment that will suit human needs and create congenial outdoor spaces several factors have been discussed already.

The clustered built environment is the first pattern examined in order to make the city reasonably compact and on a human scale suitable for people on foot, thereby improving the quality of urban life. As Libya suffers from urban sprawl, this pattern has been evolved in an attempt to reduce its negative aspects. To this end planning must ensure that there is not even a square metre of wasted space between buildings. An attempt has been made to
dispel the misunderstanding that a building to be prestigious must be an isolated structure with unutilised space around it, free-standing, with great surrounding areas of asphalt. In order to produce a compact city, buildings require to be joined, with the reduction of the huge unneeded spaces to a minimum.

As a consequence of making the city compact encouragement can be given to walking. For the sake of bringing about safe livable streets priority must be given to pedestrianisation where possible (without neglecting the car), in an attempt to create specific environments in which both can respectively operate best. The areas in which the pedestrian operates at his optimum are the city centre, residential zones and villages where the distance to his destination is short. This gives the car priority in any inter-city travel. Creating a pedestrian street helps to improve the quality of urban life, but it is not everywhere that a pedestrianised area can be constructed. While it is desirable to separate pedestrians from cars total separation is not always feasible even to the extent of being harmful to street activity. Cars and pedestrians often need each other since a large number of activities take place where both meet. Probably this is the most suitable point of time to utilise professional traffic management in Libya.

Having considered the clustered built environment and the pedestrian street it would be appropriate to consider the importance of mitigating the climate by making use of the built form. The traditional habitat is a rich source of inspiration in this field. For this reason ways and means have been suggested of modifying the harsh Libyan climatic conditions. Such considerations have been, in the past two decades, largely neglected and, in some cases, even
forgotten causing unnecessary discomfort indoors and outdoors. Streets have as a result a less active social life as there is no protection from the sun, wind and rain. Street orientation, street covering, use of water and the planting of trees are added means of lessening the impact of climate. This can create a city capable of offering a pleasant and healthy habitat to its residents and visitors alike. In order to create this requirement the street form is an important consideration.

This need calls for a search for the most congenial and apt kind of street to suit both the pedestrian and the motorist. There is also the need to create a human dimension throughout the whole city. Libyan developers have tended to break away from the traditional street which has been found to produce such conditions. They have promoted straight wide street shapes, rather than the traditional curved, dead-end and narrow forms of streets.

The cul-de-sac, as one of these forms, provides more safety, privacy, personal identity, an ease of orientation and enhanced neighbourhood cohesion. Although the use of the cul-de-sac has been encouraged, all street forms should be used, without over-emphasis on one shape. All forms deserve to be used, where relevant, in order to maximise choice.

However, scale is the concept which ought to have been given more consideration. It has, instead, been largely neglected in the creation of the recently built environment. The width of the street and the height of its buildings should be related to the human senses, especially vision. In order to maximise social life in the street its width should be minimal. In such contexts people can be seen and hear each other quite clearly.
Irregularities and street enclosures have their own virtues in the creation of a congenial built environment. Irregularity provides the needed complexity. Complex rich urban streets can often enthuse a pedestrian so much that he is pleased to walk long distances with enjoyment. On the other hand the street enclosure can provide a completely private world which is inward looking, static and self-sufficient. The street should be recognised as an outside public hall in that it has a degree of enclosure.

The other pattern discussed, which has an influence in producing a livable environment, is land use mix. An environment that provides a genuine diversity of choice would encourage interaction among most inhabitants throughout the large part of the public domain. It was noted that the level of land use mix to be found in *suqs* is not only desirable but also necessary for environmental satisfaction. It ought to be emphasised that a building’s ground floor is extremely important as an area of public context. The kind of land use which should best be located on the ground floor is that which is related to the frequenters who have come in off the street. For this reason small individually owned shops should be encouraged, as well as open markets and *suqs* in order to provide maximum diversity of land use.

As well as providing diversity, the street should be attractive so that people stay and enjoy being there. It is not enough just to group people in a particular place, the street must of itself offer them a highly congenial environment. For the urban street to be attractive there must be something happening, activity taking place and protection provided from sun, rain, traffic and hazard. Jan Gehl (1987) pointed out that most people prefer to sit near the edges of a space because they feel safe and want to get a view of what is
going on. No one wants to sit in the middle of the space.

The creation of a livable street depends on the contribution of street furniture in providing an informal locale for people. It is not wholly enough to supply street furniture. It must be inviting, attractive, safe and well placed for the convenience of its users.

At the same time, most streets in a town centre are dependent for their success to a great extent on providing an easy interaction between the inside and outside of buildings. In addition, the success of a business within a building depends on its exposure to passers-by. For this reason one should try to create maximum connections between both areas by designing them as one space. The best kind of connection is not as seen through glass or even open to the street but where the activity and the goods are spread out on to the pavement so that passers-by have to walk between them, finding themselves part of the scene without needing to make any decision to do so or not.

The entrances and windows have a considerable and unique contribution to make to any connection between the interior and the exterior. The design and position of their openings should be considered carefully from different points of view as they are important to street life. As these windows and entrances can also be the source of argument between neighbours a great deal of attention should be given to them during the design, so that the Municipality staff are not occupied with disputes connected with residents’ privacy. Such privacy, as has been noted before, is an important dimension in Libyan socio-cultural traditions. Above all, cultural mores and popular attitudes
require to be accepted.

Consequently, attention has been paid to those details of the built environment that have come into conflict with Libyan cultural traditions. As has been shown, the major factors in the development and shaping of the traditional built environment are the socio-cultural and the climatic. Such factors have been largely neglected in recent reconstruction. This absence of attention is not altogether surprising since plans and design of cities usually derive from a different, often alien, cultural environment.

One of those conflicting elements is to be found in the preparation and implementation of the master plan of a city. The zoning regulation is one of the tools used in the preparation of the master plan. Such regulations evolved and developed in different cultures and physical contexts from those of Libya. Difficulties have arisen not only in the plans themselves but in the way in which they have been implemented. Usually there is little or no consideration given to the existing area, as it often involves the imposition of new grid pattern plans on the old area which has involved carving up narrow streets. Such implementation of a grid system involves not only the physical demolition of the existing built environment but it also leads to the destruction of the old community.

For the sake of generating life into the traditional area and community and their protection from wholesale dissolution Geddes's approach "Conservative Surgery" has been found to be relevant. By adopting such a method one could hope to achieve the best of urban life without losing any advantages of the traditional environment.
Modernisation and demolition are no doubt necessary in certain circumstances but they should be carried out with care and consideration to ensure that nothing of the traditional environment will be destroyed which can be retained. Many old buildings can be modernised successfully by alteration and improvement.

The other element in conflict with socio-cultural values and climatic conditions, which has been discussed, is that of the high-rise flats. These structures have since been widely condemned and largely criticised even in their country of origin. When such blocks were being built in Libya in the early 1970s they were already open to a considerable degree of criticism in other countries. Given this wide condemnation Libya could well have avoided their construction. These high-rise flats were built for reasons of prestige and for the provision of housing in quantity. Yet it is easier to obtain popular acclaim if one tries to achieve quality by a more imaginative careful design project suitable to its location and to its users. This would demonstrate to them that someone has their care at heart.

At the same time it cannot be said that all imported European urban concepts are alien to the Libyan situation. Others, which have not yet been imported, with little adaptation, can well be implemented in Libya, namely, conservation concepts. Most European countries today have enshrined the need for the preservation of buildings of historical and architectural interest in their planning legislation. There is no doubt that conservation is now essential in Libya; for this reason authorities and institutions should be provided so that policy and legislation can be brought into being.
Having discussed the physical pattern which can affect life in the street, it is important to examine as well the role of propinquity and social mix. Propinquity, no doubt, has a great deal of importance in affecting social relationship between neighbours. The kind of social mix, either homogeneity or heterogeneity has positive and negative aspects. An examination of both characteristics shows that the answer is to create a balance in the social mix. There is a need to draw from each amalgam which would ensure the inclusion of the characteristics required to meet the requirements of the problem in hand.

It is inappropriate for anyone to plan another’s friendship as it is such a personal undertaking. The way in which a friendship happens may suit one person but might not suit another. People ought to form their own friends in their own way, not through being manoeuvred into a friendship by others. Accordingly houses should not be so isolated that residents find difficulty in keeping up friendships or social contacts which they might have formed with neighbours as is the case in the modern built environment in Libya. At the same time the designer should avoid the construction of the dwellings so close to each other as to put privacy at a premium with the inhabitants in too close proximity to each other. A policy of more attention to the needs of the people whom the agency is responsible to rehouse and a greater in-depth study of the subject would be a constructive step forward on their part.

All models which have been discussed need to work as an amalgam in a single pattern. One alone will not produce or invoke congenial street life, according to the residents’ and the users’ needs. A compromise between all the factors calls to be made, not forgetting that the main function of the street
is a socio-cultural one. For example one might argue that the car is more important in the modern city than any considerations of climate. It might be held that the wide straight street is more suitable than the narrow and compact one. Yet it would be undesirable to construct a street from one consideration. All circumstances ought to be taken into account. There needs to be a compromise between all factors, ensuring that the uppermost importance for the pedestrian is the city centre, while the wide straight roads between cities and towns are of equal moment for the motorist. More interest should be given to the paramount needs in the circumstances but not to the exclusion of the lesser ones.

In conclusion one could agree that the best solution to the problem is to devise a system where everyone could enjoy his life to the best in the circumstances, both indoors and outdoors.

Designers would be advised to cease treating planning ideas as a modern phenomenon. Rather, it would be of value if they made themselves aware of the long history of design concepts, and where they have neglected such study, this might induce a greater degree of humility and understanding. They would thus be deterred from producing simplistic solutions where complex problems demanded otherwise.
General Conclusion

This preceding discussion has been concerned about every day activities and their specific demands on the man-made environment. It is in these daily situations that our cities and their streets must function and provide enjoyment.

A large proportion of the time that people spend in human settlements is devoted to activities in the spaces and streets surrounding their places of work, and their residences. The street is extremely well known to us as a place where one walks about, sits down, rests, watches, talks and trades. In such a space one meets story-tellers, troupes of musicians and fortune-tellers, entertainment for the casual passers-by.

From the beginning of this study the emphasis has been on the search to devise ways in which a congenial street environment may be created that will be of particular relevance to Libya. One feature for which this country was famous was its streets' livability. This was a part of the Libyan's heritage of which he was justly proud. This tradition, however, has been largely lost over the last two decades when the modernisation of the country was advancing rapidly. The traditional built environment has been swept away. Even its memory has hardly been revered and has been considered a sign of poverty from which one ought to escape. This has led to large-scale demolition, which has been so systematic that wide areas, even towns, have gone undocumented and unsurveyed. The lessons that could have been learned from their built environment have been forgotten or neglected.

The new built environment is a combination of most aspects of the modern
international architectural model which can be constructed in any country. In Libya’s case little or no consideration has been given to local conditions or socio-cultural values. The climate has been virtually completely forgotten. The link with the traditional built environment has been broken and the uninterrupted continuity with the past has been severed.

The past and the accumulated experience which shaped it should not be neglected since it produced a congenial built environment that fitted human needs and local realities as well as mitigating the harsh climatic conditions. The unique socio-cultural imperatives of the local inhabitants should not have been forgotten.

The accumulated wisdom, sensitivity, attitudes, inclinations, of a national or local culture, constitute a natural base for cultural identity. Respect for the past, for every phase of human creation, humility and a sense of the creative potential of the existing elements of the social and national life should not be deprecated in order to take on board the sense of superiority of a Western world view. On the other hand the mass of knowledge which comes from the West cannot be ignored, nor its impact be negated. Consequently, a critical assessment of the traditional as well as the modern built environment is called for. Such an examination could provide the guidance necessary in the restoration of confidence which has been lost in the sudden impact of an alien system of built environment. This confidence could enrich the belief of the urban designer in himself and in his traditional inheritance modified to the extent of contemporary needs.

Any solution should be evaluated in its intrinsic circumstances in order to
be meaningful. The way to the discovery of any genuine solution to the conflict between the traditional and the modern can be arrived at by observation of people in their use of modern buildings and streets. In the search for environmental terms that will fit human needs, the human scale and human values, behaviour study is essential. Such an investigation will reveal how people use, behave and interact within their environment. Since such observational analysis is virtually non-existent in Libya, it is vital to carry out this kind of study before any solution can be proposed. Furthermore data need to be provided as a basis for any future research. The lack of such information can be overcome by any accredited observational study and its analysis.

In this study it has been suggested that certain formal aspects of the traditional street are persistent and are still viable. As has been pointed out the traditional street structure, its function and accommodation of several elements make the street capable of providing differentiated open space. The intention is not to enshrine the traditional street, rather it is to suggest that there is merit in the conception of such a street which is often considered antiquated and discounted out of hand.

It is clear that the designer ought to be accorded a position as a mediator between the past, the present and the immediate future. This being so, he ought not to overrate the future and underrate the past, as the past in context has its own relevance to the present and the future. The Libyan situation is perhaps unique in scale and time compared to other countries, as here in a mere twenty years one finds a new system of urban structure which has overwhelmed a pattern which had taken centuries to evolve. The indigenous built environment, as a consequence, has almost entirely disappeared in one
generation. Consequently, it is not surprising that this sudden transformation and the elimination of a tradition has produced considerable maladjustments, incongruities and irrelevancies.

While the traditional street cannot be reproduced exactly because of the new demands of modern times, yet, within these limits, one can expect to maintain a continuity capable of sustaining its socio-cultural relevance. One ought to search for a contemporary concept of a city in which the street or street-like space is a positive element. It can be suggested that a city is able to be viable socially and functionally if it has come into being out of the traditional as well as the more recent concepts of the built environment.

An enquiry into the form and use of streets will quickly convince one that most literature is based on the premise that the street is predominantly a traffic channel. There is much expertise on street widening, effects of multiple lanes, on and off street parking, one-way traffic patterns, signalling and the like. Even sophisticated researchers have tended to institutionalise such one-dimensional notions of the street. The modern model separates the various issues such as the social, the cultural and the climatic from the physical one.

This study recognises the street as a functional element of the city. The street is not merely a channel for the movement of traffic and pedestrians nor is it bounded by the kerb or the building line flanking it. For most users, however, the street extends into the buildings or properties be they offices, shops, houses, parks, etc., which border the pavements. The limits of the street are, therefore, the limits of control of the users.
The interface between buildings and spatial elements is a vital one. The street could be regarded as the rooms of the city and the built structures could be looked on as its walls. Such boundary-buildings owe a responsibility to the shape and activities of these spaces. The interior functions of the buildings should be co-ordinated with those of the exterior in order to create a livable environment.

One of the problems of contemporary design is that the spaces between buildings are seldom taken cognizance of. The notion of the function has been gradually displaced from the external space to the internal one. Buildings have tended to become regarded more as objects, separate from their context. The building as a free-standing element, the building-in-a-park has come to be a convincing idea with widespread acceptance. The new high-rise buildings, devoid of necessary relationships to the street, have destroyed the integrity of the street space. Public urban space has become regarded as having predominantly one function, that of serving the purpose of getting the people from one particular point to another.

The social purpose of urban space and the sense of space have tended to be forgotten, as such a function has shifted to the buildings themselves. Urban space has become valued at little more than the locus of such structures. Rather than producing a parklike city this Utopian ideal has given rise in instance after instance, to a wasteland. This is most clearly illustrated in Libya because of the difficulty of maintaining landscaped gardening in such a harsh climate and with water shortage. This wasteland so often, in consequence, has become a rubbish dump.
Such relegated areas between buildings have come into being because no professional designer is concerned with such areas. While the architect’s main interest is in the building, the planner pays his attention to the large scale, seeing such a small area as a line in his design. The urban designer who can fill this gap is completely absent in Libya. This problem has led to the creation of an uncongenial environment with the resultant neglect of the human scale and the absence of the small details which are equally important in creating the livable street. Such a profession is more relevant now to Libya than at any time before.

This study has looked for guidance on how this process of neglect might be reversed by considering the street as a positive entity, as a human dimension. Stress has been put on the role of the street as a vital part of the socio-cultural structure of the built environment, not as a study in nostalgia. Rather it is hoped to have the best elements of the traditional street enhance that of today. In this study there has been an attempt to define how one might plan the use the street as the primary source of public urban space and as a functional entity.

In an endeavour to research a means of increasing social interaction in the street, it could be said that it cannot only be done by creating a physical environment that permits and encourages contact, but also by encouraging more co-operation between the relevant departments of the administration.

At the same time the Islamic tradition is a most important factor in increasing social interaction as it stresses the unity and interdependence of the family, relatives, neighbours and friends. At the same time it also stresses the
need for a more equitable system between all members of the community. The encouragement of these most widely appreciated tenets and the improvement in educational opportunities should promote community interaction.

Within this context, however, the designer should consider by whatever means are available how external space may be more carefully orchestrated to achieve a secure environment which will advance the needs and desires of the residents of these areas. If urban environments are to be used to their fullest potential it must be recognised that one cannot concentrate one’s attention on a single factor to the exclusion of others. All elements, such as climate, socio-cultural considerations and traffic, among others, should be given equal attention without neglecting one or over-valuing another. In the past there has been a tendency to over-emphasise the problem of traffic movement to the exclusion of all other considerations. Here the same degree of attention has been given to traffic. No all-embracing examination of the street can neglect the needs of the car and its driver. What is under discussion is the solutions which have been implemented in Libya, for example, widening and straightening of streets, which is regarded at present as the most important panacea with scant attention to the need for professional traffic management. Such techniques are in many other countries the ways and means of keeping the traffic working for the benefit of all. Each of these discussed elements has an importance of its own, indeed, it may be that efforts to improve the urban environment’s capacity to meet human needs will have unintended positive benefits for other aspects of the urban resident’s life.

As has been previously pointed out, it is not possible to generalise, because
each culture or subculture has its own distinctive identity. Even in one country or in a group of countries, as in the Arab world, wide variations exist. Each subdivision, be it small or big, requires to be considered. The designer should not take it for granted that the new environment designs are automatically and universally acceptable and suitable to any location or any groups or culture. For this reason because of Libya's different socio-cultural environment, climate and economy other countries' solutions may not fit the local situation. But lessons should be learned and the experience of others taken into account to prevent a repetition of the problems which other countries have faced. For example, high-rise buildings should not have been considered, as evidence existed, even before they were constructed in Libya, that their positive aspects were far outweighed by their disadvantages in their country of origin.

Today, architects and planners, trained along Western lines, cheerfully embark, with confidence, on the resettlement of diverse social groups and cultures. They plan and build environments often alien to the way of life of the user, and construct quite often inappropriate structures considering the climate and local conditions. The most depressing aspect of all this, is the uncritical acceptance of such Western methods, for example, the immense blocks of steel and glass erected as symbols of prestige.

The designer's aim, in recent times, has been to create a new highly distinctive building that will attract other designers and could be put on the front page of architectural journals and magazines. The motive should not be to attempt to create a new and totally different structure, but rather design a better one. He should not see himself as an avantgarde inventor but rather a modifier, seeking to create a congenial environment for the people who are
going to use and live in it. Nor should he seek ways of becoming famous at the expense of the users. If he wishes fame it can be gained more appropriately by producing an outstanding design while serving the needs of the client.

The designer should put himself forward as the servant of the people working side by side with his client, without feeling a sense of superiority. It is reasonable that the user should have a meaningful control of the creation of much of his environment.

If a Municipality is looking for ways to impress its residents and visitors quality rather than quantity is the best means of achieving this end. Popular support can be gained by the protection of the identity, culture and heritage of the country rather than enormous schemes which mean little or nothing to the local inhabitants.

The architect may protest that it is the Municipalities, local authorities and commercial interests which make the decisions, give him his instructions and determine the character of a city. There is an amount of justification in such a defence since society must shoulder a substantial degree of blame for embracing inappropriate values and expressing them in the training and opportunities they afford these professional people.

In order to meet the awesome challenge of extremely rapid change and modernisation, the education sector in general and the universities in particular should be given more meaningful and closely defined guidelines regarding in-put in student courses. For this reason certain themes in the realm of planning and architecture should be made more evident and accorded greater
importance. Firstly, planners and designers must know the past to design the shape of the future. Cultural continuity and self-identity are essential to produce authentic designs and environment. Secondly users' participation and community involvement are the key to developing functionally successful environments. Thirdly, learning from outside experience requires adaptation not copying and accordingly, internationalism must be tempered by localism. Finally, the hallmark of the designers and planners of tomorrow should be flexibility and adaptability to suit new needs.

Such key elements of an appropriate educational programme could be advanced by the involvement of the role of the University. The link between the Universities and Municipalities should be strengthened. Local authorities could take advantage of the experience of the university staff, skills which such authorities usually lack.

Libya for several centuries prior to the present day suffered great economic difficulties. Only when oil had been discovered were such hardships swept aside and Libya had the economic power with which to build herself up. This chance may not happen again; for this reason, great thought, time and increased research is called for to make best use of this opportunity.

Scientific analysis, modern techniques and motifs cannot, by themselves, provide all the solutions to Libya's elusive problems. Awareness of Islamic heritage, of the environment, the economics and social history of the area in which he is working and love for the people who will use his buildings, together with the qualities of modesty and sensitivity, would seem to be the essential attribute for a designer.
It could be said that Geddes (1968) gives an apposite summing-up when he says that: “The battle for better cities and towns and environment generally is on, but no amount of technicological evolution is purposeful unless accompanying a fundamental human evolution”.

In conclusion, it is hoped that these studies will spur further discussion and stimulate some fruitful theory and research.
Appendix: Summary of M.Sc. Dissertation

Because the present study is a continuation of the author's M.Sc dissertation, it is highly relevant that a summary of it should be included as an Appendix since reference is frequently made to it.

This M.Sc dissertation, "Street activity and social contact" is a survey carried out during the summer time and concluded in August 1983 using the Jan Ghel method described in his (1977) book, "The Interface between Public and Private Territories in a Residential Area". This study was carried out in the Libyan city of Misurata, which is located in the Eastern part of the Tripoli region, on the Mediterranean coast. Misurata is the third Libyan city after Tripoli and Bengazi and is the commercial and administrative focus for its area. An important part of its current development plan is the iron and steel complex, which is in two stages, the first of which has been completed. The population of Misurata in the 1984 Census was 131,000 inhabitants.

**Demonstration of the method**

1. A minute-to-minute diary was kept, describing all events occurring in the street or visible from the street, stating time, duration, place of occurrence, type of activities and persons participating.

2. A record was taken of exactly where people were and what they were doing at twenty predetermined times and this information was plotted on a plan of the street. Photographs were taken where possible.
The information from each study was presented on two sheets, the first being a description of the physical characteristics of the study area, and the second showing the activities and interaction observed. In addition, all activities and interactions were shown in a histogram on the second street. Certain categories were used to classify the activities and interactions observed.

Interactions: Short chats (less than 2 minutes)  
Long chats (more than 2 minutes)  
Chats across the street.

Activities: People doing something in the street:  
mending cars, painting fences, etc.  
Staying activities: people staying on the street, standing, leaning on the front door, sitting, etc.

The histogram

The hatched part of each bar represents those activities or interactions which took place in the street in the evening between 5 pm and 10 pm. The lower part of each bar represents those activities or interactions which were observed in the morning period, from 7.30 am to 2.30 on (Figs. 8.1, 8.2).

Map A

This map was drawn by overlaying all the compiled information at regular predetermined times during the study periods (Figs. 8.1, 8.2).

Map B

These maps were compiled from information diaries. Each dot represents the position of a person engaged in an interaction or activity; where people moved about, the dot was placed at the position where they spent the most
Two examples of surveyed streets in Misurata.
time (Figs. 8.1, 8.2).

Types of activity in residential areas

1. Children playing.
2. Children sitting or standing.
3. Children cycling around.
4. Adults standing.
5. Adults sitting.
6. Adults talking.
7. Adults walking.
8. Adults watching.
9. Adults sitting on a balcony.
10. Calling or talking to somebody from a balcony.
11. Reading things and taking things out of cars.
12. Putting things into and taking things out of cars.
13. Washing cars.
14. Repairing cars.
15. Arriving in cars.
17. Loading up cars.
18. Watering trees.
19. Taking something to a neighbour.
20. Borrowing something from a neighbour.
21. Putting rubbish out.
22. Going to the shop.
23. Building a fence or wall.
24. Painting.
25. Pushing wheelbarrows.
26. Adults playing cards.
27. Adults playing games.
28. Hajj activities.
29. Wedding activities.
30. Women popping out looking for children or calling someone.
31. Listening to the radio.

General observations and conclusions

There is a remarkable difference in the level of activity and interaction between the street studies. Some streets were full of people with various activities taking place. Others demonstrated a lack of social contact. The absence of activity in such streets makes them unpleasant places to be in or to walk through. In such places the residents are isolated. They appear to be strangers to one another and to lack a sense of community.
It can be concluded from the study that the differences in levels of activity observed in different streets depend on a variety of factors rather than the number of people resident in the street. Elements such as the street form, its width and enclosure, volume of traffic passing through, climate and land use have, undoubtedly, a great deal of effect in determining the level of activity.

On the other hand, social structure plays a very important role in street life. It has been noted that where there are high levels of activity and interaction, there is a strong relationship between the occupants and their relatives. This is clearly noticeable in the village streets and in those in the city with old houses where most of the residents have close relationships with one another. People meet in the street and are seen sitting or standing talking. The residents treat the street as a part of their own territory. These streets are more lived in than modern ones where the residents come from different areas and do not know each other. This is so in the case of houses built by the government to house various people. Such residents lack company, that is, somebody to sit with or to talk to. This type of street is particularly difficult for women to live in, especially those who used to stay in traditional houses with plenty of space around them. Whereas there used to be many neighbours whom they could visit and see often, now these immigrants to the city stay alone in their flat or house and there is little coming or going. Such people used to talk a great deal, but now there is nobody to talk with. Men who get fed up with domestic life, can go with others, or go off to other parts of the town as the car facilitates their movement.

In modern streets, children play individually or in groups and their mothers come out from time to time to look for them often as a result of anxiety. On
the other hand in the village and in old streets children play in the street and anybody who happens to be there looks after them. Their mothers do not worry about them as they know that their relatives or friends will look after them.

Another factor which affects street life is the structure and shape of the walls. The author has observed people looking for secluded places to sit in, to protect themselves from the sun in the shaded areas provided by the staggered facades of the buildings. They would sit or stand in recesses also to protect themselves from the wind which carries the dust with it. Women were seen sitting or standing in concealed places to keep out of the public eye. People do not like to sit in front of somebody else’s house and such hidden corners provide appropriate places to gather and spend time. Where such places are available more people can come and sit without disturbing their neighbours’ privacy.

From the plans provided, it is clear that old streets, especially in the villages, are the best models for providing secluded places. This is because they have many irregular lines, the walls being built in an organic way so that they provide many recesses where old people and women can sit or stand. The facades of most modern streets consist of two unbroken, regular, parallel lines, with pavements of identical width running from one end to the other. This leaves an area for people to stand or sit, especially in those streets which have narrow pavements.

The lack of furniture in most streets noticeably reduced the number of interactions and activities. It has also been observed that people looked about
in the street for something to sit on, like a front door step, or stone. It was also noted that where there was street furniture, it was often not well placed, so that the residents were inhibited from using it. Street furniture makes the place pleasant to be in and therefore invites one to increase the time spent in the area. It has been observed that people bring out their own chairs and, in the village streets they bring out their mats, to sit on. In some old streets there are fixed seats built of stone or brick as part of the wall. This kind of stone seat is popular because it is a convenient shape for either sitting or sleeping on.

Another matter worthy of consideration which has its effect on street life is the impact of climate. It has been observed that most activities occurred in the evening and early morning when the heat lessens. About midday people started to disappear from the street and the main activity observed at that time was that of residents coming and going from their houses. Most of the long time activities took place in shaded areas. Where there is a tree much of the street activity tends to happen in its shade. Most of the interactions which came into existence in the afternoon were relatively short, evidently because the sun was too strong to be endured for long.

The study also made a comparison between the appearances of males and females. There were evidently different reasons for this, but the most important one is social custom. Women spend most of the day inside the house and the reasons for them to go out are to sweep the front door steps, to clean the balcony, to look for children, or to go somewhere, or to talk to each other across the street. They prefer to be found in secluded places out of the public gaze. One seldom observes any interaction between men and

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women. For this reason in the village street women were more apparent than in the city streets. The shape of the street is one factor. There are numerous recesses in the walls where women can sit or stand and talk to each other without being seen. Another factor is that there are fewer strangers in the village. These people also know each other quite well. Other differences between women's and men's appearance is that while morning activities were dominated by the former, the rest of the day's activities were largely left to the latter.

The study also made comparison between the level of activities on different days in the week. As Friday is the only non-working day during the week, from observation it is clear that the activity pattern is different. On the other hand much of the activity occurs near the mosques. The activities and interaction level is much higher on Fridays than on other days, especially positive activities associated with doing things.

Although twenty eight streets were observed, analysed and presented in a co-ordinated way, the results ought to be viewed from the point of each group having a different physical setting, another kind of user and showing dissimilar activity patterns. These groups are classified as:

**Village streets.** From the survey it was clear that village streets were the most active of all the residential streets studied despite the comparatively small number of houses and residents in the street. The residents treat the street as part of their territory. They use the street as an extension of their home, they look after it and they meet and receive their customers there. Most of the residents sit on mats and talk in groups; they serve food and tea;
they give the street their own unofficial family name. The observer has to ask for permission from the residents for what he intends to do, because they do not like anyone to watch them and they immediately come and ask him what he is doing. This is a great difference from the city street which seems to be nobody's domain, nor does anyone pay much attention to what is going on there. This gives an indication of how the residents of both such streets contrast in their attitudes to the street.

**Streets with houses without courtyards.** The survey examined houses with and without courtyards. It has been noted that where there was a street with houses having no courtyards, most of these houses being built on a small plot, the street became more lively and more crowded, especially with children and old people. Because of the smallness of the houses and the large numbers in the family they are encouraged to go out onto the street. The adults may go out in the street to get fresh air, to get away from the noise of the air-conditioner or from the heat inside the house. The study recommended that houses should be comfortable for people to live in and they should not be forced to go outside because of bad housing design, rather they should be given the choice of going outside or staying indoors by making both options equally acceptable.

**Streets between high-rise flats.** The study also analysed life in streets between high-rise flats. The level of activity has been found to be low when one takes into account the number of residents. Fewer activities were observed involving interactions and staying activities. Most of the actions observed were the comings and goings of adults and children playing.
Pedestrian and traffic streets. In the survey it has been pointed out that when the street has less traffic more activities are to be found. It is easy to note that pedestrian streets are more active than the streets with vehicular traffic. It was also observed that the street is not only busy with through-traffic but also cluttered and crowded with parked cars, as few people use their garages, preferring to park their cars in front of their houses. At the same time watching cars is more popular with young people who usually sit at cross roads and corners; most of their activities are associated with the observation of cars.

Commercial streets. The study also investigated the commercial streets and compared their activities as, between pedestrian and traffic streets, between different land uses, and with regard to various widths and shapes. Certain factors such as land use mix, pedestrianisation, protection from the climate, and attractiveness have all contributed to making the commercial street a livable and enjoyable area.

The study concluded that, in order to create a congenial built environment and bring life to city streets one needs to make these streets more pleasant places to frequent. One wants people to treat the street as theirs, not as no-man's land. It is best to encourage the creation of livable streets so that the public can spend time in each other's company. For people to go out they usually require a pretext to give them the excuse to appear on the street. They also require protection from the climate and from hazard as well as the provision of facilities for entertainment and services. People should feel that they are living near neighbours and in a community, not among strangers. One wishes to create a better atmosphere for those who move from the village to
the town and who suffer from the lack of social contact they formerly enjoyed.

The problem of the modern architect and outdoor designer is that they pay too little attention to traditional forms. These shapes did not exist without reason, since it is clear that social behaviour and the physical environment are very intimately linked. Therefore, contemporary designers should take care to see that the functions performed by these traditional physical environments are not left unsatisfied. In other words, people’s needs still have to be fulfilled either using traditional urban forms or alternative methods. The most important observation is that people’s needs cannot be ignored.
Glossary

Agora: Market place (Greek).
Amir: Governor of a province.
Bab: Gate.
Bazaar: An area of shops which is equivalent to "suq" as it is known in Arab countries.
Castra: A fortified camp (Latin).
Chabila: Tribe.
Darb: Path.
Eminent domain: A form of compulsory purchase.
Gibli: A hot, dry desert wind.
Hadith: The corpus of sayings and practices of the prophet Muhammad which forms one of the main sources of Islamic law.
Hajj: The pilgrimage to the holy places of Mecca.
Hara: Quarter.
Ijtihad: Scholarly opinion on matters of Islamic religious law.
Itinera: Pedestrian spaces (Latin).
Jami: Mosque.
Madina: City.
Madrase: School.
Maidan: Square.
Mashrabiya: Wooden grill work used to cover the windows of traditional built houses.
Maskan: A term used for house which means peace and tranquility.
Rahba: Esplanade.
Sagifah: A covered area before or after the entrance to a house.

Shara: Street.

Suq: An area of shops which is equivalent to bazaar as it is known in India and Iran.

Sugag: Lane.

Tell: Mound.


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References

Chapter Six


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is a space of at least three metres between his window and his neighbour’s heritable property. This results in disputes and litigation. In such a case the judge will rule that, unless the parties can reach an agreement, the window will have to be sealed up. Legal decisions usually coincide with accepted norms. Consequently the judge has to contradict what was authorised by the municipal building authority.

Such an example shows the nature of the rules which are applied in both the traditional and modern context. The view is that planners can be asked to compile regulations, but that these can be changed at any time. This view is held because the modern zoning regulations and building codes which are currently applied in Libyan cities are artificial and ‘technical’ and have no relationship to the indigenous culture. This is what has happened in Misurata where Polservice has introduced a set of regulations. Such regulations imply a change from socio-cultural and religious conventions which are still accepted locally, to imported zoning laws based on arbitrary rules which are no longer accepted even in the society of origin. These new regulations imply more than a change in rules. They also imply a change in the system and method by which the law is derived.

7.11.5 High-rise flats

One of those elements which contradict the socio-cultural values and physical conditions in Libyan cities is highrise flats. These high-rise flats have been widely condemned and largely criticised even in Europe and America where they first appeared.

Initially the construction of such tall residential buildings was considered