TOWARDS AN IDEOLOGY OF URBAN FORM

Open Space in the Built Housing Environment

with particular reference to the

Arid Urban Environment in the Middle East

by

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Errata

In spite of the attention taken in the production of this work, a number of errors have been located after the thesis was bound. These are listed below.

- In the declatration page following the acknowledgement section, third line, "..research ot the author" needs to be corrected as "research of the author".

- Page 27, sixteenth line, "..receptacle",[43] According.." the comma needs to be changed into a full-stop as follows: "..receptacle".[43] According.."

- Page 33, second line of the quotation in italics, "..*civilisations have*.." needs to be spelt as "*civilizations have*.."

- Page 46, footnote 5, "..late sixties an earl seventies.." is to be corrected as "..late sixties and early seventies.."

- Page 59, Claibourne's quotation, fifth line, "..into ares were he could.." needs to be corrected as "..into areas where he could.."

- Page 71, the sentence "This shows that ... been regarded as entities." on the lines 2, 3 and 4 is to be eliminated.

- Page 76, fourteenth line, the sentence "..seem to have implicitly related to.." needs to be changed to "seem to have implicitly led to.."

- Page 105, fourth line, "..and content. a concave..", the small *a* needs to be changed into a capital *A* as follows: "..and content. A concave.."

- Page 118 fourth line, "..processes becomes.." needs to be corrected as "..processes become.."

- Page 189, fifth line, 'conversionce' is to be corrected as 'convergence'.

- Page 194, second line, (among other) needs to be corrected as (among others).

- Page 207, illust. 13, "house" needs to be plural: "houses".

- Page 234, illust. 42, "A Typical.." needs to be corrected as "A typical.."

- Page 241, illust. 49, "..aimed at developnig.." needs to be corrected as "..aimed at developing.."

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Abstract

The analysis of architecture is most often being restricted to its formal or visible characteristics. Once relationships are being considered, however, aspects of meaning and praxis become indispensable to any such analysis. But even then, the view of the built environment as a combination of more or less separate entities seems to persist, while different aspects remain expressed as mere dichotomies. The question here comes: is it enough to consider architecture as the space of representation and/or of experience? This thesis argues that this is not so, as such position would imply passivity on the part of those who experience space, or to whom the space is being represented. Rather, it will be argued that a proper understanding of the built environment is primarily attached to an understanding of ideology, as it is conceived through the architectural process.

From this point of view, the hypothesis tested is that *the question of the architectural creation is not in 'space', nor in its constituent elements, but in the nature of the causal forces which put them together in a particular combination in time and place (i.e. ideology).* Moreover, that *the quality of the environment lies in the ability of its various elements to influence one another, and interact causally.* It is suggested that the misconception

of this basic fact stands as a central factor behind many of the problems that the architectural environment currently faces. The aim is to offer a critical analysis or explanation for the failure of some earlier architectural/planning ideologies, and hence, outline some principles which would avert these failures. The arguments are focused on open space in the built housing environment, with particular reference to the arid urban environment in the Middle East.

Central to the evidence presented is the 'concave' and 'convex' model. This is a method that this thesis has developed which aims at illustrating the effect of various factors (social and cultural factors) and forces which are applied (local or global) on the level of causal interaction in the local environment. This method is based upon principles which are derived from preliminary discussion of some basic concepts (space, climate and culture), and the critical examination of existing theories in social and urban patterns. It is contemplated that the 'concave' and 'concave' model provides an important addendum for the explanation of urban phenomena. Particularly, this method helps in illustrating the significance of relationships over entities, and of causal interactions over spatial patterns.

It is concluded that the hypothesis tested is correct. It is thus argued that the efficiency of the built environment is related to the extent that it facilitates interaction between its various constituents (physical and/or social), as well as being itself the cumulative outcome of such interaction. Some of the implications of this in terms of architecture and the role of the architect are analyzed.

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If the English words that I learnt to use might have been able to point to a concept, or prove a hypothesis, I certainly found them very deficient in expressing my deep gratitude to all those people who through their commitment, concern, support or encouragement, made this thesis possible.

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Except where otherwise acknowledged in the text, this thesis represents the original research ot the author.

The author consents for the thesis being made available for photocopying and loan.

Charles I Kidess

To

Issa A Kidess and Regina T Kidess

my parents

The journey of love is a very long journey
But sometimes with a sign you can cross that vast desert
Search and search again without loosing hope
You may find sometime a treasure on your way

Muhammad Iqbal

If you can look into the seeds of time,
And say which grains will grow and which will not,
Speak then to me ...

William Shakespeare

"The poet has gone and the radio has come. This is the way of God in His creation. Long ago it was told in *tarikh* which in English means 'history' and is spelt, H-I-S-T-O-R-Y."[1]

Prologue: *The line between two realities.*

Passing through the wide modern boulevards of new Middle Eastern cities, one seems to face little wonders. It is the age of technology, where the car, the media and the telephone easily found their way into the centres of old civilization. For many Westerners, it is the way it has to be. For people of the land, it is progress and development, from which there is no return. It is been long since Napoleon's fire arms and typing machines were discarded as *bida'* (unlawful artifacts), and even longer since *Charlemagne's* clock, which was sent as a gift to *Haroun al-Rashid*, the great *khalif*, was received with skepticism, and thought to be satanic. Today, other than watches, fire arms, or typewriters, these areas of the land constitute a major market for western thought, investment and product. No more fear or skepticism seems to stand in the way. Even more, it is "the will of God", as some would claim, and what is in the past is '*tarikh*', or history.

But the '*tarikh*' is far from being forgotten. As we proceed through the wide boulevards, many of them run in straight lines through the new western style suburbs where the stretched spaces make the motor car more than a luxury, one is likely to arrive at a solid

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[1]The words of *Sheikh Darwish* (one of the characters in Naguib Mahfouz's 1988 Noble prize winning novel *Ziqaq al-Mudaq*) mumbling after the old poet who has been reciting in the alley's café for twenty years has been sacked, and replaced instead by a radio placed on a shelf in one of the café's corners. [p 8]

block, a sudden change, where these boulevards end - or rather begin. This is the *madîna*, where lies the old preserved past. Sometimes, the transition between the old and the new is more or less gradual, but in cases as in Jerusalem, Fez, or Tunis, this block is in the shape of a wall, like that of a castle, or a fortress; a straight, strong, well defined line. This line is more than a boundary. It marks the end of an era, and the beginning of another. It is the line where one has to desert the car, and go on straight on the ground, or on the back of a beast. Beyond this line, the narrow, cool winding alleys drive through the dense aggregates of urban settings, where the chanting of the mosques *mu'azzin*, far from the noise of horns and motor cars, is only disrupted by screaming merchants and chatting passers-by of the *bâzaar*, and where in the absence of exhaust smoke and defiled air, the sweet odours of Eastern herbs and Arabian incense thrive and nourish, all acting as lavish reminders of the glorious memories of olden times. This line is the line between two realities.

Introduction

"I use the workings of chance ... not to express myself but to change my mind. What interests [*sic*] me most are not the ideas I may have to start with, but those that come without my being able to decide beforehand - chance suggests them to me."

John Cage, 1990

Introduction

I. BACKGROUND

Age of chaos

These times are times of crisis. It is no secret that the built environment in many areas around the world - along with other qualms such as over-population and starvation, energy crisis, and even weather - is probably facing its most serious crisis. The product of the past hundred years or so has been far from satisfactory, and voices expressing deep concern are today being raised more than ever before. This thesis, in essence, adds to these voices.

However, while aligning itself with the cause, this thesis is critical of the methods (at least some of them) which are being taken to handle today's problems. Many such methods remain reactionary; they respond to the symptoms, but can do little to cure the disease. Therefore, a clear diagnosis is necessary. What is needed in other words is to identify the causes, or even less so, questions for which we need to seek answer. This point - identifying the question - is after all not as simple and straightforward as it appears.

Let us look at the following example. "How long is the coastline of Britain?" This apparently simple question found very different answers. Each such answer depended on the method - the scale of measurement, intervals, and so on - which was used; the smaller the interval, the larger the number that was arrived at, and eventually this number kept on growing indefinitely (see illust. 1). It was afterwards anticipated that the problem was in the question; simply, it was the wrong question to ask, or more so, it was not crisp and specific enough to define the criteria for the answer which was required, one which would have been expected. A more specific question would have led to a more accurate, more anticipatory answer. Taken from this point, to what extent can we say that the questions we are asking in terms of the built environment are the right ones? Are they specific enough that we can expect reasonable outcomes?

In a widely publicized campaign over the past months, Chaos theory received the euphoria which can only be attached to major (scientific) breakthroughs. It probably can only be paralleled to Einstein's theory of relativity at the beginning of this century, but with all the advantages of today's media, the impact here was instant. It was as if our salvation from the choas in which we float became apparent, in theory of Chaos. This euphoria and joy however, seems to have overwhelmed the caution, alert and insecurity which was unquestionably also present. Doesn't the theory of Chaos, at the height of the age of pragmatism, lay down much doubt over rationality and objectivity, which in the past did not allow any space for chance? Do not the patterns of Chaos pose the greatest challenge to scientific reason, whose power of prediction was transferred into the power of domination in the hands of elites and professionals? Least to say, shouldn't all this leave those behind such professions feeling the need to put under critical examination all current attitudes and approaches otherwise facing the not very unlikely fate of extinction?

Architecture, still an infant discipline - less than a hundred years old many would suggest - seems to have an advantage; it is often dressed in the camouflage of art, but when needed, it justifies itself with the power of reason. However, architecture is no exception here, and let us look at another implication of Chaos. Mandelbrot - the mathematician to

whom the example mentioned above concerning the query into the length of the coastline is usually referred - is also universally associated with 'fractals', the 'backbone' of Chaos. His most famous and popular achievement, though, seems to be what is called in his honour today the 'Mandelbrot set'; the look-like natural, organic, cosmic patterns produced through computer simulation. These infinitely variable and irregular, though charming patterns seem to have all the qualifications of belonging to art. However, it is not there that their real value lies, as many would claim. These patterns seem chaotic, but they are not random. They are often reducible to simple rules and elementary principles, which combine together to form minor fractals; minor fractals would then combine to form larger fractals and shapes, and so on. Therefore, to understand these shapes, there is no point in simply analyzing the forms, but rather, it is much more viable to go back to the rules, or to the method or ideology which has been utilized to produce these shapes. When doing this, not only do we start to appreciate these shapes for their real value, but also, their production and reproduction becomes more feasible. In architecture, however, formal (or aesthetic) analysis still seems to be the major domain, while many other questions involving how or why these forms are created remain largely overlooked. From this perspective, let us have a quick look at the main propositions, as well as the purpose and objectives of this thesis.

II. DEFINITION AND SCOPE

This thesis is about space. It defines architecture as a spatial construct, and it recognizes space as the essence of architecture. Yet it negates the necessity of space; the main proposition that this thesis sets up to demonstrate is that *the question of architecture is not in space, but in ideology*. It suggests that the misconception of this basic fact stands as a central factor behind many of the problems that the architectural environment currently faces. The aim is to offer a critical analysis or explanation for the failure of some earlier architectural/planning ideologies, and hence, outline some principles which would avert these failures. The study is essentially based on the critical use of existing literary sources. It

focuses attention on open space in the built housing environment, with particular reference to the arid urban environment in the Middle East.

The proposition made here - that *the question of architecture is not in space, but in ideology* - is arguable. I say arguable because it ultimately depends on what we mean with the term 'space'. In this thesis, I wish to illustrate that 'space' in architecture has in most cases been conceived narrowly to imply the spatial pattern or form of buildings. Yet a proper understanding of the concept of space implies a *process*, or *ideology*. According to this view, the actual forms or spatial patterns depend primarily on the application of rules to certain elementary constituents, which are related to aspects such as climate, culture, building material, and so on. Spatial forms are accordingly seen as the outcome of the process (or processes) leading to these forms, not just of the ideas, means or methods which were utilized in producing them. On the other hand, by looking at 'space' as an entity, 'space' has become largely isolated from its constituents, and therefore, from its local domain. In general, we can say that much of the architectural development over the past hundred years or so in many areas around the world can be put in this latter category, where new ideas in design and urban planning, married to new technological methods of production and reproduction, largely outstripped the different areas from their traditional developmental procedures. This ultimately resulted in space being taken as infinite, homogeneous, common to all buildings, based upon dimension, proportions, and physical appearance, as in, for example, the 'International Style'. Such 'machine architecture', as it is often referred to, replaced the indefinitely variable complex patterns of indigenous or vernacular settlements, which it totally opposes. These, by all means, are global problems; however, and as would be expected, their effect on the less developed countries - third world countries, among them are countries of the Middle East - is most profound. We would also expect the housing environment, which contributes to the larger portion of the built environment, to be their fiercest casualty.

It is acknowledged that the essence of the housing problem, particularly in developing countries, is mainly political and economic.[1] This is at the same time both an effect and a cause of recent trends in terms of the development of state-based economies; the largely agricultural societies, originally self-sufficient, depending on local industries and self-management of resources, have been transforming into centrally-governed employee based societies. This transformation, occurring only over a few decades, has been characterized by migration into major urban centres, leading to problems of over-crowding, and so on. The provision of housing then became an attribute of capital spending, resources and employment. None of this in particular, however, is in the scope of this current study.

The main concern of this thesis remains in regard to the *nature* (as opposed to *provision*) of the housing environment. This is not denying that the nature of the environment as such is intimately related to the very basic facts mentioned above; i.e. that housing over the past decades has transformed into a commodity product, manipulated and controlled by politics and central economies. In fact, the very questions of ideology, autonomy and control, which are among the basic themes which will be looked at in this study, are - many would argue - first and foremost economic and political. This, at least, seems to be the general attitude. Roussopoulos(1982) for example says,

> "What is the dominant ideology of the professionals - urban planners, architects, engineers, economists, sociologists - who are concerned with the urban crisis? This ideology sees the crisis as the consequence of jobs, land and commodities seeking to influence personal taste and choices and determined by vague technological and economic forces."[2]

Nevertheless, it is assumed here, as evidence from the past shows, that even within the political and economic constraints, there remains some space for manipulation. I am referring here particularly to the nature of the architectural solutions which are introduced. Post-war decades in Europe are particularly relevant in this regard. This puts the architect as a collaborator and active participant in today's trends, and has within his/her ability, the choice

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[1]See for example Abrams (1966), Oliver (1969), Abu-Lughod *et al.* (1979, 1984), Gillissen (1980, 1986), Correa (1983), Payne (1984), Hassan, M. (1990).
[2]Roussopoulos (1982), p13.

and power of change. On the other hand, this study will aim to present a case against the tendencies to over-emphasize the economic determination over the urban development, which in the past seemed to largely exclude the effect of other contingencies, particularly local culture and praxis. This does not involve rejection of the economic dimension, but rather it aims at stressing the importance of the local context for the understanding of development.

Particularly in the sociological domain, this point has been a major point of dispute. The abstract and rigid formula which regard the society as a collection of entities and institutions (the Marxist concept of 'the base' and 'the superstructure', for example) has been debated in recent years.[3] This line of research - whose proponents are usually classified among 'structuralist' approaches, such as Castells (1977) - has been criticized for being mainly associated with universality, finding it difficult to address spatial variations.[4] Similarly, Giddens (1984) work, while it has been widely acclaimed as the 'rediscovery of space' in sociology[5] - where the city has been regarded as intrinsic to the social analysis - largely disregarded the importance of local actions, all which led for the whole association of space with the social analysis of modern societies to come under fierce attack.[6]

Recently however, attention has been drawn towards the importance of social entities as *participants*, rather than mere constituents, as in earlier approaches; a factor seen as the reason which stands behind earlier confusions. There is more emphasis in this debate on the *process* - not only the structure - of social interaction, and more specifically, on the particularity of such interaction according to time and place. What this brought along with it is (or some would argue it is the outcome of) the emphasis on the importance of space in the social analysis; all social processes are realized in space, and since spaces are different, activities are also expected to be different. Even more, these argue that it is impossible to properly comprehend universal processes without appreciating small scale social variations. This point, that space does make a difference, is becoming widely accepted, though the type of

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[3]Williams (1977), Alexander (1990), p2.
[4]Bourne (1982), p10; Duncan *et al.* (1991), p158.
[5]Gregory *et al.* (1985), Duncan *et al.* (1991).
[6]Saunders (1981; 1985).

difference that space makes remains disputed, and seems to depends upon the particular type of analysis.[7]

One main concern here is that the realization of the importance of locality brought attention to the role of culture in the social process of interaction. Culture seems to have been long neglected in the social analysis, and one significant contribution in this regard is that of Raymond Williams. Williams (1977) argued for a revision of the social formula, where large-scale capitalist economic activity and cultural production can be seen as inseparable.[8] The analysis of institutions, as he says, has to be extended to the analysis of formations, and this involves embodiment (i.e. entities, institutions, etc.), as well as performance (i.e. a process and contribution). Williams puts this in the wider context of consciousness and knowledge. The general tendency, as Williams puts it, was to reduce consciousness to knowledge, and knowledge was then to be reduced to the institutions of 'organized knowledge', as in education and religion. He thus calls for what he refers to as 'sociology of culture' whose task is in terms of analyzing the interrelationship within this complex unity - a task radically different from the analysis of isolated forms.[9] Some suggest the cultural context as an alternative,[10] but what is actually needed is to realize the role of culture within the role of society as a whole.

These are by no means new realizations. The development and implications of the concept of space as it is realized in various places across history indicate that 'space', conceived correctly, as mentioned above, also implies ideology. The theory of the opposites - the '*yin yang*' - the whole-part relationship, the theory of relativity, as well as other concepts which we shall briefly review, all imply that space needs to be taken as part of a continuum, which includes space *and* its constituents, being related to each other through a process; i.e. a sequential process based on causal action. 'Space' - or emptiness - as we shall see, is a by-product of the act of building; it remains beyond the primary intention of the act of building.

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[7]See Duncan *et al.* (1991).
[8]Williams (1977), p136.
[9]*Ibid*, p140.
[10]For example, see Agnew *et al.* (1984).

By primarily addressing space, as was mentioned, it is very likely that we overlook the value of its constituents, as is often observed in the case of contemporary urban settings.

What this thesis aims to do is to show that it is the process which leads to a particular spatial pattern which is important to understand and address, not, so as to say, the spatial pattern itself. This will involve the identification of the various factors which are involved, namely, space, climate, culture, and the social structure, and most importantly, the type of forces which exist between them. But where does this leave architecture? As it will be argued, the isolation of architecture as an entity needs to be down-played in favour of identifying and understanding the forces and social processes which lead to and/or act upon it. From here on, this study does not focus on any of the elements or constituents in the built environment (buildings, or open space) on its own account, but rather, the primary concern is to observe and comprehend the nature, causes, and the underlaying factors and rules of their interaction. The notion of 'open space', as it is referred to in the title of this thesis might not appear as obvious as some would expect from a title; it might even at times be seen to disappear behind the arguments which are presented. However, any attempt to disqualify the title can simply be neutralized by pointing to the fact that it is open space which shapes our experience of the settlement.[11] Open space is the space of interaction between the various entities in the environment. This thesis then refers to the notion of 'open space' through its implicit value of facilitating such interaction.

III. HYPOTHESIS

The main hypothesis tested in this thesis is this: *the question of the architectural creation lies not in 'space', nor in its constituent elements, but in the nature of the causal forces which put them together in a particular combination in time and place (what will be referred to as ideology). More specifically, the quality of the environment lies in the ability of its various elements to influence one another, and interact causally.*

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[11]See for example Lynch (1960), Hough (1984), p6, Hanson and Hillier (1984), p89.

The argument goes as follows: The study of open space involves identifying the rules which regulate and control urban development (development here is regarded as the interaction and synthesis of the basic (syntactic) components [i.e. buildings, etc.] in the environment, leading towards growth). Such rules are the product of either of these forces: a) *inner* (or local) forces, or b) *external* (or global) forces. The first relates to direct response to the immediate situations and conditions, as implied through historical knowledge or experience (i.e. through culture). External forces on the other hand are those whose occurrence is more or less independent of the particular conditions which prevail in the local domain; these can be either physical (i.e. natural or climatic), or social, as is often the case for state politics or economic trends. In the first case, local forces are *reflected* on the local domain in the form of spatial (physical or behavioural) patterns, while in the second, spatial patterns are largely shaped by external or global forces which are *projected* from above. The nature of any environment is then a dialectical interaction between these two types or modes of forces.

It will be argued that the main point which needs be addressed in any analysis of the urban environment is regarding the consequences that environmental forces (local or global) have on the *causal interaction on the local level.* The quality of the environment is in these terms related to the level of causal interaction between its various constituents. To illustrate this point, a method is introduced (the 'concave' and 'convex' model). This method is based upon diagrams, which allow for the representation of the basic components, and the major methodological and phenomenological processes which take part in shaping the environment. Here, the physical properties of concave and convex figures in terms of projection and reflection are metaphorically paralleled to the reflection and projection of causal forces. This method is intended to facilitate the understanding of the combination, and sequence of operation of the various forces, and of the fundamental consequences of each pattern in terms of human-environment relationship. Based upon this, the study draws some observations and conclusions on how such human-environment relationship can be enhanced.

IV. THE EVIDENCE AS PRESENTED

This thesis is in two main parts. The first part undergoes a critical discussion of three major concepts: space, climate, and culture. The purpose of this discussion is to outline the basic principles under-which these essential - often taken for granted - concepts should be considered, and how they can enhance our understanding of the built environment. Chapter 1 makes a critical review of the concept of space - its nature and development. The concept of space has been acquiring new grounds not only in architecture, but in most other disciplines. The increasingly expanding domain of 'space' makes its understanding an essential component of any related study. Here, a historical review of the development of the concept of space in a multi-cultural milieu is first undertaken. What this particularly reveals is that 'space' as a concept needs to be looked at in terms of a 'continuum' of entities, *and* a 'process' which relate these entities to each other, rather than in terms of separate objects or categories (such as emptiness, form, meaning or value), as it often seems to be regarded. Here, the importance of the factor of causality is stressed as an *a priori* condition for spatial relations, and the dualistic nature of things is highlighted as an essential component for the explanation of spatial phenomena.

Chapter 2 discusses climate, culture, and more importantly, their interaction. The main point that this chapter addresses is the distinction between inner and external processes which take part in shaping the environment. Climate is seen as an external factor, while culture is the cumulation of *inner* processes and responses to both external as well as internal factors. Culture will be looked at as the collective construct of subjective experience of individuals and groups, which then act as a set of normative principles within the social group. The relationship between the two (climate and culture) is identified as an essentially causal relationship. It will be argued though that the nature of this causality (i.e. determination) is indirect, as it occurs through (or is related to) internal circles of interaction (or social processes), which are in themselves conscious and self-willed. Based upon this, the question

of determination in the built environment is looked at. It will be stressed that the determination factor can only be considered in terms of setting the limits, or identifying the rules, within which interaction can freely proceed.

In the second part of this thesis, these three concepts - space, climate, and culture - and the principles that they embody, are drawn upon in the study of open space in the housing environment. Chapter 3 reviews the impact of the new consciousness of space in architectural theory on architectural development. This impact, stemming largely from positivist circles which have been dominating over and beyond the first half of the twentieth century, seems to have led to the isolation of architecture from its local context. Therefore, the architectural process is emphasized as an important consideration over other formal or conceptual entities which it contains. As such a process depends upon the application of rules which are essentially sociological, the social approach to architecture is stressed. Here however, both inner as well as external social processes need to be considered, therefore, the role of culture as an essential part of the social process is emphasized. A critical review of some of the major approaches searching in this direction reveals that this point (the importance of the cultural dimension among other processes) is largely down-played by many universal (mainly economic) approaches to the built environment. This chapter then concludes by pointing to the need for a method which puts together the various entities, forces, and processes which take part in shaping the environment.

An attempt in this direction is made in Chapter 4. Here, a method is introduced - the 'concave' and 'convex' model - which aims at the representation of the various factors or entities which act in the environment - local-global, social-cultural - and the forces and processes of interaction which happen between these entities. This method - which simply allows for the diagrammatic representation of the various factors and processes - is based upon one major theme: that the efficiency of the environment is determined by the level of causal interaction between the various entities which constitute this environment. There are many advantages which are anticipated for the use of this method. For example, it helps to clear some of the confusion which currently dominates the study of the relationship between

society and culture. Most importantly, this method illustrates how different social patterns can lead to different spatial relationships in the built environment.

From this perspective, Chapter 5 looks at the housing environment of the Middle East, traditional and contemporary. This, as we shall see, strongly supports the initial argument that it is ideology, not space, which is an important aspect of consideration in the built environment. The contrast between traditional and contemporary environments of most Middle Eastern cities represents a clear example of two very different ideologies which have been implemented, and which led to very different spatial patterns. The advantages and disadvantages in each case are subsequently identified and critically analyzed.

The last chapter aims to provide some vision for future development and research. Here, the question of tradition is emphasized, but only through a process which can allow for direct interaction and communication between the various entities which are involved. A brief account of some recent revivalist approaches which attempt to address today's problems in the urban environment (particularly the so-called Regional approaches to architecture) shows that this point remains largely overlooked, and again, this chapter stresses that any formal or aesthetic considerations can only be marginal in relation to the real issues needing to be addressed, which are essentially ideological. It will then be argued that architectural solutions need to be looked upon within a framework which involves a greater consciousness on the part of society as a whole. The role of the architect as a 'mediator' (i.e. between inner and external forces) is then put forward in this regard.

This thesis is an exercise towards identifying some of the questions which need to be addressed in order to arrive at a better understanding of urban form in the housing environment. While approaching this field, I am well aware of the complexities, as well as the wide range of the issues under discussion. It is however my belief that such undertaking is necessary, and has so far been highly misrepresented in the architectural domain.

PART I

Basic Concepts

Chapter 1

Space

You comely countenance of
space Miraculous

Your dauntless breast is
without end

Al-Rusafi[1]

Space stands at the centre of the architectural creation. It is the essence of architecture, as will be argued throughout this thesis. Yet, it often gets misunderstood, misinterpreted, or misappropriated. A proper understanding of 'space' is thus essential. This chapter will go into some of the basics of the concept of space as has been conceived in human thinking. The main point that I wish to make clear is that 'space' as a concept is related to a 'continuum' *and* a 'process', rather than to separate entities (such as emptiness, form, meaning or value) as it often seems to be regarded. First, we shall look at how new conceptions in space, stirred by

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[1]The author would like to thank Deborah White for kindly spending some time on the translation of these verses. Al-Rusafi's original script in Arabic is as follows (quoted in Al-Bayati (1983), p 26):

jamâluka yâ wajha-l-fadâ' i 'aguibu *wasadruka ya' ba-l-'intihâ' i rahîbu*

جمالك يا وجه الفضاء عجيب ووجهك يأبى الإنتهاء رهيب

الرصافي

developments in science and art, have been affecting various areas of research in recent years. A historical analysis of the concept of space will then be undergone in the second part of this chapter. This will aim at observing the differences and similarities in a multi-cultural milieu, pointing out the basic principles in spatial considerations. The third part looks at the aesthetic phenomenon in terms of these principles. Particularly, the whole-part relationship will be examined as an alternative for the explanation of spatial phenomena.

I. NEW DIRECTIONS IN SPACE

Ever since the theory of relativity was introduced at the beginning of this century, there has been an enormous increase in the literature on space - and time.[2] It seems as if new horizons have been opened, and new dimensions have been realized. From being exclusively belonging to the realm of metaphysics, the concept of space is now a fundamental property of physical, social, economical, as well as geographical, architectural, and various other domains. Stephen Kern (1983) in *The Culture of Time and Space* reflects these trends as he says,

> "It is possible to interpret how class structure, modes of production, patterns of diplomacy, or means of waging war were manifested historically in terms of changing experiences of time and space. Thus class conflict is viewed as a function of social distance ... Urbanism viewed as a process of diminishing living space, the politics of imperialism is seen as a universal impulsa to claim more space, wealth is conceived as the power to control time and space."[3]

Underlying these developments is a long established debate into the essence and nature of space, which has been carried out by philosophers, theologians and scientists ever since early histories. This has generally been characterized in the quest of whether space is absolute, or whether it is relative; does it exist as an entity, or is it a representation of its constituents - a quest which seems to still be going on. In earlier times, the mystery of space was associated

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[2]Jammer (1960), p 1.
[3]Kern (1983), p 4.

with the secrets of the universe, and with the absolute and supreme powers which were assumed to stand behind its existence. Today, physical scientists are increasingly taking over the challenges of explaining the nature and origin of the universe[4]- a transition which necessarily marked the move towards the more relativist attitudes. A review of these developments will be made in the following section, but first, let us point out some of the new dimensions of the concept of space, and how these relate to our particular study.

The concept of space is closely associated with (we may even say a representation of) other concepts such as 'light' and 'time'; space implies the use of light, as it is light which reveals the various dimensions of space[5] (this is clearly evident in the Arabic term for space - fadâ' - which simultaneously implies three meanings : 'space', 'emptiness', and 'light'). Also other concepts such as 'place', 'field', 'region', 'territory' and others are extensions of the concept of space. This gives a broad indication of the wide dimensions that the concept of space occupies in human thought.[6]

Whether it was the wide dimensions associated with 'space' which led to its adoption by so many varied disciplines, or that this is related to the new revelations in physics, as some (such as Giedion, 1945) would rather argue, it is hard to say. Regardless, it is clear that much of the recent development in various areas of thought (in science, art, and elsewhere) *were* parallel, and invariably, they seem to rely upon the association between space and time. We thus note that relativity in science was accompanied with multi-dimensionality, and non-linearity in nearly all other fields. Cubic artists, for example, broke away from the Euclidean geometry and the one point of reference of the Renaissance perspective, towards the presentation of spatial relationships in time from various points of reference. As Sigfried

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[4]See for example, Kuhn's *The Structure of the Scientific Revolution* (1970).
[5]This association between light and space has played a major role in the development of human thought, particularly in the realms of the spiritual and metaphysical constructs of human beliefs. [Jammer (1960)]
[6]In order to illustrate the extent to which 'space' is involved in our lives, Edward T Hall (1966) claimed the 5000 of the terms listed in the Pocket English Dictionary - that makes according to Hall around 20% of all terms listed in that dictionary -could be classified as relating to space - which does illustrate the extremely wide dimensions that the concept of space has. See also Geeti Sen (1988) who discusses some of the definitions of the word 'space'.

Giedion (1967) explains, "The essence of space as it is conceived today is its many sidedness, the infinite potentiality for relation within it."[7] In this sense, Giedion argues that exhaustive descriptions from one point of reference are no longer valid. In other words, cubism introduced the time factor into painting: that is, it views objects relatively, and simultaneously from several points of reference. Space has been regarded as four-dimensional space-time continuum.

Similar attitudes can also be felt in literature. Urry (1985), for example, referred to Berger's analysis of modes of narration in modern novels; it is according to Berger scarcely possible at present to tell a straight story sequentially unfolding in time, which is due to the need to take into account the simultaneity and extension of events and possibilities. According to Berger,

> "Instead of being aware of a point as an infinitely small 'part' of a straight line, we are aware of it as an infinitely small 'part' of an infinite number of lines, as the centre of a star of lines."[8]

This is in some ways similar to certain aspects in the philosophy of Heidegger. In his concept of 'presencing', Heidegger regarded time as four-dimensional; the first three dimensions are past, present, and future, while the fourth dimension is the 'presencing', which brings the first three dimensions together and holds them apart.[9] Time, in other words, is relative to space. Recent theories of chaos also seem to support this notion, where it was found that what appears to be a straight line is nevertheless a combination of fractals[10] (i.e. has more than one dimension, or a spatial extension), and what appears to be a definite boundary is found nevertheless to be infinite - as the principle of the Koch 'snowflake' illustrates (see illust. 1). In other words, time itself has (and also *is*) a spatial dimension.

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[7]Giedion(1967), p 435.
[8]Urry(1985), p 29.
[9]Giddens (1981), p 30-34.
[10]Fractals are referred to Mandelbrot, whose quest into the length of 'the coastline of Britain' revealed to him that it can be very different according to the standard length which is utilized to measure it. A fractal in these terms is defined as any shape whose Hausdorff's dimension is greater than Euclid's dimension. (Hausdorff in 1919 discovered the formula that seemed to give the dimension of shapes, which usually weren't whole numbers - i.e. what appears to be one dimensional has also other dimensions). See Mandelbrot (1982).

These developments undoubtedly had significant impact on research in many areas. Particularly, we can refer to three main implications. First, it became apparent that it is inapplicable to separate the various disciplines within isolated and secured boundaries. The paradox of finite area bound by infinite edges was a clear contradiction to earlier conceptions, seemingly based upon Euclidean geometry. Instead, the boundaries separating different disciplines would mingle into each others, and the deeper we search, the more these shared boundaries would expand and thus integrate the various domains. Therefore, we find that various phenomena, when being explained in terms of space (and time), exist not as separate disciplines, but through the interaction of the various disciplines.[11] Such attitudes are today common in urban studies (as for example in urban sociology, urban geography, etc.), cultural studies (cultural geography, cultural anthropology), and many others. In this regard, architecture stands in the centre. What the concept of space seems to have done then is to melt various fields of thought into each other, and with space acting as common denominator, the awareness of one discipline towards all the others was not only seen as useful, but necessary. Hillier and Hanson (1984) wrote in this regard, "Experience of space is the foundation and framework of all our knowledge of the spatio-temporal world."[12] From here, we can say that *the rise of consciousness of 'space' led to the tendency towards a broader and more general approach to be undertaken by most disciplines.*

Secondly, and in an opposite direction, new developments in 'space' led to *the realization of the importance of the particularity of events and localities.* This has been particularly associated with 'the discovery of space in social sciences', or with, as some refer to it, 'the new geography'.[13] Earlier periods saw geography as a separate discipline, "science of the spatial," according to Massey (1985), with space and distance as its main parameters.[14] As such, it was concerned with the particular, the specific, and the unique. In

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[11]See for example Agnew *et al.* (1980).
[12]Hillier and Hanson (1984), p 29.
[13]See for example Duncan *et al.* (1991), Urry *et al.* (1985).
[14]Massey (1985), p 11.

contrast, with the rise of 'positivist attitudes', there was the trend towards generalities and normalization. Social analysis was to a large extent negligent of spatio-temporal location where the various phenomena were explained in terms of general regularities.[15] In the 1960s, and particularly 1970s, however, it was realized that the spatial is a social construct, and at the same time, social processes could only be realized in spatial patterns. This, as we shall see later, remains a subject of debate,[16] but in general terms we find that there was more emphasis in geography towards theory, at the same time as the social turned towards *locality*. In other words, the combination of geography and sociology marked the combination between *generality* and the *specific*. As Massey (1985) puts it, "The recognition and understanding of *particularity* is theoretically the mirror image of, and politically the equally-necessary obverse of, pointing to the *generality* and necessity of underlying mechanisms."[17]

Therefore, we note that new directions in space led to multi-dimensionality and multiplicity in human conception, which at the same time was paralleled with the tendency towards specificity and particularity. As we shall see later on, these two tendencies constitute a binary opposition which is a constituent of any reality; as Kollar(1985) puts it, any outcome of creation is a simultaneous manifestation of unity and multiplicity - of 'whole' and 'part'.[18] To lean to either poles - general or specific - while ignoring the other is simply untenable, and can lead to serious consequences. However, to stop here would be deficient, as the relationship between the two - the general and the specific - remains oblivious, and can (as it did often) lead to dichotomies. A closer look, however, gives some clues.

A third implication for the association between space and time (the first two being multi-dimentionality and specificity), is that it also implies a *process* - the 'underlying mechanisms', as referred to in Massey's quote above. The reason why the recognition of a process is essential is indicated in the meaning of the term 'space'. As space-time 'homology'

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[15]Urry (1985), p 20.
[16]Saunders (1981,1985), for example, denied the importance of space, or the city, for social analysis, and called instead for non-spatial sociology. This will be discussed in more detail in Chapter 3.
[17]Massey (1985), p 19 (*my emphasis*).
[18]Kollar (1985a), p 6.

is generally accepted - "Space is in its very nature temporal and time spatial"[19]- it seems to be widely recognized that space has priority over time;[20] Ed Ullman (1974), for example, noted that "space implies *Being*, time implies *Becoming*."[21] Jammer also referred to the distinction between space and time in the distinction between 'space' and 'motion in space'. Therefore, he argued that "the category of space preceded that of time as an object of consciousness".[22] What this means is that four dimensional space-time continuum readily implies action, therefore, a process. Jammer in these terms refers to early Islamic philosophy, where it was recognized that before the creation of the world, there were no natural bodies in the space, thus there could have been no motion, and no time.[23] With the act of creation, in other words, there came the association between space and time.

Briefly, space as a concept needs to be considered in terms of a *continuum* of entities, and a *process* which relate these entities to each others. In a word, space implies *convergence*, that is, the convergence of various areas towards a particular point or destination. Any reduction in this formula can highly devaluate the essence of objects or research associated with space. Among what this means is the necessity of avoiding the reductive or simplistic view of 'space' or spatial patterns as emptiness, or form, and directing it rather towards *the interactive process which takes part in between.* The implications of this on architectural theory and practice is essential; as it will be argued in this thesis, *the question of architecture is not in space, but in ideology.* I shall leave this, however, to a later stage. Suffice to say here that in spite of the wide consciousness of space in architecture in the past hundred years or so, rarely was the concept of space fully appreciated. On the contrary, it

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[19]Alexander (1920) in Massey(1985), p 20.

[20] In *Being and Time*, Heidegger placed time on a higher hierarchy than space; he related a being to its temporal character, and rejected the tendency to "spatialize" time. However, this has been later down-played by, among others, Heidegger himself in his concept of '*presencing*', which essentially implies a time-space constitution. For a critical review see A Giddens (1981), p 30-34.

[21]Quoted in Massey (1985), p21 (*my emphasis).*

[22]Jammer (1960) in this regard drew upon linguistic concepts where terms qualifying time, such as 'short' or 'long', 'thereafter' - not thenafter! - and 'always' - meaning all the time - all are vocabulary which are taken from spatial concepts. [p 3]

[23]Jammer (1960), p 49.

will be argued that the disregard of one portion or the other was one of the main reasons behind many of the misfortunes that the architectural environment currently faces. In fact, each of the above three points - generally speaking - seems to correspond to one stage in architectural development; from universal architecture of the early Modern Movement, to ontology and regionalism at a later stage, and lately, the turn towards *ideology*, which this thesis is mainly addressing.

Below, a brief analysis of the concept of space as it has been realized in different contexts throughout history is made. This shall demonstrate how the principles stated above - generality, specificity, and the underlying process - while they are being rediscovered today, have been always essential components of the concept of space.

II. CONCEPTS OF SPACE

The recent developments in physics have brought a basic point to our attention: space and matter are inseparable. Not only are space patterns dependant on the disposition of material which lie within it, but matter, in a similar way, is essentially a product of the spatial environment where it exists. The theory of relativity as crystallized by Albert Einstein in the earlier parts of this century clearly demonstrated this basic fact. Space is a field, and particles are merely local condensations of that field. In the words of Albert Einstein,

> "We may therefore regard matter as being constituted by the regions of space in which the field is extremely intense ... There is no place in this new kind of physics both for the field and matter, for the field is the only reality."[24]

Parallel to these changes in physics, Edward Hall (1966) drew attention to a significant change in attitudes which was occurring in the art movement in Europe in the nineteenth century. As is well known, even before cubism the perceptual world of impressionists, abstract and expressionist artists shifted its emphasis towards light and space from

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[24]In Capra (1983), p 211.

surrounding edges and reflecting objects.[25] "Edges" Hall explains, "apparently produced a sort of cortical jolt beyond that experienced in nature."[26]

This new consciousness of space brought about some radical changes in western thought, where the classical view was based on the notion of solid indestructible particles moving in space. While it was realized only recently in architecture theory - and according to Van de Ven (1987) is often regarded as original nineteenth century thought[27] - we find, however, that very similar notions have been realized far earlier. As a classical example, we can refer here to Lao Tzu, the father of Taoism, who at around 550 B.C. in his *Tao Teh Ching* wrote,

> "We make a vessel from a lump of clay;
> It is the empty space within the vessel that makes it useful
>
> We make doors and windows for a room;
> But it is the empty space (within), that its use depends
>
> Thus, while the tangible has advantages,
> It is the intangible that makes it useful"[28]

Two main themes seem to come up here: one is the concept of 'Unity'; this word has been pronounced at different stages in history in different languages; it is the unity of the '*Logos*' in early Greece, the unity of the '*Yin Yang*' in the East, and '*Tawhîd*', or 'Unitarianism' in Islam. The second theme is 'Relativity'; a new concept as seems to be widely acknowledged, but as we shall see, its roots lie deep into history. In the discussion which follows, a critical review of the history of the concept of space will be made. This is not based upon chronological events, but aims mainly at observing the similarities and differences in the conceptions of space in different times and cultures, hoping that we can grasp some of its basic principles. This also will illustrate that historical mysticism and scientific rationality are

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[25]Hall (1966), p 82.
[26]*Ibid.*
[27]Van de Ven (1987), p 5.
[28]Modified version from Van de Ven (1987), p 3, and Legge (1962), p 55.

not necessarily at odds - which is contrary to what seems to be a common notion that ideology replaces the metaphysics.[29]

The '*yin yang*' of Eastern philosophy relates to the unity of the opposites (see illust. 2). Opposites are two sides of one same reality; extreme parts of a single whole. '*Ying yang*' is the good and bad, day and night, body and soul, mass and void. To understand one, one has to relate to the other; only through their unity can things obtain meaning. As Lao Tzu realized, "So it is that existence and non-existence give birth the one to (the idea of) the other."[30]

As the Chinese recognized, "Mass is the servant of the void",[31] a notion which is evident in Lao Tzu's verses above. For them, 'emptiness' is all that matters, which therefore has to be guarded against its 'fullness'. Yet, "this emptiness is not to be taken for mere nothingness." Capra writes, "It is, on the contrary, the essence of all forms and the source of all life".[32] It is in this context that the Upanishads say, "Brahman is the void".[33] Similarly, Lao Tzu described the '*Tao*' as "the emptiness of a vessel",[34] and Buddhists referred to the ultimate reality by '*Sunyata*', meaning 'emptiness' or 'void'.[35] But vital and important as it is, space in Eastern philosophy can only be realized through physical means. As in Lao Tzu's verses above, space, at one and the same time implies the tangible (*lump of clay*), the intangible (*the empty space within*), as well as the a process, through which we '*make* a vessel', and which 'makes it *useful*'.[36]

Early Greeks also believed in the unity of the opposites, which they referred to as '*Logos*'.[37] This is particularly true in the philosophy of Heraclitus, in the sixth century B.C.,

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[29]See Raymond (1977), p 55-71, Bailey (1975), pp 24-35. The term 'ideology' will be defined later on, but as for now, we can consider it to simply imply a process which leads towards causal interaction between different - though related - entities in a particular environment.
[30]*Tao Teh Ching*, Legge (1962) p 48.
[31]Van de Ven (1987), p 3.
[32]Capra (1983), p 211.
[33]*Ibid*, p 234.
[34]*Tao Teh Ching*, Legge (1962), p 49.
[35]Capra (1983), p 234.
[36]See Chang (1956).
[37]Capra (1983), p 25.

who according to Capra believed in a world of eternal change. Fire for Heraclitus was a symbol for continuous flow and change of all things; a world of eternal 'Becoming'.[38] As Capra indicates, Heraclitus taught that all changes in the world arise from *the dynamic and cyclic interplay of opposites*, and he saw any pair of opposites as unity; i.e. Logos. However, this unity was later split in the philosophies of Plato and Aristotle, which led to the separation of space and matter, the body and the spirit, and to a dualism which became characteristic of western philosophy until the early twentieth century.

Plato, in his *Timaeus*, saw space as a complete element of absolute existence, distinctive and independent from matter.[39] For him space was a three dimensional Euclidean order, which is "affording place for all things that come into being."[40] Therefore, in Plato's conception, the essence of existence is in terms of physical tangible bodies which come into being through geometric forms.[41] Aristotle, on the other hand, rejected the existence of space as defined by Plato, although his the theory of 'place' (*Topos*) which he defined does not seem to defer much from Plato's concept of 'affordance'. A place in Aristotelian theory is a receptacle, the bodies container; "Everything is somewhere, that is a place."[42] It is the position in space, or "the inner boundary of the containing receptacle",[43] According to Aristotle,

> "A place surrounds that whose place it is
> A place is not a 'part' of what it surrounds
> A thing's primary place is neither smaller nor greater than it"[44]

This concept proves to be very limited in scope. According to it, a place in architecture is that of the walls and physical objects that exist within space. The space between these walls and

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[38]*Ibid.*
[39]Plato identified space (or air) as one of four elements which made up the universe. These are, 'Earth', 'Fire', 'Water' and 'Air': these are "whole complete parts," as Plato wrote. [in Van de Ven (1987), p 9. See also Jammer (1960), p 12]
[40]*Plato, Timaeus*, p 184.
[41]As Plato says in this regard, "Now anything that has come to be must be corporeal, visible and tangible: but nothing can be visible without fire, nor tangible without solidity, and nothing can be solid without earth." [Quoted in Van de Ven (1987), p 9]
[42]Jammer (1960),p 17; Van de Ven (1987), p 17.
[43]Jammer (1960),p 17.
[44]Quoted in Van de Ven (1987), p 17.

objects then does not qualify in these terms as place.[45] *A 'place' in other words is here defined as an entity, being separated from the experience of place, or the process through which it has been created.* In spite of its deficiencies, however, Aristotelian theory came to dominate western thought throughout the middle ages up until the seventeenth century when it was replaced by Newtonian principles.[46]

These concepts had significant impact in the Arabian world in medieval times. Being the inheritors of the legacies of the Graeco-Roman period, early writers of the ninth and tenth century, such as Ibn Sînâ, Al-Fârâbî, and Al-Râzî, were highly influenced by Greek philosophers, particularly Aristotle.[47] However, due to the deficiencies of these theories, and more importantly, their apparent contradiction to the *Qur'ânic* dogma, they were later rejected.[48] Instead, Islamic philosophies and beliefs are centred around one main theme: that is *tawhîd*, or 'Unitarianism'.[49] Unity in Islam means essentially the one reality which combines the duality of a being;[50] the soul and the body are one, just as the sun and its light are one, and so is the Creator and His creation. No one can be separated from the other, as much as each is revealed through the revelation of the other. The Spanish-Muslim philosopher Ibn Masarra says in this regard,

> "Without the sunbeam falling on them as they float in the air, the minute particles of dust would not be visible, and without the dust particles, the sunbeam itself would not show."[51]

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[45]Incidentally, Aristotle in these terms conceded that as everything has to be in a place, the universe was finite, and that the outer circle of the universe revolves around the earth which was at the centre. [See Jammer (1960), p 17]

[46]This is mainly due to the association of Aritotelian theories with the church in medieval Europe. Concepts of '*topos*' and '*logos*', 'space', 'place' and 'light' all were strongly associated with God, though without the implication of any spatial limitations. [Jammer (1960)] It is thus written, "Lord, Thou hast been our dwelling-place"[*Psalm* 90:1] and, "I, the Lord, will be your eternal light". [*Isaiah* 60:19]

[47]See Pines (1970), pp 780-823, Jammer (1960).

[48]Al-Gazzali, the Sufi mystic of the eleventh century said in this regard, "Aristotle also contended with success against the theories of Plato, Socrates, and the theists who had preceded him, and separated himself entirely from them; but he could not eliminate from his doctrine the stains of infidelity and heresy which disfigure the teaching of his predecessors." [*The confessions*, p 27]

[49]See Pines (1970).

[50]This notion is particularly expressed in Ibnul Arabi's mysticism. Affifi(1964), p11. See also Al-Gazzâlî, *Alchemy of Happiness*, p38.

[51]Quoted by Norberg-Schultz (1986), p 11.

Similar to the Eastern thought, space and form in Muslim philosophy are never separate, but both always and only co-exist. Even though the true beingness in Islam (as particularly expressed in the orders of the Sûfis[52]) is through the spirit,[53] yet, the association between the two 'worlds' remained intact. This is particularly apparent in the distinction between the 'absolute' and the 'relative', which characterizes Islamic mysticism. In Ibn Masarra's notion above, Muslims realized that by diminishing the dust particles, light would not show, but this does not necessarily vanish or doubt the reality of the existence of the light itself - as implied in the *Qur'ânic* verse, "God is the Light of Heavens and Earth" (*XXIV35*). As Norberg-Schultz explains, light is "a 'being' that is everywhere at the same time as it remains invisible."[54] This means that the existence of light, or space, is in this sense absolute; it is the essence to which the existence of matter is relative. Jâmî, in his *Lawâ'ih* expresses clearly these trends as he says,

> "O Thou Sacred precincts none may see,
> Unseen Thou makest all things seen to be;
> Thou and we are not separate yet still,
> Thou hast no need of us, but we of Thee."[55]

And again,

> "The absolute does not exist without the relative,
> and the relative does not exist without the absolute;
> The relative stands in need for the absolute,
> while the absolute has no need for the relative."[56]

This seemingly extreme theistic tradition should not be seen as esoteric, or as being far from the realities of everyday life. As a matter of fact, these concepts seem to have much resemblance to the historical materialism of Marx in his analysis of the 'base' and

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[52]*'Sûfism'* (or *tasawwuf*), is an expression of complete devotion to God and the Divine Spirit. [Ibn Khaldûn, p358] It aims in Al-Gazzali's terms to " free the soul from the tyrannical yoke" of matter. [*The Confessions*, p 41]

[53]The Persian mystic Omar Al-Khayyâm, for example, says in his *Rubâ'iyyât* , [Chapter 55]

> "Destroy the form, you destroy the nothingness-
> for what she seems survives her not yet being"

[54]Norberg-Schultz (1983), p 11.

[55] These verses were according to Arbery originally transcribed by Al-Ghazzali.[Arbery(1970), p 624]

[56]In *ibid*, p 628.

'superstructure'.[57] Although Muslims remain uncritical about the origin of the 'absolute', while Marx referred the origin of 'superstructure' to the objects of consciousness, or the 'base',[58] still, the underlying mechanisms in the two positions remain very much similar. Let us take a deeper look at the two quotations above; here, we find that the existence of the various 'entities' (the absolute and the relative) is dependant on each other, while their reciprocal relationship is sequential, as necessitated or implied through 'need'. Therefore, the link between the absolute, and the relative, is determined through the particular 'need', meaning that actions are taken in response to immediate conditions. Several theories developed by Muslim writers and philosophers - in what Ibn Khaldûn describes as the "manifestation" of the *Sûfî* orders towards the orders of the physical realities of existence[59] - seem to correspond to such analogy. Particularly significant is the implication of some of these theories to aesthetics, which will be looked at in the following part of this chapter. In physics, the *Kalâm* school[60] developed the 'atomist theory',[61] where everything was seen as composed of atoms - even space and time. According to this conception, every atom acquires a particular position due to its relationship with all other atoms which surround it - including those of space and time.[62] Matter then was seen as the correlation of atoms in space - i.e. a system of relations - ultimately being related to each other through a higher order (an absolute, or normative entity).

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[57]See for example Raymond (1977), pp 75-83; Bailey (1975), p 21-24.

[58]This according to Williams (1977) eventually changed in later stages of Marxism, where the 'superstructure' became imposed over the 'base' - this will be discussed in more detail in later chapters.

[59]Ibn Khaldûn, p363. As Jammer noted, however, many of the theological concepts about space were originally of purely profane character and became adapted to an extreme theistic dogma only during later stages of their development.

[60]The *Kalâm* school - also called '*Al-Mutakallimûn*', meaning 'the speakers' - was found in the ninth and tenth century A.D. mainly by Abu' l'Hasan al-Ash'arî of Baghdad and Abu' l-Mansûr al-Matrurîdî of Samarquand. [Pines (1970)]

[61]The atomist theory was originally adapted from early Greeks, and revised to suit the extreme theistic philosophy of the Kalâm. [Jammer(1960),p 60-67]

[62]Atoms of the *Kalâm* are indivisible particles, equal to each other, and devoid of all extension. They do not occupy space (*makân*) but their combination constitutes spatial extension. The *Kalâm* in these terms assumed continuing divine interference which keeps these atoms in place. Everything in the universe was thus conceived as being composed of atoms (i.e. space) and accidents(i.e. changes in spatial relationships) which is essentially different from the notion of substance and properties in Aristotelian thought. [Jammer (1960), p 61]

Islamic concepts prove to have had great resemblance to concepts developed in the seventeenth century in Europe. Newton's distinction between the absolute and the relative is very similar to that of Al-Râzî - whose atomic theory differed slightly from that of the Kalâm, as he considered atoms to be existing in empty space.[63] Absolute space according to Newton (as was also defined in the Cartesian philosophy) is homogeneous, infinite, and of Euclidean character.[64] For Newton relative space was a co-ordination system to measure absolute space. The Platonic split between the realms of the body and those of the spirit was still, however, highly apparent - as was particularly the case in the aesthetics of Kant in his conception of the two worlds, the world of appearance, and the transcendental world.[65] The disassociation from this polarity started with Leibniz, who rejected the notion of absolute space, and referred to space as being relative.[66] According to him, "it is an order of co-existences as time is an *order* of successions."[67] Around two centuries afterwards, new discoveries led to Faraday and Maxwell's 'field theory', and later, Einstein's Quantum physics and his 'Theory of Relativity'.

The scene as it is today is in many ways similar to that of earlier times. Recently, Buckminster Fuller(1970) reflecting on the general consensus of views which appeared throughout history, re-defined the theory of the opposites. Opposites, as he says, "always-and-only co-exist."[68] Fuller conceived the physical universe as chaos; energy patterns being diffused in very random way, in an increasingly disorderly expansive universe. Yet, opposite and complimentary to that, Fuller saw a phase where the universe was contracting, and where chaos suddenly turned into comprehensible order. This, Fuller conceded, occurs through the

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[63]Pines (1970), p 207-8.
[64]Jammer (1960).
[65]Van de Van (1987), p 35.
[66]Jammer (1960).
[67]Quoted in Urry (1985), p 21. Leibniz was according to Jammer (1960) highly influenced by the atomic theory of the Islamic *Kalâm* in developing his conception. [p 62]
[68]Fuller (1970) referred for example to tension which according to the theories of mechanics is always accompanied by compression, as well as concave and convex surfaces, or the proton and neutron which always co-exist in the atom. [p 56]

intellectual ability which characterizes human beings; he referred to this intellectual ability as '*the metaphysics*'.[69] As such, he referred to the co-existence of the physical, and the metaphysical. Fuller thus argues,

> "The weightless metaphysical and the physical- that's everything of the universe. I've left nothing out. That's all there is."[70]

And then, realizing such unity, Fuller emphasizes on an active process which occurs in between. In his words,

> "We find, then, the metaphysical balancing the physical - the metaphysical apprehending, comprehending, and ordering the physical."[71]

Fuller's two notions above resemble the two main themes that have been mentioned earlier, and thus highlight a continuation of human thought of over a millenia. The first theme is the unity of the opposites, and the second is relativity, where the transcendency of the non-being over the being - i.e. space over matter, or in general terms, the 'metaphysical' over the 'physical' - is only arrived at through direct action. Fuller elaborates more on this point in his distinction between the nature of the 'physical', and that of the 'metaphysical'; the former as Fuller says is governed by entropy, where energy is transferred from one system to another due to certain actions - as in experiments, for example; the amount of energy being converted, however, remains always static.[72] But as energy is being conserved, the 'metaphysical' factor - or our intellectual ability - is always gaining. In every experiment that we do, any action or effort, can only increase and build this intellectual ability - "*you can not learn less*", Fuller pointed.[73] Therefore, up to this point, we can say that as 'metaphysical' orders the 'physical', the very existence of the first (the metaphysical) is related to actions of the second (the physical).

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[69]Fuller (1970), p 59.
[70]Fuller (1970), p 51.
[71]*Ibid.*
[72]For example, energy in the form of radiation, such as light or sun-rays, which can be converted into energy as mass or matter, and vice versa. [p 50] According to this view of nature,the difference between space, matter, light and radio-active radiations lies only in the difference in the concentration of energy, and the difference in wave-length. Otherwise, everything is united in the form of a field in space.
[73]Fuller (1970), pp 49-51.

To summarize, the essence of 'space' as it has been conceived in the past, as well as at present, is related to both entities (i.e. physical-metaphysical, absolute-relative), and a *process* which relates them to each others. Below, we shall see how these notions apply to the art and the artistic creation.

III. SPACE, ART, AND ARCHITECTURE

> *What is space says the child. And civilisations have asked themselves the same question. They have looked out at the stars and inward to their sacred traditions. Architecture emerged and building traditions. And this was* the act of space.[74]

What we shall do here is to look at the concept of space as it applies to aesthetics. This particularly includes the association between form and content in artistic creation (whether art or architecture). Further to what has been said so far, I wish to illustrate that the association between form and content is contingent to the underlying mechanisms which allow various entities to causally affect each other. It will be argued that this depends upon the existence of a metaphysical dimension, which is a historical construct of this inter-active process.

The relationship between form and content is essentially associated with the dualism of thought and reality - or the realm of knowledge, and the realm of material objects. This as it is discussed below is a whole-part relationship, which proves to be essential for the understanding of the spatial interaction between different entities.

The 'Whole' and the 'Part':

In a paper entitled *Islamic Philosophy and the Fine Arts*, Muhsin Mahdi (1983) pointed to the distinction between philosophy and the arts, which as he says lies in the difference between

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[74]A phrase cited on a brochure for an exhibition entitled *Kham: Space and the Act of Space* held at Rabindra Bhavan, New Delhi, November 1986. Quoted in Geeti (1988), p60.

two main aspects of human experience; those of *production* and *knowledge*. As such, he says that it is a 'whole-to-part' relationship; the aim of the philosopher is to understand and *know* the 'whole', while observing the 'part'. Contrary to that, the artist *produces* the 'part', based upon his or her knowledge (or perception) of the 'whole'. In these terms, Mahdi says, "one [the philosopher] looks at the natural 'whole' with the aim of knowing it, the other [the artist] conceives a 'whole' with the aim of producing it".[75] So while philosophers aspire towards the universal 'whole', the absolute realities, they draw upon the particular parts.[76] Contrary to that, the work of art is in general relative in character, deals with the specific, and addresses the particularities of space and time. Mahdi says,

> "The arts (to a greater degree than the sciences) are relative to certain peoples, times, and places ... They express the human character, traditions, conventions, laws, and the religions and cultural views that prevail in a certain region at a certain time."[77]

This whole-part relationship proves to be an important factor for explaining and understanding aesthetic phenomena. But does this mean that the arts are always parts, while knowledge is a 'whole'? This obviously is not the case. Any piece of art can be considered a whole, as well as a part of a greater whole. Similarly, the 'holisticity' of knowledge is relative to how, and by whom such knowledge is perceived. There are therefore a few considerations which need to be noted in relation to the whole-part relationship.

The use of binary oppositions for the explanation of world phenomena has always been common.[78] The whole-part dual is one among many others, through which we are able to structure our thoughts. Many such duals can be seen as parallels, such as whole-part, general-specific, universal-particular, global-local; other duals have different contexts, for example, physical-metaphysical, concrete-abstract, form-content. In certain cases, these two

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[75]Mahdi (1983), p 21 [*my brackets*].

[76] Mahdi (1983) defined [Islamic] philosophy as follows:

> "It is the search for order and harmony in the natural world, the intelligible world, the human soul, and the city. It is an account of such order and harmony where it exists, and an account of how to restore order and harmony in man and in the city. It looks at works of art as being in the service of this objective." [p 21]

[77]Mahdi (1983), p 23.

[78]See Sayer (1991) for a comprehensive and critical analysis of the use of dualism.

sets are by-crossed. For example, we can refer to the relationship between whole-part/ abstract-concrete; here, the concrete is assumed to be the part, while the whole is seen as the abstract. Similarly, the part can ascribe the physical form (the realm of material objects), while the whole relates to metaphysical content (the realm of knowledge). As Sayer (1991) stressed, however, such association between duals cannot be presupposed - abstract is not always whole, while the physical can be considered as either whole or part, according to particular conditions and situations.

The whole and the part, as in the case of the *centre* and the *periphery*, contribute to a continua - i.e. they essentially presuppose one another, as (fig. 1.1) illustrates. But not all duals are or can be explained in terms of 'whole' and 'part'; some might imply dichotomies - for example *old* and *new* (see fig. 1.2) In the first case (i.e. in a continua), one contains the other, and therefore, they are internally related; in the second (i.e. in a dichotomy), such relationships are external. As it will be argued, relationships need to be internal in order to facilitate interaction. External relationships, as Sayer(1991) realized, turn out to have a missing middle term, which can turn a dichotomy into a continua. Dichotomies, cleavages, or schisms, impede interaction, as they often lack continuity and integration which is necessary for such interaction. They might instead be originally related to certain misconception or mishandling; "The differences *between* entities ... are shown to be based upon a repression ... *within* entities", as Johnson realized.[79] In these terms, this thesis argues that where there are dichotomies, we should aim towards their abolition (as fig. 1.2 illustrates), so that any two different entities become two parts of a particular whole through which these entities are related.

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[79]Quoted in Sayer (1991), p 286.

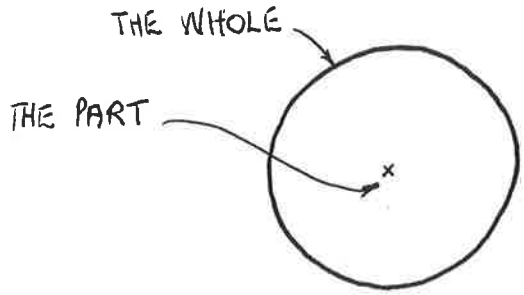

Fig. 1.1 The 'whole' and the 'part'.

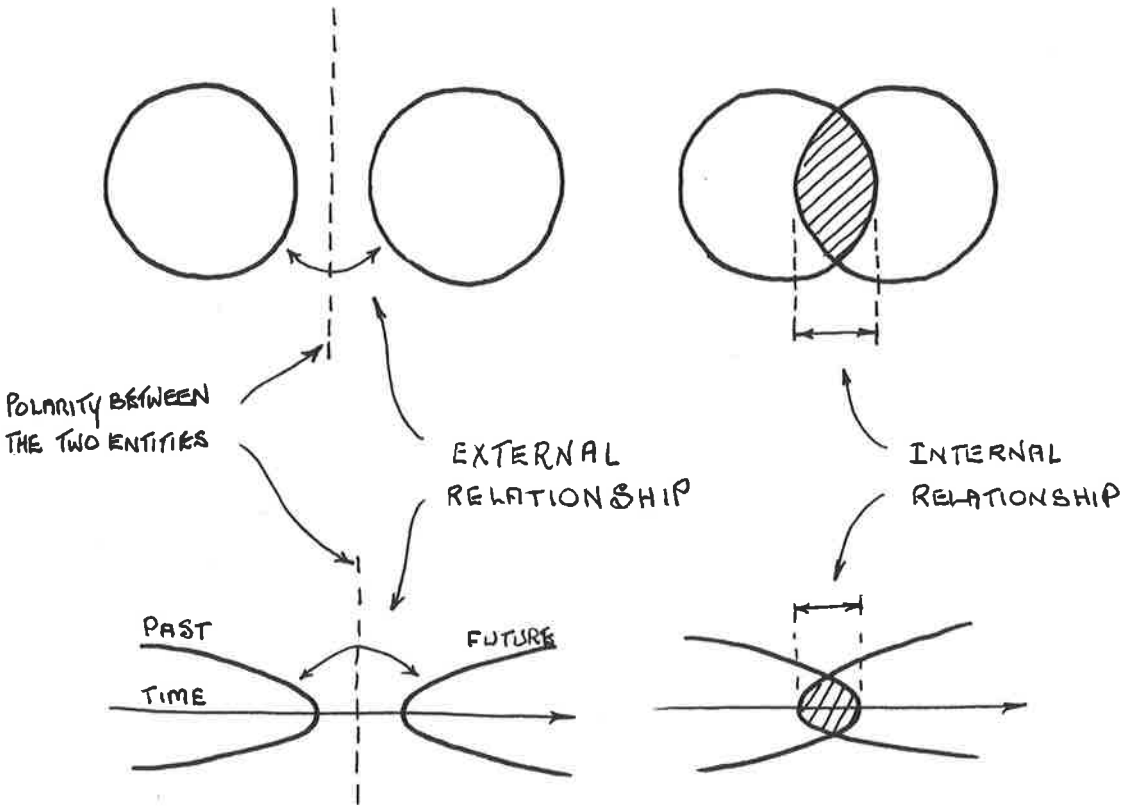

Fig. 1.2 Dichotomy vs. continuity.

As for the relationship between the parts *within* the 'whole', Sayer (1991) points out, that these can be seen to be external relations, as those between individuals within the group of which they are a part. Sayer equals this with 'atomistic ontology', where as he says the world is seen as consisting of discrete atomistic events or objects.[80] Parts within the whole, then, do not necessarily presuppose each others, which means that any or all *can* exist independently of one another.[81] So, as Sayer puts it, in contrary to the 'necessary' relation between the whole and the part (or between any two opposites which presuppose each others, such as the room in the house, the house in the city), the relations between the parts within the whole are 'contingent' - i.e. any two houses within the city are not necessarily related to each others. Nevertheless, contingents *may* come to influence one another, and interact causally, and this ultimately depends upon them being related through a 'whole', which is a construct of shared experience or histories. These concepts will be referred to later on - particularly in chapter 4, where they will be used to develop a method for analyzing the various forces and processes which are acting in the environment (the concept of 'concavity' and 'convexity') - but let us here see how they relate to the notion of form and content.

Form, content, and causal interaction:

The world of things that come
into being as a result of action,
materialize through thinking.

Ibn Khaldûn

From what has been said above, content and form can be regarded as, respectively, whole and part. The 'whole' here is the *absolute value as we come to know it*, while the 'part' relates to *the realities of existence, and how these are created, manipulated and ordered, thus keeping in terms with the particularities of space and time.* The distinction between form and content is in the distinction between particular structure or spatial patterns, and universal

[80]Sayer (1991), p 298.
[81]Sayer (1991), p 292.

meaning or value that this form implies. We note that the relation between form and content is a 'necessary' relationship (like in a whole-part relation, they presuppose, or cannot exist independent from each others), and it is causal. Here, arts and artifacts are assumed to possess certain causal powers which define them, and determine their relationship with their surroundings.[82] Such causal powers can only come about through physical means, and this depends upon causal action. It is appropriate here to refer to the writings of some early Arabian philosophers, where these concepts are clearly expressed. Ibnul 'Arabi (died in 633/1240), for example, says in his *fusûs*,

> "We are sufficiently far from the screen on which the phenomenal objects are reflected to believe that what we see (on the screen) is all that is real."[83]

In other words, Ibnul 'Arabi realized that what is reflected through form, or through the body, is not the only reality that this body withholds. According to Affifi, Ibnul 'Arabi contended that for every form (*sûra*) there is an essence (*dhât*),[84] in a similar way to a mirror which has its image, or a body which has a shadow.[85] The essence, in this sense, is contingent to form, while form acquires its powers through the essence. This notion was elaborated further by Ibn Sînâ - known in Christian medieval Europe as Avicenna - who in his *Metaphysics*, defined the term '*jawhar*', meaning 'substance'.[86] A *jawhar* according to Ibn Sînâ is essentially a constitute of two inter-related facets, these are, the actual existence through the bodily figure, and the essence of that existence. In these terms, the existent body, through its essence, acquires the powers which allow it to become a '*jawhar*' - i.e. a real being.

Ibn Sînâ stressed that any object - which he referred to as "a being which is a body (*jism*)"[87] - is a composite of matter (*mâdda*), and of form (*sûra*). He related matter to the

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[82]Sayer (1985), p 50
[83]Affifi (1964), p 16.
[84]*Ibid*, p 13.
[85]*Ibid*, p 16.
[86]Morewedge (1973).
[87]*Ibid*, p 16.

potentiality of the being, and the form to its actuality.[88] As from here, Ibn Sînâ argued that the form of a body is the result of an action. Such an action is by no means definite, or absolute, but rather he referred to it as an '*accident*' which happens to the body, and thus defines its form. In the work of art, then, matter is given a form, thus obtaining an essence. Ibn Sînâ writes,

> "We assert that there must be an essence (*mâhiyyâti*) other than existence for any contingent being (*mumkin alwujûd*) ... A contingent being is a being which has an essence other than existence ... There must be an essence for any contingent being, such as its existence is accidental."[89]

There seems to be one implication in Ibn Sîna's statements above which is particularly important. He says that for any 'contingent being' (or the part within the whole), the 'essence' (i.e. content) remains 'accidental'. This means that, the association between form and content is dependant primarily on form, or rather on the accidental powers which result through direct action thus defining that form. Once form has been defined, it becomes attached to a higher order through which form acquires meaning.

However, there seems to be a paradox here; hasn't form - as many would rather argue - been originally conceived as a whole, before being composed through its parts? This view, which seems to be very well accepted, means that things are seen 'holistically', before being realized or shaped through action. Kollar (1985) in *On the Whole and the Part* reflects these trends, where he argues that the work of art needs to be conceived and achieved as a whole. As he says, "the whole brings into being its parts, and in return, the parts support the whole."[90] Accordingly, the idea of the whole is seen to be prior and to exist independently from any of its parts, and that the effect of the whole is greater than that of the sum of its parts.[91]

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[88]It is interesting to note that this distinction between matter and form is identical with the distinction between time and space, as we referred to it earlier in this chapter.
[89]*The Metaphysica*, Chapter 38, in Morewedge (1973), p 877.
[90]Kollar (1985a), p 15.
[91]*Ibid.*

But to what extent can we hold the whole to be responsible for its parts? Kollar seems to give it absolute power: "the whole contains and generates its own parts, not the parts the whole."[92] The 'whole' for Kollar always precedes the 'part'.[93] However, while this might *seem to* be true in many instances - as for example, in design - shouldn't we also assume that such a 'whole' has been generated due to existing facts and concrete realities in the environment where this whole has been conceived? Some might insist that the idea comes first, independent of the object matter, but it seems to me that the opposite is true; the reason many dichotomies occur in today's environment is because so many ideas are being juxtaposed on a certain reality, rather than stemming out of that particular reality. The problem here is that the 'whole' and the 'part' are seen as isolated entities.

This can change if we look at the *process* through which the whole and the part is being produced. Such a process necessarily involves other parts (or contingencies), *by* which action is taken. Following Harré, Sayer(1985) attempts to explain this point by considering the spatial relationship between the following sets of letters,[94]

A B C

P Q R

As Sayer (1985) says, the spatial relations of B to A and C, and Q to P and R are exactly equivalent; by swapping B with Q, the spatial relation of 'between-ness' would remain the same, although depending on what things these represent, such a move can result in very different 'causal mechanisms' between these objects. In other words, these causal powers lead to the set of meanings and values (i.e. content) which these figures (or in other cases, artifacts) hold. Accordingly, the synthesis of content and form leads to the realization of the different values and meanings of the object matter, which thus reach far beyond those possessed through their material value or physical properties.

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[92]*Ibid*, p 25.
[93]See also Kollar (1985a+b)
[94]Sayer (1985), p 52.

The important point here is that causal powers are those of the parts. They are generated by the parts, although through a particular whole. The relations between different parts, then, while they are shaped through the whole, are determined by the causal interaction between the parts (see fig. 1.3). The whole in these terms is a *historical construct of this interaction.* Here, causal interaction between the different parts can occur in a spontaneous manner, defined, though not determined, through the 'whole'. The latter might hold certain criteria, or rules, within which the parts can freely interact. In all cases, the causal powers here are being generated by the part, and in response to concrete existing realities to which this part is related. The 'whole' in these terms is not important in itself, but in its ability to facilitate interaction, and at the same time that it is an accumulated by-outcome of such interaction. Briefly, the question is not that of the whole, or the part, but rather in the process though which these are related.

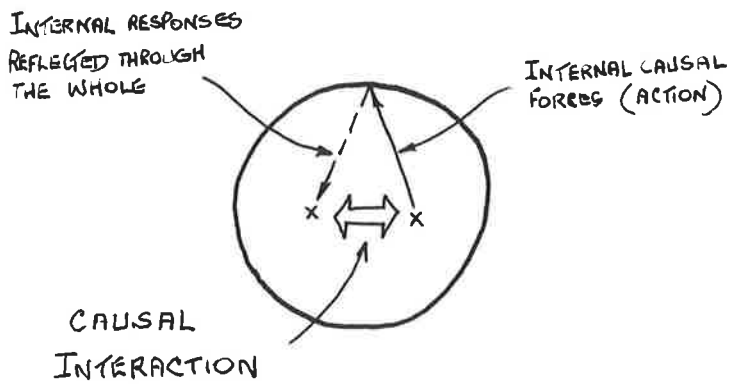

Fig. 1.3 Causal interaction between the different parts is defined by the whole.

In the built environment, then, people manipulate physical objects in order to comply with the dimensions of human needs and purposes. Once matter was put into the vicinity of human

usage, it becomes what Minai referred to as "social objects"[95] This is the process where universal meanings of objects and matter are assigned to special qualifications and symbolic values, which thus relate them to particularities of individuals and societies. The experience of space, and of the causal powers of the spatial relationship between constituents and recipients, is then an expression of the relationship between the production and/or experience of *particular* instances, through the *universal* knowledge of these instances - or as Hillier and Hanson say, between a particular object and a class to which such an object belongs.[96] This relationship is then manifested in the form of human communication systems.[97] Before communication becomes possible, however, we need to define what we mean by the notion 'universal knowledge', or what we will refer to as 'historical consciousness', or simply 'culture', with which we shall be dealing in the next chapter.

Conclusion

This chapter aimed at illustrating some of the basic principles of the concept of space, and how these can help towards better understanding of the built environment. It was stressed that space only exists through a process, that is, an on going process between generalities and specifics. Both generalities and specifics (whole and part), are definitive in terms of particular situations. The nature of this process depends upon the nature of the relationship between the two poles (whole and part). Holism, for example, implies that the whole is conceived first, which then generates the parts. In an evolutionary process, on the other hand, wholes are by-products of the accumulation of the parts. The important point to remember here is that spatial relationship between different entities in a certain environment (whether these are individuals, objects or houses) is determined through causal interaction between these entities. This

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[95]Minai (1984), p 49.
[96]Hillier and Hanson (1984), p 40.
[97]Zijderveld (1970), p. 50.

interaction stems out from within, in response to the immediate conditions, but is entirely dependant upon the ability of the whole to facilitate such interaction. This is ultimately related to the cultural systems which occur in space and time, which will be discussed in the next chapter.

Chapter 2

Climate and Culture

Culture these days seems to be a doubtful area.[1] This is particularly true in terms of architectural and urban studies, where the conflict between tradition and development is ever increasing, and where culture seems to take, at best, the back seat. This chapter aims to redress the question of culture as a central *foci* in spatial considerations, not as an alternative - as some seem to argue[2] - but as a part in an overall comprehensive system of analysis.

In the previous chapter, it was concluded that space - or rather the concept of space - resembles a process; i.e. an on going process between generality and specifics. Generality, in this sense, is an outcome of the interactive process between specifics. This chapter aims to analyze the notion of culture in these terms. Culture is the historical construct of collective experience of a certain group, which acts as a normative principle, and defines the particular modes of production and interaction within such group. It will be argued that this notion is

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[1]See for example, Williams (1981), Abu Lughod (1984), Touraine (1988), Nieuwenhuijze (1988).
[2]Agnew *et al.* (1984).

attached to both 'inner' as well as 'external' processes. Climate - which is another highly overlooked aspect in spatial analysis - will first be looked at as an external factor in this interactive process (i.e. it essentially remains independent of human actions). Culture, on the other hand, is the outcome of an 'inner' process of development. The relationship of climate and culture as it is expressed in some areas of analysis (particularly in cultural evolution and cultural ecology) is then defined, and is drawn upon to debate the question of determination (climatic and cultural) in the built environment.

I. CLIMATE AND CLIMATIC STABILITY

Climate is a complex phenomenon.[3] The term seems to refer to the state of weather conditions at various places over a considerably long period of time. In more specific terms, it refers to rainfall, temperature, humidity, air pressure, and other factors that humans learnt to perceive and measure. The combination of these factors at any given time determines weather conditions, and over longer periods, mean temperature and average rainfall, etc. indicate the type of weather and the climatic characteristics of that particular area.

Climatic conditions of a particular area are then determined by a number of factors which relate to the physical conditions and circumstances of that particular area; for example, geographical latitude and altitude, its position in relation to the ocean, and its physical nature - i.e. forest, desert, coastal, rural, urban, etc. In this way, climatic characteristics of the various areas around the globe are determined. Although climatic conditions on the regional level can be generally classified - for example, tropical, hot arid, Mediterranean, wet cold, etc. - yet, the exact conditions of different areas differ. As a consequence, the natural domain, living conditions, as well as living cultures under their influence are more likely to differ as well.

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[3]See for example Hare (1985), Lamb (1977), Rimsha (1976), Skinner (1981), Givoni (1976).

However, climate remains a largely unpredictable factor within any environment.[4] The occurrence of floods and droughts[5] is an evidence of that, which at the same time, it seems to put some doubt over the stability of the climatic system as we have come to know it. Historical records and Biblical scriptures inform us of such incidents as 'seven fat years followed by seven years of famine',[6] Noah's flood,[7] and the floods of the old world in the Nile and Babylon,[8] and in archeology, the existence of some cities in the middle of the desert (such as Shivta - *A-Sbaita,* as it is called in Arabic - and other Nabatean cities in southern Palestine) without any apparent water supply was taken as an indicator that changes in climate did occur since these cities were inhabited, which thus led to their decline.[9]

It is widely accepted that climatic changes which have happened in the past - ice ages and so forth - might have been enormous, but as far as the geological evidence proves, we are at the present time millions of years beyond the latest of such incidents. Historical or Biblical incidents, on the other hand, seem to continue to happen at present - with the exception of Noah's flood! - though their effects on the longer term remain to a minimum.[10] On the other hand, findings form the explorations of some ancient desert cities show that sophisticated water systems were utilized into houses, where runoff water was collected by channels and drains from the entire exterior of the house (which had slopping roofs) into deep cisterns beneath the courtyard. This implies that climate must have been as arid as it is at present. It is suggested instead that these cities would have served as a haven for the large trade caravans crossing the desert.[11]

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[4]The recent theories of chaos try to explain this climatic phenomenon. Climate is simply described as being chaotic, meaning that it is essentially unpredictable. [Davies (1989), p51] The reason for this is referred to the inter-relation of all parts of the universe within one single whole, where the state of the whole is determined by the state of each of its parts; what came to be known as the butterfly effect.

[5]The Saharan drought in the late sixties an earl seventies of this century is an example, and the 'Little Ice Age' in pre-industrial Europe (16th-18th century)is another.

[6]Genesis 41:29 - 57.

[7]Genesis 6:17 - 8:14

[8]al Fârûqî (1974)

[9]Carter (1975), pp68-77.

[10]Instead of 'climatic change', Hare (1985) used terms such as 'climatic noise', 'variation', or 'fluctuation', as the variations of only around ±2 degrees centigrade in temperature, or ±5%in rainfall prove to have been occurring.

[11]Trade was the *raison d'être* of many desert cities particularly in the Middle East. As early as the second century B.C. records speak of caravans as large as thirty thousand camels, carrying African gold and ivory,

Briefly, we can say that while it is highly acknowledged that the climatic conditions (at least over the past five thousands years or so) have been relatively stable, within which people survived and developed their cultures,[12] climate remains an *external* element within any environment whose unpredictable effects as yet are beyond any anticipatable methods or practices. Between these two factors - externality and stability - climatic impact on living cultures is significant. To study the impact of climate in these terms can be revealing in terms of how other external forces (mainly social) exert their influence on spatial and social patterns. This will be discussed later on, but first, let us examine what we mean by the very term 'culture'.

II. CULTURE

There are many definitions for culture. Very few of them are contradictory, but in most cases, they complement each other. Culture is seen as a way of life, a system of meanings and values within which a society exists; it is the normative beliefs and principles in any one society, which govern and regulate peoples' behaviour, practices and products.[13] Culture is how people think, and its consequences.[14] It is what people know is true, and eventually, culture is in human actions and reactions in the physical universe. Philip Wagner (1972) says,

> "culture consists of systematically communicated experience - what men learn and can teach, or what is learnt and taught in a human society and graven into its material surroundings."[15]

The cultural experience goes far beyond the immediate action and orientation of the individual in the physical universe. Instead, culture is a totality of human experience. It is the cumulative

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Indian spices, and incense from south Arabia. [al Fârûqî (1974), p238] All these funnelled through Arabia; trade centres flourished, and many grew into prosperous wealthy cities. See also Segal, A. (1985), Carter (1975), p68, Daniel Hillel (1982),.p14.

[12]This argument is further supported by such studies as those dealing with 'vegetation assemblage' which as Riebsame (1985) mentioned, "implicitly assumed to have established themselves in equilibrium with the fixed climate."

[13]A. Rapoport (1984, 1987), Altman *et al.* (1984), pp 3-4.

[14]Wagner (1972), p4.

[15]Wagner (1972), p4.

lessons of the past, and the multitude of histories. Culture, in Hoebel's (1971) words is "the integrated sum total of learned behaviour traits which are manifest and shared by the members of a society".[16] Tylor (1871, 1958) similarly describes culture as "that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits acquired by man as a member of society."[17]

The diversity and ambiguity of the term 'culture' is very easily grasped. The reason for this is, it seems, that culture - similar to 'space' - has been referred to almost everything, from the metaphysics of space and time,[18] to the physical world of all living things. Culture has been referred to as a 'social invention',[19] or as 'ecological adaptation',[20] as an 'evolutionary process for survival', even as 'energy capturing systems'.[21] In the words of Alain Finkielkraut (1988), "from religious rituals to industrial techniques, from food to dress, from the humanities to team sports, we all know that everything is cultural."[22]

It is not hard to see then that in spite of all these definitions, the term remains a mystery; neither is it hard to see why. Culture is a term which remains attached to specific conditions, and how it ascribes these conditions. To define what culture is - just as was the case for the question of what is space - would not be of much help. Rather, as it will be argued, to relate to culture through a process can be much more helpful towards understanding both its origins as well as its role.

The nature of culture:

In attempting to disclose the nature of culture, Hoebel (1971) drew upon the distinction between two types, or two domains of culture: these are, the material, and the non-material culture.[23] As he says, material culture is the direct product of overt action, and appears in the form of tangible goods and artifacts. Non-material culture, on the other hand, consists of

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[16]Hoebel (1971), p208.
[17]Quoted in Lévi-Strauss, p18.
[18]Kern(1983).
[19]Hoebel (1971), p208.
[20]Roy Rapoport (1971), p237, Altman *et al.* (1984), p 6.
[21]Sahlins and Service (1960).
[22]Finkielkraut (1988), p76.
[23]Hoebel (1971), p217.

both 'overt' and 'covert' modes of feelings and behaviour, which accord with certain values, systems of meaning, and rules of conduct.

According to Hoebel, however, the material culture as embodied in the arts and artifacts is not at all culture on its own account. He rather referred to it as "the product of culturally determined activity."[24] Tangible products, in Hoebel's argument owe their existence to cultural patterns, "that give form to the idea for the artifact and the techniques of shaping and using it."[25] In a similar way, Daryll Forde(1956) says, "Between the physical environment and human activity there is always a middle term, a collection of specific objectives and values, a body of knowledge and belief : in other words, a cultural pattern."[26] Culture, in these terms, is the intangible reality which is revealed through tangible products, and through the overt behaviour of the individuals within societies.

But while this might explain certain portions of how we can look at a certain culture, it helps little in explaining the essence of culture, or its role within society. Are all actions or product culturally motivated? And if we admit that culture is both material and non-material (or simply a spatial expression), isn't this a character of everything else, as we saw in the previous chapter? Therefore, the confusion remains obvious, and as Williams (1977) realized, there is little hope in resolving this confusion, until we drive 'culture' back into its origins, which are essentially historical.

Up until the eighteenth century, as Williams (1977, 1981) points out, culture was still a noun of a process - the culture (cultivation) of crops, (rearing and breeding) of animals, and then by its extension, it became the culture (active cultivation) of the human mind. The notion of 'culture' was first expressed in the idea of '*Volksgeist*' in German cultural philosophy, which means 'national genius', and which according to Finkielkraut(1988) first appeared as early as 1774 in the philosophy of Herder.[27] As Finkielkraut mentioned, Herder insisted that culture, as embodied in the human creation, cannot be extracted from the particular and

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[24]Hoebel (1971), p217.
[25]Hoebel (1971), p217.
[26]Forde (1956), p463.
[27]Finkielkraut (1988), p12.

specific contexts within which these exist. Human creations, norms and social values, all have a genesis and a context. In the words of Finkielkraut,

> "He [Herder] drove back the Good, The True and the beautiful to their local origins, he dislodged the eternal categories from their smug security in heaven and returned them to their earthly place of birth. There was nothing absolute, Herder proclaimed; there were only regional values and contingent principles. Far from man belonging to all times and all places, to each historical period and to each of the earth's nations there corresponds a particular type of humanity."[28]

In this sense, Herder emphasized on the need to speak of 'cultures', rather than 'culture', so as to acknowledge variability between the different cultures, as well as the complexity and variability of shaping forces within each. This, as Williams (1977) points out, was a reaction against two main trends: the universal ideas of the Enlightenment (as embodied in the term 'civilization') as well as the authority of religions and metaphysical ideas with their 'timeless' conception of history.[29] But then, it was the first (or 'civilization') which seems to have been particularly targeted; with the rapid development of industrial society, 'civilization' embodied a sense of uni-linear history towards an achieved state - the metropolitan west. With its prolonged social and political conflicts, 'civilization' was seen then as superficial, and even more, as 'external'. According to Williams, it is this latest sense - the 'external' properties of development, which the notion of culture seems to have risen against.[30]

'Culture' then addressed the 'inner' development. As Williams points out, it was then associated with religion, art, the family and personal life, as distinct from, or opposed to 'civilization' or 'society'. The extension of this sense included the general processes of 'inner' development, including institutions and practices of meanings and values. The emphasis here as Williams explains is on 'subjectivity', and while the religious emphasis in some instances weakened, it was replaced by, in Williams words, "a metaphysics of subjectivity and the imaginative process."[31] This took shape in terms of art and literature, as well as other 'inner' spatial experiences of individuals and groups.

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[28]Finkielkraut (1988), p12.
[29]Williams (1977), p13.
[30]*Ibid*, p13.
[31]*Ibid*, p15.

Culture in these terms is a universal property for all social groups,[32] as much as it is relative and specific to each of these groups. This notion, what we might call the *relativity* of culture, is well acknowledged today; Finkielkraut (1988) addressed this notion in terms of the "transmutation of culture into *my* culture";[33] i.e. the move between the universal property, into the relative and specific. In these terms, he defined culture as "the domain in which the creative and spiritual life of man developed."[34] On the other hand, Finkielkraut stressed upon the relativity of cultural systems as he said,

> "*My* culture was the collective mentality of the people to whom I happened to belong, a mentality which impregnated simultaneously both my loftiest thoughts and the most elementary gestures of my daily life."[35]

Similarly, Lévi-Strauss(1963) expressed this notion as he noted that kinship terms - which are also cultural terms- are elements of meaning (that is, universal meanings of absolute value), but they acquire meaning only when integrated into specific cultural systems.[36] It is a whole-part relationship, or more specifically, a relationship between an absolute concept, and relative attitudes. As Lévi-Strauss referred to it, the concept of culture implies the transition from the explicit to the implicit, and that from the particular to the universal.[37] Cultural differences between the different places do exist, due to the multiple of effects and influences which steer and define the cultural potential of societies. Cultural domains, in these terms, are relative to the extent that what is considered normal and taken for granted in any particular culture, might be considered as eccentric, or even a serious offence in another.[38]

To summarize, we can simply say that culture is a construct for the specialization and orientation of individuals and groups. Culture is an outcome of the 'inner' process of development, and it acts as an agency for intellectual and artistic life[39] - which includes material and non-material products. More specifically, culture is a historical construct of these

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[32]Wagner (1972), p4.
[33]Finkielkraut (1988), p11.
[34] *Ibid.*
[35] *Ibid.*
[36]Lévi-Strauss (1963), p34.
[37]*Ibid*, p 24.
[38]Hall's *The Hidden Dimension* (1966) deals with this point in a very elaborate manner.
[39]Williams (1977), p17.

- a bank of historical experience which is produced from within. The nature of these experiences are related then to time and place. To understand how culture assumes its role in society, or, what the nature of these 'inner' processes are, the understanding of the term 'ideology' is important.

Ideology and culture:

'Ideology' is another difficult term which has considerable importance in the socio-cultural analysis. Ideology according to Williams(1977) originated in the eighteenth century as the 'science of ideas'.[40] It has often been associated with radicalism; for example, it has been said that "ideology has replaced the metaphysics",[41] or that ideology opposes science or scientific thinking.[42] Negative views of ideology also draw upon its association with the bourgeoisie.[43] The way the term 'ideology' is used here, however, is different, and rather more neutral. I mainly wish to refer to the *practicality* of the term; no action is at all possible without some ascribed ideology, nor can we understand activity, or its product, without understanding its underlying ideology.[44] As such, ideology is an indispensable part of culture and society, characterized in the underlying mechanisms behind both 'inner', as well as 'external' processes and forces.

Among the different senses under which ideology is conceived relates to it as a system of beliefs and values characteristic of a group, which can inspire and sustain social action.[45] As such, ideology is important in historical sense. These beliefs can be rational or scientific, or in other cases, they can be what Williams described as 'illusory beliefs', or 'false consciousness'.[46] These latter terms ('illusory beliefs', 'false consciousness') are not meant to be degrading, but rather they express the socio-historical ideas which are attached to a certain group, and which, if traced back to their origins, might relate to matters of survival.

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[40]*Ibid*, p56.
[41]*Ibid*, p56.
[42]Bailey (1975), p25.
[43]Saunders (1981), p150.
[44]Bailey (1975), p24.
[45]See Williams (1977), p55-71; Williams (1981), p26-30; Aron (1977), p1; Bailey (1975), p24-35.
[46]Williams (1977), p55.

As a matter of fact, it is this sense of unconscious motivation to which ideology is mostly attached. Engels (1893) in this regard says,

> "Ideology is a process accomplished by the so-called thinker, consciously indeed but with a false consciousness. The real motives impelling him remain unknown to him, otherwise it would not be an ideological process at all. Hence he imagines false or apparent motives. Because it is a process of thought he derives both its form and its content from pure thought, either his own or that of his predecessors."[47]

Therefore, ideology can refer to either formal and conscious beliefs, or the less conscious attitudes, feelings, or habits.[48] Ideologies are the more or less obvious beliefs, or - as Bailey (1975) says - even 'proofs' about how to achieve social action, and who should have control over it.[49] As such, they have the power to persuade, through historical and cultural analogies, rather than just states of consciousness. Ideologies are systems of organization, which order patterns of living and social discourse as comprehensible within a certain culture. In all these definitions, there is no reference to science, myth, or religion, as ideology can align (or not) with any or all, according to different situations.

Ideology as we said was intended as a 'science of ideas'. However, and as Williams points out, these ideas were not to be understood in the 'metaphysical' or 'idealist' sense - although these might contribute to such ideology. They instead were based on the empiricist tradition.[50] Ideology was originally seen as part of the natural science,[51] or in general terms, it has to depended on the material context where it was applied. So, rather than being narrowly conceived as a means of legitimating class domination as it is often regarded, and thus being discarded as a concept altogether,[52] ideology needs to be seen as an inherent feature of social action.[53] Ideology thus is not ideal, but material - otherwise, Bailey(1975) argues, "[it] is doomed to academicism."[54]

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[47]Quoted in Williams (1977), p65.
[48]Williams (1981), p26.
[49]Bailey (1975), p26.
[50]Williams (1977), p56.
[51]*Ibid.*
[52]Castells (1977).
[53]Saunders (1981), p163.
[54]Bailey (1975), p32.

The relationship between ideology and culture is then in the relationship between, respectively, the process of development, and the medium of this development. Ideology is the process used by social forces and entities in the production of ideas, as well as in formalizing spatial relations and experiences between these entities. Culture, on the other hand is not a process in itself, rather, it is the means which facilitates these processes through 'screening', ordering, and 'reflecting' information or forces carried through certain ideology. As Williams (1981) puts it, culture is seen "as the *signifying system* through which necessarily (though among other means) a social order is communicated, reproduced, experienced and explored."[55]

Through culture *and* ideology, then, we are able to undergo and sustain our lives, methods and social practices. One more thing needs to be pointed at: there is no reason that either culture or ideology should be over-emphasized as determining factors of spatial outcomes. This is because, as we will be arguing later on, causal forces, whether these are local or global level, remain independent from both culture and ideology. Ideology is not important in itself, but in how it is used, and by whom. In these terms ideology may simply enforce or define certain limits over social action. Simply, this means, as Bailey realized, that we cannot predict action from ideology in a mechanical sense, but we can only hope to understand such action by referring to ideology. Similarly, culture is a highly passive (or transparent) entity, whose role (as we shall refer to it later) is characterized by the *reflection* of social forces. This does not lead to degrade the vitality of culture in social interaction, or in enhancing social relationship. Yet, culture only exists through local action, and it responds to a need, but in no way does culture compel or enforce certain methods - we can refer back here to the relation between the 'absolute' and the 'relative', or between light and the 'dust particles', where as we noted causal forces remain those of the parts.

Having defined culture and ideology, the rest of the chapter will undergo a discussion of how culture is related to various processes which act in the environment, and its role in enhancing such acts. Particularly, the bond between culture and place (the natural

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[55]Williams (1981), p13.

environment) will be emphasized - as implied in the notion of cultural evolution. The factor of determination will then be discussed, drawing upon the various positions in this regard, particularly in relation to the built form.

III. CULTURE AND ENVIRONMENT

We have seen above that culture is essentially historical. Below, I will extend this argument to illustrate the close association between culture and the environment. The aim here is two-folds. First, we shall see that culture is an outcome of a particular ideology (or in this regard, evolution) originally based upon spontaneity of response to immediate conditions and circumstances in any particular environment. Ideologies, or/and the metaphysics, in other words, are primarily related to concrete realities, not ideas. Climate and the natural environment here present continuing as well as varying (external) causative forces, which then need to be adapted to through cumulative experience (i.e. culture). The nature and characteristics of this process will be identified.

Secondly, and following from there, it will be emphasized that climate and culture, as well as ideology, all contribute to this continuing process of adaptation to the environment. They thus cannot be regarded as separate entities. The notion of determination (cultural and climatic) will then be considered in this respect.

Cultural evolution:

In *Evolution and Culture*, Sahlins and Service (1982) defined 'evolution' as "the succession of cultural stages."[56] It is a process of adaptive improvements or specialization with relation to the environmental surroundings; a trend towards stability and self maintenance under the influence of external pressure.[57] In a similar way, Ian McHarg (1969) defined evolution as a creative process, where it aims towards "the raising of matter from lower to higher order."[58]

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[56]Sahlins and Service (1982), p6.
[57]Sahlins and Service (1982), p68.
[58]McHarg (1969), p118.

'Creation' according to McHarg is a gradual change from simplicity to diversity and complexity, as opposed to 'destruction', which he defined as the reduction from higher to lower levels of existence.[59] In general, the process of evolution in Sahlins and Service's words is, "a movement from homogeneity to heterogeneity",[60] which then leads towards "increasing *adaptation*", and "greater *adaptability*".[61]

The continuous development towards diversity and complexity is therefore seen as a law of nature , in which a higher order of complexity is accompanied by a greater ability on the part of the organism to survive in the face of outside pressure. Modern science, in particular theories of *Chaos* affirm this. As Paul Davies (1989) noted in this regard, "the universe began in featureless simplicity, and grows ever more elaborate with time."[62]

In order to illustrate this point, McHarg(1969) referred the example of two environmental conditions: a sand dune, and a forest.[63] A sand dune is characterized by simplicity; there are few physical constituents in a dune and therefore it is characterized by few physical processes. A sand dune has the ability to house only a few inhabitants - whether plants, animals, or human beings - and for these, life in general is very unstable, and highly insecure.[64] On the other side of this, a forest (or in McHarg's words, "a primeval forest covering an ancient sand dune."[65]) resembles a totally different situation. The great number of species living in a forest, the variety of habitat, and most importantly, the extremely complex structure of relationships and interactions which occur between them, all provide a highly efficient and stable environment for various forms of life to develop.[66]

As did Sahlins and Service, McHarg argued that simplicity and uniformity is accompanied by insecurity and instability, while complexity and diversity imply stability. A sand dune is highly subject to the influences of outside pressure, and has little from within

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[59]McHarg (1969), p118.
[60]Sahlins and Service (1982), p6.
[61]Sahlins and Service (1982), p70.
[62]Davies (1989), p21.
[63]McHarg (1969), p118.
[64]*Ibid*, p119.
[65]*Ibid*, p118.
[66]*Ibid*, p119.

which would allow it to protect itself and its inhabitants. On the opposite, a highly developed, self-sufficient and secure environment is found in a forest.

There seems to be many implications for McHarg's argument. The metaphors of nature - a sand dune and a forest - can equally relate to socio-cultural factors within societies. In these terms, the more varied and complex the relationships between the various domains and sectors of a society are, the greater is the potential for that society towards survival and prosperity. As from there comes the notion of cultural evolution.

Hills (1966) noted that the various species react to the environment in two main ways:[67]

1- Physiological specialization.

2- Behavioural adaptation.

The first relates to the biological responses of the living body to the environment - i.e. biological evolution - while the second relates to cultural responses. For plants and animals, both seem to be obvious. Their distribution around the globe and the life cycles of most animals and plants are to a high extent related to climate and the natural environment. As such, we find that thin haired camels and goats live in the desert, while woolly beasts such as bears and sheep are found in colder areas.[68] Similarly, the behavioural adaptation of animals towards the environment is most often very apparent. To mention a few examples, a warble migrates across the oceans, while bears hibernate, in order to escape the excessive cold temperature of the winter season. Similarly, with swift rapid wriggles, a lizard dives in the loose sand of the desert, thus escaping the boiling heat, and any possible dangers. Most animals and plants have similar characteristics and adaptation strategies within their environment.

The same seems to apply to *homo sapiens*. As it is the case for most animals, humans acquire a very efficient biophysical system which keeps their body temperature within a certain range, as well as the five senses which allow them to perceive things and locate

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[67]See Hills (1966), pp145-218.

[68]It is interesting to note though that many such animals prove to have sprung out of common origins, but developed in very different ways within different climatic domains. [Booth and Fitch (1980)]

dangers. In comparison with other species, however, such abilities in human beings remain limited. Yet, what makes the human race far more privileged than other species lies in its ability to manipulate its environment to its own satisfaction. In contrast with other species, humans were able to survive a wide range of environmental conditions without real or significant change in their bio-physical structures. Instead such differences are more likely to show on their surroundings, and in the way they react to these surroundings. In other words, the differences in environmental conditions where different people live are revealed through the differences in their cultures. As Sahlins and Service say in this regard, "Culture has diversified as it has filled in the variety of opportunities for human existence afforded by earth."[69]

Below, I will try to expand on this, and give some examples which will illustrate the wide implications that climate has on human culture. As we shall see, climatic influence is often apparent, directly or indirectly, even in the most subjective and metaphysical beliefs that humans have. I will then use this argument to address the question of determination in the built environment, and how it should be looked at.

Modes of climate-culture relationship:

"Climate", as Robert Claibourne (1970) exclaimed, "is very much involved in the human game. It sets some of the rules, and also helps to shape the field on which the game is played."[70] The field, it seems to me, is nature; the physical environment. The rules are those of nature; i.e. diurnal and seasonal changes - a regular rhythmic pattern due to earth movement - within which more or less stable climatic conditions prevail, often interrupted by largely unpredictable, sometimes disastrous extremes. The game, after all, is that of human survival.

Cultural adaptation to the environment appears in different contexts. Most apparent, it is through physical means; response to a necessity or urgent need for humans to correspond to climatic conditions. In all stages in history, the wheels of civilization , however far or fast

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[69]Sahlins and Service (1982), p23.
[70]Claibourne (1970).

they could go, were always dependant upon the finding of means and methods to deal with climate, and survive its consequences. Claibourne (1970) says,

> "Climate, and the need to deal with it, has played no small part in the advance of human culture. Fire, the first natural force to be tamed by man ... became man's first means of manipulating climate, thereby permitting him to spread from the tropics and subtropics into ares were he could not otherwise have survived. Irrigation, man's prime tool for coping with inadequate rainfall, played a leading part in the advance of civilization. Today, man still cannot manipulate climate at large ... but his ability to control local climate is impressive. With dams and canals he made the desert blossom like the rose and, with the aid of air- conditioners or heaters, he can survive in comfort amid the Saharan sands or the Antarctic ice."[71]

The phase of technological development eventually led to more ability on the part of human beings to control their micro-climatic environment. However, before modern heating or air conditioning facilities have been created, human records in various parts of the world show high ingenuity and impressive systems of co-existence with the natural environment. Within scarcity of resources, and often in severe climatic conditions where there is little space for error, the only way available for survival was through natural means; i.e. through the appropriate use of natural resources, and the careful understanding and use of the laws of natural energy within the environment.[72]

Numerous studies have illustrated the adequacy and efficiency of old traditional environments.[73] Not only did people of the old cultures survive, but many prospered. According to historical records, desert dwellers in the Middle East reached the optimum in human comfort which, given the circumstances, could have been possible. That is to the extent that ice blocks are reported to have been manufactured and distributed to every doorstep in the midst of summer heat, all through natural means.[74] At the other extreme, such ice blocks were turned into warm shelters by people living under the freezing conditions of

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[71]*Ibid*
[72]Fathy (1986).
[73]See Rudofsky (1964).
[74]Beasley and Harverson (1981).

the Arctic.[75] All these and others remain as significant lessons for present and future generations.

On the other hand, we find today that modern solutions and recent technological devices are taking over, with the claim that through the use of such devices, more appropriate living conditions and stable indoor environments are attainable. However, their efficiency (social and economical) has often been questioned.[76] Of particular concern here is that such tendencies seem to be totally directed towards the indoor environment. More than ever before, the gap between indoor and outdoor environments seems to have widened, and the interaction between the two has eventually been very much undermined. As the interaction between the various spaces in the environment - outdoor and indoor- has in its essence a socio-cultural dimension, what followed is the corresponding conflict and artificial gap between what is cultural need, and what is a climatic requirement, as we shall see later on.

It is not hard to see here that the difference between the two phases (old and new) is a difference in ideology. Old environments in most cases followed an evolutionary process, leading to a more complex, and - if we accept McHarg's argument above - more stable environment. Opposite to that, today's methods are based on organization, where environments are thought out before they are built. Rapoport(1984) discussing this latter trend says that organization aspires for order in the environment, where he equalled 'order' with 'recognisability', 'predictability', and 'stability'.[77] However, this seems not to be very accurate; the first two notions (order and recognisability), are highly relative, and are context dependant; the last two (predictability, and stability), remain (paradoxically) highly *un*predictable - especially over extended periods. Therefore, while for old environments, stability is an on going process, based on constant improvements and modifications in accordance with changing conditions, contrary to that, new environments remain, to some extent, rigid, unadaptable to change, and therefore, less stable. These two phases will be

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[75]Rapoport (1969).
[76]It worth noting here that according to certain studies in the biophysical reaction of the human body, an artificial environment caused by mechanical devices might constitute a source of psychological conflict. [Dubos (1966)]
[77]Rapoport (1984), p52.

discussed in detail later on , particularly in relation to the urban environment in the Middle East (see chapter 5).

The search into the extent to which climate and the natural environment influence human culture and character has often been extended beyond that of the immediate responses through the physical arrangements and settings.[78] The direct impact on social and economic conditions, especially after incidents such as droughts and floods is often obvious. However, the indirect impact which by large occur on the sub-conscious level over longer periods of time has also been examined. For example, Ibn Khaldûn in his *Muquaddimah* referred to the joyful and excitable character of the negroes, which as he saw it, is caused by the hot environmental conditions of the areas of origin.[79] According to him, in the hot zone, "excitability is the natural consequence", where on the other hand, he noted that the opposite of this occurs in colder areas. Huntington (1959) in these terms noted that temperature, rainfall, and other climatic conditions have as much effect upon social conditions as upon the human body.[80] A study by Barkho(1990) draws the connection between climate and language.[81] Similarly, many studies search into the impact of climatic variability and change on social and metaphysical conditions.[82]

Studies in cultural ecology particularly emphasized on the relationship between culture and the climatic environment.[83] According to Irwin Altman, cultural ecology view the environment as a powerful determinant of customs, life styles, and behaviour in different cultures.[84] A particularly interesting study which provides a good example illustrating this point has been assumed by Whiting (1964). Through his observation of different societies

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[78]See for example Huntington (1959), Flood (1983), Altman (1984), al Fârûqî (1974).
[79]Ibn Khaldûn.
[80]Huntington (1959), p285.
[81]Barkho (1990) in this regard made comparative analysis between Arabic and English terms and expressions in relation to weather conditions. As he argued, terms denoting hot, and cold relate to different intentions in different cultures. English terms of cold are unfavourable (ex. cold hearted, or 'give somebody the cold shoulder') while the term '*bârid*'(cold) in Arabic is often more favourable.
[82]For example, Jan de Viies (1981) noted certain decrease in the population growth throughout the 'Little Ice Age' in pre-industrial Europe. Such studies also try to parallel the occurrence of this climatic situation with the decline in intellectual ability of the Europeans in that particular period. [*ibid*]
[83]See for example Altman (1984).
[84]Altman (1984), p6.

living in the rainy tropical climates in different parts of the world, Whiting was able to detect certain cultural practices which he found to be similar between these variant societies. He thus concluded that such practices were initially originated by climate. In his analysis, he was able to identify a long causal chain, through which climatic condition where found responsible for social practices such as polygamy, circumcision as well as others .[85]

Huntington in *Mainsprings of Civilization* (1959) drew upon the parallels between climate on the one side, and social conditions and religions on the other. He particularly referred to the connection between religious beliefs, and climatic conditions. For example, he pointed that polytheistic religions -i.e. believing in many gods -such as Hinduism, originated in the jungle, with its complex variety, whereas monotheism of Judaism, Christianity, and Islam according to him are equally natural products of the simple unified and undisrupted space of the desert.[86] As he argues, what the people of Palestine who spoke of God's protecting care as "the shadow of a great rock in a weary land", while it might have meant a lot for people of the desert, but in Huntington's view, not as much so in a 'Siberian forest'.[87]

This intimate relationship between climate and spiritual beliefs of societies is best grasped in cultures of the old world in the Near East. These lands were among the first to support and sustain human civilizations; "the cradle of civilization", in Carter's words. But life there was far from satisfactory.[88] To early dwellers of the land, life was hard and chaotic, and nature was cruel and unpredictable. In the river basins - particularly in the two fertile valleys in Egypt and Mesopotamia, which were the most populated - floods were devastating; they transformed villages into islands, demolished houses, and trees were uprooted and washed away. Then came the sun which completed the task and burned up every living

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[85]Whiting (1964). Briefly, Whiting's hypothesis goes as follows : first, he noted that in tropical climate, food supply consists largely of fruits and roots which are low in protein. For this reason, and as a reaction to severe protein deficiencies in newborn babies, there was a tendency to avoid pregnancy for a long period of time after childbirth, so that the nursing babies would then receive adequate supplies of mother's milk, which is a rich source of protein. What resulted out of this situation is a form of sex taboos during this extended period, which according to Whiting, led to the adoption of polygamy as an accepted form of life. Circumcision, as it was hypothesized by Whiting, was then meant as a dramatic vehicle for breaking the long term and intimate relationship between the boy as he approached adolescence, and his mother.
[86]Huntington (1959), p300.
[87]Huntington (1959), p290.
[88]al Fârûqî (1974), p3.

thing.[89] In the desert, the situation was at best far worse. Nomadic tribes might be wandering through the hot sand oceans for years before they were able to spot a little tiny spot where they could feed there flocks. As it dried up, they were on the move again. To these ancient people, life didn't mean much on its own. As Lawrence (of Arabia) (1962) puts it, the only feelings which ever evolved were those of "hopelessness, helplessness, and life worthlessness."[90]

In reaction to these irregularities, and in the face of nature, people turned to each other, towards societies, and explored in the realms of the spiritual. Lawrence in this regards noted that 'hopelessness', 'helplessness', and 'life worthlessness', are the common base for all Semitic creeds. As al Fârûqî (1974) puts it,

> "For only when men turned themselves into cooperation with one another under the planning eye of a supreme authority were chaos, untimely death and destruction stopped and life and happiness made possible."[91]

Therefore, we see that the values and spiritual beliefs of these societies developed in response to the environment where they were found. The ancient Egyptians believed in the god Atum - i.e. sun - and the god Nile; their hazards emerged as their gods. Out from the desert, on the other hand, there came the creeds of monotheistic religions. With the simple life they led, where there was little obstacle to clear thinking and vivid imagination, the people of the land perceived the unity of the universe - as it is said, "The further you go into the desert, the closer you come to God".[92] For these people, there was only the one God who created and controlled everything. All misfortunes, along with the little fortunes they got was the will of God. It was then that life obtained its meaning and purpose. No matter how hard it was, for then it was worth all the effort.

Such are early examples where the correlation between the physical and the metaphysical were recognized, and where the unity of both was seen as the secret behind existence. Cultural values and beliefs, even the most abstract and spiritual, are means of

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[89]*Ibid*, p3.
[90]Lawrence (1962), 37-38.
[91]al Fârûqî (1974), p 15.
[92]Norberg-Schultz (1985).

addressing the special character and circumstances which exist in the realms of the physical world. If this is so, is it viable to separate the effects of what is climatic and what is cultural in terms of the built form, as some seem to argue? I will discuss this below under the question of determination.

Determination in the built environment:

The question of determination has consistantly been a vital aspect of consideration in a wide range of issues. Two main positions will be looked at here: climatic determinism, and cultural determinism. I wish to illustrate that the notion of determination has often been misconceived; it seems to be taken to imply, through a given criteria, predicting the outcome, while as we shall see, determination should only be thought of in terms of setting certain limits, or laying down the rules, within which development, more or less, can freely proceed.

Particularly in relation to the built form, this distinction between climatic determination and cultural determination has often been pronounced. Scholars belonging to the first group argue that it is climate which is mainly responsible for the shape and nature of the built form. According to these, the act of building itself is considered as a response to climatic conditions, and so are the introduced solutions, materials and techniques which are all defined by climate. Gideon Golany(1983) says in this regard,

> "We should make it clear that we see ... urban development as a synthesis of a variety of contributing forces which emerged over the years ... It is impossible to isolate definitely the impact of one factor or another...however, it has become apparent ... that climatic considerations stand in the forefront. Climate, at least as a social and economic factor, is omnipresent and cannot be ignored."[93]

Such studies usually refer to old traditional built environments as climatic responses. In many cases, however, by being pre-occupied with climatic performance of the building, they tend to disregard or devalue the importance of the spatial arrangement of its internal structure. As Fitch and Branch(1960) for example claimed, the plan of the building or its internal layout does not, in their words, "have any significance except in relation to the culture which gave it

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[93]Golany (1983).

birth."[94] The dangers of such approaches are obvious; by excluding the cultural factor from their discussions, they end up with an area of study which is too isolated, and too narrowly defined. Also, they often come up with certain conclusions which aspire towards sorts of utopias or universal ideals which most often prove not to be appropriate. Golany's proposals for planning and design in arid areas represent one example of what appears to be a reductive and premature approach in this regard.[95]

On the other hand, advocates of cultural determinism primarily focus on culture as a major determinant of both the form and spatial layout of buildings, along with social patterns and traditions which are dominant within various societies. This view has been traditionally held by anthropology, sociology, and other human-environmental studies. These do not deny the important role played by climate in the process, but they critically question its determining role. C. Daryll Forde (1956) noted in this regard,

> "broad general classification of climatic or vegetational regions are quite inadequate for the analysis of cultural possibilities, and the occupants of regions similar in their geographic conditions often show great divergencies in cultural achievements."[96]

Similarly, Rapoport (1969) writes,

> "One need not deny the importance of climate to question its determining role in the creation of the built form. Examination in the extreme differences in urban pattern and house types within one area, such as Old and New Delhi, the old and new parts of Fez or Marrakesh, or certain Latin American cities, show them to be much more related to culture than to climate, and makes any extreme determinist view rather doubtful."[97]

As in the two quotations above, advocates of cultural deterministic position deny referring the built form or existing spatial patterns to climate. The existence of different cultural patterns or different dwelling forms within areas of similar climatic conditions seem to reinforce their arguments. Amos Rapoport in his book *House, Form and culture* (1969) thoroughly discussed this point. He refers to what he called 'anti-climatic' solutions, where he meant

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[94]Fitch and Branch (1960).
[95]Golany (1983).
[96]Forde (1956), p464.
[97]Rapoport (1969).

those ideas and forms introduced which do not necessarily respond to the climatic situation where they exist, presumably due to cultural reasons. Also, Rapoport drew upon certain examples where, by large, the concept of a physical permanent shelter did not evolve,as it is the case for the Australian Aborigines.[98] For such reasons, climate as a determinant element in the environment has been discarded, instead, Rapoport referred to climate and the natural environment as "important aspect(s)of form generating forces."[99]

It is obvious from the two positions observed above that the notion of determination is misconceived. Determination seems to be judged by the analysis of determining forces and their conceived ends. However, such formal analysis seems to be too simplistic, while the situation proves to be far more complex. One fundamental difficulty is that, as Davies noted, complex forms - which is a just and fair ascription to both climate and culture - have a high degree of individuality, and tend to have a large number of components.[100] Such systems are rarely closed systems, and are predominantly non-linear.[101] Therefore, under no condition could we expect the climate of an area to tell us about the particular cultural trends within that area, and *vice versa*. Yet at the same time, that the culture be highly sympathetic with that climate is to be expected. Forde(1956) explains this relationship as follows,

> "Physical conditions enter intimately into every cultural development and pattern, not excluding the most abstract and non-material; they enter not as determinants, however, but as one category of raw material of cultural elaboration. The study of the relations between cultural patterns and physical conditions is of the greatest importance for an understanding of human society, but it cannot be undertaken in terms of simple geographical controls alleged to be identifiable on sight."[102]

In another place, he says,"[even] the most meticulous knowledge of physical geography, whether of great regions or of small areas, will not serve to elucidate these problems unless the nature of cultural development is grasped."[103] In other words, as climate might largely affect the creation of a certain culture, under no condition could the nature of that culture be

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[98]Rapoport (1969), p18-24.
[99]Rapoport (1969), p83.
[100]Davies (1989), p22.
[101]*Ibid.*
[102]Forde (1956), p464.
[103]Forde (1956), p465.

strictly defined by climate - although it would be counted upon to imply solutions. Both climate and culture, then, need to be considered simultaneously, as parts within a system.[104] It is thus suggested that in such a situation, empirical phenomena are best explained "in reverse";[105] in other words, as it is assumed that the specific patterns are the outcome of a long process of development (or in one sense, as they come at the end of the 'causal chain', the study starts with these specific patterns, and then proceeds backwards towards their origins).[106] Cultural patterns then are to be discussed in terms of the climatic situation. The opposite of this - i.e. starting off with climatic conditions, towards certain assumptions or predictions of cultural patterns - while it might seem feasible, proves to be highly suggestible and misleading.

Accordingly, the notion of determination needs to go beyond the simple notion of certain forces and specific results. The root sense of 'determine' according to Williams (1977) is 'setting bounds' or 'setting limits'.[107] But this, as Williams points out, implies two very different situations: one has a sense of 'externality', where some power (God or Nature or History) controls or decides the outcome of an action or process, beyond or irrespective of the wills or desires of its agents - what Williams refers to as 'abstract determinism';[108] the other is a situation in which the essential character of a process or the properties of its components are held to determine (control) its outcome.[109] This latter depends upon the outcome of an inner historical process - i.e. culture. The distinction between the two is vital; in the first case, control is as we said external, and so, it is projected on society, which is thus conceived as passive, and unwilled. But this is a negative view of society, which is essentially destructive, leading, as Williams realized, to an alienated, objectivist 'society'.[110]

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[104]Lévi-Strauss (1963), pp35-46; Urry (1985), p28.
[105]Urry (1985), p28.
[106]Ibn Khaldûn discussed extensively this point in his analysis of human's ability to think. As he says, "human action in the outside world materializes only through thinking about the order of things, since things are based upon each other ... Once this order is taken into consideration, human actions proceed in a well-arranged manner." [p335]
[107]See Williams (1977), pp 83-89.
[108]*Ibid*, p84.
[109]*Ibid*.
[110]*Ibid*, p87.

On the other hand, Williams points at another sense of 'determine', which means as he says, "to determine or be determined to do something is an act of will and purpose."[111] This is then 'positive determination', which implies in some ways certain pressures (individual or collective) against the limits set through 'negative determination'. Such pressures are not isolated events, but they are derived from "the formation and momentum of a given social mode."[112] As Williams further says,

> "'Society' is then never only the 'dead husk' which limits social and individual fulfilment. It is always a constitutive process with very powerful pressures which are both expressed in political, economic, and cultural formations and to take the full weight of 'constitutive', are internalized and become 'individual wills'. Determination of this whole kind - a complex and interrelated process of limits and pressures - is in the whole social process ... Any abstraction of determinism, based on the isolation of autonomous categories, which are seen as controlling or which can be used for prediction, is then a mystification of the specific and always related determinants which are the real social process - an active and conscious as well as, by default, a passive and objectified historical experience."[113]

Simply, what Williams seems to be saying is that the reductive view of determination as external control is inappropriate - whether 'external' refers to 'climate', 'culture', or 'society'. We note here that social processes are the outcome of opposing factors which act simultaneously: limits and pressures, external and internal, willed as well as unconscious. In this sense, the effect of culture and society is essentially opposite; while society is based upon differentiation and control (external or internal), culture is what combine these differentials together in one whole unit, and here lies the vitality of culture. But culture at the same time is a construct of *inner* social processes, and thus, its effect remains in terms of the *reflection* of such inner causal forces in spatial forms (physical or else), as opposed to the *projection* of social control exerted by external forces (such as climate, society). In this way, since external forces indirectly affect culture, though inner social processes, their ultimate effect on culture remains then highly unpredictable.

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[111]Williams (1977), p87.
[112]*Ibid.*
[113]*Ibid*, pp87-88.

Briefly, the determination factor cannot be considered simplistically in terms of cause and effect, as it remains attached to various passive, as well as active, external and internal social processes (or ideologies). Instead, determination should be looked at as setting limits, and exerting pressures, which are arrived at historically, and which affect development. In these terms, the nature or outcome of development remains unknown, and is yet to be realized.

Conclusion

This chapter made a critical analysis of the relationship between climate and culture, and discussed the determination factor which presumingly connects the two. Culture was defined as the historical construct of inner social processes. Climate, on the other hand, is an external factor in any environment; it exerts its influence on inner social processes, and then indirectly, on cultural patterns (material or otherwise). External determination on any environment is thus tied to internal processes, and therefore its outcome remains unpredictable. Instead, it was argued that determination should be looked at in terms of limits and pressures within which social action and processes can freely proceed.

In the coming chapters, the concepts developed above will be used to study the open space housing environment. 'Space', 'climate', and 'culture', as concepts, provide us with an overall understanding of the various processes which take part in shaping the environment. Most essentially, the environment needs to be looked at as a process and a continuum of entities, which ultimately leads to a particular spatial pattern. The nature of the built environment is then related to the causal interaction between the various entities which constitute that environment.

PART II

Open Space in the Built Housing Environment

Chapter 3

Open Space: Analogy and Patterns

This chapter is in two parts. Firstly, a critical analysis of a number of various approaches to space in architecture is made. This shows that the emphasis on 'space' in the past has been negatively conceived in the past, different approaches stressed different aspects which have been regarded as entities. This will show that 'space' as a concept (which as we saw in the previous chapters relates to a continuum of entities, and a process which regulates the interaction between these entities) has often been misconceived in the past, a factor which will be held primarily responsible for many of the problems that the architectural environment currently faces. Therefore, while the importance of the concept of space will be stressed, it will be argued that *the question of architecture is not in space, but in ideology*. The term ideology as it is used here refers to the process which combine the various contingencies in the environment. These are architectural elements, rules, and social forces. A review of social approaches reveals that there is a need for a method which can identify these contingencies in

terms of a process, rather than as categories, as they seem to be often taken for, which will be the subject of the following chapter.

It needs to be noted before we start that the notion of open space is not taken here as an object of analysis in itself, rather, and as was mention in the introduction, in terms of its implicit value of facilitating interaction between the various entities in the environment. Reference to open space then will mainly be limited to the forces acting in the environment, rather than directly addressing its formal shape or physical characteristics. In fact, among the main aims of this chapter is to criticize certain attitudes and approaches which deal with the built environment as such.

I. DIRECTIONS OF SPACE IN ARCHITECTURE

Painting can depict space,
poetry can form an image of it,
music can offer an analogy, .
but only architecture can actually
create it.

Kern , 1983

The concern with space in architectural theory in Europe seems to have started with the Viennese architect and city planner Camillo Sitte. In 1889 Sitte published his book *City Planning according to Artistic Principles* where he argued that urban planning was the art of space, and that the task of planning and design was to express the artistic qualities of space. Shortly afterwards, in the 1890s, Hildebrandt and Schmarsow identified the concept of space as essential for the plastic arts.[1] Such concepts were highly endorsed by both theorists and architects since the early twentieth century. In 1941, Sigfried Giedion published his best selling book *Space, Time and Architecture*, in which he put the concept of space at the centre of the development in modern architecture. In later works, he identified the history of

[1]Van de Ven (1987), pXI.

architecture as the history of the making of space; from solid masses 'emanating power of volumes' of the early Egyptians and Greeks, through 'hollowed-out interior space' of the Romans (particularly addressing Hadrian's dome), to the third period, which is according to him characterized by the 'interaction between inner and outer space' or the concept of 'transparency' of modern architecture (referring to Kenzo Tange's Tokyo's Olympic stadium, and Jorn Utzon's Sydney Opera House as examples).[2] In a similar direction, Bruno Zevi (1957) in his book *Architecture and Space* declared that "architecture is the mastery of space"[3]; Louis Khan (1957) also stated that architecture was "the thoughtful making of space."[4]

In the late 1960s and early 1970s, there was a general dissatisfaction and dismay with such early theories. This was prompted essentially by the declared failure of the modern movement.[5] Early theories were labelled as 'highly selective',[6] or 'too naïvely realistic'.[7] Later approaches were highly influenced by developments in other areas, particularly, in linguistic studies,[8] and in sociology.[9] What followed is a flow of cognitive, behavioural, and socio-economic studies, which often took divergent, sometimes contradicting paths. For one group, architecture became a property of the mind, or a 'space of representation'; for another, architecture was the 'experience of space', which had its origins in concrete human activity.[10] The first group stresses the conceptual origins of architecture, while the second draws upon the connection between social processes and spatial patterns.[11]

A critical look at the various positions mentioned above reveals that the rise of new consciousness of space in architecture since its early stages in the late nineteenth century has been accompanied with a series of contradictions. Early theories, with their emphasis on

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[2]Giedion *The Eternal Present: The Beginnings of Architecture* (1964).
[3]Quoted in Relph (1976), p23.
[4]Quoted in Van de Ven (1987), pXI.
[5]Jencks (1980).
[6]Rapoport (1969), Rapoport (1980) in King (1980), p 283.
[7]Norberg-Schultz (1971), p14.
[8]Jencks *et al.* (1980), Preziosi(1979), Broadbent *et al.* (1980).
[9]Beattie, N. (1985), p13-14.
[10]For a critical discussion of these trends, see Tschumi, B. (1990).
[11]Hillier and Hanson (1984), pp1-7.

'space' (that is, 'emptiness'), seem to have given rise to the conflict between space and form, which seems to have been present ever since: still for some, it was the corporeal mass, not space, which was the real essence of the architectural creation,[12] a notion discarded by others (such as Hildebrandt and Brinckmann) who argued that this would confuse architecture with sculpture.[13] They stressed instead *movement* in space which characterized architecture from any other form of art. So these argued that it was the ordering of space that is the *purpose* of the building; the resultant form, according to them, isn't but an outcome. As Van de Ven (1987) explains,

> "The exterior manifestation of the architectural mass was a secondary result of the internal mood of the space contained."[14]

On the other hand, the concern with meaning in the built environment was a weary path. Often, it brought back into account the earlier ideologies of Kant and Hegel, where architecture was a sort of 'artistic supplement' added to the building,[15] leading to the general negation of functionalism.[16] Adversely, sociological approaches rejected these arguments, on the grounds that, yet again, they do not distinguish between architecture and other artifacts.[17] According to these, the emphasis on form, or the physical appearance of the building negated the very essence and purpose of architecture, which they saw in the ordering of empty volumes of space, which is in turn about the ordering of relations between people. They regarded space as the medium for social praxis.

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[12]Van de Ven (1987), p110. Van de Ven in this regard referred to the theory of empathy which took shape in late nineteenth century German thought. [p78] He attributed it to Wolfflin, who proclaimed, "the one and only object of architecture is corporeal form: didn't man himself have a corporeal body?" [p94] Van de Ven paralleled such concepts to the work of Antonio Gaudi.

[13]Brinckmann distinguished between architecture and sculpture, in terms of the position of mass in relation to space. As Van de Ven explains, he argued that "Sculpture created surfaces standing in space while architecture was the art of surfaces around space." [p110].

[14]Van de Ven (1987), p110.

[15]Hegel distinguished between five arts, and gave them order according to the extent of expression of the spirit: architecture, sculpture, painting, music and poetry. [Tschumi (1990), p15] Van de Ven explains this more in the following paragraph : [p 37]
"The more the artist tried to express the spirit, the more he had to overcome the the substantial limitations of the means. Architecture, which by nature has the hardest and most material means of all arts, thus, took the lowest level in hierarchy of the arts; whereas poetry, being entirely immaterial, the highest."

[16]See Jones (1987), Wolfe (1982).

[17]Hillier and Hanson (1984).

Briefly, we find that different approaches stressed different facets which appeared as opposites, while as we shall see, they were in fact complimentary; these involve the separation between space and form, between the idea and reality, and above all, the architectural paradox between experience and knowledge.[18]

To what extent did such seemingly posing contradictions influence architectural development? At a more basic level, is it a problem of space, or is it mere coincidence that these conflicts appeared and gained momentum along with the rise of the concept of space? As we shall see below, it is not coincidental, nor is it a problem of the concept of space, but rather, it was their very preoccupation with 'space' (that is, the very term 'space', without always taking into account the extent of its dimensions and possibilities) which seems to have been the main cause for these conflicts in such early theories. To understand this, let's draw upon some of the basic concepts in architecture; the *enclosure* of space through the use of a built *boundary*.

Boundary, Enclosure, and Concavity:

The essence of architecture is to define space (i.e. to make space distinct), which literally means, to lay down boundaries. Boundaries result in enclosure, and enclosure is ultimately related to concavity. Simply, the purpose of the architectural act is the creation of concave structures.[19]

According to Van de Ven (1987), Sitte was the first to introduce the notion of concavity and convexity in architecture and city planning. Concave spaces were seen by Sitte as the main task of architecture, whether these are interior spaces within the building, or exterior spaces shaped by the combination of buildings.[20] Sitte defined the concept of enclosure, which he related to interior and exterior concavity. Sitte writes,

> "The essential thing of both room and square is the quality of inclosed space."[21]

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[18]See Connors (1989), p3, Tschumi (1990), pp 12-29.
[19]Norberg-Schultz (1979), p58.
[20]Sitte (1945).
[21]Quoted in Van de Ven (1987), 20.

The notion of exterior and interior concavity, or the continuum between the inside and the outside is in the very essence of the concept of boundary. As Heidegger says in this regard, "a boundary is not that from which something stops but, as the Greeks recognized, the boundary is that from which something begins its presencing."[22] Similarly, Venturi's definition of architecture as "the wall between the inside and the outside", and Schmarsow's "the room between four wall."[23] (where emphasis is put on walls, not roofs or ceilings), all seem to delete any such distinction between open and closed space.[24]

Following from there, it seems that in attempting to achieve such continuity in space that problems started to arise. Such attitudes are first observed in Sitte (who incidentally was a witness of the first of the impacts of modernism, where outdoor market plazas were replaced by covered market halls, and motor vehicles were starting to impinge on city structure, trends of which he was very critical[25]). Instead of buildings standing in space, he rather preferred the notion of space surrounded and defined by mass, as he saw in the urban structures of the past. Sitte's nostalgic inclinations seem to have implicitly related to the concept of 'flowing space', which forms one of the basics of the Modern Movement in architecture. According to this concept, the emphasis put on interior space which was attributed to earlier movements would be abolished, and the distinction between indoor and outdoor space would thus be removed.[26]

However, we note that this did not occur. As a matter of fact, it was just the opposite which did actually happen. Much of the modern built environment is characterized by loose, indefinite and undifferentiated space, surrounding, rather than being surrounded by

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[22]Quoted in Norberg-Schultz (1979), p 13.
[23]Quoted in Van de Ven (1987), p90.
[24]It worth noting that the notion of continuity between the 'inside' and the 'outside' is not to be taken at face value as some modern concepts seem to imply. The concepts of 'transparency', and 'flowing space' which characterize some modern approaches (as in De Stijil and Mies Van der Rohe's Barchelona Pavilion, for example),would contradict the essence of architecture in terms of enclosure and privacy. (See for example Venturi's *Complexity and Contradiction* (1966), where he criticized these approaches). Such continuity is rather functional, and ideological, not merely visual. See also Quantrill (1974), p91.
[25]Van de Ven (1987), p104.
[26] This particularly relates to Frank Lloyd Right, Alvar Aalto and others. [See for example Norberg-Schultz(1971), pp91-96, P.B. Jones (1987), pp14-15]

buildings.[27] What comes to mind here is, why, in spite of all this conscious intention, modern architecture increasingly turned away from the ideals and principles that brought about its very existence? This very question seems to imply the answer: it was this very consciousness and direct intention which to a large extent led to the various problems that we face in our modern architecture and urban structures.

As we mentioned, the essence of architecture is 'To make space distinct'. However, this proves to mean different things to different people. To explain this point, let's have a look back at the concept of enclosure. Enclosure, or concavity in architecture are defined in terms of two main features; these are 1- *the degree of enclosure*, and 2- *texture of the boundary*. The texture of the boundary is mainly related to defining the nature and character of a given space. Similar spatial organizations may possess very different characters according to the concrete treatment of the space defining elements.[28] Material properties, building techniques, colours, details, all are qualifying factors which characterize that environment, and thus visualize its local character. The degree of enclosure, on the other hand, is a function of social values, principles, and rules, where strongly defined spatial boundary results in restrictions on social encounters, and *vice versa*.[29] As this seems to be obvious, however, we note that the two notions have been split in architectural thinking: texture of a boundary has been referred to meaning, style, or form, while being seen as distinct from the degree of enclosure, which has been referred to function. It seems to me that this split between the two marks one of the main setbacks which led to today's situation.

There is large amount of literature try to analyze this point - i.e. the separation between aspects of meaning and function in modern architecture - which we do not need to exhibit here. Briefly, we can say that this is usually presented in terms of a sequence of different stages in architectural development (such as 'Modern', 'Post-Modern', and lately what Jencks called the 'New Moderns'[30]) where in each stage, either terms (meaning or function)

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[27]Wolfe (1982), Jones (1987).
[28]Norberg-Schultz (1979), p66.
[29]Hillier and Hanson (1984), p141.
[30]Jencks (1990).

is seen to have taken priority over the other. However, much of such criticism or analysis remains superficial, highly selective, dealing with architecture in terms of separate or isolated entities. According to Viren Sahai (1991), for example, the Modern Movement emphasized the need for a rational explanation at hand before devising a solution in built form, using appropriate technology.[31] He thus suggests that it is a great fallacy to equate 'International Style' with the Modern Movement, claiming that the latter was never intended to be what it became in the hands of its followers (referring to the pre-occupation with stylistic images). He argues that the reason for this was because the emphasis was put more on the appearance of buildings, rather than on their spatial organization; i.e. that architects emphasized walls (or texture of boundary), rather than space (referring here to function, or the degree of enclosure). However, this view seems to contradict with the fact that Functionalism in the early parts of this century (which essentially regards organization as its main task[32]), was regarded as one of the major factors behind the failure of the Modern Movement, leading only afterwards to expressionist and stylistic trends.[33] Therefore, while Sahai's arguments do identify some of the problems, the explanations that they provide of these problems do not seem to be sufficient.

What is missing in such type of explanations is the regarding of the building(s) under examination as a part of the larger built and social environment, being related to each others through discourse (or a process). In his recent work *Questions of Space,* Bernard Tschumi (1990) deals with this point. He draws upon the 'total split' between social reality and the utopian dream, which first appeared, and then reappeared while attempts were made to reformulate the concepts of architecture. As Tschumi points out, the reason for such split is not due to professional naïvety nor economic constraints, but the fundamental question which lies at the centre of the architectural creation: 'space'. As he says, "By focusing on itself,

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[31]Sahai (1991), pp 41-45.
[32]According to Jones (1987), Hannes Meyer, who took over from Gropius at the Bauhaus, declared in this regard that "building is nothing but organization, social, technical, economic, psychological organization", a philosophy which was received with enthusiasm, and expressed in such notions as 'systematic design, or 'scientific architecture'. [p18]
[33]Jones (1987), p17.

architecture has entered the unavoidable paradox: the impossibility of questioning the nature of space and at the same time experiencing a spatial praxis."[34]

To put it in a simple way, the concept of space does not exist in isolation, neither does it merely relate to the word 'space', but to the range of notions to which it is related. This as was mentioned involves the consideration of spatial entities within any environment in terms of a continuum, *and* a process which relates these entities to each others. Yet, we find that in modern trends, starting with Sitte's nostalgic ideals, and which were adopted by many others after him,[35] the main concern was shifted back into space, and hence, *the effect has been taken for the cause*. We only need to parallel Sitte's concepts with major architectural development ever since to appreciate the danger in such attitude.[36] We find that new ideas in urban design, (particularly Le Corbusier's Radiant City and Howard's Garden City, which were largely to affect later developments around the world), were mainly centred around abstract, universal qualities of 'space'.[37] This was characterized in terms of uninterrupted, featureless, homogeneous space, containing (rather than being contained by) buildings which are scattered in a separate and individual character.[38] As Sahai puts it, architecture became synonymous with 'packaging'. What this led to is a polarity existing between form and space as we saw above, and this in turn, in spite of all claims, led towards the consideration of architecture in terms of mainly interior space, being separate and largely independent from exterior or local conditions.[39]

As a result, and as it seems to be generally accepted, the built environment in many areas around the world has become largely dissipated from human purposes.[40] However,

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[34]Tschumi (1990), p12.
[35]A particular example is Christopher Alexander who tried to developed a system of patterns in order to achieve such qualities. We shall refer to Alexander's approach in Chapter 6.
[36]As Beattie (1985) noted, Sitte's book seemed to have had immediate impact on European readers, and indirectly on the English speaking world, even though the English edition only appeared in 1945. [p13]
[37]Ponsi (1985), p215.
[38]See for example Jones (1987).
[39]Bruno Zevi (1957), for example, says, "Architecture is like a large hollow structure into which man enters and around which he moves". [in Norberg-Schultz (1971), p14. *My emphasis*]
[40]Smith (1980), p94.

even the other claim that space is the medium for social praxis has also been challenged.[41] In some cases, the spatial environment is viewed as a clear reflection of the social relations which occur within its boundaries. A typical example here is the Bororo village which has been studied and documented by Lévi-Strauss (1968). However, this is a rare example. In most cases, we find that while social inter-action is allowed for, and is indeed an important factor in generating the spatial environment, it can hardly be explained in terms of these spatial arrangements alone. As Lévi-Strauss indicated in this regard, "among numerous people, it would be extremely difficult to discover any such relations [between social relations and spatial forms] ... while among others ... the existence of relations is evident, though unclear, and in a third group spatial configuration seems to be almost a projective representation of the social structure."[42] What this means, as Hillier and Hanson realized, is that social analysis cannot be taken as a starting point in the consideration of the built environment. Rather, they suggested that a "*descriptive autonomy*" is first needed, where spatial patterns, and their generative processes can first be described and analyzed in their own terms before any assumptions, or other determinative statements are made. This will be looked at further later on in this chapter.

The important point here is that 'new consciousness' of space as it is expressed in early theories largely negated the essence of architecture, in terms of the unity and continuity between space and form, inside and outside. It is not space which is to be blamed for that, but its rather narrow and unqualified conception. Instead, space is a concept which can allow for the possibility of encompassing the complex and inter-related facets which are involved in the architectural creation but only where the dimensions of space as they relate to architecture are understood.

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[41]See Saunders (1981,1985).
[42]Quoted in Hillier and Hanson (1984), p4 [*my brackets*].

Levels of space awareness in the built environment:

Norberg-Schultz was among those who made remarkable contributions in this direction. In *Intentions in Architecture* (1963), criticizing the popularity of the concept space which was occurring in the fifties and sixties, he argued that "there is no reason to let the word 'space' designate anything but the tri-dimensionality of any building."[43] He attributed this for the same reason that we outlined above; i.e. that space was often taken from a one-sided dimension, where spatial experiences were seen devoid from their constituents. Such early theories were in his terms "too naively realistic".[44]

Following his first book, Norberg-Schultz published his other work, *Existence, Space and Architecture* (1971) in which he tried to encompass the various complex and inter-related dimensions of space in architecture. He analysed his conception of space in the form of five systematic levels of space awareness. According to him, the collapse of the absolute judgemental positions such as the laws of Gestalt psychology and Euclidean space have given way to the realization of other levels of space awareness which as he says are far more in effect. These go as follows: "the pragmatic space of physical action, the perceptual space of immediate orientation, the existential space which forms man's stable image of his environment, the cognitive space of the physical world, and the abstract space of pure logical relations".[45]

As can be noticed, a greater degree of abstraction applies when going from the pragmatic space level through to the abstract level. This resembles "a growing content of information", as Norberg-Schultz noted; "*the series is controlled from the top, while its vital energy rises up from the bottom.*"[46] The pragmatic space relates to the level of spatial experience which integrates people and their material environment. It is the 'functional circle of animals', according to Relph (1966), where it relates to the spontaneous reaction to objects

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[43]Norberg-Schultz (1963), p97.
[44]Norberg-Schultz (1971), p14.
[45]Norberg-Schultz (1971), p10.
[46]Norberg-Schultz (1971), p 11 [*my emphasis*].

according to the degree of gravitation (or deprivation) that they afford.[47] However, while action is usually related to inborn instinct in animals, but for humans, it can only be referred to the non-genetical adaptation which is culture. This is then related to perception and cognition on higher levels of space awareness, which will be dealt with further in the following chapter.

Architectural space according to Norberg-Schultz is a part of existential space; it is "a concretization of man's existential space."[48] On the other hand, he described 'existential space' as "a psychological concept, denoting the schemata man develops, interacting with the environment". It refers in other words to the cultural orientation of the individual. Therefore, *architectural space is regarded as a concretization of an abstract idea or concept, at the same time that such an idea is an expression of the concrete existential environment*; as Norberg-Schultz puts it, "Man's existential space is thus determined by the concrete structure in the environment."[49] He then concludes that human-environment interaction is a two-way process, where existential space forms its abstract or psychic structure, which has architectural space as its physical counterpart; therefore, "*'Architectural space' is a concrete, physical aspect of this process.*"[50] A large amount of literature about the concept of 'place', or *genius loci* , deals very elaborately with this matter. According to these, space only acquires its potential through context, texture, location,[51] and above all, through experience.[52]

To summarize the above, we see that the concept of space lies within a continuum of direct experience at one extreme, and abstract thought at the other.[53] Architecture then has as

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[47]See Wheatly (1976).
[48]Norberg-Schultz (1971), p12.
[49]Norberg-Schultz (1971), p37.
[50]Norberg-Schultz (1971), p37.
[51]Martin Heidegger (1958) was among the first to introduce the concept of 'place' in architecture theory. He argued that spaces receive their being from locations, and not from 'space'. Heidegger related 'place' to the notion of "our-being-in-the-world". [Dovey (1985), p94] See also Relph's *Place and Placelessness* (1966) and Norberg-Schultz's *Genius Loci*.(1979) 'Place' is also expressed in similar concepts such as the concept of 'dwelling' [Heidegger (1958)] 'territory' [Hanson and Hillier (1984)] 'region' [Boussora (1990), Curtis (1986)] and others.
[52]Dovey *et al.* (1985), Norberg-Schultz (1979).
[53]Relph (1966), p8.

one of its major tasks the integration and interaction between these two extremes. However, to what extent does this clarify these tasks? While Norberg-Schultz's phenomenological analysis does reveal the various dimensions of space, and how these relate to architecture, very little is actually mentioned about their interaction. In other words, the nature of the architectural process, remains so far largely implicit. He did suggest that architecture needs to be considered as a *field*, constituting the different levels of interaction in a complex totality.[54] Kurt Lewin was the first to introduce field theory into social sciences, where he attributed a field to a "totality of co-existing facts which are conceived of as mutually interdependent".[55] This concept was particularly related to architecture by Minai (1987), who mentioned that "architectural fields consist of a dialectical process of interaction between physical fields with non-physical (phenomenological) fields."[56] However, how can we conceive such interaction. To get a glimpse of the complexity (even more, impossibility)of the situation, let's look at Minai's definition of architectural field:

> "Architecture is seen here as a totality of man's experience, including man in the midst of nature and natural forces; among fellow human beings and their socio-political and cultural value system, within an energy pattern or restless matter; and finally, it is man by himself alone as a being carrying a unique space-time experience and potential."[57]

Field theory proves to be a useful principle. In a field, the total is regarded as a composite of the inter-related parts, where at any given time, each of these parts contributes in various magnitudes to the state of the whole. Lewin in this regard stressed that any event has to be considered as resultant of the multitude of factors at force, and he thus emphasized on the need for a "fair representation" of this multitude of interdependent factors.[58] However, taking into account the complexity of the situation, the extent to which this 'fair representation' of all the forces present can be achieved remains dubious.

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[54]Lewin (1951), p99.
[55]Lewin (1951), p 246.
[56]Minai (1987), p124.
[57]*Ibid.*
[58]Lewin (1951), p 44.

To put it in a simple manner, we can say the following: few would deny that architecture is both being and non-being, form and space, experience and knowledge. However, while this does put together the two sides of the formula, at the same time, it nevertheless seems to bring us back to square one; if architecture is both idea and matter, does this mean that idea is ascribed to matter, or adversely, that matter is shaped according to a pre-established idea? In other words, while we might agree that architecture is both, it surely cannot be both at the same time; 'architecture can never be', as Tschumi (1990) puts it, as we cannot both experience and think that we experience.[59] It therefore seems that there remains something which is missing.

Let us at this point recall Mahdi's distinction between philosophy and the arts which was referred to in Chapter 1. Mahdi argued that the distinction between the two lies in the difference between production and knowledge, which as we noted is a whole-part relationship. A whole-part relationship as it was pointed implies a process; i.e. a causal process, based on action. The nature of the whole, or in these terms, of the architectural spatial pattern, depends upon the nature and configuration of the parts, or environmental elements, which then is a result of a direct action in time and space. This ultimately depends, as we shall see below, upon the the nature of the causal forces (local or global forces) which induce such action.

Whole-part relationship does seem to have the potential for offering a clearer understanding of the complex processes which occur in the built environment. It allows for the examination of the fragments within the 'whole' at various levels of considerations. While the 'part' is always related to the 'whole', at the same time, the 'whole' is considered as a part of a greater 'whole'. Therefore, the discussion can move in ascending or descending order, and focus on the particularities within the context of the 'whole' as it applies. The 'part' and the 'whole' can for example refer to a 'room' within the 'house', the 'house' within the 'city', also, the 'physical' and the 'metaphysical'. In each such pair, the 'part' is

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[59]Tschumi (1990), p26.

always related and explained in terms of a particular 'whole', where both the 'part' and the 'whole' contribute to one correlative unity. The particular application of these concept will be illustrated in the next chapter under the concept of concavity and convexity.

On the other hand, a whole-part relationship means, as it was argued, that the whole is the outcome of the causal forces of its parts. Knowledge then starts with experience, and the idea starts with reality. One of the main problems in modern architecture can be attributed to this basic fact; it starts with an idea, which is then made into reality.[60] It is here where the question of ideology becomes central to any such analysis. To simply criticize entities (whether they are formal or abstract) can lead us nowhere, but what is more essential to understand is how such entities where arrived at in the first place. The emphasis here is more on discourse, or experience, than on the outcome of such discourse or experience. This is not denying the importance of the outcome (whether it is physical, or metaphysical), or that it is the ultimate achievement of any experience, but to emphasize that a change in space can only be effectively realized through a change in the process which brought about such space. Neither knowledge, nor space or idea are in these terms important in their own account, but in their ability to allow for a certain experience through a certain process. At the same time, they are an outcome of this process.

In summary, we can say that architectural theories of the past, whether they concentrated on formal issues, issues of meaning and semiotics, or Norberg-Schultz's phenomenological perspective, all seem to have shared one basic point, they concerned themselves with architecture while being divorced from the various forces which were responsible for it being realized. As Mary McLeod puts it, such approaches shared a synchronic viewpoint, which disregarded changes in the nature of ideology.[61] In contrast, it will be argued here that the question of architecture is not in 'space', but in ideology.

A last point before we move on to the next section is that the term 'ideology' as it is used here, and as it has been pointed in the previous chapter, is related to the process, rather

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[60]See for example Charles Jencks (1990), Jones (1987), King (1990).
[61]Mcleod (1985), p9.

than to certain terminology which is meant to determine either the means or ends of this process. In contrast to the general tendency of regarding ideology as the ideas, images or values which are dominant within any society,[62] it is referred here to the *practicality* of the term. The main position taken is that any particular built environment can only be understood or appreciated by recognizing the process of interaction between the various forces which are acting in the environment. This implies, among other things, that architecture as a discipline is released from responsibility for the environment, as the forces are those of society at large. This position is mostly associated with Manfredo Tafuri, who strongly criticized tendencies and false hopes of social transformation through design. According to Mcleod (1985), Tafuri argues instead that the architect's only option is to find a course for revolutionary praxis outside architecture, and its traditional boundaries.[63] This involves the recognition of the social forces and processes, and analyzing their effect on urban development. The implications of this will be discussed below.

II. ELEMENTARY GENERATORS OF URBAN FORM

From what has been mentioned so far, we conclude that the experience of space is the essence of the architectural creation. This experience is related to the synthesis of certain elements which can act as elementary generators of spatial patterns or urban forms. By elementary generators, it is here referred to physical as well as socio-cultural factors in the environment. It will be argued that the importance of these factors only comes about through their interaction, which would then allow any alternative experiences to become possible.

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[62]Mcleod (1985), for example, referred to ideology as "those ideas, values, and images by which individuals perceive their society at a given moment." [p7] She however also assumed that ideology in these terms is implicitely linked to productive relations. Philip (1985) similarly defined ideology as "a set of shared beliefs which a group adheres to ... for responding to issues arising in social life." [p174] Such definition seems to project ideology as being seperate from the actual social processes which occur.
[63]*Ibid*, p11.

Three main factors can be identified; these are physical element, rules, and the causal forces which combine the various elements according to these rules. Causal forces can be inner (or local) forces, or external (global), where the latter refers to either physical forces (such as climate), or social (those of the wider society). Rules then can either be inner (or cultural) rules, or external (enforced or projected through a central authority). These factors cannot be looked at as separate entities, but through a certain ideology which puts them together in a particular combination in place and time. Below, I will try to make a critical analysis of how these factors have been identified in various social studies.

In *The Social Logic of Space*, Hillier and Hanson (1984) argued that a first step towards the understanding the particular formations in the built environment is through a quantitative (or syntactic) analysis of spatial elements within the environment, where it can be analyzed in terms of its basic elementary constituents. In relation to internal spatial patterns, these relate to walls and boundaries, which define and enclose space, while open space, or the exterior spatial pattern, can be analyzed in terms of the combination of two main components, these are 'closed' and 'open' cells.[64] Hillier and Hanson in these terms say,

> "Settlements seem to be made up of the same kinds of 'elements': 'closed' elements like dwellings, shops, public buildings, and so on, which by their aggregates define an 'open' system of more or less public space - streets, alleys, squares, and the like - which knot the whole settlement together into a continuous system."[65]

Open and closed cells are then aggregated in terms of restrictions and rules (socio-physical rules) which are implemented on an otherwise random process.[66] According to Hillier and Hanson, this process results in two main levels, one is local, and the other global; by applying *local rules* (i.e. specifying how one object should join onto another), aggregations lead to a well-defined *global form* (a term which they identified as "[a] collective product of a system in which discrete organisms follow a purely local rule".[67]). In other words, the

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[64]Hillier and Hanson (1984), p89.
[65]*Ibid.*
[66]*Ibid*, p10.
[67]*Ibid*, p34 [*my emphasis*].

collection of individual units in the environment leads to a system which is external to these units, though entirely dependant upon them.

The nature of the rules according to which architectural elements are combined relate to the social order. Hillier and Hanson defined architecture as the "interface between the dwelling and the world outside ... the former being the domain of the inhabitants and the latter being the domain of strangers." [68] In these terms, they argue that the main function of the spatial environment is through regulating the relations among inhabitants, and those among strangers. The relationship between social relations and the urban form is in terms of the degree of limitations and restrictions that the various societies apply over an otherwise random process.[69] These restrictions and limitations resemble, among other things, functions of social values, beliefs, and the level of communication and understanding which are shared or/and agreed upon by members of any particular society. Hillier and Hanson summarized their approach in what they referred to by "Syntax theory of space: Spatial organization is a function of social solidarity." [70] The fundamental proposition of this theory is that there is a relationship between the generators of settlement forms and social forces.[71]

Architecture, therefore, through the use of architectural elements and boundaries, is the means through which spatial, and 'transpatial' - i.e. the accessibility between the different spaces - relationships are determined. However, to what extent can we count upon the rather immediate conditions of encounters to explain the various generative processes of the urban form?

The argument of 'inhabitants and strangers', while it might imply in general one of the basic tasks of architecture (the enclosure of spaces or experiences), it remains to be known how these are arrived at. While such restrictions on encounters between inhabitants and strangers act on a more or less local level, we find that other forces are also at work on the higher level of society as a whole, or even more on the wider global scale, which seem to be

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[68]Hillier and Hanson (1984), p17.
[69]*Ibid*, p12.
[70]*Ibid*, p142.
[71]*Ibid*, p82.

seen by many as the immediate and most important forces regulating the built form.[72] Below, I will discuss the relationship between social relations and spatial structures as it has been conceptualized in some social theories.

Social relations and spatial forms:

Space has a social content and society has a spatial content.[73] In the domain of urban sociology, the urban environment, or spatial structures in general, are seen as the medium through which social relations are produced and reproduced.[74] In its basic terms, urban sociology draws upon the connection between human action and place - the former being the domain of sociology, while the latter, the domain of geography.

It was mentioned in the previous chapter that causal forces occur on two main levels: inner and external. In social terms, the first of these relates to familial ties, kinship, or direct local relationships within the street or the neighbourhood. External social forces on the other hand relate to global entities or institutions. Traditionally, various sociological approaches dealt with each of the two levels in different ways. Early approaches seem to have been more aligned with the first level, where the city was viewed as an ecological phenomenon. According to this direction - which was developed by the Chicago school in the early twentieth century, initiated originally by Park and Burgess - urbanism was viewed in terms of Darwinian principles, where the 'struggle for existence' was regarded as a state towards the social and economic equilibrium within every community.[75] A 'community', was seen as comprising two main levels: the biotic, and the cultural. Early urban ecologists were mainly concerned with the biotic level, where the overall spatial pattern of the community was seen as regulated by competition - i.e. actions and decisions would have to be taken in response to

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[72]King (1990) for example argued for the importance of realizing the role of international capital and foreign ownership in considering today's built environments.
[73]Urry (1985),p44.
[74]Gregory *et al.* (1985),p3.
[75] Berry *et al.* (1977), p4. A community was then defined in organic terms, which related to "an unconscious process through which human beings were engaged in biotic struggle for existence resulting in functional adaptation between them and their environment." [Saunders (1985), p69]

the immediate conditions circumstances at work on the local level.[76] This, however, is an over-simplistic view, as on the one hand, it seems to ignore the impact of global or external social forces, and on the other hand, inner processes are seen as being isolated from their cultural milieu to which they are ultimately related.[77]

At the other extreme, other approaches viewed urbanism as a *collective* rather than competitive phenomenon. As such, they stressed more the general or universal qualities of urban development. Most notably, this direction has been pioneered by Castells's *The Urban Question* and Giddens' *A Contemporary Critique of Historical Materialism*. These seem to speak of a 'new cultural order' defined by recent urban development, where collective consumption is the main denominator.[78] The term 'urban' in these studies relates to aspects such as size and density of settlement, and its consequences of social and functional differentiation between the various sectors (particularly in relation to consumption activities[79]). 'Urban culture', a term used to connote the 'new' urbanization, implied curiously the separation between spatial form, and cultural context.[80] Briefly, these approaches regarded urbanism in universal 'Eurocentric' terms.[81]

On the other hand, Saunders (1981,1985) fiercely defied the importance of the city as a social entity. As he argues, the contemporary city cannot be isolated as a separate entity, as it is related to a higher order which determines its social and spatial patterns. He points out that

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[76]Berry *et al.* (1977), p5.

[77]This approach has been continually criticized, both for its reliance on competition, for its exclusion of cultural factors, and for the lack of theory. See for example Berry *et al.* (1977), p6, Saunders (1985), Smith (1980), Castells (1977), p120, Lynch (1981), Short (1984), p3, Agnew *et al.* (1984), p13, Susan Landay (1971).

[78]By collective consumption it is referred to resources which are provided by the state and 'collective consumed' such as basic services and infra-structures. [See Cuthbert (1985)]

[79]Castells (1977), p10. Giddens (1981) in this regard - and under his analysis of the 'theory of structuration' - distinguished between 'structure' and 'system' of a society; the latter -system - refers to the patterns of relationships between people in the temporality of day-to-day life - i.e.on a spontaneous local level - which according to him are bound together by the former - structure - in the form of the "longue durée" of institutions - i.e. on the universal level. Giddens deals mainly with the former - i.e. the analysis of institutions in regards with the production and reproduction of the social system. [p28]

[80]Castells (1977), p10. According to Castells, the notion of urban (as opposed to rural) belongs to the ideological dichotomy of traditional society/modern society. [*Ibid*, p15] Taking historical realities into account, we can easily deny this hypothesis. Also, such approach seems to suggest that societies enter into the process of development in systematic evolutionary stages towards unified ends - ex. from rural towards urban- an approach which is highly criticized. [See for example Giddens (1981), p21]

[81]Agnew *et al.* (1984).

the 'causes' of local problems which occur in cities -such as unemployment, family breakdown, *etc*.- transcend the city's geographical boundaries.[82] As he sees it, this contemporary situation is in deep contrast with, for example, feudal Europe where the city was socially and politically autonomous (as in Weber's analysis of European cities suggests[83]). Saunders thus argues that the city ceased to represent a significant social unit of organization in advanced industrial societies.[84] He says,

> "The city in contemporary capitalism is no longer the basis for human association (Weber), the focus of the division of labour (Durkheim), or the expression of a specific mode of production (Marx), in which case it is neither fruitful nor appropriate to study it in its own right."[85]

Saunders in this regard stresses the need to negate the importance of the city for the purpose of social analysis, and called instead for 'non-spatial' sociology. The reason for this is that the power of capitalist and centralized urbanization processes which have been increasingly dominating the world seems to deny the local level of society any significant impact on urban development. Therefore, while Castells (1977) stresses the term 'urban', as a connotation of social processes,[86] Saunders, on the other hand, argued that "social processes cannot be confined to particular locations."[87]

Briefly, social patterns have been regarded on two main levels: the local level as in the ecological approach, and the global level, which took two directions: one considers the city as a necessary outcome of social processes which occur on a universal level, and the other disregard the importance of the city, and stresses instead the universal (or 'non-spatial') qualities of these social processes. All positions have been fiercely criticized,[88] as each seems to ignore one part or the other of the formula. On the one hand, both local and global levels of social relationships always and only co-exist, and need to be considered simultaneously. On

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[82]Saunders (1985), p83.
[83]Landay (1972).
[84]Saunders (1985), p70.
[85]Saunders (1981),p13.
[86]Castells (1977), p236.
[87]Saunders (1981), p9.
[88]For a critical review see Cuthbert (1985).

the other hand, while Saunders' critique of considering the city in contemporary societies as a distinct social entity might as well be justified, however, we cannot ignore the fact that universal processes as such are generated, or at least realized in terms of concrete spatial structures on the local level. This has been particularly addressed in what has been called the 'locality debate', where the importance of spatial variation is stressed.[89] Locality here refers to the centrality of the idea of spatiality to social life; as Duncan and Savage (1991) argue, "it is impossible to understand universal processes without appreciating small scale social changes, given the inevitable spatiality of social life."[90] In addition, what this implies also is the recognition of the role of culture in urban development, which seems to have been totally overlooked in earlier approaches.

Therefore, spatial analysis (whether social or urban) needs to be undertaken in terms of all parts of the formula, local and global. This point seems to be well realized at present. Cuthbert (1985) expressed this point in his discussion of 'Urban Design'. He identified this concept between architecture, and urban planning. Architectural design deals with particular localities, while urban planning involves the allocation of resources in rather universal terms. Urban design would then accordingly imply the integration between the two dimensions. His discussion of Hong Kong led him to the conclusion that the source of urban design must spring from material conditions within society, and the human relations which these embody.[91] As he says,

> "Changes within the mode of production itself have effects on land use, spatial organisation and expression, ... and the design of urban space. These effects are not comprehensible in relation to each other without first referring back to the structure, rules of order and relationships which emanate from the social formation."[92]

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[89]See Duncan and Savage (1991).
[90]*Ibid*, p156.
[91]Hong Kong seems to provide a particularly good contemporary example of the effectiveness of spontaneous generative processes of development - or '*laisser-faire*' and 'positive non-interventionism' policies, as Cuthbert (1985) referred to them. In these terms, he says, "While a secure environment is required in order to extract benefits from fixed capital investment, an 'insecure' environment is needed for the purposes of speculation. On this basis, development control is both required for stability and resisted as potentially restrictive to the accumulation process itself." [*My emphasis*].
[92]*Ibid.*

Similarly, Susan Landay (1971) suggests in her discussion of concept of *ethnocity*[93] that the aim in the analysis of urban forms is for: 1) a consideration of 'organization of people' in narrower, more culture bound terms, and 2) a consideration of 'space' in broader, more extensive terms than the particular spatial setting. Both universal and specific factors need to be identified and thus taken into account.

But even then, it is not enough to look at these as entities. Pratt (1991) in this regard pointed to the importance of discourses (or practices) in the social analysis; as he says, "Simply to state that space or locality matters is not enough, what is crucial is which or whose spaces matter and what power relations are embedded in these particular discourses of space and locality."[94] What Pratt particularly refers to is the necessity of culture and ideology in the social analysis, which then connect and define the interaction between the various forces in the environment. A similar notion has been presented by Williams (1977) in his critical analysis of the Marxist concept of 'the base and the superstructure'.[95] Williams points out that Marx's concept implied that the superstructure is being determined and transformed by the base. Superstructure in this sense refers to the legal and political forms (on a global level) emerging through existing relations on the local level (the base). However, Williams (1977) argues that in the transition from Marx to Marxism, both the 'base' and the 'superstructure' have been abstracted, which lead to the separation of 'areas' of thought and activity.[96] These became treated as separate categories, where there was a loss of the whole social processes which connect between them. Further, this concept has been criticized as being mechanistic, where particularly the notions of culture (seen mainly as subjective and antimechanistic), and society (seen in contrast as an objective mechanical order) became confused.[97]

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[93]The theory of ethnocity according to Landay (1971) questions the value of using the city as a category of study in cross cultural situations. It argues that the geographical determinants of interaction do not necessarily correspond to the same social determinants of interaction for all culture.
[94]Pratt (1991), p264.
[95]See Williams (1977), pp 75-82.
[96]*Ibid*, p78.
[97]See Alexander (1990) for a critical analysis in this regard.

What is needed then is a method which would allow for the integration of all these together (i.e. social and and cultural, local and global) in terms of the actual processes, activities, and discourses. This is what I shall be dealing with in the next chapter.

Conclusion

In this chapter, a critical review of some theories of architecture was made. It has been shown how most of these theories fail to acknowledge the full implications of the concept of space as a continuum of entities, and a process which occur between these entities. This led to the conclusion that the essence of architecture is not in space, rather in concrete experience as determined by the physical environment and the social praxis (i.e. in ideology). It was argued that the built environment needs to be considered in terms of its elementary features, and the rules which determine there combination (or synthesis). The nature of these rules has been related to the various social processes which take place on various levels in the environment. The critical analysis revealed that there is a need for a method which puts together the various factors and processes responsible for the generation and/or experience of the built form. An attempt in this regard will be made in the next chapter.

Chapter 4

The Ideology of Urban Form:

'Concave' and 'Convex' Patterns

In this chapter, a method is introduced (referred to as the *'concave'* and *'convex'* model) which aims at illustrating the various aspects of the relationship between spatial and social patterns which have been discussed in the previous chapter. This method allows for the representation of the basic components, and the major methodological and phenomenological processes which take part in shaping the environment. The diagrammatic provisions of this method are intended to facilitate the understanding of the combination and sequence of the various operational forces. This method aims in particular at illustrating the fundamental consequences of the various patterns in terms of human-environment relationship. It will be argued that spatial concavity, not only in physical, but also in social and behavioural terms, is a necessary contingent towards an effective urban environment.

I. THE IDEOLOGY OF 'CONCAVE' AND 'CONVEX' PATTERNS[1]

The physical environment can be looked at in terms of two main parameters: 1) physical structures, or the various elements which constitute the environment, and 2) the spatial pattern (i.e. open space) resulting from the combination of these elements. The first relates in particular to interior concave structures, and the second ascribes exterior concavity which is defined between these structures. The main concern here is in regard to the process which leads between the two parameters (i.e. from 1 to 2), or to be more specific, in regard to the forces which define the nature of this process. Here, there is one main assumption: that *the nature of the the built environment is primarily related to the nature of causal interaction which occurs between its various constituent elements (whether these are physical or social).*[2]

Let's first try to summarize the basic arguments which have been put so far. As we have seen in the previous chapter, the study of open space involves identifying the rules which regulate and control urban development through its elementary constituents. These rules are related to social forces, which as we saw exist on two main levels: 1- inner (or local) forces, and 2- external (or global) forces. Inner (or internal) forces relate to actions and reactions to the immediate environment; i.e. the inner processes of interaction, the cumulation of which leads to what we refer to as 'culture'. External forces, on the other hand, are those which remain more or less independent of the particular local experience. The built environment then is the outcome of the synthesis of these forces as determined through the interactive processes between its various constituents (physical and social).

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[1]To the present knowledge of the author, the terms 'concave' and 'convex' as they are used here have never been referred to before. The use of these terms is common in spatial economics, where concavity and convexity refer to mathematical models. [See Schaible *et al.* (eds.) (1981), Tiel (1984)] Michel (1971) applied apparently similar diagrams in terms of human action and perception in interior spaces. Such uses however are not related in any way to the concepts introduced below.

[2]See the hypothesis, p11.

The discussion which follows will be structured in terms of binary oppositions. This is because, as it was concluded earlier, things can only be explained in terms of opposing conditions; as in *yin* and *yang*, or in the case of light which is revealed through the dust particles, a local entity is always attached to a global domain, and any physical object can only exist through its metaphysical content. It is therefore important before we progress that we recall some aspects duals, particularly the whole-part relationship which we discussed in Chapter 1. As it was mentioned, binary oppositions can be referred to on different levels: they can be parallels (or of similar contexts, such as the house in the city), or may have different contexts (physical and metaphysical, as in form and content). Also, they might presuppose each other, (the centre and the periphery, part and whole), or they might imply a dichotomy (old and new). The particular context in which these are used needs to be related to particular situations. It has also been referred to the difference between a continua and a dichotomy, which as we said is in the type of relationship between the opposing entities; in the case of a continua, relationships are internal, while a dichotomy implies external relationships between different entities, which at the same time impede interaction, or make such interaction difficult to occur. Below, we shall see how these notions can be used to explain the various processes which occur in the built environment.

The 'concave' and 'convex' model:

'Concave' and 'convex' patterns as they are discussed below are an attempt to offer a method for visual or diagrammatic representation of the various inter-related factors and processes which take part in shaping the environment. Here, some of the properties of concave and convex figures (particularly in terms of projection and reflection of light rays) are used as metaphors for explaining certain aspects of social interaction. These concepts will be presented as a series of points.[3]

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[3]All assumptions, propositions and illustrations which are made below are those of the author, unless stated otherwise. They are drawn from the arguments which have been discussed earlier in this thesis. The diagrams are metaphoric representations of forces and entities in a spatial environment. Reflection as they are used are not necessarily based on true angles, though they are derived from actual geometric principles.

1- Things or objects can only exist as opposites. The nature of any such opposite (or dual) depends upon its particular context. Here are examples which we shall refer to below:

part	-	whole
physical	-	metaphysical (cultural, social, etc.)
local	-	global
internal	-	external

2 - In a whole-part relationship, we note the following:

i. The 'part' and the 'whole' usually imply a continua; i.e. as in the case of the centre and the periphery, they (the 'part' and the 'whole') presuppose one another (fig. 4.1).

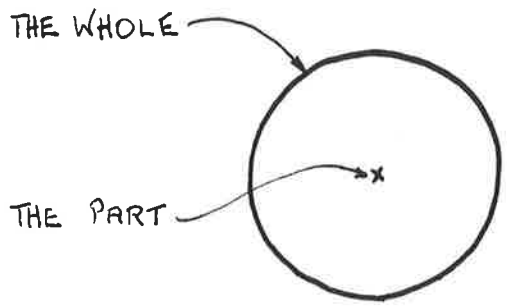

Fig. 4.1 The whole and the part.

ii. Any 'whole' is a combination of different parts. More precisely, the 'whole' is the cumulative construct of smaller wholes (fig. 4.2).

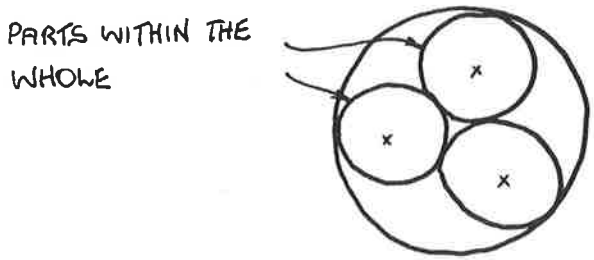

Fig. 4.2 Parts within the whole. Each part is related to a particular whole, together contributing to one greater whole.

3- The relationship between any two entities is determined by the causal interaction between the two. Here we can refer to two main types of relationship: *internal* relationships, and *external* relationships. the distinction between the two is as follows:

i. *Internal relationship* exists *within* any particular whole. For example, the relations within the family or the neighbourhood. The term 'internal' here can relate to either a) the relationship between the 'part' and the 'whole' - an object in relation to a class of objects, for example, or in social terms, the orientation of the individual within society, as defined by his/her ethnic origin, kinship, and so on (as in fig. 4.3 a) - or b) those relations between the parts (between members of a family, for example). In an internal relationship, the whole is determined by the causal forces of the part(s). The relationship between any two parts on the other hand is defined through the particular whole to which these parts belong. More specifically, the relationship between the two is determined by the *reflection* of the causal forces of the part(s) through the whole (see fig. 4.3 b).

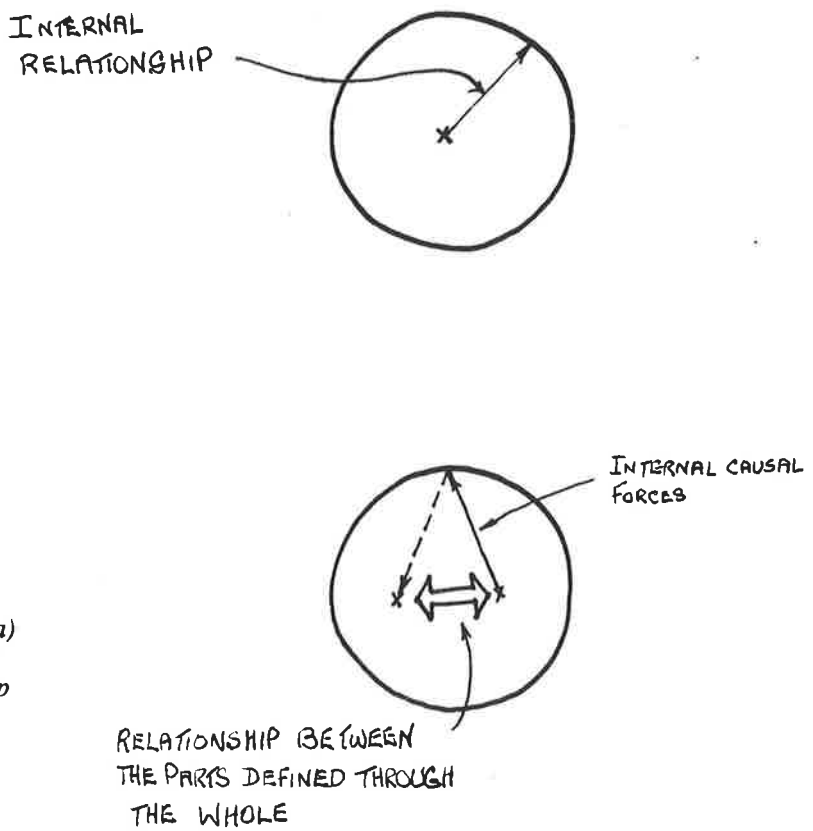

Fig. 4.3 Internal relationships. a) the relationship between the part and the whole. b) the relationship between two parts within the whole.

ii. *External relationship* exists between dichotomies (as for example in the relationship between the old and the new), or between the more or less separate or isolated entities (the individual in relation to central authority). External relationships as fig. 4.4 illustrates are characterized by the *projection* (as opposed to *reflection*) of the causal forces between the various entities. (See also fig. 1.2)

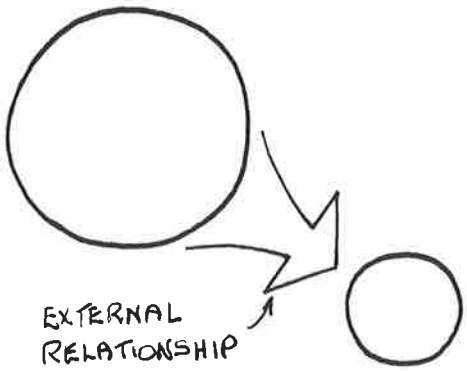

Fig. 4.4 External relationship.

4 - A **'concave'** pattern is that which contains (or encloses) in within its parts (fig. 4.5). The relationship between any two or more parts is determined through their causal interaction; as in fig. 4.3 above, this depends upon the *reflection* of causal forces through the 'whole'. Here are some of the characteristics of a concave relationship:

i. A concave pattern is a cumulative construct of the causal effects of the part(s) on the local level; i.e. *it evolved through direct interaction between its part(s)*. (Fig. 4.5)

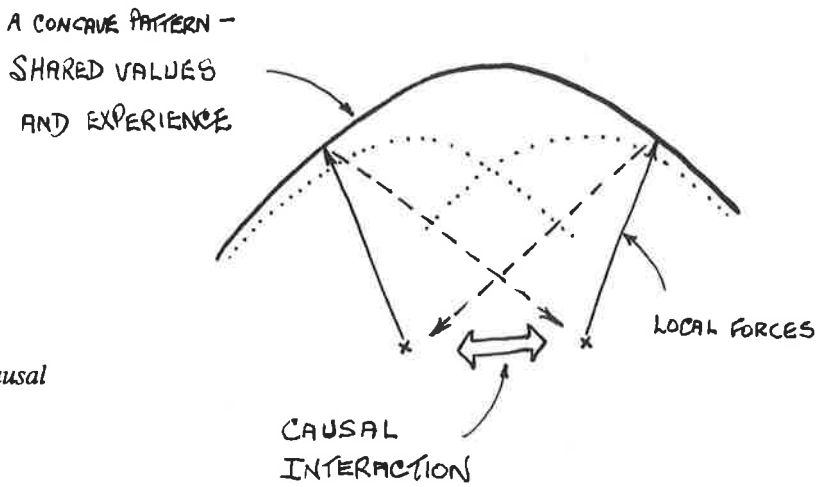

Fig. 4.5 A concave pattern: a cumulative construct of the causal forces of the parts.

ii. In a concave relationship causal forces start off from one point, and are reflected towards another from within. In other words, it is a convergent relationship, where forces are directed through responding to particular situations or conditions in the local domain. (Fig. 4.6)

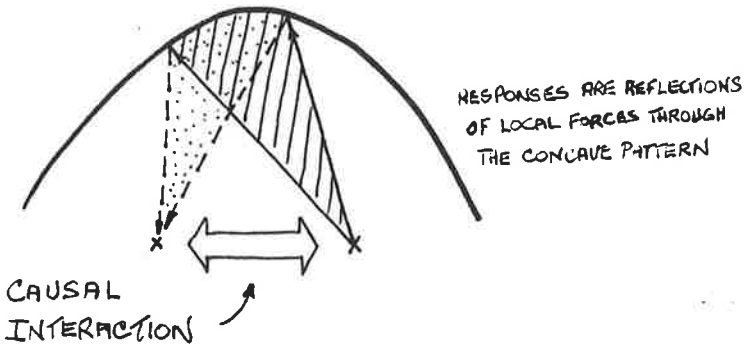

Fig. 4.6 A concave pattern of interaction.

iii. A concave relationship is characterized by a large area of interaction between the parts (see fig. 4.7). (It is assumed here that each point of reflection on the concave pattern which connects between any two parts is a point of causal interaction between the two - i.e. due to shared meanings, values or experiences.) This eventually leads to strong and influential causal relationship to develop between the two.

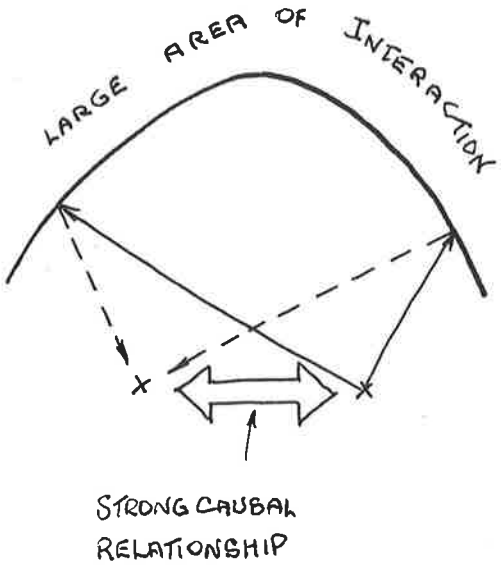

Fig. 4.7 Large area of interaction between the parts, leading to strong causal relationship between the two.

5- A **'convex'** pattern, on the other hand, is that which is external to another; i.e. *each evolved separately due to different processes and contexts*. Some of the characteristics of a convex pattern are as follows:

i. A convex relationship is an external relationship. It depends on power of domination; the 'bigger' and more powerful dominates and manipulates the others. (Fig. 4.8)

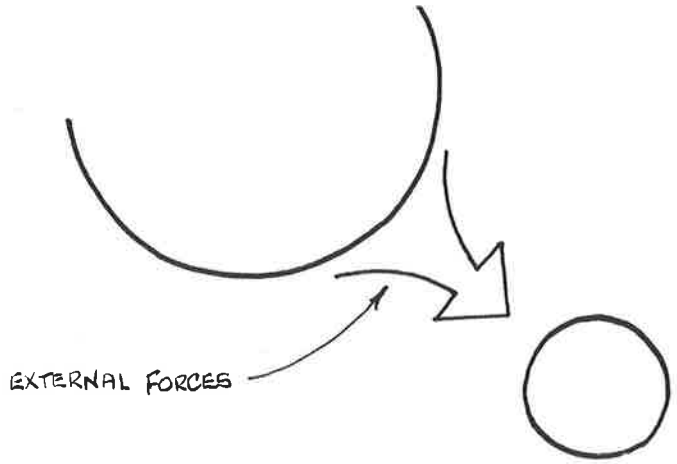

Fig.4.8 A convex relationship.

ii. A convex relationship is characterized by *projection* (as opposed to *reflection*) of causal forces from the convex structure. As we notice in fig. 4.9, causal forces are equally projected in all directions. Therefore, we can say that a convex relationship is characterized by *spatial indifference* on the part of the dominant structure towards outer surroundings.

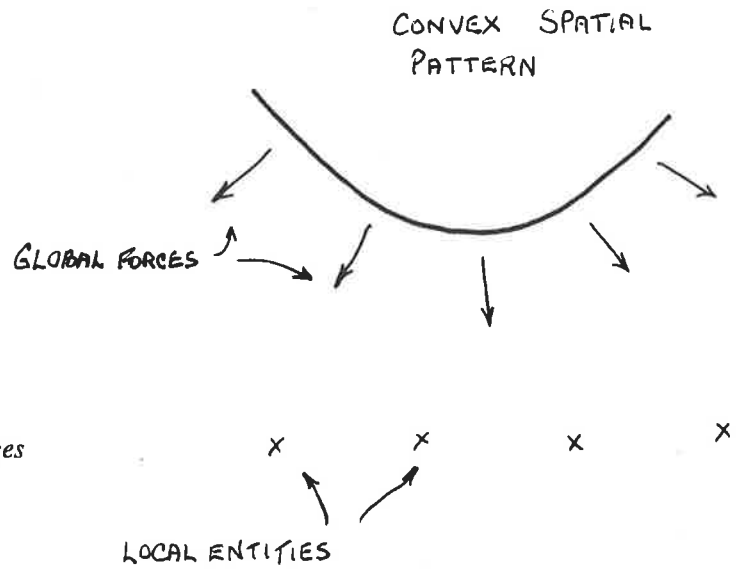

Fig. 4.9 Projection of causal forces from a convex pattern.

iii. It can be noted on the other hand that only a limited area on the convex pattern would reflect local forces of the part(s), while the majority of these forces will be diffused, and would therefore have little or no effect on local conditions (see fig. 4.10). In other words, in a convex pattern, any direct causal effects of any part on the local conditions surrounding that part is kept to an absolute minimum. What this also means is that the relationship between any two parts as defined by the convex structure is restricted to a *limited area of interaction*, leading as a result to *weak causal relationship to occur between the parts.*

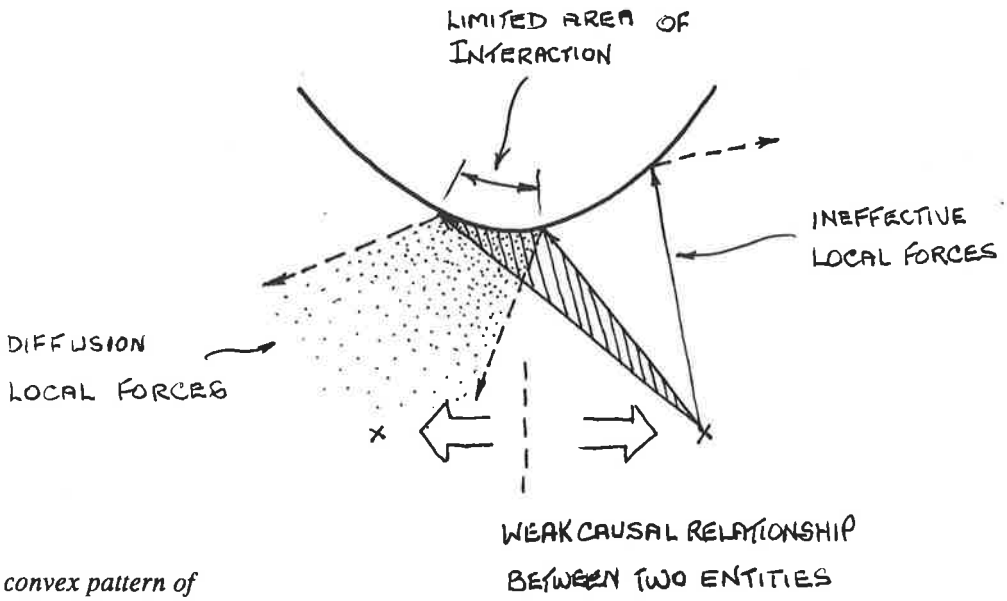

Fig. 4.10 A convex pattern of interaction.

So far, we defined the relationship between the 'whole' and the 'part', and outlined the characteristics of concave and convex patterns. Briefly, we can say that a concave relationship relates to the internal relationships within the whole, and a convex relationship relates to external relationships between different or unrelated entities. It was argued that the difference between concave and convex relationships is characterized in the difference between *reflection* and *projection* of causal forces. The effects of any of these is ultimately related to the causal interaction between the parts. Below I will build up upon this, and try to explain how these notions relate to the built environment.

6- The main purpose of architecture is the creation of physical concave structures (see fig. 4.11)

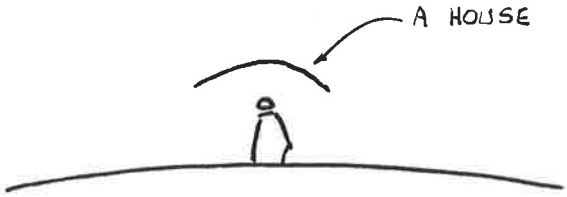

Fig. 4.11 Concave physical structure (such as a house).

7- The combination of any two or more concave structures (or buildings) results in external concavity (i.e. open space) in between these structures. (Fig. 4.10)

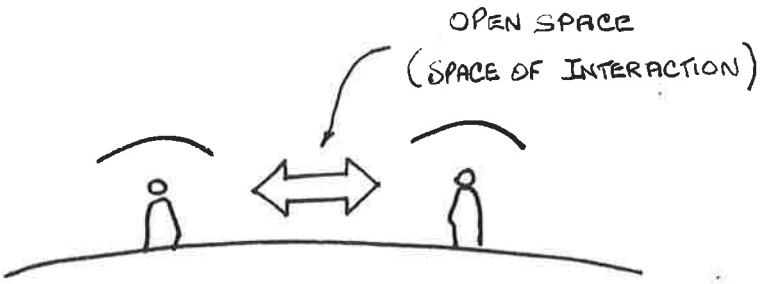

Fig. 4.12 Open space results from the combination of physical structures.

The nature of open space in the built environment is then determined by the particular relationship between any two or more physical structures; i.e. spatial or social relationships on the local level. This is dependant upon the nature of the causal forces which exist in the environment, and how they are applied (i.e. whether they are projected from above, or reflected from within). This can then take two extreme conditions (points 8 and 9).

8 - **i. Concave spatial pattern**: The concave pattern of any entity represents the collective history or (subjective) experience of that entity (i.e. culture). As we already mentioned, this can either relate to an object and the class of objects to which it belongs, or to the relationship between form and content. a concave spatial pattern depends as we saw on causal action. It is the cumulative construct of forces which are generated by the part(s). (Fig. 4.13)

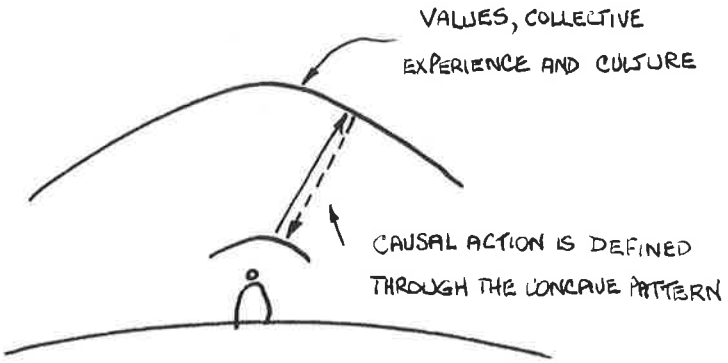

Fig. 4.13 A concave spatial pattern.

ii. In a concave pattern of interaction, inner relationships between any two or more parts are diverse, and strong, due to the wide area of interaction between them. In other words, the social bond between the two parts is magnified through (cultural) values, beliefs, and practices, which are shared between the two, and which relate them to their environment. This ultimately leads to an 'effective' open space in between. (Fig. 4.14)

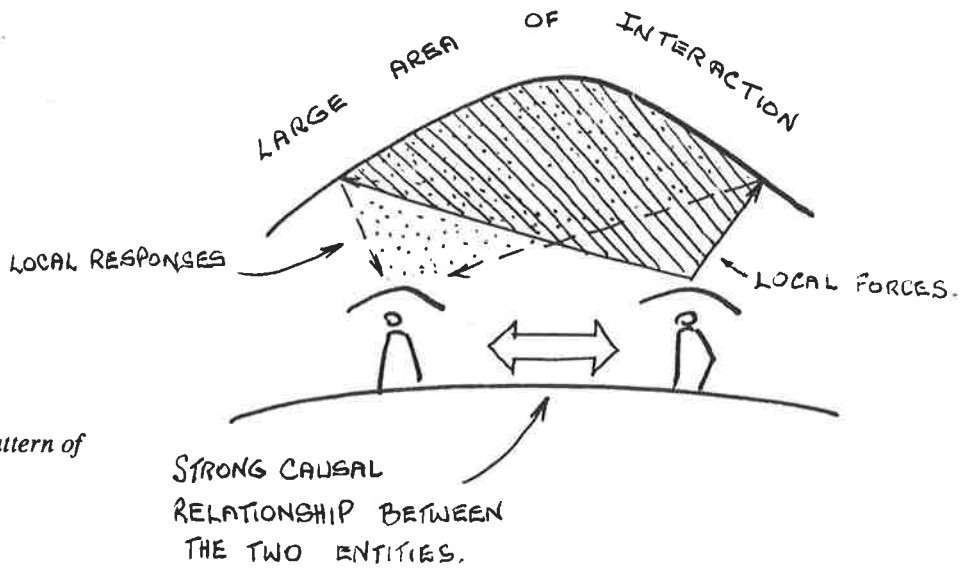

Fig. 4.14 Concave pattern of interaction.

9 - **i. Convex spatial pattern:** this is where external relationships dominate between local and global levels. More specifically, a convex spatial pattern implies that causal forces and decisions are projected and/or imposed on the part(s) from the whole (in the form of central authority, for example). (Fig. 4.15)

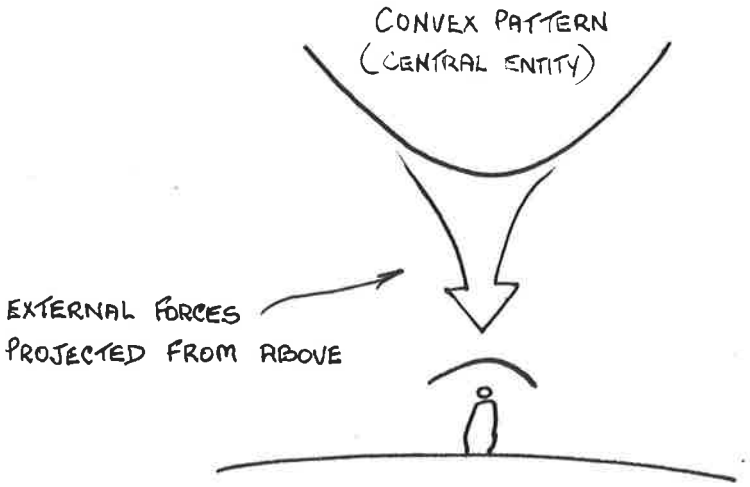

Fig. 4.15 A convex spatial pattern.

ii. In a convex pattern of interaction, inner relationship and causal interaction between any two parts or more remain limited, being only restricted to certain areas on the convex pattern (fig. 4.16). Instead, causal forces are projected from an external entity. This results in weak social bond, or a polarity between any two parts, and therefore, an 'ineffective' open space between the two.

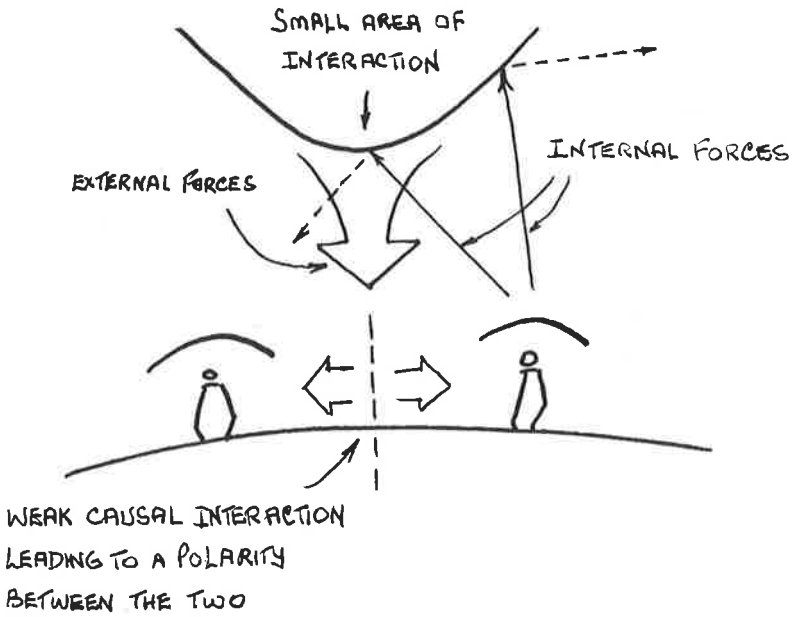

Fig. 4.16 Convex pattern of interaction.

10- Any situation is a synthesis of both concave and convex spatial patterns. Here, one or the other might dominate according to the nature of the socio-cultural processes which take place in any particular situation. The diagrams in the following figures show a few possibilities.

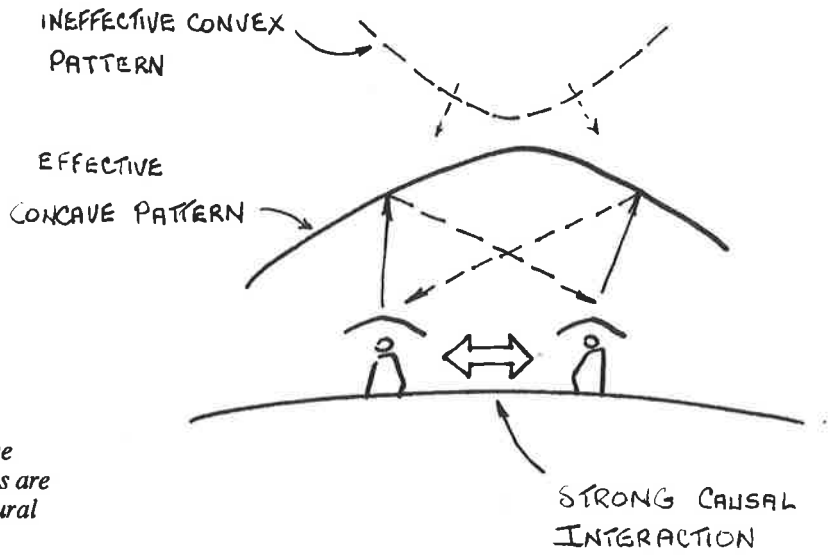

Fig. 4. 17 Dominant concave pattern. Local spatial patterns are reflections of social and cultural characteristics. Interaction is maximum, leading to an 'effective' open space environment.

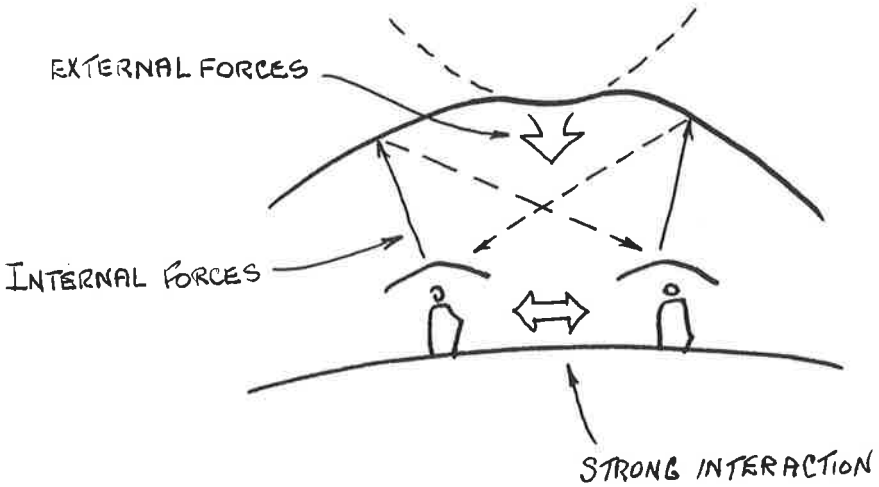

Fig. 4.18 Both concave and convex patterns are effective.

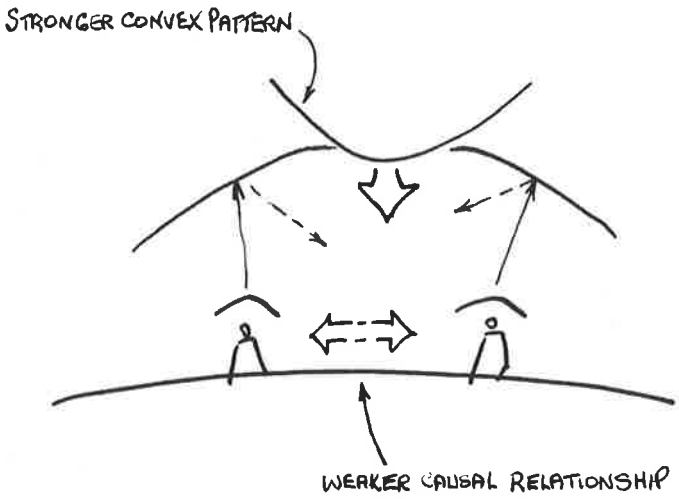

Fig. 4.19 More dominant convex pattern, causing a cleavage to exist between the two concave patterns. This leads to weakening the relationship between the two parts.

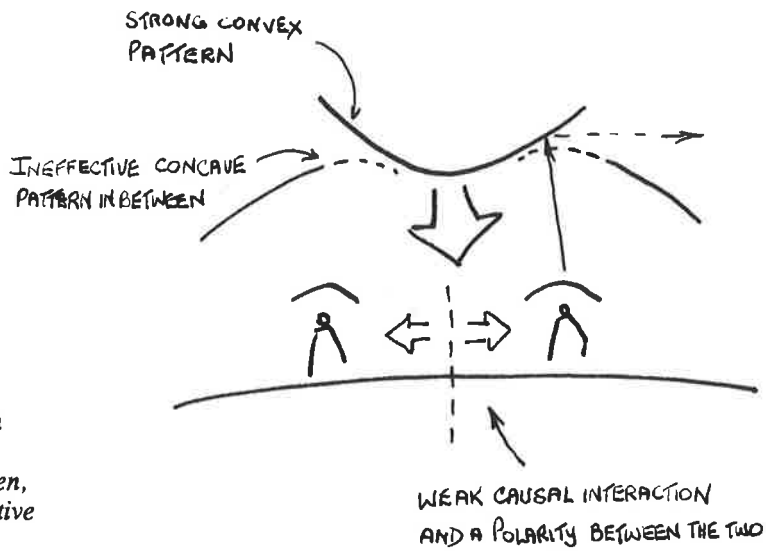

Fig. 4.20 Diminishing concave pattern, and a more dominant convex pattern. Polarity between the two local entities, therefore weak social interaction in between, leading accordingly to an ineffective open space environment.

From the above, we note that an 'effective' open space between any two entities depends upon the existence of an effective concave spatial pattern of interaction between the two. This includes more control on the local level, and less power on the global level. The term 'effective' here means an environment which is responsive to physical (such as climatic) and socio-cultural conditions which are dominant. In this sense, an effective environment is related to the level of complexity in causal interaction between its various constituents and

entities. As we saw in in Chapter 2 in relation to the notion of cultural evolution, more complexity and diversity of relationships in any environment leads towards more stable and secure environment. Adversely, limited relationships and interactions lead to insecurity, and instability. It is interesting to note that what is true for a natural environment (a forest or a sand dune), can also be true for the built environment, and the social life which inhabit this environment.

The 'concave' and 'convex' model as it is presented above aims in essence at 'deconstructing' the various elements, entities, forces and processes which take part in shaping the environment, in order to understand their influence. There are a number of implications that this model has which we shall be referring to in the following pages. Before we move on to the next section, I would like to draw upon one particular implication, which is in terms of the relationship between society and culture.

As we saw in the previous chapter, the various approaches to the built environment took in the past various directions, but they can be characterized under two main trends: architectural, and social. In relation to architectural approaches, whether these are formal (or aesthetic), semiotic, or phenomenological, it was concluded that they were in general terms limited to a 'synchronic' viewpoint, which means that they have more or less been devoid from any reference to praxis, or 'ideology'. In other words, architecture was looked upon in terms of entities; it was observed, rather than experienced. Social approaches, on the other hand, seem to have taken similar, but opposite direction; they were mainly orientated towards global, rather than local entities. Even where the importance of both local and global entities was recognized, the process which joins between the two (i.e. from local to global, or *vice versa*) was as we have seen largely overlooked. In general terms, we can say that what most of these approaches, both architectural and social, seem share is their disregard to the cultural factor, and its role in shaping the environment.

It might be best here to briefly refer to Marx's concept of the 'base' and the 'superstructure'.[4] Here, both local (the 'base') and global ('superstructure') have been recognized. The 'base' in Marxist tradition is related to the economic structure of society, the foundation on which rises a legal and political 'superstructure'. In Marx's words, "The mode of production of material life conditions the social, political and intellectual life process in general."[5] Moreover, "With the change of the economic foundation the entire immense superstructure is more or less rapidly transformed."[6] At first instant, it seems as if the 'base' and 'superstructure' resemble a 'concave' spatial pattern, as identified in fig. 4.13.

However, and as far as Williams (1977) argument goes, in the transformation from Marx to Marxism, both the 'base' and 'superstructure' became projected as analytical categories. Here, the original process of 'superstructure' being determined by the 'base' was altered, and the 'superstructure' became abstracted as an entity, which took priority over the whole social material processes to which it should be related. In other words, it became based upon the projection of social control; i.e. a 'convex' spatial pattern, as fig. 4.15 illustrates.

These topics are very deep, and the space here does not allow for their examination in detail. Briefly, we can say that the analysis of these concepts took different forms, and most criticism seems to concentrate on later stages, where what was originally meant to developed through generative processes became idealistic instead, and thus projected (or enforced) upon society. However, It seems to me that the problem here lies far deeper, and it is essentially related to the fact that there seems to be little (if any) distinction in the above analysis between what is cultural, and what is social. The term 'superstructure' seems to have referred to both. It is here that the 'concave' and 'convex' model has an advantage.

According to the 'concave' and 'convex' model, culture and society (that is, on the global level) are essentially opposites. Culture takes the form of a concave pattern (as in the points 4 and 8 above), while society is in the form of a convex pattern (points 5 and 9).

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[4]See Williams (1977), pp75-82.
[5]Quoted in Williams (1977), p75.
[6]*Ibid.*

Accordingly, the role of culture is essentially in binding or bringing people together through shared values and experiences. Here, culture is the means as well as the outcome of local interaction, which is allowed through the process of reflection of inner causal forces. Society (that is, global society) according to this model has an opposite effect; it differentiates people, and separates between them by defining their roles. Forces here are external, and are projected on people with little or no reference to their particular needs or demands. This takes the form of social control through the imposition of rules and regulations on society. However, while many approaches seem to stress on the determining factor of these external forces, they are only transformed into spatial forms, and therefore into cultural patterns, through inner processes and responses (this has been discussed in Chapter 2 in relation to the relationship between climate and culture). Therefore, global or universal forces cannot be considered divorced from the concrete local processes which take place, and at the same time, to realize the difference between cultural and social processes is in these terms important.

Much more can be said here, but the main point is that rather than the rigid classification of society in terms of local or/and global entities ('base' and 'superstructure', or in terms of subjective-objective dichotomy, as other studies seem to present it[7]), it is the processes which take place which are important, and here, the cultural dimension is intrinsic to any such analysis. Culture here is seen as distinct (and to some extent, autonomous) from other social factors. In other words, there needs to be a distinction between cultural practices and institutions, and those which are prescribed through a central entity. Not that each should be looked at as a separate entity, but that the process which takes place in between need to be fully appreciated. The 'concave' and 'convex' model shows this very clearly. Again, the emphasis here is placed not on the shapes or forms which follow from applying certain forces, but on the causal interaction on the local level. Accordingly, images, values or ideas are not particularly important in themselves, but in the fact that they facilitate, and are

[7]See Alexander (1990), pp 1-27 for a critical review of such approaches.

themselves the product of social interaction. In these terms, any abstraction based on ideals contradicts this basic factor, and is thus totally invalid.

There seem to be many more implications, some of which we shall refer to in the remaining parts of this thesis. In case there is any misunderstanding, let me here stress that the 'concave' and 'convex' model is not a new 'ideology' - whatever this might mean - or any kind of terminology which can be implemented in any way or another. It is merely a way of representing the various elements, forces and processes in visual terms - very much similar to sketch analysis common in architectural practice. The ultimate aim of this model is to show how different forces and processes lead to different degrees of interaction. Below I will try to illustrate how these notions apply in terms of human-environment relationship.

II. MODES OF HUMAN-ENVIRONMENT RELATIONSHIP

Human-environment relationship is a two-way relationship in which human acts create environments, and environments thereafter indicate and/or allow for particular forms of behaviour. In the previous pages, we dealt with the first portion in this relationship. It was argued that the built environment involves the conglomeration and synthesis of basic elements which constitute the built environment in accordance with particular processes or ideologies (identified in terms of concave and convex patterns). The second portion relates to the impact that the *built* environment has on human behaviour and attitude; i.e. the question of environmental determination. This in other words goes into the implications of concave and/or convex ideologies on, as we shall see below, concave and/or convex patterns of interaction in the existing environment. In regard with what has been mentioned earlier, it will be argued that the question of determination in the built environment can only be looked at in terms of an interactive process, which is arrived at through historical experience.

This line of research has traditionally been the concern of environmental semiotics.[8] *Semiology* is the theory of signs. It is, as Jencks describes it, "the theory of the way anything can take on meaning."[9] It was developed originally within the field of linguistics through such pioneers as Ferdinand de Saussure (1959), Charles Sanders Pierce (1974), Claude Lévi-Strauss, and others.[10] Charles Jencks (1980) reports that it was first introduced into architectural theory in the late fifties in relation to "crisis of meaning" in regard to the 'International Style'.[11] It soon developed into what is referred to as 'behavioural semiotics'.[12] As Linda Groat (1983) explains, this approach is mainly directed towards understanding "the way in which an entire range of cognitive responses - perceptual, intellectual, emotional, *etc*.- are generated by exposure to the built form."[13]

These topics are far too specialized, and go beyond the scope of this thesis. The intention here will thus be limited to two main aspects; first, the basic mechanisms and processes which mediate behaviour in the environment will be briefly discussed. It will be shown that, similar to social processes, human-environment relationships depend upon reflection and/or projection of environmental images from *concave* and/or *convex* patterns (here imitating *conscious* and *subconscious* behaviour of the mind). Secondly, the role of meaning in the built environment will be critically analyzed. As was the case for 'space' (particularly in relation to experience and knowledge), it will be argued that meaning is not intrinsic to human behaviour; on the contrary, it will be shown that the more we have to unfold meaning in our everyday practices, the less efficient is our relationship with such environment. The repercussions of these notions will be elaborated below.

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[8]See for example Preziosi (1979), Jencks *et al.* (1980), Broadbent *et al.* (1980).
[9]Jencks *et al.* (1980), p7.
[10]Broadbent (1980), p1-3, Jencks (1980), p7.
[11]Jencks (1980), p8.
[12]Eco (1980),p18.
[13]Groat (1983), p29. See also Hershberger (1980), p21, Norberg-Schultz (1965), Lévi-Strauss (1963), Maini (1984), Rapoport (1982).

Perception of the built environment:

Man learns while he sees,
and what he learns
influences what he sees.

E T Hall

In one of his publications, the Swiss architect Le Corbusier is noted to have expressed his appreciation of Muslim house design in a coastal hill-side in Algiers.[14] Its 'excellence' according to him was contributed to by the manner in which the houses of the Qasabah were disposed in tiers, an arrangement which, as he thought, would afford each of the residents a view of Algiers Bay. However, Le Corbusier's assumption largely misconceived the fact that Muslims were forbidden to take advantage of such a situation, which would inevitably involve the impropriety of overlooking the domestic activities taking place on the flat roof or private outdoor areas below. These houses were inward looking, and the siting of the houses followed the terrain, rather than the desire for a view to the sea - which would very much appeal to the western experience. While both views might appear to be valid in different contexts, they are rather contradictory.

The problem of perception is dominated by a number of assumptions; first, the role of the sense organs; "Things only exist because the senses perceiving them exist", as Ibn Khaldûn writes.[15] Secondly, the role of the mind; "No material entity is seen as it is in reality. It's image is coloured by the perceptive apparatus of the mind."[16] Thirdly, and following from there, the role of the individual; "we are not blank sheets of paper passively

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[14] See Wheatly (1976). Wheatly referred to Le Corbusier's *Manière de penser l'urbanisme* (Paris, Editions Gonthier, 1966), p139.
[15] Ibn Khaldûn, p364. In these terms, Hildebrand emphasized on the sense of touch as the basis of the perceptual experience, that is, "either, with the hand, or with the eye."[in Van de Van (1987), p89] Others realized the role of all senses, including hearing, smelling; all take part in the process, through which images and impressions of environmental surroundings are made. [Hall (1969)]
[16]Minai (1984), p121.

receiving impressions, but rather, active agents, able to direct and detect our perceptions."[17] Each of these contributes to one stage towards the formation of the total environmental image.

Perception then a purposeful process of obtaining information from and about one's surroundings. We tend to see what *we* want to see, or in many cases, what we were *taught* to look at. Therefore, there is no one way to see things[18] (see illust. 3), neither can there be an absolute judgement of the impact that any particular environment can have on individuals.[19] Moreover, it was proven through field experiments that mental images that people have of the environment and what the environment actually is do not necessarily contribute to the same thing.[20] Le Corbusier's example above is a good illustration of this fact.

On what does this depend? There are three major categories can be specified here: 1- Historical experience and language, 2- cultural background, and 3- present motivational state.[21] The first two are related to what some refer to as the subjective experience (or memory attributions).[22] Accordingly, the perceptual image can be very different between any two different people. However, and as Hall realized, "the distance between the perceptual worlds of two people of the same culture is certainly less than that between two people of different cultures."[23] He further says,

> "Space perception is not only a matter of what can be perceived but what can be *screened out*. People brought up in different

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[17]Coren *et al.* (1990).
[18]Experiments in perception and optical illusion clearly illustrate this fact. The drawing of "My Wife and my Mother-in-law" by Hill, or Rubin's famous figure are evident examples in this regard, as in illust. 3.
[19]Hesselgren (1975).
[20] See for example Lowenthal and Riel (1980), p85, in Broadbent *et al.* Also, Rapoport (1977) argues that "the individual and the environment form a system and their mutual interaction is determined partly by the physical environment and other people or, the individual's perception and interpretation of them and their significance." [p26] Similarly, Peter Smith (1979) notes that the aesthetic phenomenon has no existence outside the principle of relationships; the relationship of the object to the beholder, and the relationship of that object to its surroundings. Smith argues that "aesthetic value is not an innate quality of objects, but an interpretation imposed by the mind." [p9] This means that two different people looking at the same physical object can carry away very different impressions.
[21]Smith (1979).
[22]See Kelley *et al.* (1990).
[23]Hall (1969), p65.

> cultures learn as children, without ever knowing that they done so, to screen out one type of information while paying close attention to another."[24]

Similarly, Saarinen (1976) says,

> "Perception then depends on more than the stimulus present and the capabilities of the sense organs. It also varies with the individual's past experiences and present 'set' or attitude acting through values, needs, memories, moods, social circumstances, and expectations."[25]

Bellantonio (1985) in this regard pointed to the fact that identifying perception is far from being simple cause and effect approach, but rather a two-way relationship, where an observer, or interpreter, may as well be regarded as 'participator', as the mere presence of the so-called observer can alter the state of events and conditions in that environment.[26] Paul Wheatly (1976) expressed this point by referring to the social dimension in the perceptual experience. Based upon Eickelman's study of the Moroccan town of Bja'd, he noted that the perception of space is related to the aspects of social solidarity or *qarâbah* which exists within the cluster or the *darb* (i.e. alley, pl. *durûb*) As will be noted in the following chapter, Muslim cities are organized into quarters, where each contains people with social proximity deriving from familial ties or kinship. Therefore, the *darb* (alley) becomes an extension of the *qarâbah* (familial ties). Wheatly then mentioned that the differentiation of Bja'd into *durûb* can be very different between different people, according to their association with the various social groups within the city, and therefore, their social experience. In other words, the perceptual experience is largely dependant upon the social involvement of the individual within any particular place.

What then is the role of the physical environment in the process, and how does it affect our behavioural responses? To answer these questions, it is important to refer to some of the

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[24]Hall (1969), p43.
[25]Saarinen (1976), p7.
[26]Bellantonio (1985) referred to findings in physics to illustrate this point, where the simple one-way causality of Newtonian mechanics was found unsatisfactory. Objective realities which were considered independent of human consciousness were nevertheless found to be affected in certain cases by the immediate surrounding, such as the presencing of an observer.

mechanisms which take part in the process, particularly, the role played by the unconscious mind.

Complexity, information, and meaning:

The process of perception of the socio-physical environment is the result of the flow of information. Information exist in differences (or complexity) that one sees in a given pattern. Complexity is in these terms both needed and desired, otherwise, uniformity can lead to boredom due to the lack of stimulus in the existing patterns[27] (see illusts. 4 and 5). Differences then are realized in the form of cues, signs, and symbols which are coded in the environment. Symbolization, as Lévi-Strauss (1963) defined it, is a process in which homologous structures of different natures are related to one another.[28] It is where physical realities are attached to their contextual meaning or value, or where form is related to its content.

There are many concepts and theories which deal with these issues. Saussure's scheme is particularly useful; according to Broadbent (1980), Saussure saw everything in pairs, such as *language* (i.e. "a shared public thing agreed by social contract") and *speech* (i.e. "one's personal use of language"); the *signifier* (i.e. physical or spatial patterns) and *signified* (i.e. concepts, ideas, and meanings which the signifier stands for); also, particularly important here is Saussure's distinction between *synchronic* and *diachronic* adaptive mechanisms;[29] the former relates to spatial structure or complexity in a given pattern at any moment in time, while the latter ascribes adaptive mechanisms over time (or the cultural experience). As fig. 4.21 illustrates, symbolization in these terms can be looked at in terms of a concave pattern between the physical form (the synchronic pattern), and what it signifies (diachronic pattern).

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[27]Pyron (1971) in this regard made an experimental study which illustrated the importance of diversity in spatial patterns on human perceptual responses. Similarly, Chein (1954) related the lack of stimuli in the environment as one of the effects leading to the state of neurasthenia.

[28]Levi-Strauss (1963), p201. Norberg-Schultz (1965) defined symbolization as the "representation of a state of affairs in another medium by means of structural similarity." [p57]

[29]Saussure's use of diachronic and synchronic related particularly to linguistics. See Broadbent *et al.* (1980a), De Long (1980).

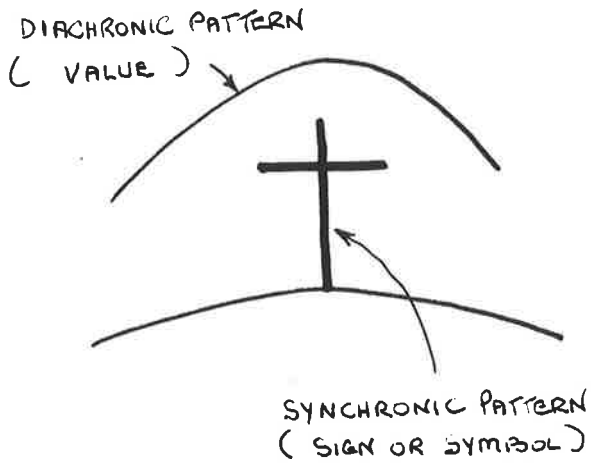

Fig. 4.21 Symbolization.

We mentioned earlier that perception is the result of a purposeful process of interaction with the environment. However, it seems to be highly acknowledged that this is only one part of a process which is mostly unintentional. Taking into account the diversity and complexity which exist in any environment, such unintentional (or subconscious) processes becomes self evident. Depending on how closely we search, the environment is information-rich, and endlessly variable. The sensory abilities of most organisms on the other hand, no matter how sophisticated they are, remain limited in their ability to appreciate the full range of environmental complexity.[30] This then requires the existence of an adaptive mechanism to serve as a mediator between the environment and the organism, which would enable that organism to survive in the face of such complexity. As it has been referred to above, such adaptive mechanism can be referred to in terms of a concave pattern.

The perceptual process then involves the relationship between particular instants and one's knowledge of these instants. A concave pattern refers to the latter, which as it was mentioned represents a collective construct of the past. Therefore, the process of perception is where the individual and the object(s) perceived, each form a part of the concave pattern which relates them to each other (Fig. 4.22). What this means is that the synchronic

[30]De Long (1980), p258.

relationship between the individual and the surrounding environment at any moment in time is dependant upon the diachronic mechanism of the two (i.e. culture and past histories). An example which might help clarify this point is the perception of a cube, which was referred to by Tschumi (1990). Even though we are only able to see one corner at a time from the inside, we still are able to perceive the room as cube. This phenomenon Tschumi attributed to the "operation of reason", or according to others, it is the "screening" ability of the mind, which allows us to form an image from the least information that we are able to obtain at any given moment in time.

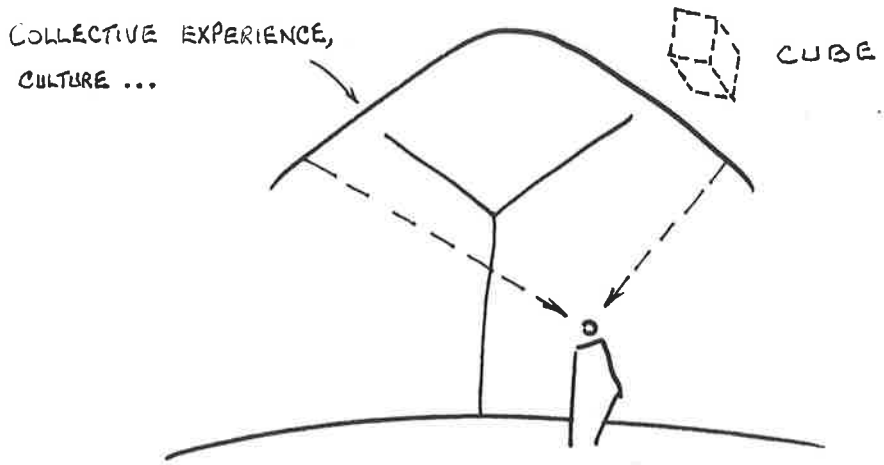

Fig. 4.22 Screening ability of the (subconscious) mind; reflection of local structures through the concave pattern.

In this way, such concave pattern allows us to identify and focus the various perceptions that we encounter, by them being reflected from a particular point (i.e. particular memory or experience) on this concave pattern. All past experience, shapes or figures, in their finest details are coded in our minds so that when we face them again, we need only realize the overall abstract figure in order to recognize them. This we referred to earlier in the notion of relativity, or as Lévi-Strauss referred to it, it is the *classification* of images towards imposing

order on the environment.[31] Therefore, perception relates to the reflection of the environmental image through the concave pattern, but this only happens after these images have been classified, 'screened out', and focused towards our needs and intentions at the time. Lynch's approach is one example in this direction, where *the image of the city* (which is the title of his work) was classified in terms of five basic features: paths, nodes, edges, districts, and landmarks.

Let us reside at this point a little further. In his autobiographical notes, Albert Einstein recites one of his early experiences as a child of 4 or 5 years, when his father showed him a compass. Einstein says that the determined behaviour of the needle made a deep lasting impression upon him.[32] Such an experience as he says made him 'wonder', and the reason for this as he writes in his notes, is that it did not at all fit into the nature of usual events, those which could pass by unnoticed, similar to infinite others. Einstein writes,

> "What man sees before him from infancy causes no reaction of this kind; he is not surprised over the falling bodies, concerning wind and rain, nor concerning the moon or about the fact that the moon does not fall down, nor concerning the differences between living and non-living matter."[33]

As Einstein explains, the routines of everyday living are thus deeply settled into us, that they find their place into the unconscious world of concepts which were accumulated through the past, and therefore, they are readily accepted. Furthermore, he says, "it is not dubious that our thinking goes on for the most part without use of signs (words) and beyond that to a considerable degree unconsciously."[34] When the flow of events in our everyday living stays within what we consider as normal, then there are no such odd reactions. Only when we experience something which comes into conflict with the world of concepts which is sufficiently fixed into us, or which are coded in our subconscious, that we start to wonder. This 'wonder' is the motive for knowledge, and for change. But behind our ability to

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[31]In De Long (1980), p260. E. Peron *et al.* (1990) referred in this regard to the effects of "familiarity" in recalling places.
[32]In Schilpp (1970), p9.
[33]*Ibid.*
[34]*Ibid.*

wonder, there is a reserve bank of all our previous experience, knowledge and practices; i.e. the concave pattern. These are the assets which allow all other experiences.[35]

Therefore, complexity is a socio-cultural dimension, and this is largely related to the subconscious processes of the mind as determined through the cultural orientation of the individual.[36] Familiar scenes, no matter how complex they might appear, tend to be realized as simpler than the unfamiliar.[37] In these terms, though richness and complexity of the environment might not be fully appreciated by us simply being present (maybe not even in part), the various elements which constitute that environment do exist, and their effect mainly on our subconscious is significant. As Ehrenzweig (1967) noted in this regard, "superficially insignificant or accidental looking detail may well carry the most important unconscious symbolism."[38] All this depends on the cultural orientation of the individual, and also, on the ability of the environment to delineate that culture -i.e. on the level to which the concave pattern of the individual is aligned with that of the environment (as in fig. 4.23 tries to illustrate). This ultimately affects the ability of the individual to respond to that environment.

What emerges from the above is twofold; we note that perception is a purposeful means of obtaining information from about one's surroundings on the one hand, and on the other hand, it depends on simplification and abstraction. In what might appear to be a paradox, the realization of meaning, is obtained through elimination of differences (i.e. information, or meaning). Intentional processes, in other words, are based upon unintentional mechanisms.

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[35]Lévi-Strauss (1968) expressed this notion in terms of human use of language, where the structure of words, or grammar, remains beyond the immediate concern of the individual, and therefore is largely digested and used subconsciously.

[36]We have already mentioned in chapter one that the perceptual process occurs on two main stages; the first stage is related to orientation, as such, it is related to reality, with all its "richness and complexity". [Rapoport (1982), p207] The second stage is related to as cognition. Cognition is concerned with investigating differences, not as much in complex details, rather in abstract value; [Lynch (1965)] i.e. realizing the Gestalt figure of the object perceived, where the physical order is reduced to it most basic or elementary components. Perception as Lang puts it is where cognition and reality meet. [Lang (1987), p85] Therefore, we first perceive the specific reality as we tend to see it, and then, this reality is matched against the 'class' of concepts to which it is related.

[37]See Norberg-Schultz (1965), p45.

[38]Ehrenzweig (1967), p21.

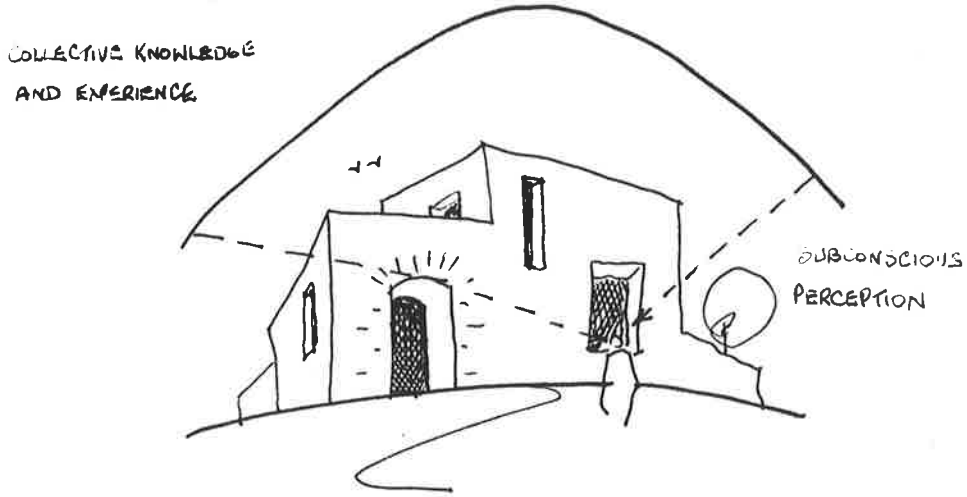

Fig. 4.23 Perception of the environment is largely an unconscious process of obtaining information, where the individual and the environment become united under one concave pattern; i.e. meanings and experiences which are shared between the two.

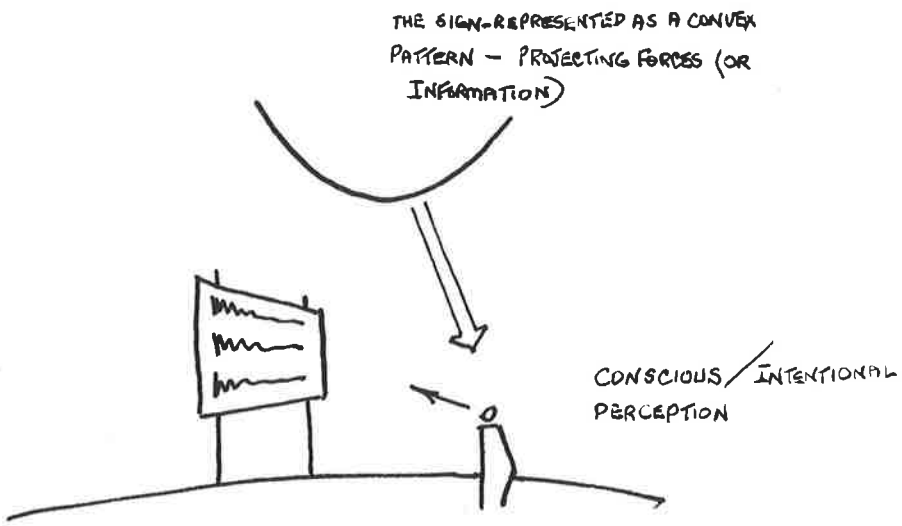

Fig. 4.24 Intentional perception: interpretation of the information by the mind through the projection of information from a convex pattern.

Therefore, we can say that the difference between intentional and unintentional perceptions is in the difference between concave and convex patterns. Intentional perception is the search for the unknown; i.e. for a new reality or experience which is not yet included in the concave pattern (Fig. 4.24). It therefore results in the projection of information from an external, or convex source. On the other hand, unintentional perception is a result of instant reflection of the object or environment through the concave pattern containing our experiences. The process of perception is then a dialectical process of interaction between concave and convex patterns. In one instance, a concave pattern focuses all experiences and information towards our particular needs and demands. On the other hand, a convex pattern, which like a light globe or a convex mirror, gives away information or data indiscriminately to whoever is there to receive it, but only where particular action or effort is made by the individual.

Freud (1901-1960) was among the first to suggest that behaviour is determined by both conscious and unconscious intentions.[39] This as we mentioned above then means that as we direct our attention towards a certain objective, other aspects within the environment are still digested unconsciously, and are likely to affect us.[40] As one scholar puts it, "behaviour can be influenced by the categorical nature of a stimulus presented below some objectively measured threshold of conscious awareness."[41] We will discuss this further below.

Behaviour and response to environmental surroundings:

What we will try to do here is mainly to analyze how behaviour in the built environment can be understood as based upon the perceptual processes described above, and what this means in terms of human environment relationship.

The basic assumption here is defined by Allan Wicker (1972) follows:[42]

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[39]See Mind&Language Vol. 5, No. 1, Spring 1990, p2.

[40]Clinical experiments of the mind strongly support this concept. For example, brain damaged or blindsighted patients reveal that they continue to be able to make accurate responses to visual stimuli, even though they are not aware of actually seeing. [Young and de Haan (1990)] This suggests that subconscious awareness on a more or less subjective level is going underway, whether or not this is directed by conscious intention.

[41]*Ibid*,p4.

[42]Allan Wicker (1972) p265.

> "The immediate environment is a significant determinant of human behaviour: Most of the time, most people behave in ways that are compatible with, or adaptive to the setting they occupy."

Also, Lang says,

> "A change in the environment results in changes in social behaviour."

The effects of the built environment on human behaviour has been conceived in different ways. Lang referred to the 'deterministic' approach, in which it is argued that the environment controls people's behaviour, even though they are apparently acting out of free will.[43] Other tendencies to associate meaning with function;[44] as Eco puts it, "it communicates the function to be fulfilled."[45] In addition, it is assumed that the built environment indicates what *type* of behaviour to happen in space and time; it indicates to particular ways of doing things.[46] The act of shopping, for example, is essentially the same for a traditional *bâzaar* in Damascus, or a multi-storey Western style shopping centre in Europe. However, no one can claim that the experience is the same in the two environments. Similarly, we shall see in the following chapter how recent housing patterns in the Middle East largely affected social patterns of behaviour of new urban societies of the area. This is why, when discussing the environment in terms of human behaviour, we are more concerned with '*HOW*' things are done, rather than simply the question of '*WHAT*' things are done. The '*HOW*' of things relates to their particular nature in relation to place; in contrast, '*WHAT*' seems to relate more to universal properties and attitudes. At any time both questions need to be asked, and the answer can only be made in relation to the particular place where the question was put.

The concept of environmental determinism, however, is a very controversial one. "We should avoid making fetish of the spatial", Urry (1985) pointed out,[47] as neither temporal nor spatial relations themselves produce particular effects. For example, time 'flows' as it

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[43]Lang (1987), p100.
[44] see for example Eco (1980), Preziosi (1979), p79, Rapoport (1982), p15, Lang (1987), p81.
[45] Eco (1980), p13. Lang in this regard pointed towards demand or invitational qualities of the environment, where as an example, a mail box invites a mailing letter. [p81]
[46]Hillier and Hanson (1984), p199.
[47]Urry (1985), p28.

remains independent from the sequence of events which occur through it. Likewise, space as we noted is independent of the activities which take place within its folds.[48]

What we need to understand here is *how* does the environment affect behaviour, and *what* in particular causes such behaviour. Lang (1987) stressed in this regard social variables, such as similarity of values of the population, rather than architectural factors as major determinants of social patterns.[49] Similarly, Wicker noted that the spatial arrangements within the built environment is, a ".. network of social roles and norms, of expectations and rules of proper behaviour."[50] The individual's perception of the environment, and his or her responsive behaviour, is achieved through a learning process whether active or passive - by being a member of a certain group or society.[51] Wicker pointed to such theories as 'social exchange theory' - based on Barker (1968) - where not only does the setting determine the pattern of behaviour, but also, "..the selection of settings to be entered by an individual [is based upon] ... his ability and/or desire to perform the standing pattern of behaviour."[52] Therefore, human-environment relationships depend upon a communication process, which is based upon one's knowledge and expectations of that environment. Similar to perception, behaviour then is information based, and is highly related to our previous knowledge of that environment and of the roles which need to be performed;[53] i.e. the concave pattern.

However, there seems to be a controversy here. We saw earlier on that perception depends upon the reduction of differences in objects or the spatial patterns which are perceived. This *reduction of differences* means at the same time *reduction of information* (which more or less represent historical and relational facts about the structure, and which as we said are the outcome of a cumulative construct of interaction with the environment), at the same time that differences (i.e. information) are the cause of action.[54] Therefore, in the

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[48]Sayer (1985).
[49]Lang (1987), p61.
[50]Wicker (1972), p267.
[51]*Ibid*, p268.
[52]Barker (1968), p273.
[53]See Amedeo and York (1990).
[54]See Lang (1987), p101, Dretske (1990).

perceptual process, differences (historical and relational), which hold meaning (or value) are *screened off* from the explanation of the object's behaviour.[55] What this means is that causal relations do not exist in meanings or value of the structure, but in its concrete texture or form.[56] While meaning does help explain current attitudes and behaviour towards a particular structure or environment, they are not intrinsic in explaining the present action or behaviour. This is not negating the value and importance of meaning, but as it was the case for space, meaning remains unintentional, and its power, being secluded from the contingent facts which relate to it, is causally ineffective.[57]

This seems to be highly contradictory with some approaches, where meaning is considered as "one of the most important determinants of behaviour".[58] However, many others did realized the danger of this situation. This latter position is represented generally in terms of the disruption that any intentional or projected meanings can cause. Instead, the efficiency of the built environment is regarded in terms of causing minimum intentional behaviour in response to spatial arrangement. As De Long (1985) puts it, to acquire a stable system, the organism must relinquish a considerable proportion of its discriminatory potential; "Survival within the synchronic context [i.e. immediate spatial arrangement at a particular point in time] thus appears to be *as much a function of ignorance as of knowledge*."[59]

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[55]Dretske (1990), p8.

[56]For an elaborate discussion of this point, see Frederick Dretske (1990) "Does Meaning Matter?" He mentioned the example of fakes reproduction of original pieces (such as a Picasso painting or $100 bill), where the fakes, if the are very good, can cause similar reactions, no matter where they came from, or what their original historical process, meaning or real value is. This he argued means that meanings or value do not supervene on intrinsic physical properties. [pp5-17]

[57]As Lao Tzu wrote in this regard, [Chapter 48]

> "The way to learn is to assimilate.
> The way to know is to forget."

Therefore, consistent with the philosophy of the non-being, to forget is regarded as a constructive action, as a person will not be inhibited by his/her knowledge in any creative acts. See Chang (1956), p70.

[58]Osgood *et al.* (1967), quoted in Hershberger (1980), p21. See also Linda Groat (1983) where she argues that meaning needs to be more involved in the architectural process, where the interpretation of the building, either by users or architects, is taken as a primary consideration in the initial design process. Also, Harrison *et al.* (1980), who stresses upon the importance of meaning in the urban image, although an experiment that they undergone seems to suggest otherwise, where residents where found to be rather insensitive to their urban environment. [p180] Bonta (1979) in his Architecture and its interpretation also seem to isolate between what is 'cultural reality', and 'physical reality', making the former, not the latter, as his subject matter. [p14]

[59]De Long (1985), p262 [*my emphasis*].

To sum up the arguments above, we can say that behaviour is the result of conscious and unconscious perception. The transmission of meaning through differences occurs only in the former, while the causal powers which can trigger behaviour are mainly centred in the latter. To put it in another way, we can arguably say that behaviour occurs only where a concave pattern is predominant. Arguably because while a concave pattern allows for immediate reaction to immediate conditions, the causes of action might as well be external factors or unknown intentions; i.e. they involve the search for meaning, where a convex pattern penetrates through the concave pattern, in order to project such meaning or information. This would involve higher degrees of consciousness to occur on the part of the individual[60] However, where such awareness increases (recalling Einstein's example above), this situation would lead to too many 'wonders' to occur, and to some extent, it would result in limiting the capability of the individual to handle the various situations.[61] As it was mentioned before, we cannot at the same time, experience, and think that we experience.[62] This is a situation where the convex pattern penetrates deep, thus causing a cleavage or a dichotomy to occur between the individuals needs, and environmental responses to such needs (fig. 4.25).

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[60]There have been many arguments in relation to the effects of modern consciousness on human societies. See for example Schneiderman (1988), Zijderveld (1970), and Roszak (1969). These argue that human consciousness underwent a qualitative change in the transition from traditional to industrial society, which is attributed to the lowering of the quality of life through the tendency towards abstraction, universality, away from the subjective values and qualities, leading to a 'spiritual void', and alienation from one's surroundings'. [Dube (1988), p508] Probably one extreme case is Spengler's, as explained by Schneiderman (1988). Spengler argued that the increase of consciousness can lead to an intensification of cruelty no less than to constructive social change.[p30] Spengler in these terms seems to have reached the extreme, and went ahead to equate the growth of consciousness, and the crystallization of a distinctive civilization to "unmistakable symptoms of a terminal process, the approaching end of an evolutionary cycle." [Schneiderman (1988), p30]

[61]The situation as such is often attributed to such notions as 'mental fatigue', 'information overload', 'overstimulation', or as Toffler (1970) referred to it, 'mental bombardment', where the information which a person needs to handle at any one moment exceeds that which can be attainable by the mind. What follows then in relation to individuals or groups in such a situation, as Toffler realized, is modes of irrational behaviour, disorientation, distortion of the perceived images, and therefore breakdown of the various aspects of human performance. [p306-315]

[62]See Tschumi (1990).

Fig. 4.25 A dichotomy between the individual and the environment is related to lower responsiveness of the environment, and higher consciousness on the part of the individual. Here, external forces (such as climate) are more dominant than the environments ability to respond to these forces.

Therefore, we can say that a concave pattern of behaviour is that which evolves through direct reaction to the environment, in response to particular needs. Convex pattern of behaviour occurs where a mediator is required. The role of the environment in the process is through symbols which give cues for behaviour in accordance with culturally identifiable messages (or those which are coded within a concave pattern). This is what Rapoport (1987) referred to as the "cultural responsiveness" of the built environment,[63] or the 'affordance' of the environment according to Lang (1987).[64] This means that the effectiveness of a certain environment in communicating behaviour lies in its ability to reflect that culture. For example, some Westerners complain about the maze-like labyrinth streets and alleys of traditional Islamic cities, where one is most likely to lose track, while this would obviously not be the case for people living in these cities (or in that particular street or quarter). The largely homogeneous, open, indifferentiated western-type suburbs in new cities would also cause

[63]Rapoport (1987).
[64]Jon Lang (1987) referred to Gibson's concept of the 'affordance' of the built environment. which he defined as "those of its properties that enable it to be used in a particular way by a particular species or an individual member of that species."[p81]

similar problems in relation to orientation for strangers - this will be discussed in detail in the following chapter. Furthermore, a concave interaction with the built environment is where that environment readily responds to its users' demands in terms of shelter from rain, shading from the sun, and so on. On the contrary, where such aspects are not afforded by the environment, particular consciousness and concern would then arise towards finding alternatives.

Conclusion

In this chapter, the notions of concavity and convexity have been introduced for analyzing the spatial environment in terms of its socio-cultural characteristics. Concave patterns or relationships depend upon locality, and therefore reflect local needs in terms of spatial patterns. Convex relationships, on the other hand, result in the projection of universal patterns, attitudes, and properties. It was argued that any situation is a particular combination between both concave and convex patterns. This then affects the particular configuration of physical elements in the environment, which ultimately has its effect on human actions and inter-action in that environment. In the following chapter, I shall discuss these notions as they apply to the built housing environment in the Middle East.

Chapter 5

Culture and the Built Housing Environment: The Case of the Middle East[1]

So far, we have seen that the nature of the urban environment depends on the nature of the causal forces which are responsible for it. It has been argued that the 'quality' of such environment depends primarily upon the ability of the various entities within any environment to affect each others, and interact causally. This primarily depends upon the cultural context in any particular environment, which reflects local forces in the form of spatial (i.e. physical and behavioural) patterns.

Accordingly, the study of the spatial configuration of the urban environment in the cultural context implies two main themes: firstly, a network of meanings, values, and beliefs

[1]The term 'Middle East' was invented by the (US) American naval historian A.T. Mahan about the year 1900, and was adopted worldwide during World War 1. It usually refers to the area between Morocco in the west, to Afghanistan and Pakistan in the East. [Wickens (1976), p1; Blake *et al.* (1987)] The term 'Near East' also prevails, which refers to the area between the Nile and the Euphrates (Egypt, Syria, Arabia and Iraq). We will mainly be concerned here with the area known today as 'the Arab world', which lies between Morocco and Iraq, although reference to other areas might occasionally occur.

which exists within any one society, and which is drawn from the collective histories and shared experiences of individuals within any such society (i.e. a *diachronic* mechanism or pattern). Secondly, that these can be invoked to account for specific spatial and behavioural (i.e. *synchronic*) patterns.[2] This, as we have seen, may be represented in terms of a concave pattern of relationship between the two (see Fig. 5.1). This chapter will study the extent to which this applies to both traditional and contemporary housing environments in the Middle East.

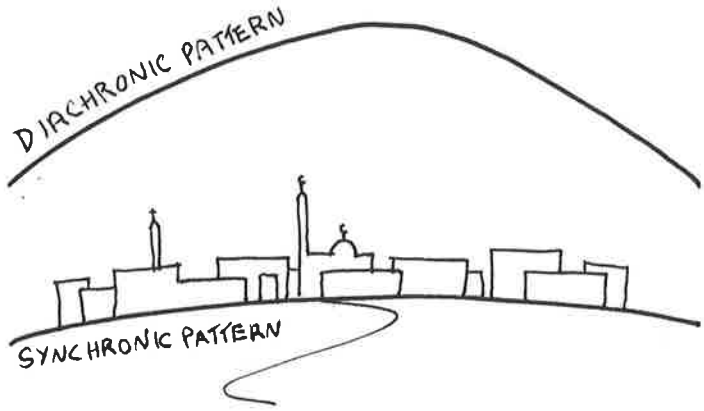

Fig. 5.1 The city in the cultural context.

The case of the Middle East offers the possibility to investigate two extreme conditions. The traditional urban environment - which will be discussed first under the title 'the Islamic city' - demonstrates the effect of a largely *concave* pattern of interaction between people and their built environment. Here, the urban form is being generated progressively in response to particular needs, based upon direct interaction between the various individuals and entities in the local environment. By contrast, we note that *convex* social pattern led to contemporary cities, where spatial forms have been largely manipulated through centralized apparatus, as we shall see in the second part of this chapter. The study of the two cases will reveal some of the dimensions and prospects of both patterns. This chapter concludes by stressing the need

[2]Agnew *et al.* (1984), p1.

for the continuation of tradition in the built environment, which is the subject of the following and last chapter.

I. THE ISLAMIC CITY[3]

A highly dense, seemingly chaotic environment is the impression that any aerial photograph of a traditional Middle Eastern city conveys. Often, there is no clear or ordered structure which is noticeable, rather, a maze of labyrinth streets, courts and houses scattered randomly around a few major continuous roads which cut through the city. Fez, Tunis, Herat, Damascus, Cairo, Baghdad or others, all seem to share these features (see illust. 6).

The study of Islamic cities in the past have taken a number of directions.[4] Some studies search into the effect of Islam as a religion on the nature of these cities. However, this approach can be misleading, as it leads to the expectation of certain ideals directly manifested in social and physical realities. De Planhol offers one articulation of this problem:

> "Irregularity and anarchy seem to be the most striking qualities of Islamic cities. The effect of Islam is essentially negative. It substitutes for a solid unified collectivity, a shifting and inorganic assemblage of districts; it walls off and devides up the face of the city. By a truly remarkable paradox this religion that inculcates an ideal of city life leads directly to a negation of urban order."[5]

Such is a simplistic view which ignores the process through which the physical structure of the city has evolved. As we shall see below, Islam as a religion can offer little explanation of the nature of these cities, or for the fact that very different structures evolved in other areas which are identified as Islamic (cities of south-east Asia, for example, or others which lie

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[3]The term 'Islamic city' has been adopted by scholars in order to refer to the significant effect that Islam as a religion had on the creation and development of these cities. Although many warn against the narrow conception of such terms, [Lapidus (1973), Arkoun (1986), Ibrahim (1982), Benet (1963)] it seems to have been largely endorsed; similarities in terms of geographic features and social structure over the majority of the area which once was dominated by Islam prove to have been highly significant in enhancing a homogeneous culture. Therefore, Lapidus (1969) referred to it as "diversity within unity". [p48] Similarly, Grabar (1969) stated that cultures of the area resemble a "pan-Islamic urban order". [in Lapidus, p26] This is the position adopted in this thesis.
[4]See Landay (1971).
[5]*Ibid*, p304.

within different climatic or topographic features often have significantly varied urban pattern than the general or typical patterns described above). But where Islam is taken as an ideological order which sets the rules rather than dictates certain patterns, we can start to understand how and why these cities developed in the way they did. In these terms, physical as well as socio-cultural factors, all take part in defining the nature of the development of these cities. As Mushtaqur Rahman (1987) says in this regard,

> "Muslim world is rooted in religion and environments. Religion provides cultural rules, and environments furnish matter and energy for subsistence. The human task is just to channel the environmental resources to accomplish religious and physiological requisites."[6]

Therefore, the understanding of these structures can only be achieved through an understanding of the rules according to which they developed. These rules relate to the physical (climatic) and socio-cultural values which are dominant within any particular region at any particular time. As we shall see below, the impact of Islam on these cities is characterized in a *laisser-faire* principle, which allowed for the direct response to immediate situations and circumstances in terms of rules applied in a highly spontaneous manner. The particular urban form or spatial structure remains in these terms inconceivable at the time such rules were set.

Structure and constituents of the Islamic city:

There is a tendency to distinguish between three main types of traditional Islamic cities; spontaneous (*villes spontanées*), created (*villes créées*), and transformed cities.[7] The first refers to those cities which have grown over time, which covers most of traditional Islamic settlements, such as Tunis and Fez. The second (*villes créées*) relates to those which have been founded by deliberate act of a ruler or dynasty, such as the Round City of Baghdad and Sâmarrâ, and the camps (or *amsâr*) which were inhabited by the Muslim conquerors, as in the

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[6]Ruhman (1987), p7.
[7]See for example Alsayyad, N (1986), p18; Elisséeff, N. (1980), pp 90,91.

cases of Kûfah, Basrah and Fustât.[8] Transformed cities on the other hand are those which were inherited from earlier civilizations, particularly those of Hellenistic origin such as Jerusalem in Palestine, Herat in Afghanistan, Damascus and Aleppo in Syria, and others. (see illust. 7)

However, it has been pointed out that such distinction is more apparent than real. As Hourani realized, as soon as a city comes into existence, it has to become 'spontaneous' in order to be able to survive.[9] Political power cannot maintain cities, but only socio-economic activities which allow the inhabitants to survive even after the dynasty or the state vanishes (as was the case in the Round City of Baghdad[10] and in Sâmarrâ[11]). Similarly, the transformation of cities inherited from earlier periods in history proves to have undergone spontaneous (or organic) development, as particularly is the case in Aleppo and Damascus (we shall discuss this later on in this chapter). Therefore, in spite of different origins, Islamic cities seem to have shared common ideologies, which have in due course led to a highly common and identical character to develop in most traditional cities in the region.

Below, I will make a critical analysis of the ideologies which led to these structures. Firstly, we shall identify the basic elements which constitute the Islamic city, and then search into the rules which directed and controlled their development, and how these where applied. In particular, we shall note that these ideologies were based upon a process of direct and continuous causal interaction between local entities in the environment.

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[8]The creation of these camp cities is often regarded as one of the reasons for the increase in urbanization prompted by Islam. However, not always were these virgin cities, as often new cities were adjacent to existing ones; Cairo of the Fatimids (tenth century) for example took in Fustat (seventh century) before being enclosed in the greater wall of Saladin. See Abu Lughod, J. (1971), Lapidus, I. (1969), Briggs (1974).

[9]Hourani (1970), p10.

[10]The Round City of Baghdad (also called *Madinat al-Salâm*- meaning 'the city of peace') was built by the *Caliph Al-Mansur* A.D.762 as the capital of the Abbasid dynasty. Its abandonment later on by the *Caliph Al-Mu'tasim* (who transferred his court to Sâmarrâ) led to its decay, followed by its total destruction by the Mongols in A.D. 1258. However, we find that its suburbs of Kharkh and Khadhimiyeh, which provided the core of the city's populace, survived until today. These later ones are spontaneous settlements characterized by irregularity. See Warren and Fethi (1982), pp26-29; Lassner, J. (1970).

[11]As the Round City of Baghdad, Sâmarrâ was created as a political capital. Today it remains in ruins. See Rogers, J.M. (1970).

Constituents of the Islamic city:

There are a number of approaches which try to identify the basic constituents of the Islamic city. A typical Islamic city is constituted according to Hourani (1970) of five major elements: the citadel; the palace or the royal compound; a central urban spine which includes religious and learning institutions, mosques, and markets; then there are the residential quarters; and lastly, the outer quarters or suburbs, which contained recent immigrants, or commercial caravans waiting to be admitted in.[12] Not all of these are found in all cities, neither are they exclusive to Islamic cities, as any or all such elements can be found in any Roman or medieval town - although the specific arrangements and functions can be very different.[13] Other studies specify four main constituents as the central mosque, *Dâr-Al'Imâra* or the governor palace, the *hâra* or the residential quarter, and the *bâzaar*.[14] Illust. 8 shows some of these approaches.

It is noted, however, that Islamic traditional settlements did not highly depend upon segregation in terms of land use.[15] This should not mean that the various uses were distributed at random, nor that there was a total absence of specialization,[16] but it was common to find homes, workshops and retail outlets, if not within the same structure, within the same *hâra*, or the same *darb* (alley).[17] Therefore, it seems conceivable for our purpose to consider the Islamic city as a combination of two main features, or units; these are (1) residential quarters,[18] which exist or which evolved around (2) a 'spine' of central public facilities, which include the mosque, and the *sûqs* or *bâzzars* . We shall further restrict the arguments to the level of the residential quarter, or the *hâra*. Again, we have to keep in mind

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[12]Hourani (1970), p21-23.
[13]Alsayyad, N. (1986).
[14]Alsayyad (1987).
[15]Abu Lughod (1971), p62.
[16]On the contrary, as Abu Lughod (1971) noted, concentration and specialization did exist, such as the separation of noxious industrial uses, transportation terminals, as well as commercial functions and market zones.[p63]
[17]*Ibid*, p64.
[18]Raymond pointed out to some of the different names in which residential quarters are known under different names: *hâra* in Cairo and Damascus; *mahalla* in Aleppo and Baghdad; *hawma* in the Maghrib. [Raymond (1984), p14]

that these quarters were neither only used for housing, nor that housing was exclusive to these quarters. Raymond for example noted that residential houses also existed in central areas around the main mosque, or the *bâzaar*, especially those of the rich merchants, or the *bourgeoisie*.[19]

Residential quarters were connected with the principal network of town streets encompassing the city centre by a hierarchical organization of smaller streets and open spaces often ending in *culs-de-sac* (or *tarîq ghair nâfid*).[20] This complex irregular street pattern was oriented to and from the central spine (see illust. 9). Quarters then made up what Raymond referred to as 'pockets', which are open only towards the centre of the town[21] (these structures seem to have outstanding similarity to patterns of Chaos - we can in particular refer here to Barnsley Fern as in illust. 10 - and as we shall see, the generic principles in the two cases also prove to be very similar). Each such quarter housed people from similar ethnic origins, or according to kinship or clan, tribe, occupation and so forth.[22] The basic elementary unit in the quarter was the family house[23]: an extremely private inward looking structure centred around an open courtyard (illust. 11).

As from here, the spatial organization of the Islamic city and the structure and morphology of its open space of can be analyzed in terms of two main themes: first, the courtyard concept of inward house design, leading to an inward oriented city; secondly, the system of codes and rules which regulate and control the conglomeration of these houses or units in the urban whole. In the Islamic city, this latter theme was characterized by the lack of municipal administration for the city as a whole, which was thus substituted by local urban autonomy on the level of each quarter - i.e. direct causal interaction between local entities.[24]

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[19]See Raymond (1984), p69. The central quarters tended to be wealthier than others towards the periphery of city borders. However, as Lapidus (1984) noted, there was no class divisions of society in terms of these quarters, or in other words, no class came to dominate a district. Quarters were communities of both rich and poor. See Lapidus (1984), p87.
[20]See Eisenstadt (1987) *et al.* p216, Hakim, p64.
[21]Raymond (1984), p14.
[22]Greenshields (1980), Lapidus (1969, 1973).
[23]The Arabic word for house is *sakan* or *maskan*, which is related to the word *sakinah*, meaning peacefulness and tranquillity. [Ismail,A (1972)] See also Briggs (1974), pp145-164.
[24]Eisenstadt *et al.* (1987), p216.

Both themes - the courtyard house design, and the absence of urban autonomy - led to highly condensed structures within the various sectors of the quarters, connected by irregular narrow - even squeezed to the limit! - streets and alleys. Very few squares or open spaces in the Western sense existed.[25] There was the *sâha* , which is a simple widening of the street acting as a distributing node directing pedestrian or animal movement. The only other public open space inside city boundaries is the *sahn*, or the mosque's courtyard, whose spaciousness stands in large contrast with the condensed character of other parts of the city (illust. 12).

The courtyard house design:

The courtyard house design is an ancient concept which goes back to early Egyptian, Mesopotamian, and Graeco-Roman traditions (see illust. 13).[26] Its adoption and use throughout such a wide range of climatic domains seems to suggest that the main reason behind it is cultural, in terms of the security and privacy that it allows for.[27] When referring to the Middle East, however, one cannot ignore its extreme efficiency in terms of the hot arid climate which characterises the region.[28] Overall, the courtyard house design in the Middle East proves to have had secured the optimum solution, combining both social characteristics and climatic requirements of the region in a highly efficient and workable manner.

Let's first take a brief look at these structures from a climatic point of view. We note that the courtyard concept, which was adopted and developed in the Middle East, refers to a wide range of elements and spatial arrangements within the built environment whose collective impact effectively leads towards a more pleasant and livable micro-climatic

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[25]Alsayyad *et al.* (1987).

[26]Archeological discoveries show great similarity between old methods in planning and construction used in the ancient past and traditional ones still common at present, therefore, a continuation of tradition over a millenia. [See Crawford (1988)]

[27]See for example Rapoport (1969).

[28] The arid land occupies most of the Middle East, and unless for major riverines, few desert oases and a few highlands (which are the centres of ancient civilizations of Egypt and Mesopotamia), it is lifeless desert. In some instances, the annual rainfall does not exceed 50-100 mm, which comes in a brief intense fashion, causing floods and destruction. High solar radiation, large diurnal and seasonal range is another character of the arid zone. Wind storms occur regularly, and with very few vegetation and high erosive soil, clouds of dust travelling at high speed are usual scenes. Deserts cover at least half the surface of the region. See Abdulak *et al.* (1973), Fathy (1986), Stead (1980).

environment (illust. 14). The courtyard itself has been referred to as 'the reservoir of coolness',[29] as the dusty hot air passes over it, leaving a cushion of cool air below (illust. 15). This depends on its proportions in terms of width and height.[30] Almost all rooms and interior spaces in the house were located around a central courtyard, thus providing them with light, ventilation and access. This served the vital aspect of privacy by minimizing openings to the outside, which at the same time allowed for the sharing of walls between the neighbouring residences resulting in high building densities, and thus minimum exposure of exterior walls to outside conditions (illust. 16). What followed is the minimizing the width of the street, which served well in terms of providing shade for exterior walls of the houses, thus turning these streets and alleys into pleasant cool areas free from the effects of wind and dust. This effect was further increased by shading devices or cantilevered excesses on both sides of the street in the upper floors, which often connected both sides together, therefore completely closing the street to the sky[31] (see illusts. 17 and 18). We find therefore that the whole city was a close knit of built-in areas, penetrated by the net of winding streets and alleys in an irregular organic pattern.

One important point for consideration in these areas is the high level of interaction between outdoor and indoor spaces. Through appropriate orientation in terms of the sun, the correlation between closed, open and semi-open spaces, and through the correct placement of openings, it was possible to manipulate the divergence in air pressure between the different spaces, and therefore breezes of cool air streamed through these settings, as is the case in the *takhtabûsh*[32] (illust. 19). The use of evaporative cooling systems was profound; water fountains or the *salsabîl* helped to humidify the air in the courtyard, and keeping the cool

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[29]See Fathy (1986), p62-63, Kirken (1983). Mathias (1988) made an analysis of how the courtyard can be incorporated in today's planning and design strategies in Western residential areas.

[30] It is noticed incidentally that the height of the courtyard increases with the increase in air temperature, which thus increases its efficiency; i.e. the hotter the area, the higher is the courtyard. [Stead (1980)]

[31]Where excesses in buildings did not occur, the area especially if it was a market or a public area would be shaded using either vaulting or wooden louvers. [Hakim (1986) ,p66]

[32]The *Takhtabûsh* is a type of covered outdoor sitting area on the ground level, located between the cool courtyard and the less shaded back garden, opening completely into the courtyard, and through a *mashrabiyya* onto the back garden. This arrangement drives the cool air from the courtyard to the back garden through the sitting area (as in illust. 5.14). See Fathy, (1986), p63-64; Cain *et al.* (1975, 1976).

atmosphere. The use of devices such as the *malqaf*[33] (wind catcher), and *mashrabiyya*[34] (window screen), all reinforced these effects (illust. 20 - 22). That is not to mention the efficiency of building material, characterized by mud bricks (or *adobe*),[35] and building forms and techniques which highly afforded for and reinforced such effects.[36] In addition, a certain degree of nomadism was practiced by the inhabitants in terms of the use of the various spaces inside the house according to the changing climatic environment.[37]

Therefore, we find that the synthesis of architectural elements and the spatial arrangements within these traditional settlements contributed to an eco-systematic structure, where the interaction of earth, sun, wind, and water on the one hand, and the inhabitants on the other, all worked together as a complete ecological unit. In sum, these structures are indeed most valuable examples of human adaptation and manipulation of the climatic environment, through appropriate design and planning patterns, and through maximum understanding and use of the principles of natural energy.[38]

Yet, in spite of that, it will be oversimplistic to assume that climate is solely responsible for the development of these patterns, or that they are simply climatic responses. While climate was evidently embraced and taken into account, these structures remain attached primarily to a sociological order which allowed for direct response and immediate interaction between the various entities in the environment. As we shall see next, this was characterized

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[33]The *malqaf* (as known in Egypt - also called *Badjir* in Iran, or *Bastakia* in Dubai) is an early tradition which goes back to the early Egyptians around 2000 B.C. It is based upon evaporative cooling system where the wind driven through the tower would pass through a jar of water.which thus help to humidify the air and increase air movement in the interior environment. [Fathy (1986)]

[34]A *mashrabiyya* is a wooden lattice work in certain attractive patterns placed on windows which allows the inhabitants to see without being seen from the outside. The name however is derived from Arabic word *shariba* meaning 'to drink', and means 'a place for drinking'. This is because a jar of water used to be placed there so that the cool air passing through the *mashrabiyya* would cool the water in the jar. This is another vivid example how both climatic and social factors combined in the form of a workable solution. See Fathy (1986) for more detailed illustrations of these principles. Also see Briggs (1974) in relation to woodwork and craftsmanship, pp210-215.

[35]See Fathy (1965,1986) Golany (1980,1983), A.A. Hammond (1973), Cain *et al.* (1975).

[36]It is particularly referred here to dome roof structures, which allow for minimum exposure to direct solar radiation, and at the same time, maximum surface area for heat loss. Openings in the dome were also used to multiply this effect.

[37]An Arab would often sleep on the roof top in cool summer nights, or the whole family might stay in one room if it is cold.

[38]Fathy (1986), Golany (1980, 1983), Stead (1980), Kriken (1983), Cain *et al.* (1975, 1976).

by the near absence of municipal institutions for the city at large, which have been subordinated instead by urban autonomy on every local level.

Local autonomy:

The development of Islamic cities, and their irregular character is related to evolutionary or spontaneous processes which these cities have undergone, rather than preconceived plans. It is a well-known fact that the house of an Arab is never complete, but it expands or shrink in time according to the circumstances. One house might be separated into two dwellings to accommodate an extended family, each dwelling comprising its own needs of a private courtyard, and a separate access to the street or the *cul-de-sac* (see illust. 23). Therefore, sectors within the Islamic city represented an ever changing environment.[39] One reason why this was allowed is the fact that the decision making process was largely in the hands of the individuals, rather than in those of a central authority.[40] To understand this, it is important to go deeper into the ideology and patterns of social control which characterized the development of these structures.

As Lapidus (1969) noted, Muslim cities (particularly the large great capitals such as Baghdad and Cairo) where not single cities, but rather they often were double cities, or a composite of cities, developed by the juxtaposition of a succession of palaces and military encampments.[41] The basic unit was as already shown the residential quarter, or the *hâra*. These *hâras* according to Lapidus are "village-like communities within the urban whole."[42] Each such quarter was usually strongly defined and segregated from others which surround it. Some even had their own mosque, *sûqs*, and surrounded by walls, with gates that would be closed at nights. Access was then easily monitored and controlled, in a state where suspicion was highly attached to strangers.[43] Each such quarter then contained homogeneous

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[39]Greenshields (1980) noted that quarters and ethnic clusters could expand or contract, or shift their location within the city, and sometimes beyond.in relation to changing social or economical circumstances. [p127]
[40]The Islamic constitution, which generally lacked the existence and control of municipal institutions particularly allowed, even encouraged that.[Eisenstadt *et al.* (1987), Akbar (1988), p71]
[41]Lapidus (1969), p61.
[42]Lapidus (1969), p49.
[43]Brown (1973), p32.

groups bound together by common familial ties, common origins, ethnic or sectarian religious identity, or in other cases common occupation. Social solidarity within the quarter was reinforced by administrative responsibilities, which extended to police protection and communal defence.[44] Quarters were headed by a *sheikh*, who was the representative of these groups on city-wide political or ceremonial occasions, and who assisted in collecting taxes, and maintain order.[45]

This segregation on the socio-physical level was, as Lapidus noted, further enhanced on the institutional level, with relatively few social organizations which would cut across between the various quarters to bind them together.[46] Guilds or fraternities - such as youth clubs or Sufi brotherhoods - did exist, but these were usually restricted to certain groups or sectors within the city in accordance with ethical and ethnic loyalties, rather than the community as a whole. Individuals and groups then had their loyalty restricted only within the border of any such group, and at the same time, such loyalty would extend beyond the limited boundaries of the city towards the school of law to which they belong, ethnic origins, and so on. In other words, these institutions were not exclusively urban, but were bound with certain schools of law which operated instead on the wider regional level. In this sense, Lapidus argues that social identification was not formed on urban-rural but on religious-communal lines; in his words, "Not city walls, but natural regions, political circumstances, and cultural identifications delimited the relationships which made effective religious communities."[47] Also, Greenshields (1980) noted that the dynamic character of these quarters was prompted by socio-economic powers and political circumstances which in most cases superseded the realities in any one city.[48] Therefore, as Lapidus suggested, Muslim populations - who were not necessarily all Muslims - were organized into groups which

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[44]Ismail (1972), p116.
[45]Lapidus (1969), p49.
[46]Lapidus (1969), p49.
[47]Lapidus (1969),p58.
[48]Greenshields (1980), p127.

formed "subcommunities within city spaces and super-communities of religion or state which extended beyond any single city space."[49]

As from here, the division into quarters reflected a highly segregated population living in these cities. We therefore see that social and community divisions within the city have been clearly expressed through geographical localization.[50] The reason behind this, and behind the fact that no one order which combined the whole city population developed is far too complicated.[51] It might suffice to say here is that such arrangement seems to have been the most convenient for all inhabitants and rulers. As has been said, the closed quarter satisfied the inhabitants needs for privacy, family life, and security. On the other hand, these closed quarters seem to have been most favoured by ruling parties. These, particularly in the case of the Mamluks and the Ottomans, were in most cases foreign dominant elites who were separated by a wide gulf from the people they ruled, and whom they heavily taxed.[52] The arrangement into quarters permitted strict control of the subjects by the rulers, while at the same time leaving them with high degree of autonomy. We note that such arrangement helped in keeping internal divisions intact, which seems to have effectively prevented any city wide national consciousness or movements to evolve for the length of centuries of corrupt rule.[53]

The main point which needs to be stressed here is that in the absence of one unified municipal order on the scale of the whole city, control and decisions in terms of the built form were highly motivated through direct negotiation between the parties concerned on a local level. The Islamic constitution encouraged this trend; as in the *Qur'ân*, "*And their affairs are to be discussed among them*". The Islamic law allowed for the ownership of the public space to be in the hands of all Muslims, or to be more specific, those who use it.[54] There were certain juridical or legal systems which people turned to to resolve disputes,[55] but on the

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[49]Lapidus (1969), p73.
[50]Raymond (1984), p68.
[51]See for example Abu Loghod (1971), p69-71.
[52]Abu Lughod (1971), p67.
[53]Raymond (1984), p16.
[54]Akbar (1988).
[55]The Islamic law or *sharî'ah* was based on the *Qur'ân*, the *Hadîth* (sayings of the prophet), and the *Sunna* (Behaviour of the prophet). Where the particular matter has no mention in these, there was the *Ijtihâd* (the use

whole, manipulations were governed by informal rules which related directly to the particular cases involved.[56] These were centred primarily around access, placement of doors and windows, and clearance.[57]

All this seem to have materialized in the principle of *accretion*, which can be considered to hold a prime responsibility for the particular character of Islamic cities. As Akbar (1988) points out, objections from passers-by was the main means of control. In this sense, encroachment of public areas abutting one's property was a common practice, as long as this did not undermine the rights of others -i.e. as long as nobody objected. This was particularly true in the case of the *finâ'* - the open space along the building's exterior boundary, which was considered as part of the property[58] (illust. 24). It was often usual to extend one's walls in order to include the space of the *finâ'* to the private domain - whether for residential or commercial use (illusts. 25-27). This was also prevalent at the higher level of the streets, where as we have seen above, encroachment was in the form of cantilevers or overpasses (*sabât*) which connected the two sides of the street together. This way, few open spaces where left untouched.[59] All this would occur in a random, spontaneous manner, according to the needs of the time. In these circumstances, we find that open space was used to the limit, and the irregular street morphology was most likely to occur. Extreme examples of the effect of these trends are those where highly regular and formal structures from earlier periods gradually transformed into highly irregular forms - such as the straight formal Roman arcades

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of human reason in the elaboration of law). The legal activities were carried out by various people, such as the *muftis*, *quadis*, *muhtasibs*. For an elaborate discussion of Islamic law, see Hakim (1986), Savory (1976), Abu-Lughod (1971).

[56]The general rule according to the *Shari'a* says that "Everything that is not explicitly forbidden is allowed", a notion which seems to have been well put into practice. [Serageldin (1983)]

[57]Hakim (1986), p15, Alsayyad (1986), p18.

[58]See Hakim (1986), Akbar (1988), p116.

[59]The lack formal open space has been explained in terms of the lack of municipal institutions. [Akbar (1987)] In addition, public life centred in the mosques and the *sûqs*, where most social gathering would occur, that there was no need for other type of open spaces. A sound reason for this is the hot climate which would restrict the level of outdoor activity, and inhibit the practical use of any such spaces. [Alsayyad *et al.* (1987)].

in Allepo and Damascus which turned into a maze of bâzaars, as documented by Sauvaget,[60] (illust. 28, 29) as well as similar trends in the old city of Cairo.[61]

Therefore, we find that open space in these cities was highly an outcome of development, rather than being in itself an intentional pre-conditional arrangements. The width of the street was determined by its use - the dimension of the camel, carriage, or whatever the street is used for - and this has mainly been determined by its users. In general terms, the main rule which seems to have been at work there is that open space beyond that for the immediate use (mainly transportation) is a space awaiting to be occupied by whoever claims it first. This would include either building on a street, transforming a street, or even sometimes, blocking it completely, forming another of the numerous *culs-de-sac*.[62] In all these cases, the irregular form of the Islamic city was manifested by the lack of city-wide political autonomy, and the near absence of urban administration.

Two main themes can be extracted from the above: first, we note that the Islamic city provides a most evident example of the effects of a concave pattern of relationships between people and their built environments (fig. 5.2). This is characterized by a sequence of concave patterns, starting with the individual unit, the courtyard house, where one has complete control over any manipulation or divisions within any such unit; then, a concave pattern within the darb, the alley, or the quarter, where expansion of one's property is governed through direct control and interaction of the people and individuals concerned; finally, all these concave patterns seem to have contributed to the larger concave pattern of the city as a whole, where the sharing of walls and common space between different quarters and groups necessitated interaction and common understanding.[63] Briefly, local actions and interactions are continually being shaped by the reflection of local forces through a concave pattern

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[60]Elisséeff, N. (1970), Ismail (1972), Cantacuzino (1976).
[61]Abu-Lughod (1971).
[62]Akbar (1988), and Hakim (1986) provide an extensive documentation of these rules, their implementation, and the methods of solving disputes between contenders.
[63]Even though municipal institutions were near absent, there were still certain city-wide mechanisms in relation to water and sanitation, disposals and so on. See George T. Scanlon (1970).

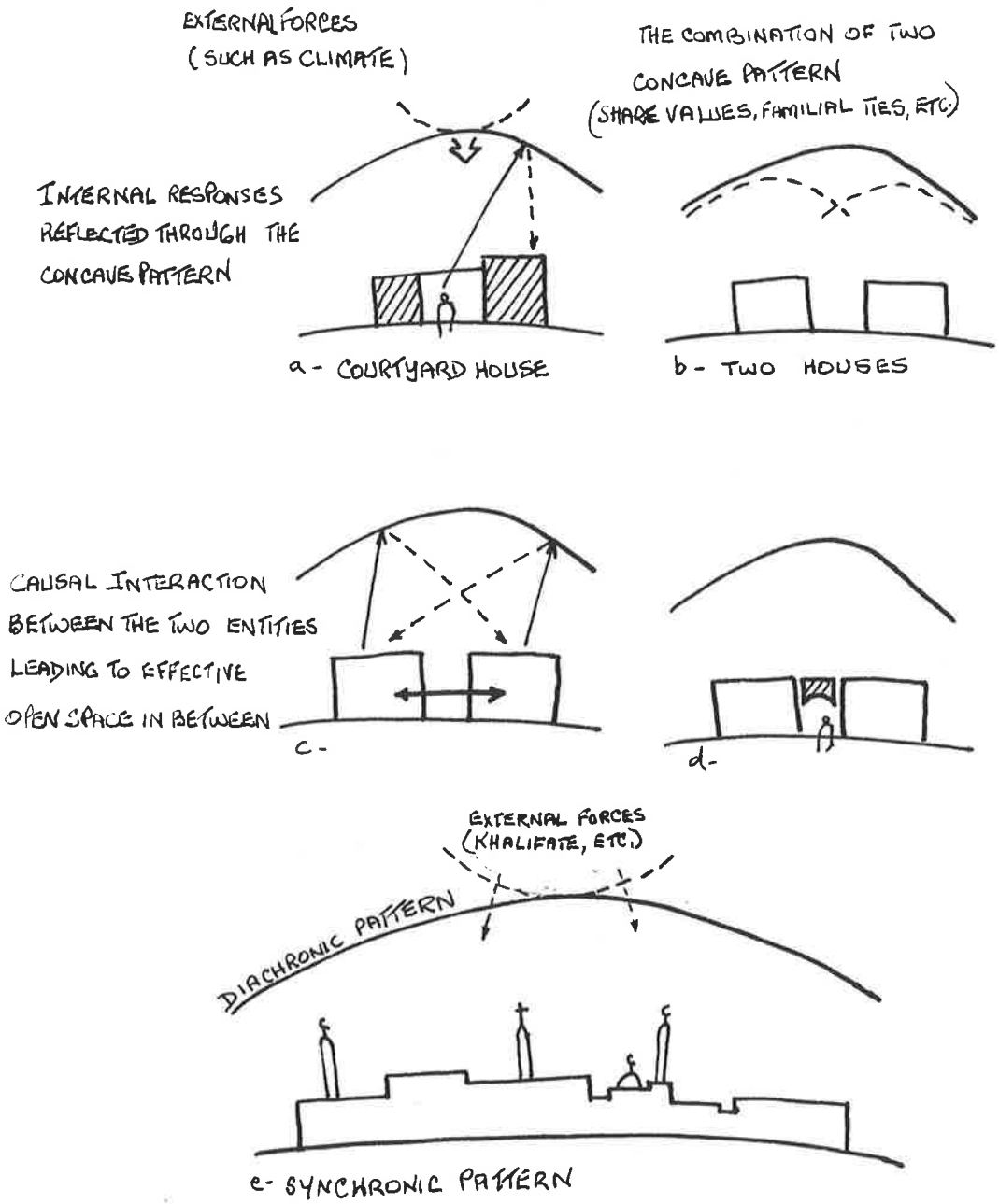

Fig. 5.2 The ideological pattern of traditional urban development in the Islamic city. a) The courtyard house, a highly responsive space in terms of climate and personal/ family life, a result of direct manipulation on the local level. b) The interaction between any two or more units is achieved through direct interaction, stemming from the particular needs of any or all the parties involved, leading to, c+d) an active and effective relationship between these parties, and effective open space in between. e) The cumulation of these patterns leads to a predominant concave pattern between different hâras or sectors , and over the city as a whole. The effect of any central authority remains to a minimum.

representing shared meanings and values (i.e. diachronic mechanisms) on the global level.[64] In the process, we noted that a highly responsive (physical and social) housing environment has developed.

Secondly, we note that the impact of the larger Islamic culture on the global level remains evident, which led to highly homogeneous urban structures within a wide range of geographic domains. At the same time, however, such global impact provided the context, rather than dictated certain patterns. Many refer the homogeneous structures which developed over the wide domains of the Islamic region to similar geographic and climatic trends, rather than simply to the Islamic 'culture'. We notice for example that at certain fringes, such as in Yemen, Kuwait, and areas in Saudi Arabia, where climatic circumstances are different, different spatial structure prevailed (see illust. 30).[65] In other words, the particular spatial patterns are most likely to have developed primarily from the immediate conditions, in accordance with the wider Islamic culture.

To summarize, traditional Islamic cities were generated through codes and decisions determined mainly on the local level, within the context of the global culture. The relationship between the two is a concave relationship, resulting from shared and homogeneous culture, practices and circumstances. As for central authorities (whether in regard to early *khalifates* or later Ottoman rule), while these were highly effective on the wider community, they did little to interfere in local disputes and decisions. This, as we have seen, allowed for the possibility to encompass the variety of socio-physical conditions and circumstances, resulting in a highly responsive environment. The adverse of this process (i.e. a convex pattern) is where development follows rules and conditions which are enforced from a higher authority. This appears to have been largely the case leading the contemporary urban development in the Middle East. The nature and consequences of this will be explored below.

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[64]Serageldin (1985) in these terms showed how the various communities in Cairo (Muslims, Jews, Christians) were not "dichotomised", but rather shared and contributed to one common culture.
[65]See for example Fernando Varanda (1982). Also see Development and Urban Metamorphosis, Vol.I, Vol. II, 1983, Kaizer Talib (1984).

II. PAST TRADITIONS AND MODERN TRENDS:

If only the eye could suffer like the ear, if only the eye, when it sees bad proportions or ugly things, could become red or have tears. Unfortunately, this doesn't take place. But we have the tears within us.

Hassan Fathy

The realities in Middle Eastern cities as they appear today are very different from those of the past; the inward looking cities have turned outwards, urban autonomy has been replaced with municipal authority, and the narrow winding alleys have been substituted by straight wide boulevards. In some cases, modern patterns were erected beyond the boundaries of old ones, resulting in a duality in structural identity of the same city - as was the case in Tunis and Jerusalem (illust. 31). In other cases, (as in Baghdad and Cairo) old traditional structures have been given a 'face lift', - what Abu Lughod called "radical surgery"[66] - thus accreting the 'new' onto the 'old', by supplying modern services, cutting straight roads through, and often demolishing what stands in the way (illust. 32). On the whole, a dichotomy resulted in the urban fabric.[67]

The variables and circumstances which have led to the transition from traditional spatial structures to modern ones are so great and diffused. From colonisation to modernization and the adaptation of Western product, then the massive migration into cities, and the radical changes in the patterns of social life, all seem to have presented a sharp break with the past.[68] What Lerner (1958) said more than thirty years ago seems to be even more valid at present:

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[66]Abu-Lughod (1971), p69.
[67]See for example Mehdi Kowsar (1977), Serageldin, I. (1983), Abdel Baqi Ibrahim (1982).
[68]See for example Issawi, C. (1969), Abu Loghod (1984), Holod (1983), Lerner (1958).

"The people of the area today are unified not by their common solutions but by their common problems."[69] In the face of these problems, people seem to be more helpless than ever. A sense of pride of the cultural heritage and tradition is often passionately maintained (Fathy's quote above is one example), however, such nostalgic feelings are paralleled to a growing pragmatist attitude towards traditional methods, and their capacity in coping with present standards. Most of all, there seems to be a sense of frustration and despair by all observers and analysts, who fiercely criticize present trends. Ranata Holod (1983), describing the situation, says,

> "The more distant, pre-colonial past was rarely used as a source of inspiration because there had been no natural evolution from its attitudes and forms to new ones. Rather, the intrusion of the alien body of Western and European colonial products, techniques, and attitude was instrumental in devaluing this past. Moreover, the expulsion or withdrawal of the colonising powers left an almost unbridgable gap between past and present ... Acceptance of the products of technologies generated elsewhere has meant that modernization came in as a finished piece, rarely filtered through collective experience ... and thus ill adapted to its particular needs."[70]

However, in spite of these changes, Lapidus (1987) noted that there remains, in his words, a "profound continuity in the institutional structures of Islamic societies."[71] As he says, the historic patterns of these societies have been profoundly modified, and the old structures of state and religious institutions have been transformed. Modern societies acquired new identity which is defined in national terms, and their assimilation into modern state societies is far away from the one nation which once combined them. Nevertheless, Lapidus argues that the ambiguities of secularisation and Islamization, and the relation between the state and religious institutions are recognizable variations of historical trends.[72] Similarly, others (such as Greenshields (1980), and Bonine (1983)[73]) noted a continuing tendency towards urban ethnic clustering in contemporary migrant settlement, although it tends to disappear with

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[69]Lerner (1958), p44.
[70]Holod (1983), p16.
[71]Lapidus (1987), p113.
[72]Lapidus (1987), p114.
[73]Greenshields (1980), p133, Bonine (1983), p316.

increasing urbanization. This means that in spite of all the changes and development that these societies have been going through in the last decades - changes which include economic growth and industrialization, political differentiation and decline, new levels of awareness, consciousness, and expectations, and others - we find that on the basic elementary level, the level of the family and the ethnic group, things are still very much the same. Social networks and the cultural orientation of the majority of the population is still largely similar to what they were before any of these changes took place. However, we find that they are living different lives, wearing different clothes, and above all, inhabiting very different environments (see illusts. 33-34).

How do we assess such situation? It would not be valid to study traditional and contemporary housing environments in terms of simple comparisons. The two situations are often very different that such undertaking would not be feasible. Instead, each situation needs to be looked at in relation to its response to the particular circumstances of the time. As was mentioned, open space is the outcome of the manipulation of physical features in the environment in accordance with certain rules. These rules are related as we have seen to socially generated forces which act on the various levels of interaction with the environment. What we have to ask here is this: to what extent can we consider the present housing environment to be generated by the particular social needs of its inhabitants, and how does it respond to these needs?

In order to be able to answer these questions, and to understand the various aspects of change in the urban structure, it is important first to analyze some of the basic principles which led to it. Below, I will investigate the impact of technology on the urban development, and how it relates to tradition. The nature and role of the emerging social paradigms (or ideologies) will particularly be stressed.

Local needs and global standards:

"In India", Fathy noted, "some villages were provided with running water but such innovation was not popular. The young girls preferred to continue to go to the river to fill

their heavy jars and to carry them upon their heads. This was the only way to go out and to be seen by the village's young men. They knew that a long stay at home using tap water would surely mean not getting married."[74]

This is one example which shows that the simple introduction of new innovations, even though they might seem essential, do not necessarily fall within the aspiration of the community. During the past century, many such 'water taps'- often of the same type, and the same brand - have been imposed on many such communities around the world. With all the benefits that they brought about with them, these 'taps' did not always take account of the local conditions. Old methods have been going on for generations. They have been tested, they correspond to local conditions, and were largely involved in the socio-physical experience of the communities. To simply substitute such old methods with new ones can lead to many further implications, which might as well have damaging consequences. The question here, if such innovations are not socially desirable, why should have they been introduced in the first place?

It is argued that two main innovations led to drastic changes in the urban environment of the Middle East. These are modern transportation systems, and air conditioning devices.[75] Both seem to have released the built environment from many of its original limitations, therefore, allowing for new ways to go through. Air conditioning facilities allowed for a greater control of the interior micro-climatic environment, which thus substituted some of the old methods of driving the cool air into the house, such as the *malqaf* or the *badjîr*. This to a large extent released the interior environment from the climatic limitations that it previously inferred.[76] At the same time, the car freed people of many of the restrictions on movement irrespective of weather conditions. The need for wide roads over-rided pedestrian requirements of cool shady paths. What followed from there is that densities per area considerably went down, as the potential for expansion of the new metropolis became

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[74]Quoted in Mimar Dec. 1989, p34.
[75]Alyaor (1982), Sofan (1982).
[76]This however was not without some severe cost; for example, in 1982 Sofan mentioned that 70% of Kuwait's energy consumption is on air conditioning. [p77]

infinite. (illusts. 35, 36) No more was the interior climate dependant on its exterior surroundings, neither were earlier planning arrangements of sharing walls between buildings, courtyard design and so on seen as appropriate or necessary. New roads are controlled and maintained through a municipal authority. Encroachment is usually not allowed, while new Western type allotment and set-back laws have been installed.

However, to what extent can we blame technology for these conditions? In many cases, technological developments were not the only reasons for new urban changes; we note for example that new urban surface morphological prototypes (such as suburbs, or grid-iron patterns) were developed in Europe fifty years before the invention of the motor car.[77] Instead, as Hillier and Hanson realized, the motor car has in fact supported and provided functional explanations for tendencies and processes that are essentially sociological - as explained below.[78] The same can be said about the developments of the new metropolis in many Middle Eastern cities. In Tunis, for example, the new metropolis was established by the French colonizers, and thus adapted to their needs of life style and military control[79] (as in illust. 31). In other cities such as Cairo, new urban patterns were envisaged by their rulers who were influenced by the image of the European city.[80] Today, such innovations as air-conditioning and car ownership remain beyond the means of the majority of the population in the Middle East - particularly in the poor countries in North Africa and east of the Mediterranean. Therefore, (as it was the case in Fathy's water-taps) it was not urban or social needs, but rather political circumstances, or in other words, the adoption of new (often alien) *ideologies*, which led to new trends in the urban development.

Hillier and Hanson trace back the origination of today's urban patterns - characterized in the suburbia and the estate - to 'industrial bureaucracies', which were orientated towards the increase in capital and industrial production and, at the same time, the organization of

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[77]Hillier and Hanson (1984), p262.
[78]Hillier and Hanson (1984), p262.
[79]Massimo Amodei (1985).
[80]This particularly relates to Khedive Ismail (ruled between 1863-1879)whose vision of Cairo as a European city led to the establishment of new European style districts beyond the boarders of the city. [Abu Lughod (1971), Ibrahim (1984)]

social reproduction in order to support the production of activities. Briefly, their argument is that as production is based upon the aggregation of workers at the lower levels, the creation of the modern estate was one response which was undertaken to counter-act this effect - i.e. to reduce the effects of social integration and solidarity. It depends, in their words, "on the power of space to separate, and to physically prevent too high and dense a rate of ... encounters, by using the 'no neighbours' principle."[81] The suburban ideal - which was originally inspired by Howard's garden city and Le Corbusier' vision of the city[82]- is the very manifestation of this; with outer boundary, open space barriers, separate blocks, and at the same time, enforcing strong descriptive control through rules and regulations that are imposed, all helped towards the segregation of the large aggregates of workers into smaller and smaller units. In other words, one principle behind the introduction of the new urban order is the diminishing of social integration on the local level, thus resulting in a highly divided individualistic society. These spatial forms were, under the guise of new technology, to sweep the world in the twentieth century, becoming a universal form of space with all its outcomes and consequences.[83]

The circumstances which have led to the introduction of these spatial forms in the Middle East widely differ, but both the ideologies used, and their consequences, remain very much the same; a predominantly convex pattern based upon power of differentiation, segregation, and control. One might argue that spatial segregation -whether physical or social - is not new to Middle Eastern cities, as they have been put into practice far earlier in the form of isolated and closed quarters, containing strongly defined private territories. However, the two systems are two far apart - or in fact opposites - simply because each stemmed from very different social and cultural background. Quarters in traditional towns, as we have seen, contained inhabitants with strong social or occupational bonds, thus making a strongly integrated unit. Within such a quarter, urban autonomy and spatial proximity necessitated

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[81]Hillier and Hanson (1984), p266.
[82]Hillier and Hanson (1984), Jones (1987).
[83]Hillier and Hanson (1984), p267.

such integration.[84] In addition, street patterns which connected between the quarter and the rest of the city were limited to particular paths which one takes on the way to or from the centre of the city. This arrangement naturally results in high levels of random encounters, which are most effective in reinforcing social bonds between these people. In the new system, on the other hand, even the constituents from within any such unit - the neighbourhood, district or suburb - are highly segregated, resulting in separate individuals living near each other with least possible bonds between them (illust. 37). All the paradigms of this new system simply prevent, or at least do not encourage the manifestation of any such bonds. Encounters remain to a minimum, and those which occur are non-random, and even strongly controlled. Manipulation and control of the local environment remain attached to a higher order of hierarchy, in the form of municipal authority. These depend as we said on the imposition of rules, and as Akbar realized, "the more prescriptive rules, the less communication between parties"[85] Similarly, the fewer rules, the more communication and interaction occurs, as we saw in the traditional environment. Therefore, as fig. 5.3 illustrates today's situation leads to a polarity in the relationship between neighbours.

From all what has been mentioned, we note that today's practices seem to have led to is the degradation of the built environment in terms of its response to environmental demands. We find for example that the courtyard house design - while it made up the cornerstone of traditional cities - was most often almost totally ignored in the new urban patterns, as new regulations in terms of building set-backs made it impossible to obtain enough space for an interior courtyard to be acquired. Within a society which is centred around privacy and the seclusion of women - though the latter trend is becoming less strict in many cases- the outdoor space surrounding the house is simply wasted space, and cannot be used. In the absence of outdoor living space, a whole set of life styles have been severely degraded.

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[84]Lapidus (1984) also notes that in Damascus and Aleppo in the fifteenth and sixteenth century, the size of these quarters was often about the size of small villages, with a population of around six hundred to twelve hundred people well within face to face intimacy.
[85]Akbar (1988), p145.

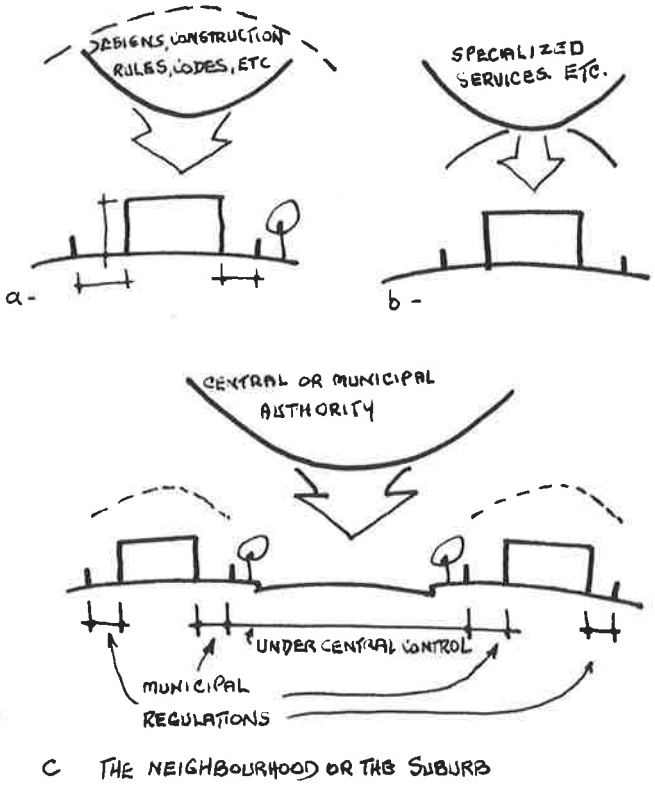

Fig. 5.3 Present ideological patterns in the housing environment in the Middle East; the estate principle. a) Design and construction through specialized parties according to central codes and rules. b) The family house; a highly enclosed private domain. Causal actions on the local remain to a minimum as services are supplied and controlled from above. c) The majority of the exterior environment is under municipal control and/or subject to municipal regulations. The effect of the users remain limited, and the interaction between them is thus kept to a mere minimum.

What we are faced with in the Middle East today is far more serious than simply the discontinuation of the past. We are instead faced with a situation where spatial arrangements are no more coherent with either environmental or human demands. Instead of being produced from within, modern buildings in many cases seem to be arbitrary imposed from the outside. As Jones (1987) realized, "We have built 'autistically' ... imposing the same dumb boxes regardless of place, climate, culture of purpose."[86] Concrete flat-roofed houses

[86]Jones (1987).

and flats which have been spreading all over the Middle-East proved to be unbearably hot,[87] in contrast with traditional mud bricks houses, which well served their purpose.[88] In some cases, these new houses have been disregarded, or have been used for storage or to house animals, while the inhabitants themselves lived in tents in the adjacent land.[89] In other cases, balconies were used to raise chickens (see illust. 38).[90] Accretion, where allowed, occurs but at a far greater cost, as illust. 39 clearly shows. All this and others imposed a serious shift from old methods and practices. In the process, some important questions have been left unanswered, or simply ignored. Most notably, it is the question of tradition, and the role of the past in directing the path for the future. This, particularly the relationship between tradition and development, which shall be discussed in the next and final chapter of this thesis.

Conclusion

In this chapter, a critical analysis of past and present urban environment in the Middle East was made. It was argued that the difference between past traditions and present trends is in the difference between concave and convex patterns of relationship. Among what this means is that such difference is not merely in shapes or spatial pattern, but it go far deeper into the ideologies which led to these shapes. As a matter of fact, we can hope to achieve little by analyzing these shapes and patterns other than contemplating for better or more appropriate ideologies which might better serve our purposes. To simply try to improve our performance, either by making better buildings (if there was such a thing), or by copying past successes would lead us nowhere. In particular, it was noted that efficiency in the urban environment is related to the level of causal interaction between the various entities in the local domain. In

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[87]See for example Rami Khouri (1981) *The Jordan Valley*, where he talks about government housing schemes, and the farmers reaction to them.
[88]Fathy (1986).
[89]Rami Khouri (1986).
[90]Roxy Bino (1986).

traditional environments, such interaction was substantial, while modern settings largely undermine the possibility of such interaction through direct control from a higher or central level.

It can be stated then that the purpose of any environment is to establish and follow a particular concave pattern. Here, two notions come to mind: tradition and development. The two terms, often conceived as opposites, need to be highly related in order to allow for this to happen. The last chapter of this thesis will search into some of the means and methods towards this objective.

Chapter 6

Towards the Continuation of Tradition in the Housing Environment

Our gold is not the same as their gold, as our tongue sounds different from their tongue. Do you not see how our Sheikh talks and dresses like a man of the locality? The crops of the locality, the houses of the locality come from the material of the locality. [1]

Based on previous arguments, this chapter aims to identify some objectives for future development, and to suggest certain means towards achieving them. As it has been argued, the nature of the environment depends on the level of causal interaction between its various constituents. This involves the interaction between the inhabitants on the one hand, and between them and their built environment on the other. Accordingly, this chapter will argue that in order to achieve better environments, one needs to look beyond the mere architectural

[1] *Mustafa Mahjub*, talking to *Ibn Aswad* about *Sheikh Halim Unwani*, who was originally from Syria, but was settling in Morocco where he was teaching. From the *Sufi* tradition, retelling of *Jalaludin Rumsis Mathnari*. See Idries Shah (1970), *The Dermis Probe*, p20.

possibilities allowed through design. Here, the role of tradition in guiding the way for development becomes vital to understand. This will be discussed immediately below. A brief and critical look at some revivalist approaches (particularly the so-called Regional approaches to architecture) which seem to be taking pace in the Middle East today will then follow. This will show that in spite of increasing consciousness towards the need for change tradition in most cases seems to be reduced to forms and shapes, while the question of ideology remains mostly neglected or mishandled. Finally, this chapter concludes with the suggestion that any architectural solution can only be a part of a greater consciousness on the part of society as a whole where education and knowledge can act as a 'normative order'. Based upon this, the role of the architect as a 'mediator' is put forward.

I. TRADITION AND DEVELOPMENT

Save my life genie,
and bring my palace back...

When *Badroulboudour*, the *sultan*'s daughter whom *Alâ' iddîn* married, exchanged the old lamp for a new one, she did this very naïvely, not knowing that the old lamp carried the secrets behind all the fortunes which went down on *Alâ' iddîn*, and which allowed him to marry her. The new lamp might have had better looks, but for *Alâ' iddîn*, it indeed was worth nothing, as all the values and meanings were endowed in the old one. As soon as the old lamp was lost, *Alâ' iddîn* lost his palace, and could not recover it until the old lamp was recovered.

It seems to me that we also were very naïve by simply substituting old methods, whether these relate to building design, materials, techniques or planning principles with new ones, often with no respect to their real value, meaning or function, but instead being deceived by their physical appearance. However, this problem is often misunderstood; do we simply need to go back to traditional methods? This, as we shall see, is not the case.

Tradition does have a vital role to play, but this role is in terms of directing the path of development, rather than in dictating certain patterns.

Tradition and *development*: two notions which are often conceived as opposites, while in fact they are highly complimentary. Tradition is the outcome of development, while development is the continuation of tradition; each is highly dependant upon the other. Here is some of what Hassan Fathy (1973) had to say about tradition:

> "Tradition is the social analogy of habit, and in art has the same effect, of releasing the artist from distracting and inessential decisions so that he can give his whole attention to the vital ones. Once an artistic decision has been made ... it should pass into the common store of habit and not bother us further."[2]

Tradition then is the guide which clears the way for development. If we recall Saussure's pairs which we referred to in Chapter 4, tradition can be related to a *diachronic* pattern or mechanism, which means the cumulative construct of the past; development, on the other hand, can be equated with a *synchronic* pattern, which relates to the particular spatial or causal processes taking place at a particular time. The relationship between the two (i.e. between diachronic and synchronic patterns, or between tradition and development) is in these terms a concave relationship, based upon the reflection of causal forces (or development) which are generated at every local level through tradition. As such, tradition is parallel to history, defined by Tafuri (1987) as "..both determined and determining: it is determined by its own traditions, by the objects it analyzes, by the methods it adopts; it determines its own transformations and those of the reality that it deconstructs."[3] Similarly, tradition is determined by, and determining of development.

To take an example, imagine the case of building a house in the past. As we have seen, vernacular settlement in the traditional environment, beside being highly dependant upon the interaction and co-operation of neighbours, allowed for a high degree of participation and control by the inhabitants. As Fathy (1967) noted this was complimented by a high level of

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[2]Fathy (1973), p24.
[3]Tafuri (1987), p3.

understanding between the owner and the craftsman.[4] Building a house in the past would have involved a close relationship between the owner and the '*mu'allim*' (master builder). The multiple of choices and decisions used to be taken on site through direct negotiation, where the final word would be left up to the owner. Every stage would be considered as it occurred. Fathy further notes how the labourer, the artisan, and the carpenter, would all be well aware of their capabilities, and have a general understanding of the owner's needs, and how to satisfy them. What we have here is an unobstructed flow of communication through a sequence of shared values, images and expectations between all people concerned. Materials, forms, as well as spatial arrangements, all would be agreed upon. Innovations and manipulations all spring out from within, based upon the requirements of the environment, and as implied through and allowed by the well established traditions.

Today, much of this work is done through the architect - an expert trained in special schools in the aesthetics, rules and regulations of the building act. We have already seen some of the various stages of architectural development since the first architectural graduates appeared in the early 20s. This particularly involved the tendency towards the unification of architectural methods and principles, their dependence on imported technology, and therefore, the near exclusion of the owner from the process. The use of new materials led to the elimination of indigenous methods, crafts, and techniques. Where the question in the past was in terms of *how* to build, the question today is *what* to build, through the range of choices and possibilities which are available. This gradually led to the loss of the regional context which characterized every particular environment, and differentiated it from others. The ideas of the architect are not necessarily those of the client, and the means of communication between the two, whether in the form of plans, elevations, or visual sketches, are not always understood by the owner. Moreover, as soon as a plan gets approval, it is hard to negotiate while the building is being built. In this way, we find that the role of the client in the process is reduced to a mere spectator. Even more so for the majority, where

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[4]Fathy (1967), in Steele (1988).

client-architect relationship is often non-existent. In short, present practices are characterized by the 'convexity' in the interaction between people, and between people and their built environment. This eventually has its effect on the level of causal interaction between the various entities (physical and social) which are involved in the process.

Problems and objectives:

The problems facing the built (housing) environment in the Middle East today are related to various reasons. In some instances, as we have seen, it was the introduction of new methods by colonisers or rulers. In other cases, the sudden oil wealth which emerged in various areas in the region led to increasing urbanization and migration into highly populated areas. All this necessitated rapid transformation and the adoption of new methods to keep up with the rapid rate of growth. This often involved the direct contribution of western ideologies and technology, either by foreign architects and institutions, or, more significantly, through natives with western education. The problem then goes further, as the constructed image of houses and cities in the minds of the majority has been radically restructured by the western media, publications, and the examples around us.[5] Today, the great 'unconcerned majority' - to use Kuban's words, by which he refers to the average citizen, the small contractor, and the greater number of architects - unquestionably seem to follow today's trends and images in their everyday life practices, and, 'fatefully and silently' -to borrow from Kuban again - shape our modern world.[6] The new today is seen as the norm, while the old seems the inappropriate, the backward, and the unbearable.

In general terms, the problems that the Middle East environment currently faces can be characterized in three major themes:

1- The dichotomy between past and present, the traditional and the modern.

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[5]Mohammadi (1990) used the term "cultural imperialism" to connote the effect of the (particularly western) media on societies living in the Third World. See also Lerner (1985) for analytical discussion of the effect of the media of traditional societies in the Middle East.
[6]Kuban (1983).

2- The cleavage which separates the architect/urban planner, and the user, and the neutrality and lack of participation on the part of the latter in the decision-making process.

3- As a result from the two points above, we noted the inappropriateness and inefficiency which most scholars conceive in much of the present (i.e. modern) housing environment in terms of climatic, cultural, and social conditions.

Most of these problems are related to externality, and therefore, convexity of relationship between the various entities. The convex pattern in these terms takes the form of western 'experts', western education and media in some instances, or political intervention and the control of development through codes, regulations, and the provision of services in others. Altogether, these seem to act as a hierarchy of central forces, projecting and controlling local developments (see fig. 6.1). These problems lie, as Huet realized, in the control through bureaucracies and regulatory agents, as for example in the obligation for the individual to acquire a building permit.[7] This literally means that a project, whether it is a new house or a simple extension or addition to an existing one, needs to be designed and drawn to standards depending upon an architect or a technician, before the building can go ahead. This largely undermined traditional methods on the one hand, and soared building costs on the other. But what is more significant, is that such rules do not seem to correspond to existing conditions. Today's regulations and urban planning codes in most cases forbid party-walls, require set-backs, and eliminate courtyards, simply to comply with the images of western experts, education, or ideals - all contributing to what Huet calls, a conscious 'assault' upon traditional architecture. Therefore, we find that in today's situation, causal forces are largely initiated from above, from a separate entity (i.e. a convex entity or pattern), often with disregard to existing or local conditions. These seem to be largely isolating the built form from its local context and, eventually, resulting in a highly passive individualistic and segregated society

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[7]Huet (1983).

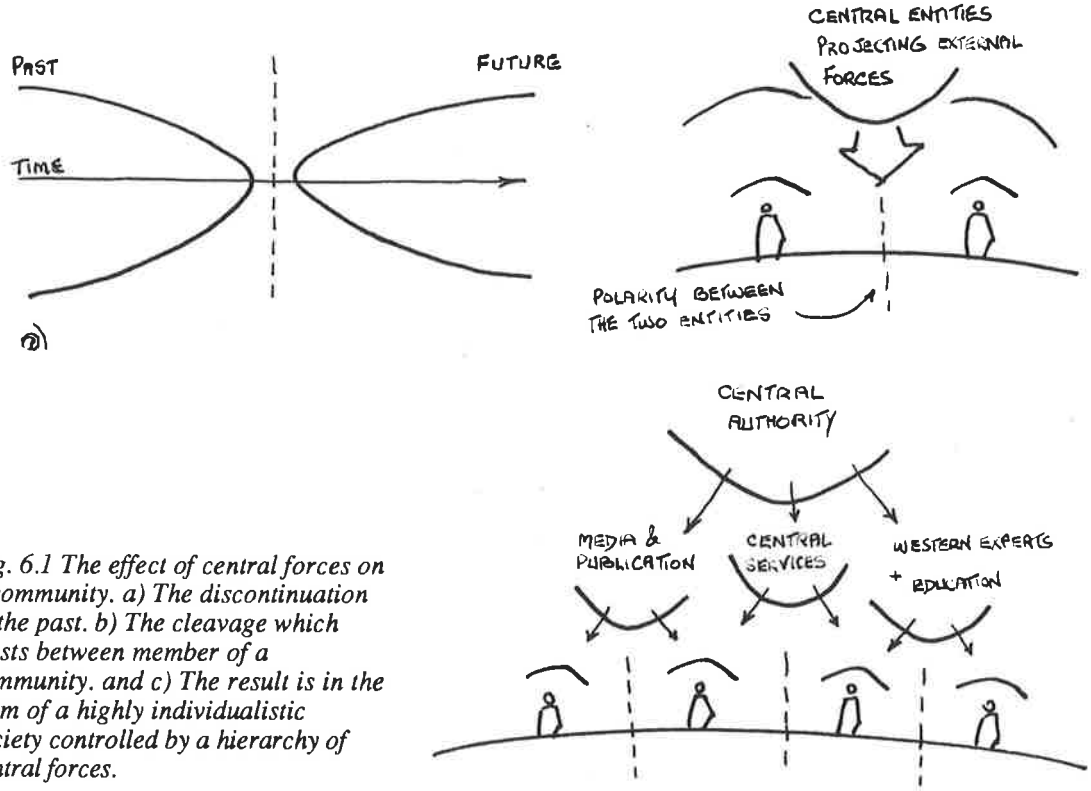

Fig. 6.1 The effect of central forces on a community. a) The discontinuation of the past. b) The cleavage which exists between member of a community. and c) The result is in the form of a highly individualistic society controlled by a hierarchy of central forces.

Tradition as mentioned above is not necessarily in conflict with either development, or with technology. Tradition is not a prison, nor is it a trap which aims to isolate us from the rest of the world. It is on the contrary an open door which provides the connection between us and others. Tradition is needed, not so much to give us solutions, but to provide us with the mechanisms, or ideologies, which can help towards realizing our objectives. As Abdel Wahed El-Wakil (1984), a disciple of Hassan Fathy, writes,

> "If the role of tradition is to safeguard an identifiable art or architecture, it is the role of art, and above all architecture, to safeguard the environment in which the tradition can survive ... To abandon tradition, to disregard the achievements and models of the past and to be caught up in the trauma of change means to be incapable of handling the new."

This is why, as Kuban (1983) points out, the conflict of modern versus traditional is a false one. Tradition is the cumulative knowledge and experience, that is all knowledge and experiences including those which are modern, or alien. Tradition does not restrict knowledge or methods, but it indicates which of these methods are appropriate for the particular conditions, and how they need to be applied. Tradition involves the 'screening' of

the various forces, as in a concave pattern of interaction with the environment. In a concave pattern, the important factor is not only what it contains, but the fact that causal forces and decisions are internal; i.e. they are initiated and taken from within in response to certain needs, before being 'screened' and 'reflected' back in the form of physical spatial patterns which respond to these particular needs.

We can thus say that the many contradictions the urban environment currently faces at various levels (the family house, the neighbourhood, and the city) can only be resolved through the continuation of tradition, that is, through the re-construction of a concave pattern. It is then that the dichotomy between the past and present dissolves, the cleavage between the various sectors in the community (including the architect and the user) vanishes, and out of all this, a more responsive built environment can evolve. To put it in another way, given that the dominance of external causal forces and relationships led to many of today's problems, what is needed is to reverse the formula, thus placing more emphasis on internal forces and courses of development. A dichotomy, in other words, needs to be transformed into a continua, which would then allow for the the causal interaction between the various entities in the environment. But how can this be achieved? How can we construct a concave pattern? More specifically, how can we turn a predominantly convex pattern concave?

Before trying to tackle these questions, it is important to realize that in the past twenty years or so (particularly since the widely publicized distruction of Pruit-Igoe housing scheme in St. Louis, Missourri - see illust. 40), many attempts have been made toward providing alternatives for the International Style - not only its aesthetics, but also its whole social approach.[8] One such direction is referred to as Regional architecture. Below we shall look some aspects of Regionalism, and see the extent to which it addresses and provides answers to the major problems mentioned above.

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[8]See Jencks (1984), Wolfe (1982), Serageldin (1986), p84.

II. REGIONALISM: ITS SCOPE AND PROSPECTS

According to Chris Abel (1986), "Regionalism attempts to put back into architecture what Modernism conspicuously took out, namely, continuity in a given place between past and present forms of buildings." Is it really so? and if it is, isn't there the typical danger of it being transformed into a stylistic trend like many others? Could it be mere coincidence that the wealthiest states such as those of the Arabian Peninsula become the patrons of Regionalism, and the most lavish and expensive projects, like the triangular introverted bank at Jeddah, or even Foster's Hong Kong Bank, become the models for Regionalism? [9]

There is much to suggest that the rising consciousness of Regional attitudes to architecture in recent years is identical with the consciousness of space on the turn of the twentieth century, which brought about what Regionalists and others are trying to set straight. However, this is not to deny that it could very well be a step in the right direction; Regionalism in general is against universality and uniformity of modern trends in architecture.[10] Its announced objectives, as Boussora points out, are to build in harmony with the life style and social needs of the locals, to build in harmony with local resources, as well as climatic and geographical characteristics of the region, together leading to or reviving a specific architectural character and identity in any particular region. All these seem to be positive remarks which need to be achieved in any regional development. But to what extent do these objectives specify directions towards a serious and effective shift in present trends?

Khaled Asfour (1990) identified three major approaches to Regionalism in the Middle East.[11] The first is through copying or implementing shapes and forms of traditional settings. This approach - referred to by Asfour as 'visual abstraction'- seems to have started with

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[9]See Chris Abel, (1986).
[10]Boussora (1990).
[11]Khaled Asfour (1990).

Hassan Fathy, and mastered later by his disciple Abdel Wahid El-Wakil[12] (see illusts. 41 - 44). It depends upon applying the syntactic elements of the traditional environment in new designs, either literally, by using the similar building materials, building techniques and structures, as is largely the case in Fathy's work, or simply by using tradition as a source of visual inspiration to be then applied in different contexts, as in the work of El-Wakil. While examples from this approach reveal a high degree of flexibility of traditional forms to cope with contemporary urban contexts, it seems to remain mainly attached to the skill and talent of the architect in perpetuating these forms. In other words, it is largely an individual task, subject to individual interpretation and manipulation, and, if not properly handled, cannot escape being regarded as a simple pastiche of earlier forms, thus reducing tradition to mere devices and images which provide camouflage for some radically different structures behind.[13]

A second approach is through using tradition on the level of principle; climatic, social or cultural principles, or 'conceptual abstraction', in Asfour's terms. This, in other words, means applying modern or contemporary interpretation of traditional concepts, such as the courtyard, windcatcher and planning patterns, which would thus relate the building to its local context. The National Commercial Bank in Jeddah by Skidmore, Owings and Merill became a symbol of this approach, where a triangular high-rise building is inward looking around huge voids in each of the facades, representing the courtyards, thus keeping offices in shadow away from the effect of glare (see illust. 45). The core of the building is a wind shaft which works as an outlet for warm air from the courtyards. The design tries, therefore, to incorporate environmental principles from local precedents in a building of a modern function. Other examples of this approach are the University of Qatar by Kamel El-Kafrawi,

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[12]El-Wakil is two times recipient of the Aga Khan award, the first in 1980 for Halawa House, Agamy, Egypt, and the second in 1987 for his Corniche Mosque in Jeddah. See Architecture and Community, Building in the Islamic world today (1980). Chris Abel (1986), pp. 53-56. See also El Wakil (1990).
[13]Curtis, W.J.R., (1986), Mimar 19, pp.24-31.

who reinterprets the principle of the wind catcher in a modern way using contemporary technology,[14] also Frei Otto's tents at Mecca, and others.

A third approach is a combination of the two approaches mentioned above, where the building is visually and conceptually attached to traditional methods. Most of the work of Rasem Badran, the Jordanian architect, belongs to this approach (see illusts. 46 and 47). It depends upon rational evaluation, and the use of syntax and principles of local traditions of the area. This does not involve simple copying, or the visual or structural limitations of old methods, rather, particular use of elements according to concrete needs implied by the situation at hand. The various projects by Badran, which range amongst others between private residences, mosques, and housing schemes, illustrate these trends.

The three approaches displayed above resemble the main trends in the Middle East which try to incorporate historical traditions in various fashions into modern designs, thus reflecting, and at the same time trying to identify a particular architectural identity of the region. These approaches have been acquiring stronger grounds in recent years, due to an increasing consciousness of the need for providing alternatives to the International Style which is still largely dominating the region. With publications such as Mimar, and the Aga Khan award for architecture, as well as the growing dismay with global trends world-wide, Regional approaches are likely to intensify and increase in the future. However, to what extent can these effectively influence current attitudes and patterns ?

It is not hard to see that such approaches remain limited in scale, and are mainly dependent upon individual skill and effort in reflecting the past.[15] The architects who have the will and ability to do so are numbered, and are countered by enormous obstructions posed by regulations, the media, and the general attitude of the public[16]. But even within these, their successes have not always been pronounced. Fathy's experiment in New Gourna failed

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[14]Boussorra (1990). See also Mimar 16, pp 20-27.
[15]Taylor (1986), Asfour (1990).
[16]Their are many other Arab architects who follow this direction, among them, we can refer to Mohammad Makiya, Rifat Chadirji (a recipient of the 1987 Aga Khan Chairman's Award for Architecture), Ramses Weisa Wasef, Jafar Tukan and others. [See issues on contemporary Arab architects in Mimar (3, 4, 5), 1982]

to attract inhabitants, and was abandoned three years after it started (1945 - 1948). The reason for this was that the people who were supposed to live there were against their relocation from the grave sites of the 'Tombs of the Nobles', where they lived on tourist trade and grave robbing.[17] This is in spite of the fact that architecturally, as well as academically, it remains a great success, as it opened the eyes of many towards the beauty of applying appropriate methods inspired by tradition. Today, the village of New Gourna is a mecca for a new generation of architects who advocate Fathy's cause.[18] Similarly, the vast housing schemes designed by Badran, sensitive and responsive as they are to local conditions, remain subject to future speculation, as yet again, they are designed as a whole from the beginning[19] - one need only recall the vast housing schemes in the post-war decades in Europe, whose failure was pronounced, although the situation here is very different. Even far from Fathy's approach, which was essentially based on developing a self-help attitude within the community involved, the inhabitants in such housing schemes remain unknown, or with least contribution or participation in defining the nature of these schemes. This, it should be stressed, is by no means discounting the ingenuity of architects such as Fathy or Badran, nor denying their vital role in bringing the questions at hand to attention. What is meant instead is the underlining of some of the deficiencies of the ideological system within which these architects (among others) assume their responsibilities. Therefore, Regionalism in architecture, as far as it has been able to go so far, seems to stop short of defining a clear way or vision for the future.

What is desperately needed in the Middle East (as well as in many other places) today is a grassroots change in public attitude and perception towards the housing environment. Regionalism as a discipline can do little to help in this regard. What is needed instead is Regionalism as a method. People need to take over the responsibilities which have been taken

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[17]The New Gourna experiment, its various stages, circumstances, and eventual failure is the subject of Fathy's book *Architecture For the Poor*, 1973.

[18]Fathy received a number of awards, in 1980 the Aga Khan Chairman's award, for a 'lifetime service of tradition'. See Robert B. Marquis (1980).

[19]Queen Alia housing scheme consists of allocating 3,000 housing units. Most of these are attached houses based on the principle of the hâra, and some are apartments. Project's Report, 1985 [not published].

away from them in terms of participation and decision making at the various levels of the process. A concave pattern combining every community needs to be re-established, where causal forces are initiated from within by the inhabitants. The role of the architect and the planner needs to be redefined in these terms, and many of the existing regulations need to be revised accordingly. Tradition and technology, as well as architects, specialists and others, all need to be part of this concave pattern; they receive the causal forces which have originated from within (i.e. by the inhabitants or users) in accordance with the particular needs of the time, and respond to them through appropriate solutions or recommendations which are relevant. Therefore, while the design of buildings which are more responsive, and more sensitive to the environment needs always be taken into account, any serious or radical shift in today's trends has to be attached to a change in ideology, not just in design. Below, I will try to search into the means and principles which would allow this to happen.

III. TOWARDS A REVISION OF EXISTING IDEOLOGIES IN THE HOUSING ENVIRONMENT

In the fairly short tradition of the association between architecture and ideology in architectural criticism, there are two opposing, though highly complimentary notions which seem to dominate the discussions. These are, historical myth, and social discourse[20]- the former (which simply refers to the system of beliefs and values) is assumingly being 'determining'/'determined' of/through the courses of action of the latter. According to this line of thinking, both tradition and history can easily turn into myth, that is, into forms, images, or subjective values, thus becoming separated from the experiences of the 'real' world where they operate, or to which they belong. When this happens, reference to discourse diminishes, as the justification of any social act becomes an aspect of an absolute truth and judgement. Therefore, while acknowledging the centrality of human experience as

[20]See Mcleod (1985), Porphyrios (1985), Tafuri (1987), Teymur (1982), p17-18. Alexander (1990).

the source of meaning, these studies argue that the need for mutual understanding leads beyond individual experience to shared ideas, and eventually, to the structuring of power[21] in the cultural and social system.[22]

Evaluation is absent here. Myth is not good or bad, nice or ugly. Yet, this ultimately depends on it evolving out, or being an inseparable part of social processes, where it acts as a codifying reference of normative behaviour within a particular society. The 'mythification' of discourse is in this sense a natural and an indispensable part of any social process or interaction, where such processes become reduced to aspects of subjective consciousness within society.

In this sense, can we consider architectural discourse to be undisputed, where it is based upon myth (i.e. images), as far as it forms an integral part of any society? As we saw above, Regional attitudes in architecture - amongst others - seem to belong to this latter category; reference to traditional values, whether these are forms, methods, or principles, becomes separated from the original traditional discourse or practices, at the same time that public submission (that is in normative sense) seems to make such attitudes fully justifiable.

To this extent, the question of ideology becomes vital. Ideology here comes as a middle term, between myth and discourse, thus defining the relationship between the two, and identifying the process which takes place in between.[23] By simply referring to architecture as discourse seems to be insufficient, as it seems to be limited to a synchronic view point, besides providing justification for passivity on the part of the subjects of discourse.As

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[21]Power here is used in a neutral sense, proposed by Poulantzas as "the capacity of a social group to realize its specific objective interest." [N. Poulantzas, quoted by Porphyrios (1985), p16] Rather than resorting to force, power in this sense is acquired through "voluntary adherence to dominant ideas." [J. Alexander (1990), p7]

[22]J. Alexander (1990), p3. Alexander in this regard referred in this regard to Dilthey's notion of "hermeneutics", which he defined as a method of interpretation through internal and subjective structures, which he contrasts with observational methods based on the methodological impulse of the mechanistic approach. As we shall see later on, the distinction between the two in the ideological sense is invalid, as both inner experience and outer determination become unified, and eventually, leading to one another.

[23]K. Dovey (1985) addressed this point in his distinction between the 'experience of place', which according to him remains highly activated on a phenomenological level, and 'processes of placemaking' which are essentially ideological. Placemaking processes are as he says tied up with the dynamics of environmental change, where persisting values can be critically analyzed and modified. [p99] Processes or ideologies in this sense help in deconstructing and reconstructing the relations between myth and discourse.

Saussure realized in terms of linguistics, for example, even though individual actors are considered to be responsible for their speech, they have no control over the language that they employ. To question a certain structure or discourse is to turn towards myth, which would then imply acceptance. But while this can be efficient in a closed system, such as language, it can on the other hand be highly degrading in a situation where external factors are dominant, as particularly is the case in architecture. In other words, by simply referring architecture to discourse, it implicitly implies acceptance of existing rules and methods, even where these might not be appropriate.[24]

So while it might be true that, as Porphyrios realized, architectural discourse is totally transparent to ideology,[25] it will be a mistake to assume the opposite, unless in a case where there is an ideological inefficiency. In other words, ideology sets the way for discourse, not the opposite, and any reformist act needs to be directed towards the dominant ideology.

Ideology, according to Aron (1977), is a "systematic conception of political and historical reality and a program of action derived from a mixture of facts and values."[26] Accordingly, Aron argues that ideology is attached to locality, which includes the consideration of means as well as ends.[27] Such means are tied to the cluster of ideas attached to a given social group, and therefore, to the socio-historical consciousness of that group. Henceforth, in defining their responsibilities and their objectives (means and ends), people within such societies have no recourse to a model, but they draw back upon their own needs, principles and ideals. Ideology in this sense is the opponent of universal attitudes, while modern societies cannot escape the ideological controversy of totalitarian trends - it is 'the end of ideology', as some scholars put it.[28]

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[24]This position is taken by M. Eslami (1985), who parallels architectural discourse with Gadamer's concept of play. While the implication of the concept of play might appear to be appropriate, it can only be so within a particular ideological system which can set the rules, operating in a more or less closed situational discourse.
[25]Porphyrios (1985), p16.
[26]Aron (1977), p1.
[27]*Ibid.*
[28]This refers to scholars such as Engels, Shils, Aron and Lipset [Ben-David and Clark eds. (1977)]. See also Bell (1990).

From this point, whether 'ideology' refers to false consciousness, or to scientific truth, it needs to spring out from the concrete spatial conditions. But even then, and as it has been noted in Chapter 2, ideology as such can easily be abstracted into certain terminology, which would then turn into an external element within society, with its own mechanisms and institutions which enforce it from the outside. Therefore, to simply stress on its local origins is misleading, instead, ideology needs to draw back on discourse. As Teymur (1982) realized, ideology should refer to particular *formations* as, as well as instances.[29] Ideology, as he says, needs to be understood not in terms of real conditions where individuals exist, but in terms of their *relations* to those conditions. Therefore, and as we have been arguing, an ideology in any environment needs to be looked at to the extent that it facilitates causal interaction between the various entities in the environment.

From Convexity to Concavity:

As it has been pointed, the efficiency of the built environment primarily depends upon the existence of an ideological mechanism which allows for causal interaction in that environment. This has been referred to in terms of a concave relationship or interactive pattern, as opposed to a convex relationship which largely inhibits interaction. The objective then is to convert a largely convex ideological pattern which is currently dominating into a potentially concave pattern.

What a predominantly concave pattern of interaction implies is in essence the direct or spontaneous response to the immediate conditions through the cumulative experience of the past. The main principles behind this have been expressed in various ways. Christopher Alexander's contribution in this regard is significant, where he focused on how to achieve what he referred to as 'Timeless' and 'Whole' environment.[30] The central hypothesis behind Alexander's work is as follows: "an urban process can only generate wholeness, when the

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[29]Teymur (1982), p18.

[30]Alexander's work in this regard includes *Community and Privacy* (1963), through *Notes on the Synthesis of Form* (1964), *A Pattern Language* (1977), *The Timeless Way of Building* (1979), *A New Theory of Urban Design* (1987), and many other works and experiments.

structure of the city comes from the individual building projects and the life they contain, rather than being contained from above."[31] Regions need to be autonomous, Alexander argues, with each region being an "independent sphere of culture."[32] He then goes on to specify the fundamental features (or principles) of this process, among them, *'piecemeal growth'*, *'unpredictability'* and *'local autonomy'*; as Alexander explains, patterns which define towns or communities can never be 'designed' or 'built', nor can they be created by central authority, laws, or by master plan, but they emerge gradually and organically, where every act takes the responsibility for shaping its corner of the world, and in the process, contributes to the larger or global patterns.[33]

Similar arguments have also been expressed by Habraken (1972), who particularly stressed the notion of 'uncertainty' as a major factor of consideration in any development. As he says, "The uncertainty of the future itself must be the basis on which present decisions are taken."[34] Chaos theory particularly highlighted this fact; if we cannot predict the behaviour of weather, or of the rabbit population, how can we do so with human beings? Even the most efficient and endorsing predictions of future trends can very well be mistaken, and any long terms strategy which is based upon such predictions is built on the certainty that upon its completion, the new plan will have been overtaken by some unforeseen circumstances, which would devalue the original aspirations, and would thus require revisions and amendments. Like Alexander, Habraken suggests that any future plans should be done on a piecemeal rate, without any clear or well defined criteria.[35] "We are not concerned in the first place with designing a town," he says, "but with *creating the rules for a game* designed to make creativity possible."[36]

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[31]C. Alexander (1987), p249.
[32]C. Alexander (1977), p11.
[33]*Ibid*, p3.
[34]Habraken (1972), p42.
[35]Habraken (1972), p43.
[36]*Ibid* , p44 (*my emphasis*). We can also refer here also to Gadamer's 'concept of play', which displays similar principles. See Eslami (1985), p 23-27.

The question however remains, what type of rules should be made, and how far should these rules go in defining the nature of the built environment? Needless to say, we are faced with the original danger of applying too strict a control over development, thus diminishing user's participation and responsibility. Alexander's 'pattern language' approach may be an alternative (only in certain contexts), though it can be criticized as being nostalgic, based upon the shapes and forms of the past. After all, we need to move beyond the concept of architecture as a timeless object, taken from the view of its harmonious aspect of form and space, and more towards stressing the cultural context through which it evolves. Habraken, on the other hand suggested the concept of *supports* (which is in essence directed towards solving the problem of mass housing) where basic structures would be constructed through local authority investment - '*a skeleton town*', as he refers to it - which would then be partitioned, cladded and finished through direct choice and participation of the client.[37] But this concept is almost entirely based upon prefabricated elements, which while it might provide cheap and appropriate alternatives in developed areas, prove to be more costly in under-developed area where labour is cheap.[38] This is not mentioning that such concepts would imply the introduction of a brand new experience for the societies involved, which is not founded in traditions of the various areas, although there remains some space for local manipulation and craftsmanship to be implemented. Therefore, it seems that the value of these approaches is more in regard to pointing towards the problems, and principles to over-ride these problems, rather than their designated solutions.

It might at this point be appropriate to say that it is very dubious whether solutions as such can ever be preconditioned. While it has been argued that the question of architecture is in ideology, this simply implies that such solutions will need to evolve from outside the limited field of architecture. Architecture then can only reinforce and help to implement a certain ideology which evolves from and is adopted by society as a whole. As Tafuri says in this regard, with the fall of the utopian ideals envisioned in the earlier parts of this century,

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[37]Jamel Akbar (1980) explored the application of the support concept in the Saudi Arabian context.
[38]See for example Hassan (1990), p16.

there came the discovery of decline of architects as active ideologists.[39] This led, in Tafuri's terms, to "the decline of the architect's "professional" status and his introduction into programs where the ideological role of architecture is minimal."[40] According to Tafuri, there can be no class of architecture, but only a class criticism of architecture,[41] and as he concludes his book on *Architecture and Utopia*, only after having done away with any disciplinary ideology, will it become permissible to take up the subject of the new role of the technician, or of the architect.[42]

Below, this chapter will conclude with suggesting the future role of the architect as a mediator within society. Such a role already assumes maximum control to be in the hands of users through their participation in the decision making process. But an attempt in this direction cannot escape having a glimpse into the field of study dealing with aspects of social education, knowledge, and control. These topics are far beyond the scope of this thesis, but a brief look into certain aspects which are particularly important is unavoidable.

Knowledge, responsibility and control:

The tide of increasing consciousness and knowledge during the past century was based upon pure objectivity and unquestionable (mathematical) truth.[43] Specialization has become the norm, and with it, the power of control by the minority who acquired knowledge (professionals in general, including architects). This led to wide dichotomies between the various sectors of the community,[44] and as Toffler (1970) puts it, to a communication lag dividing people into camps, and 'triggering bitter misunderstanding' between these different

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[39]Tafuri (1976), p176.
[40]*Ibid*, p176-178.
[41]*Ibid*, p179.
[42]*Ibid*, p182.
[43]See Young (1971) editor, *Knowledge and Control*.
[44]Zijderveld (1970), Ehrenzeig (1967), Scheidermann (1988), Toffler (1970), Davison (1977), Quantrill (1974), Roszak (1969), Touraine (1988), Williams, R. (1973, 1989), Capra (1983).

camps. The reaction to this took the form of 'counter culture' in some instances,[45] or informal challenges to existing rules and regulations in other cases.[46]

For some time, this situation has been seen as the price of development. Development - or modernization - has been seen as a gradual passage from the particular to the universal, obliterating in the process any cultural or social differences that identify different societies.[47] Recently however, this view -at least in academic doctrines - has been largely discarded, in favour of multiplicity and specificity of different regions, while development has been considered as the level that society transforms itself from one form to another in response to a changing environment. As Touraine puts it, "modernity cannot be identified with the impersonal supremacy of reason; on the contrary it must be seen as an increasingly expanding action exerted by society on itself."[48]

Therefore, the knowledge which we need to assume is different from that which is described above, but needs instead to be defined within a sociological enquiry. The search into this has traditionally been undertaken under the domains of the 'sociology of knowledge', or the 'sociology of education'.[49] According to these, such categories as the 'scientific' and the 'rational' are not treated as absolutes, but, as Young puts it, "as constructed realities realized in particular institutional contexts."[50] Knowledge here is an 'available set of meanings', within the context of 'situational specificity' as defined by the nature of the sociological explanation.[51] In other words, the main objective here is to conceive knowledge as a'normative order' or a set of defining principles and rules, which members of any one society come to share.[52] Pointing at Hobbes' notion of the 'applicability' of knowledge, Blum says,

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[45]Roszak (1969).
[46]See Holland (1983), where he presented a case study of a co-operative group in New South Wales which ignored the restrictions of existing Planning and Building Regulations and set up their own which responded to their particular needs.
[47]See for example Touraine (1988).
[48]Touraine (1988), p453.
[49]Young (1971).
[50]Young (1971), p3.
[51]Young (1971), p4.
[52]Blum (1971).

> "..a corpus of knowledge cannot be defined and warranted unless the objects of knowledge (societal members) are able to use such knowledge as normative orders in formulating routine courses of action. This means that producers of knowledge can be expected to meet criteria of adequacy only if they respect (and perhaps, share) the points of view of those societal members who will employ such knowledge. Thus, adequate bodies of knowledge are usable bodies of knowledge, and usable bodies of knowledge are those which both producers and consumers respect within the same community of meaning."[53]

Accordingly, the social organization of knowledge is viewed not in terms of 'factual', 'real' or 'absolute' properties of objects and entities, but rather, as an outcome of informal understandings negotiated among members of any given society of these objects and entities; it then should be related to factors and aspects which can combine people together under one collective ideology (i.e. a concave pattern). In other words, events and localities are not merely important in themselves, but in the methods, procedures and practices which have led to them, or which brought them about; they [events and localities] are describable only in terms of their social implication in particular social contexts.[54]

This is somewhat similar to the concept of 'knowable community' which was developed by Raymond Williams (1973). Williams applied the concept of 'knowable community' to the people whose relationships are essentially 'knowable' and 'communicable' to each other - an assumption which Williams found harder to sustain in big cities than in smaller towns.[55] Such people share common understanding, unity of 'language' -not only spoken language, but also the language of interaction - which is beyond the scope of the 'analytically conscious observer', which modern societies seem to be massively producing. What is needed, according to Williams, is that we turn our attention towards the means of producing 'knowable communities' in contemporary societies.[56] This, as he suggests, includes a commitment to democratic and popular education, based upon finding ways of embodying directly teachable and viewable material; in his words, "the problems of direct popular teaching and communication are so urgent, the other work can, so to say, be done on

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[53]Blum (1971), p120.
[54]Blum (1971).
[55]Williams (1973), p165.
[56]Williams (1989a), p178.

the side."[57] By 'other work', Williams refers to professionalism and specialization to which modern education seems mostly dedicated.

Knowledge, not as much of intellectual intuition, but more of collective understanding on the community level is what we desperately seem to need today.[58] Briefly, we can say that *the alternative for central power is local knowledge*. This is as if through such knowledge, it is possible to eliminate the convex portion of any entity, and thus make that entity contribute towards the construction of the concave pattern of the community as a whole (as fig. 6.2 tries to illustrate)

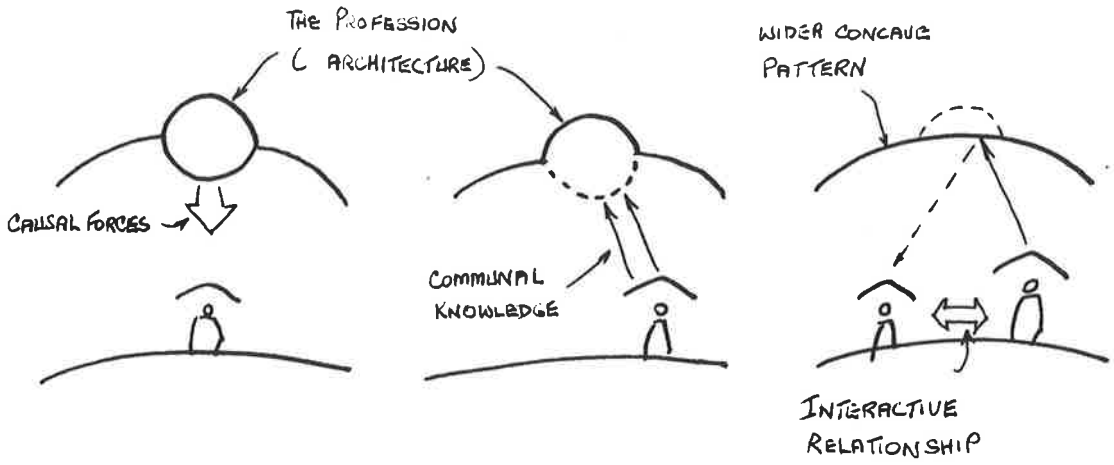

Fig. 6.2 The construction of a concave pattern.

The construction of a concave pattern is by no means an individual task which can be done over with, but a continuous process of reform taken on the part of society as a whole. Again, the space allowed here only permits us to touch these aspects without going into any great detail. What is important is that such process needs to be realized in local sense, where the contribution of all societal members can be taken into account. Such contribution is either direct, by decision making and control, or indirect, by acquiring knowledge (through workshops, media, etc.) through which rules can be formed and reformed according to

[57]*Ibid.* See also Raymond Williams and Edward Said, in Williams (1989), pp177-197.
[58]This is particularly discussed under the realm of "Sociology of Knowledge". See Mannheim, K. (1936).

changing circumstances. But what can the role of the professional building designer be in this process?

Between 'concavity' and 'convexity': the architect as a 'mediator'.

The terms 'concavity' and 'convexity' as we have seen relate to the processes of interaction between entities on two main levels: local and global. The local levels includes the concrete physical structure, spatial patterns and relationships between members of a community. The global level, on the other hand exists in two main themes: society, and culture. We identified the difference between the two in terms of the distinction between *reflection* or *projection* of social forces. Culture is the collective knowledge, experience, and beliefs which are shared, and which combine people together. Society on the other hand defines the identities and roles for each of the members in the community, and therefore, separates between them. This is not to say that the two notions -culture and society - are at odds, but that they are opposites, or two poles of one correlative reality; i.e. a unity, or a '*Yin Yang*', so to say. From all that has been said, this connection between the two has been missing. The emphasis in the past hundred years or so, whether through education, specialization or the media, has been on establishing a powerful, highly centralized social system; i.e. a convex pattern which projects decisions and control. The architect, among others, has been part of this social system, and has consciously or unconsciously, contributed to its effects. By education, that is, decentralized, or popular education, as we have seen above, we will have the ability to penetrate through the convex entity, turning it into a concave element which can then contribute to the larger concave pattern of society as a whole. But does this mean that architects become simply a 'mirror' passively reflecting the rays of forces and decisions which they receive?

This is not so. The contributions of the architect towards the system need to be realized at some point between projection and reflection. It is in these terms that the concept of 'mediation' seems to be effective. It has been identified by Williams (1977) as a substitute for

the concept of 'reflection'.[59] Mediation, according to Williams, describes an active process. In idealist philosophy, as he mentions, it has been a concept of reconciliation between opposites within a totality. In more neutral sense, 'mediation' provides the means for the interaction between divergent forces, or between separate kinds of acts.[60] Williams aimed to relate this concept to the relationship between 'society' and 'art', where he noted that the concept of 'reflection' causes many controversies. The notion 'art reflects the real world', for example, holds many disputes. Art can be seen as reflecting not 'mere appearances', but the 'reality' beyond these.[61] And then, what is reality? Is it the material world, or the processes of inter-action and communication. In other words, does art reflect separated objects, social events, or the essential forces behind them? In all cases, the concept of 'reflection' seems to be deficient in providing explanation, as it seems to imply passivity on the part of the artist. Therefore, as Williams puts it, it succeeds in suppressing the work of art.

Art , as Williams suggests, goes through a process of 'mediation'. In this sense it is an active process, which goes beyond the passivity of 'reflection'. However, this also seems to impose certain problems; 'mediation', for example, can be looked at as a matter of individual expression, in which what we might call realities are expressed (or projected) in different forms or shapes, which may, as well, induce alienation or distortion of these 'realities'. (As Williams pointed out, 'mediation' in our time has been specifically applied to 'the media'.) Therefore, as 'reflection' was detracted for being 'too passive', 'mediation' poses the problem of being potentially 'too active'. To substitute the metaphor of 'reflection' by the metaphor of 'mediation' then does not seem to help provide better explanation of the actual processes which occur. Culture as a whole can for example be taken as mediator, but the spontaneous character of cultural processes suggest otherwise; while some social processes

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[59]Williams (1977), pp 95-100. Williams applied these terms in the context of his critical examination of Marxism, particularly the concept of the 'base' and 'superstructure'.
[60]Williams (1977) pointed to the distinction between 'mediate' and 'immediate', where as he explains had been developed to emphasize 'mediation' as an indirect connection or agency between separates. [p 98]
[61]Williams (1977), p 95.

might require mediation -as in the process of education for example- others don't, as is the case in language - the use of language in terms of writing or speech (synchronic mechanisms) usually implies spontaneous reflection through diachronic mechanisms. In other words, neither 'reflection', nor 'mediation', each on its own, seems to provide an efficient explanation for the social or cultural processes.

From this perspective, the concept of concavity and convexity seems to provide an alternative. Firstly, concavity (or convexity) does not only imply entities (local - global, synchronic - diachronic), but more significantly, it illustrates the process which occurs in between, and their consequences in terms of causal interaction between these entities. Concavity implies a process where causal forces from local entities are reflected from the concave pattern on the global level. Reflection here is not passive, but also involves the screening and focusing, therefore, intensifying and concentrating of the various forces towards their particular destination.[62] 'Mediation', in these terms, is not to be taken as a separate entity, but a part of a process. It does not substitute 'reflection', but compliments it. A 'mediator' forms a part of the concave pattern, while at the same time, being in contact with external convex patterns, and therefore, 'mediates' between the two. External forces in this sense are converted into internal reflections of local forces (see fig. 6.3).

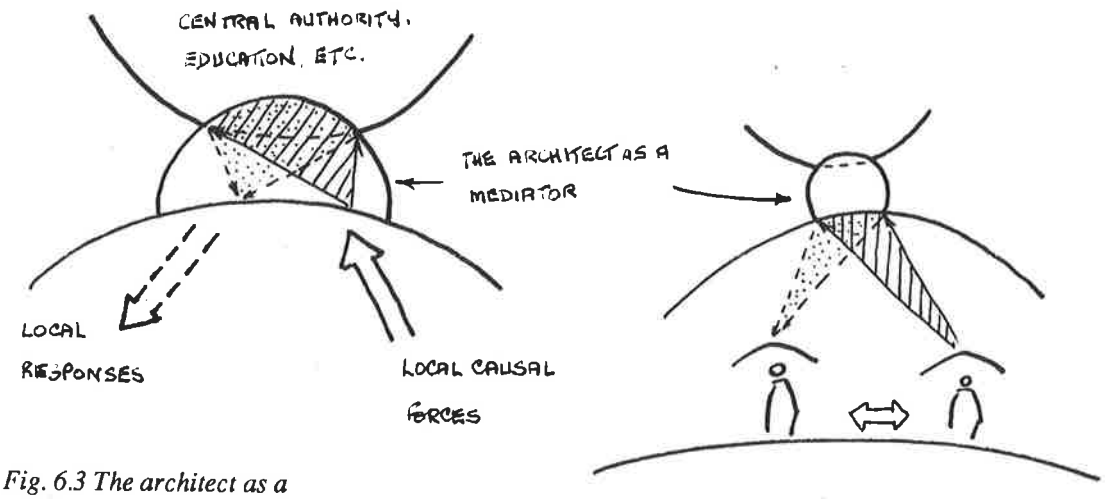

Fig. 6.3 The architect as a mediator.

[62]Williams, acknowledging these aspects, referred to another concept, the concept of 'typicality', which according to him address "the processes of intrinsic concentration", where reflections are selective and intensifying. Williams (1977), pp 101-107.

The architect (and/or urban planner, economist, etc.) as a mediator, therefore, forms part of the concave pattern which, while receiving causal forces from local sources, focuses and intensifies these forces through being in contact with the outer, more or less separate convex world, and reflects them in an appropriate manner. Within this system, spatial entities come in response to local needs. It also implies an organic pattern of growth - a 'piecemeal' process of development. What follows is a high level of participation, interaction, and understanding between members of any community. In a concave pattern of interaction, we can find a way of reconciliation between the various forces, while at the same time bringing back the control of the process into the hand of the locals.

Some examples:

There have been a number of experiments in this direction. The main problems which are acknowledged relate to the reconciliation between the provision of housing, and the need of public participation. One way of doing this is low scale development on various stages. A number of low cost housing schemes in Egypt, such as Ismailia development (a recipient of the Aga Khan award for 1987) demonstrate some of the dimensions which are involved.[63] These primarily depended upon developing a self-help scheme, which is based upon supplying the minimum standards required for the basic needs as an initial step - referred to as 'core housing'. The inhabitants would then have the choice to develop and expand the living space within their lots according to their needs (see illust. 48). The vitality of this approach needs to be considered in terms of the great constraints on the provision of housing in the developing world. Applying this method need to take into account the provision for future expansion, besides defining certain standards which would guarantee adequate hygienic conditions, and limit overcrowding, which in the past proved to cause fundamental problems.This, as El Safty argues, should be decided in relation to the 'target population', or the people meant for the housing, in terms of income, life-style, and education level.[64]

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[63]Hassan, M.M. (1990), Metwally, M. (1990).
[64]See El-Safty (1985), p144, Serageldin (1985), p205.

Perhaps one of the most enthusiastic experiments in this regard is a recent project called *How the Other Half Builds*[65] (see illust. 49). This project aimed at developing a "new set of standards for the city of Indore, India, to devise a planning process that enables users to plan the physical layout of their own neighbourhoods, and to produce audio-visual educational materials that communicate these findings to planners, architects, students, and others." This starts with social/behavioural analysis of existing patterns of social activities and spatial characteristics, as well as shapes, areas, and dimensions of desirable plots which respond to these patterns. This involved detailed survey of existing buildings and features as well as common methods and practices, which led to realizing certain rules according to which these are combined. What follows is a *Self-Selective Process*, which is characterized by a participatory process by which municipal planners allow users to define the locations, shapes and sizes of their plots. Therefore, rather than laying out rigid infrastructure on a large scale, and setting up plot lines, these develop and grow organically according to the particular needs and social patterns.

These are only a few examples among many others which have been evolving recently.[66] One can not ignore here the rising tide of computers and computational methods of generative and design grammar, which have been developing at an enormous speed.[67] These, correctly utilized, can help in providing common grounds between designers and users. Such examples clearly indicate that alternatives to existing procedures can and do exist, and need to be given serious consideration. Although these remain numbered, and their impact on mainstream development seems to be so far limited, it is anticipated that the considerable attention and interest that such experiments provoke is a reflection of shared belief and innate conviction in the necessity of change. Future intention and research then should be based on such convictions.

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[65]Witold Rybcznski *et al.* (1991).
[66]See also A.C. Hall (1990).
[67]See for example Batty (1991).

Conclusion

Tradition is related to the creation of concave pattern. Specialization, adversely, is related to the creation of convex pattern. The interaction and co-operation between the two is very well possible, as we saw in the case of the owner and the *mu'allim* (master builder). However, the threat is where alien convex structures penetrate deep into an original concave pattern within any society. This is where a cleavage can occur between the various sectors of such a society. The consequences here are in terms of the decrease in the extent to which the environment responds to the immediate or particular conditions.

This chapter tried to provide a comprehensive assessment of the situation as it exists in the Middle East (which is by no means restricted to the Middle East). It was found that contemporary approaches, while many of them remain sensitive and aware of the local environment, remain deficient in addressing the real problems that the current housing environment currently faces, which are essentially ideological. Environmental quality is based as we saw on the *processes of human interaction and communication in the environment*, not only on the physical quality of the designed environment, as most approaches seem to assume. This then depends upon responsibility and control to be assumed by the users. It was argued that the state of the professions (the architect, the planner, as well as others) is far from being oriented towards this, and thus needs to be redefined in these terms. The architect's role as a mediator was suggested, but as a means which can only occur through an ideological pattern which is directed towards society as a whole.

Conclusions

"The true happiness of the thinking man is to have fathomed what can be fathomed and quietly to reverence what is unfathomable."

Goethe

Conclusions

I. CRITIQUE OF HYPOTHESIS:

The hypothesis as it was stated in the introduction comprises two main propositions; first, that *the question of architecture is not in space, but in ideology*. Secondly, it states that *the nature of the built environment depends primarily on the causal interaction between its constituent elements, not on the individual nature of any of these elements*. To what extent can we consider that the arguments presented satisfy or support these two definition.

In terms of the first proposition, it has been possible throughout this dissertation to furnish reasonable justification for the fact that architecture, when simplistically reduced to its formal aspects, can substantially polarize the various components to which it is essentially related. It has been shown how formal (i.e. physical or aesthetic) and phenomenological (i.e. socio-cultural) aspects are related to each other through experience, and therefore, a consideration of ideology which sets about the rules and limits of such experience is essential. Yet, where a proper understanding of the concept of space is fully appreciated (i.e. where space is taken to be continuum of entities and a process which relates these entities to each others, as discussed in Chapter 1), some might justly nullify the value of the original statement - that the question of architecture is not in space, but in ideology - as the distinction

between space and ideology then becomes diminished. This however does not disqualify validity of the original statement in bringing attention to this basic fact.

Secondly, and as a consequence of the first proposition, it has been argued that environmental 'quality' (if we can use such a term) is contingent to the causal interaction between its various constituents. The discussion of the built environment in the Middle East was self-evident in this regard; as it was noted, generic growth through maximum interaction between the various entities (social and physical) on the local level which was possible in the traditional setting led to a highly efficient and responsive environment, a fact that very few would align with today's environment, with its minimum interaction due to prescriptive rules and central control.

Central to the evidence presented in this thesis is the 'concave' and 'convex' model. It provides a fairly simple approach towards looking at, or interpreting the ideology (i.e. methodology or process) of the urban form. It might be appropriate to mention here that the development of this model came as a by-product of the critical analysis of the researched material. The need for taking into account the variety of forces and circumstances, often conceived seperately in different approaches (as discussed in Chapter 3), seems to have materialized in the form of this model. Though it has never been originally anticipated, once developed, the contribution of this model towards the progression of the various arguments has been significant. It would be reasonable to say that it allowed for the explanation, and justification of many of the stances taken in this thesis, which would otherwise remain as mere speculations. Particularly, this model helped to illustrate that the effect of causal forces (whether local or global) is not limited to the nature of any particular environment (which seems to be the starting point for the notions of design and urban planning), but that the nature of the environment as such remains relative to the causal interaction between the various entities in that environment. According to the 'concave' and 'convex' model, this interactive process is the ultimate outcome of the forces which are applied, and thus needs to be given primary consideration in any design or planning process. Least to say, it shows how any absolute realities, or *the* ultimate proofs or methods, remain relative to the particularities

of place and time; once such methods are divorced from their local context, not only do they become inappropriate, but also distruptive and even harmful. It needs to be acknowledged, however, that this model stops short from identifying causes or implying solutions, which would thus remain attached to particular situations. It is therefore not to be seen as an alternative, but rather, as an addendum to the spatial analysis.

In the developing of the argument, reference has been made to a number of issues, theories, and approaches. While some were consistant throughout the argument (we may probably refer here to 'space'), others seem to have stood at the periphery (as in 'climate', for example, and as some would say, 'housing', and 'open space'). This needs to be looked at in line with the basic proposition put in this thesis - that not entities, but processes are important to look at - and what is worth noting here is that in principle, such proposition is *not* exclusive to particular situations. Causal interaction is as important in a social environment, as it is in a natural environment, where as we saw in Chapter 2, variability and complexity of interaction in ecological terms lead to a more stable, more secure environment. Similarly, the same principle applies not only to housing, or open space, but to the built environment in general, urban or rural. However, and as it was stated in the introduction, by particularly addressing urban housing, it was intended to touch the area which, due to its scale and vitality, stands at the core of today's human concerns in regard to the built environment. It is far more feasible - and also more crucial - for people to take charge of their housing environment, than, so as to say, their work environment, specially where the latter is in the form of large corporate institutions. This is not to say that the two, house and work, need to be seperate, as they seem to be most common today. As a matter of fact, the seperation between places of work and residence is just another outcome of today's practices. More interaction and local control would - as it would in any ecological unit - ultimately lead to more integration between the various facets of urban life. Similarly, the notion of open space was not intended in itself as an object of analysis, but, as it was also stated in the introduction, as the space of causal interaction between the various entities.

On the other hand, the course undertaken travelled across wide and varied fields and domains, some of which might not be considered to be directly related. Others can easily require volumes of the multiple size of the one at hand. This has two main reasons: the first lies in the very nature of 'space', which as we saw in Chapter 1, is characterized by the 'conversionce' of the various fields of thought towards the specific destination or orientation of the task at hand. An encompassing and comprehensive analysis of varied domains was thus not only unavoidable, but necessary. The second reason is attached to the very nature of the question being dealt with, that is the question of 'ideology'. As it was concluded in the last chapter, reform in the architectural environment cannot but look for insptiration from other fields, which would relate to society at large. With regard to the extremely complex socio-cultural issues which are involved in such a task, or which need to be taken into account, the present effort can easily be looked at as a modest example in this regard.

Regardless, the synthesis of the arguments has one main massage to say, that is, the vitality of local interaction as a guide for development. Where the role of such interaction (that is, causal relations between the various entities in the local domain) diminishes, the focus can easily shift into formal or aesthetic aspects, and avoid the vital issues of ideology and discourse. On the contrary, where the interactive process is taken into account, not only do we start to appreciate small scale variations in time and place, but also, the whole ideological mechanisms which would lead to it (which can be characterized in spontaneity of development, organic or piecemeal growth, local autonomy, unpredictability, and others), and the spatial variations which result (rich, varied, and highly responsive environment) become implicit to any such process.

It would be fair to say, however, that in no way do the arguments as presented in this thesis exhaust the various implications of the issues at hand. Below, I will try to isolate and briefly observe some of these issues.

II. SOME IMPLICATIONS

The main implication of the developing argument is that the question of architecture lies not in architecture, but in ideology. This however seems to bring about a paradox: on the one hand, it seems to project architecture as being a passive - even transparent - entity within society, a stance which would not be tolerated by many - if not most - within the discipline, as well as some outside, who would rather point to architecture as an active agent which has the power of control and manipulation - Le Corbusier's declaration "Architecture or Revolution. Revolution can be avoided"[1] clearly perpetuates this position. How do the arguments presented reconcile between these two extremes?

The two views have been expressed in the past in a variety of studies which often took diverging paths. The determination factor is mainly attached to behavioural and linguistic (or what is referred to as structural) approaches to the built environment, where as changes in the setting necessitate changes in behaviour, the environment has been regarded to have direct effect on human behaviour. But don't such changes occur through temporal variation even within the same setting? therefore, architecture is itself subject to human manipulation. If so, does this follow the rules of its contextual (social or physical) dependency, or does architecture have its own rules governed by the perpetual images of the mind? Here, the difference is in the question; is it a question into the nature of architecture, or its making? Is it first an idea, or reality, experience, or knowledge? Questions often with no evident answers, though they have been and are still often posed, causing not any less ambiguous responses.

It is probably best here to refer to a statement by Bernard Tschumi (1990) where he says, "*there has never been any reason to doubt the necessity of architecture, for the necessity of architecture is in its non-necessity. It is useless, but radically so.*"[2] According to this view, the various - often seen as opposing - factors cannot be seperated from each others. One, in other words, is obtained through the other; the necessity of architecture is obtained through

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[1]From *Towards a New Architecture*, quoted in Mcleod (1985).
[2]Tschumi (1990), p26.

its non-necessity, the idea through reality, and knowledge through experience. This has mainly been dealt with in the second section in Chapter 4, where it was shown how the separation of architecture as an object of analysis (as in intentional perception, for example) can only be possible through unintentional mechanisms, and this as we saw is based upon the reduction of differences, and therefore, the elimination of meaning from a given pattern. As De Long (1985) says in this regard, "Survival within a synchronic context thus appears to be as much a function of ignorance as of knowledge."[3] In other words, it is inconceivable that we pay attention to every aspect in the environment which is present, but we rather can see only one aspect at a time, while the others being unconsciously absorbed by the mind. Both objective as well as subjective mechanisms then take part in the process. Therefore, we note that while different alternatives were at times conceived as opposites, they in fact are found to be highly complimentary.

The case which has been put forward in this thesis is that any schismatic view, analysis, or situation - whether this refers to space and form, form and content, experience and knowledge, old and new, or else - is attached to a certain mishandling, or a 'missing piece' which would otherwise avert such schism into a continua. This would then relate the two entities to each other, and allow them to interact. The capacity of this relationship is in the level of causal interaction between the two, which would then reflect upon each of them as entities. Here, such interaction is related to certain subjective criteria or value, which is beyond, or which remains independent from the initial intention. This criteria, expressed in this thesis as a concave pattern, is at the same time the means and the outcome of such interaction. This point has recently been expressed by Jeffrey Alexander (1990). As he says,

> "There is a subjective order rather than merely subjective action because subjectivity is here conceived as framework rather than intention, an idea held in common rather than individual wish, a framework that can be seen as both the cause and the result of a plurality of interpretive interactions rather than a single interpretive act per se. *Experience and the meaning of experience become central to this approach.*"[4]

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[3]De Long (1985), p262.
[4]Alexander, J.C.(1990), p1 (*my emphasis*).

Central to all this is the question of ideology. By turning the emphasis in architecture towards ideology, we start to realize the need to take into account the complex interplay of forces which occurs in the architectural process. To acquire better architecture, not only do we need better ideas (or images), but we primarily need to look for better or more appropriate ideologies. Similarly, little can be acquired if we aspire to the shapes, forms or ideas of the past, without contemplating for the ideologies according to which these were produced. But 'ideology' can as well be an ambiguous term, which can be easily abstracted into certain terminology which is beyond what is originally intended - as for example in the transformation from Marx to Marxism, as perpetuated by Williams (1977). In this thesis, it was meant to emphasize the practicality of the term; it is the *process* of development, while culture is the *means* of development. Ideology, therefore, is an inherent feature of social action, and is thus related to the material, rather than the ideal. It does not simply convey ideas, images or values, as it seems to be most commonly conceived, but rather it implies processes, or courses of action which are taken. In these terms, as an ideology can be very specific in defining certain roles and methods, it can result in forms or spatial patterns which can be very divergent between themselves, and from the original intention.

It seems to me that the notions of 'concave' and 'convex' patterns are particularly useful in this regard. 'Concave' or 'convex' models refer essentially to the characteristics of the social processes, and their consequences in terms of social interaction. They thus do not imply forms, terminologies, or ideas which are used. A concave pattern of interaction, as explained, refers to the reflection of local forces on the local level, which eventually, as actions are prompted by need in response to immediate or existing conditions, leads to causal interaction to occur between the various entities in the environment. Opposite to this, a convex pattern implies the projection of causal forces from a separate entity on a higher level, thus limiting the need for such interaction on the local level. The nature of the forces, causal interactions, or the material outcome of this remain accordingly open, and dependant upon particular situations. Any situation is therefore a result of the synthesis of a particular combination of these processes.

But if we accept that the built environment depends upon the nature of causal interaction, doesn't this formulate a direct contradiction to today's mainstream order, not only in the Middle East, but also around the world? A simple and brief answer to this question is yes. Today's conditions are based upon external control, whether through the state, the economy, municipal authority, institutional knowledge, and the professions - including architecture. Excessive controls delete communication and interaction, and can lead to either lasting dependency of the population on the controllers, or to their rebellion against the controls and the controllers. But the latter case is only restricted to situations where immediate alternatives and benefits can be envisioned, and which then require knowledge of such alternatives, and the possibility of achieving them. This, however, seems to be far from a reality where any such alternative is declared dead at its birth by the media, institutions, and even the majority of the populace who seem to believe in what they are being told about the 'ideal' life that they are leading, or aspiring for, leaving thus a situation of total and lasting dependency.

While this appears to be pessimistic, and might reflect the hopelessness of the situation, there are some evident signs which concede certain optimism. There is increasing dismay on a public as well as professional level in today's situation, and more consciousness for the need of change. The response to this seems to often be reactionary, as in aspiring for new forms or better designs (as we saw in the case of Regionalism). But as these might be helpful on the short term, the major problems need sooner or later be addressed, and this needs to go into questioning the very ideological order which led to them.

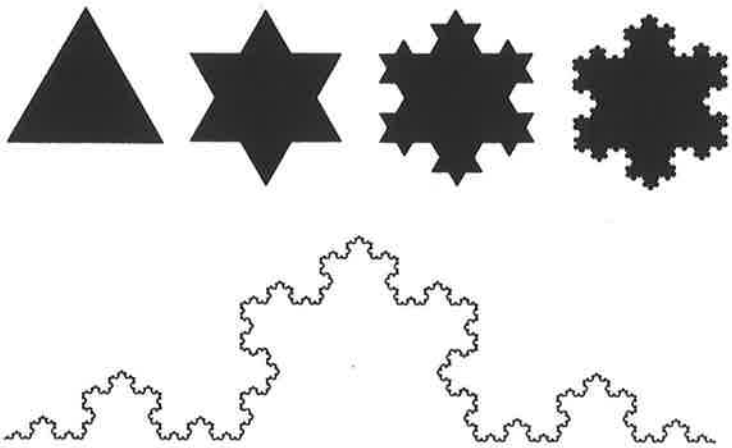
It needs to be noted that nothing here should doubt or negate the vital role of the professional architect or urban planner in the process. Most of the questions and alternatives which are being posed in this direction are being put forward by architects (or barefoot architects, as some rather refer to them). But where the architect or urban planner is often seen as the centre of reform, these should turn there intention towards society, and the role of society in the process. The role of the architect as a mediator, which has been proposed in the last chapter of this thesis, is just this; in an age where specialization is inevitable, and where

the referral to an authority, either for municipal services, financial aid, design or construction, is unavoidable, the crucial role of the architect (amongst other), is through mediating between the two. What is hoped is that such a situation would reverse the formula which is now dominating, so that control and development become aspects of local concern, and out of this develops a new social and ideological order based upon new set of normative rules and principles which encourage and govern in peoples' relationships and interactions.

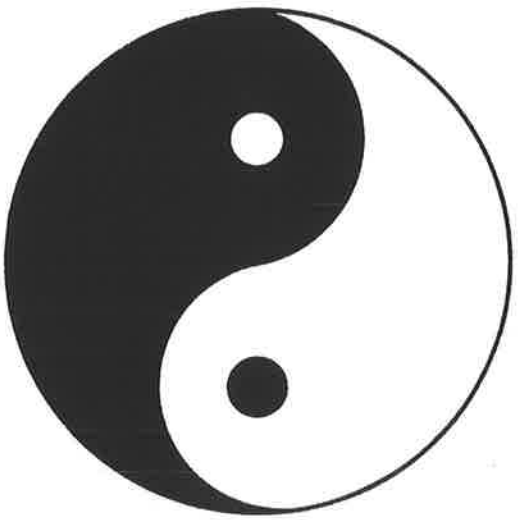
In Chapter 1, it was pointed out that a proper appropriation of the concept of space implies three main themes: multiplicity, specificity, and a process which combines them together. In a word, we can say that its a question of convergence. Convergence in this sense implies a process where different views and inputs come together in the form of particular spatial patterns, in response to particular situations. As such, it is the convergence between the intellect and the illiterate, between the specialist and the public individuals. From this point, and towards the future, intention and research should be directed towards how such convergence could be achieved. 'Better' built environments can do little in this regard, on the contrary, they would only help in alienating the majority who are not envolved in the process. A critical examination of today's educational standards is then essential,and to realize the need for more integration between local and global matters is only one step in the right direction.

I close this dissertation at a point which could just as well be the start. This is not an apology, but an attestment for an area of indefinate complextity which needs to be explored. The question of the built environmental is a labyrinth, whose roads are weary. This thesis attempted to lay down a few more stones in a few more lanes. It is my hope that these will prove to be solid enough that they allow for the heavier ones, which will eventually pave some of the other wearier parts, to be able to proceed.

Illustrations

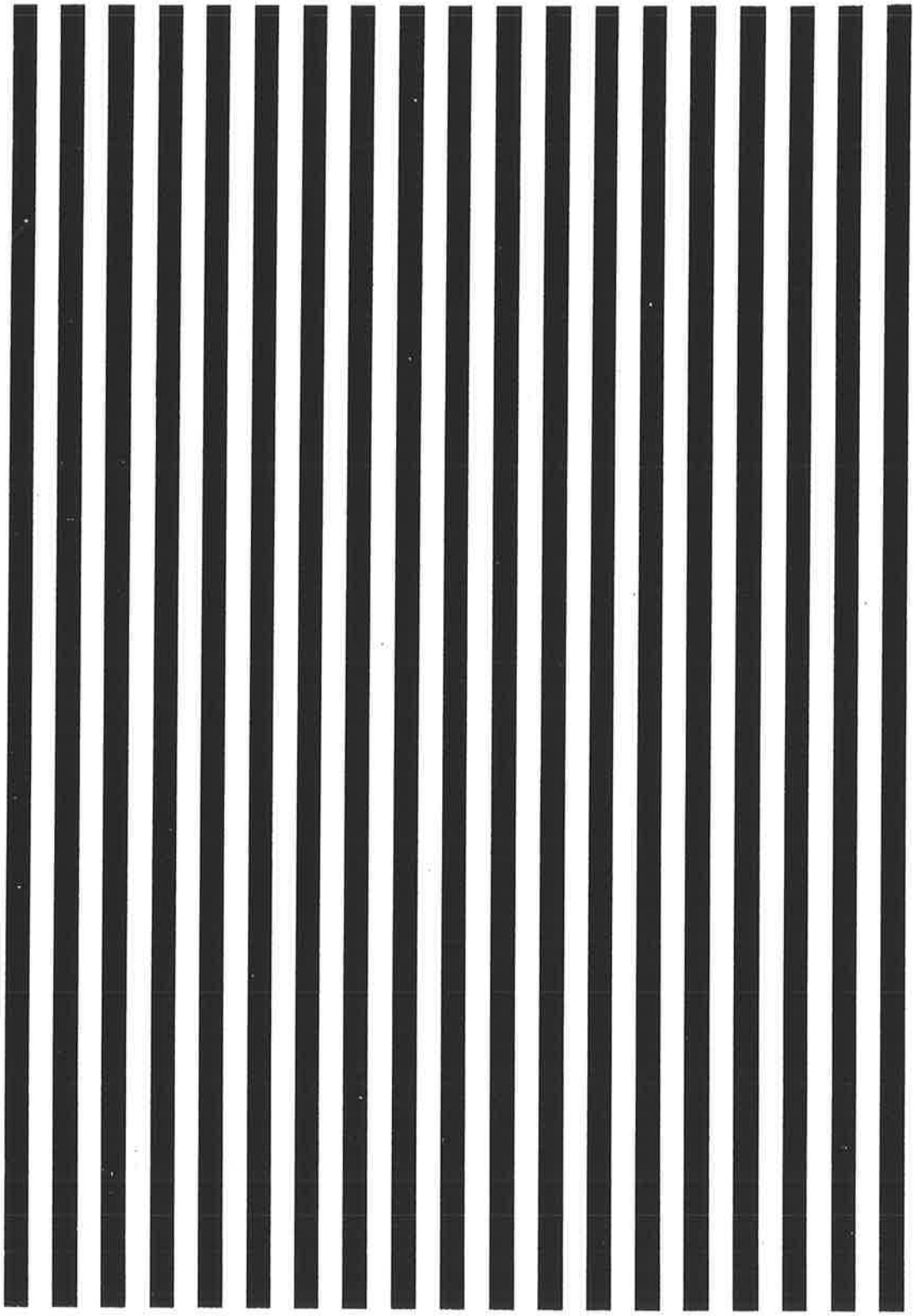


Illust. 1 The Koch 'snowflake'. "A rough but vigorous model of a coastline," in Mandelbrot's words. (Source: Gliek (1988), p99) Refer to pages 5, 20.

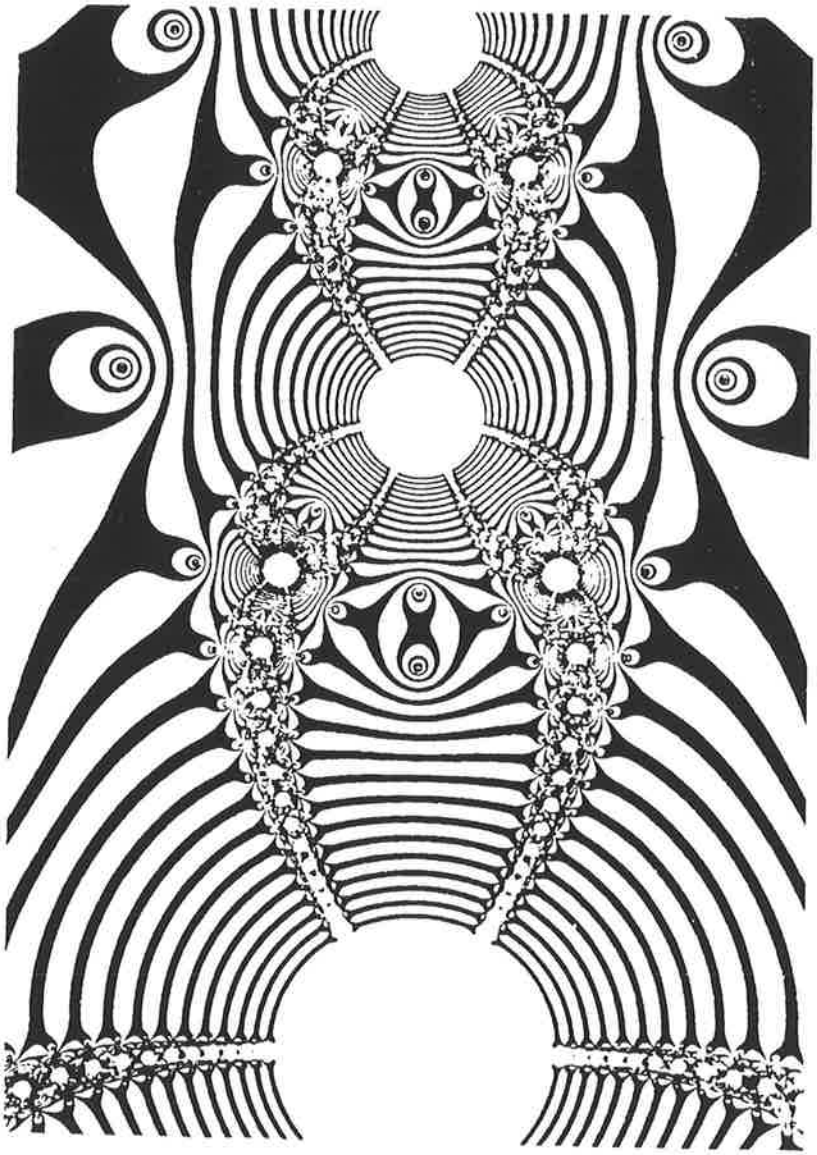


Illust. 2 'Yin yang'. Refer to page 26.

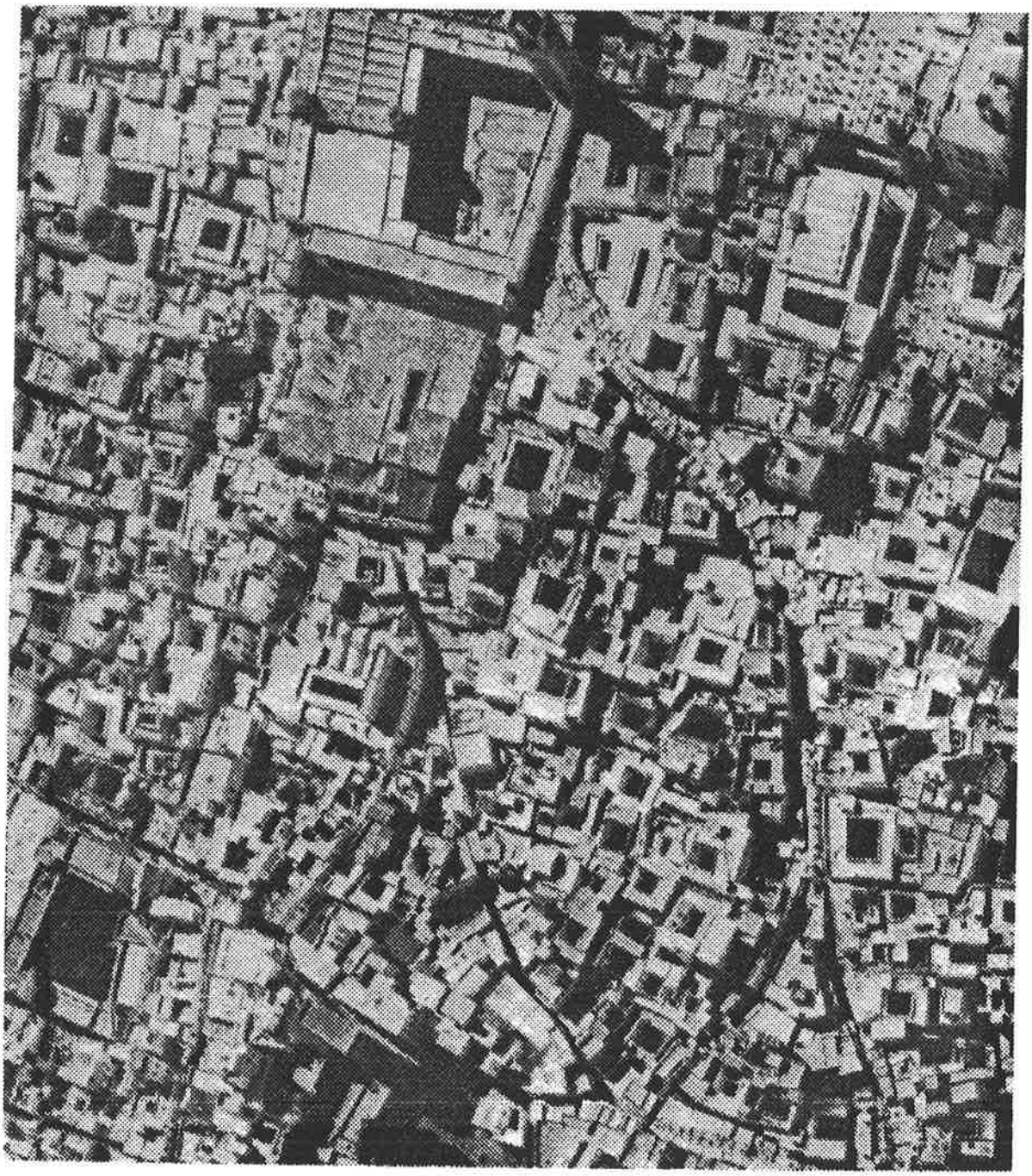
Illust. 3 An example of visual illusion. "My Wife and my Mother-in-law." Drawing by W. E. Hill. Different perception of the same image occurs in different times. (Source: Hesselgren (1969), p 153) Refer to page 115.



Illust. 4 After looking at this figure steadily for a short period of time, it will be found that the original feeling of slight uneasiness towards this uniform pattern turns into disgust or repugnance due to the lack of stimulus. (Source: Hesselgren (1969), p219) Refer to page 117.

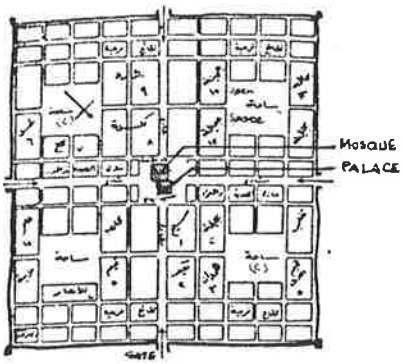


Illust. 5 More or less complex patterns are found easier to receive visually. From the exhibition "Frontiers of Chaos", Adelaide, Sept. - Oct. 1990. (Source: Lumen, Vol. 19, No. 9, 15 June 1990, p19) Refer to page 117.

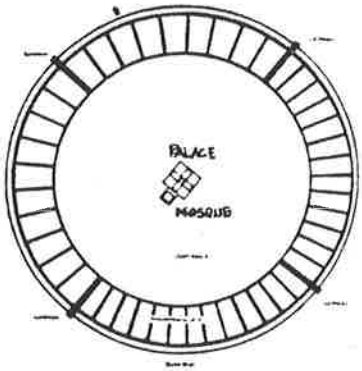


Illust. 6 Aerial view of a part of Tunis. (Source: Office de la Topography, Tunis, 1972 - in Basim Hakim(1986), p112) Refer to page 132.

PLANNED CITIES

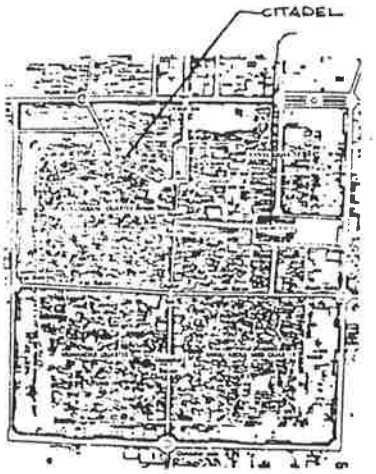


KOUFFA, IRAQ (7TH CENTURY A.D.)

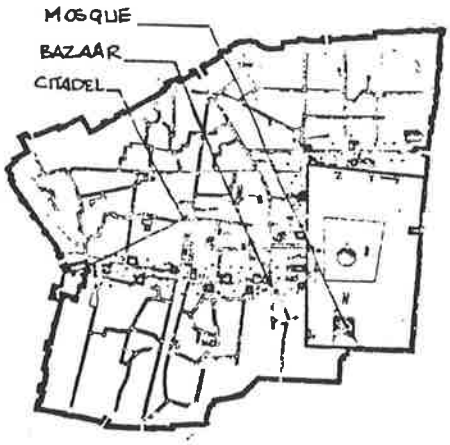


BAGHDAD, IRAQ (8TH CENTURY A.D.)

TRANSFORMED CITIES



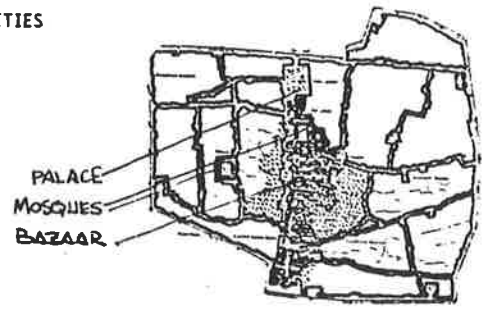
HERAT, AFGHANISTAN, 16TH CENTURY A.D.



JERUSALEM, PALESTINE, 15TH CENTURY A.D.

SPONTANEOUS CITIES

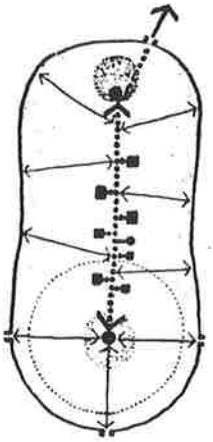
QAZVIN, U.S.S.R.



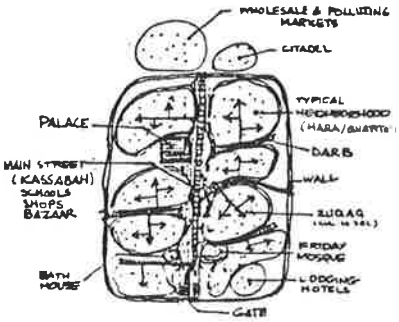
ISFAHAN, IRAN

PLANS: 14TH TO 16TH CENTURY

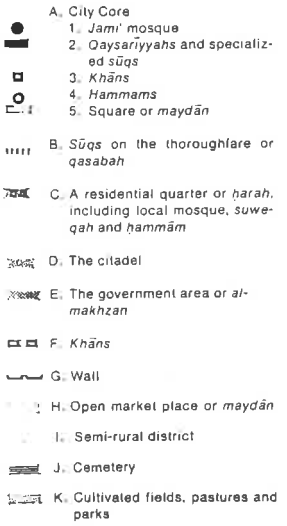
Illust. 7 Examples of Muslim cities. (Source: Alsayyad, N. (1986), p19) Refer to page 134.

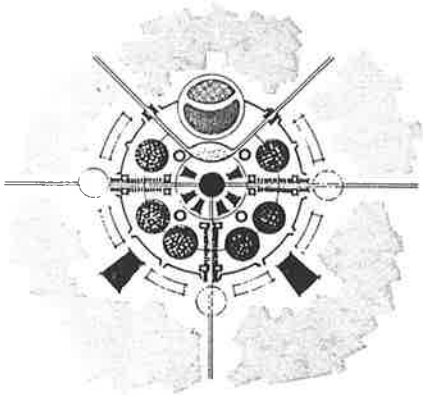


THE CONCEPT OF THE ISLAMIC CITY
(based on Ardlan)
A moving point creating a linear bazaar

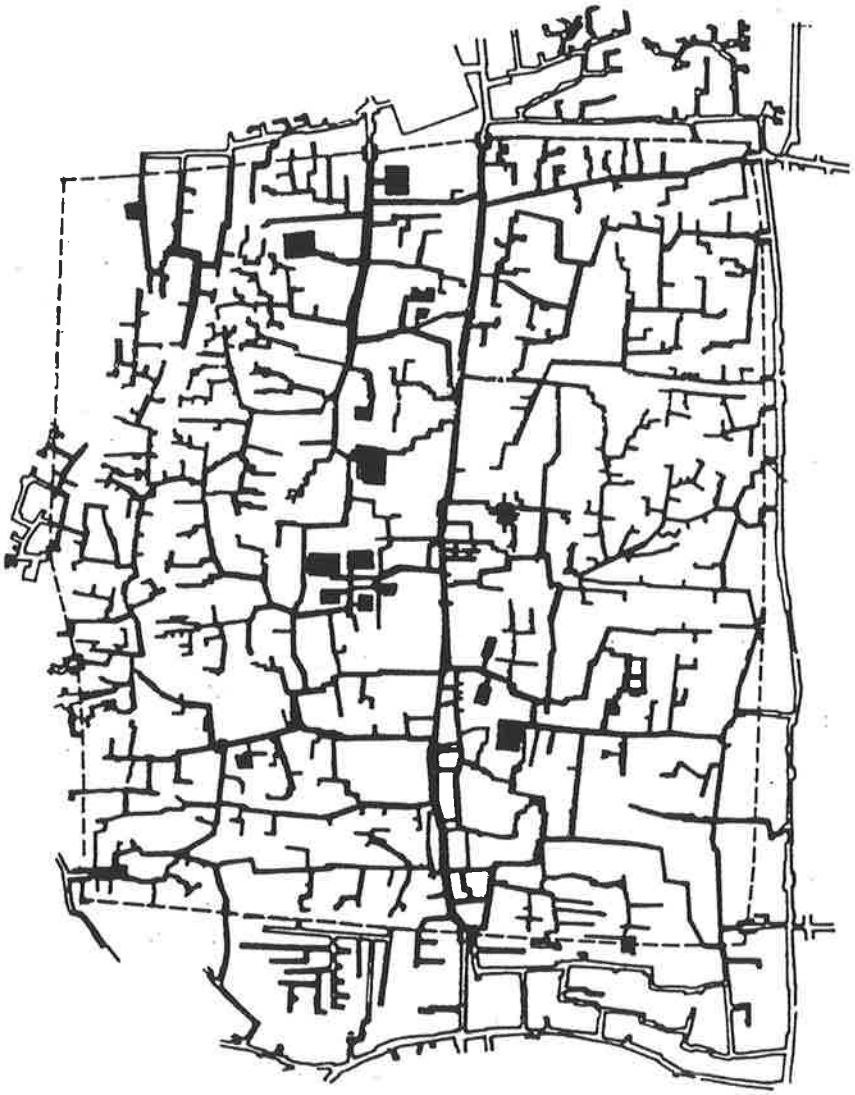


PLAN OF A TYPICAL MUSLIM CITY
(based on Alsayyad)
Controlled access, limited mobility.
Accessible areas: market friday mosque, lodging, bath house





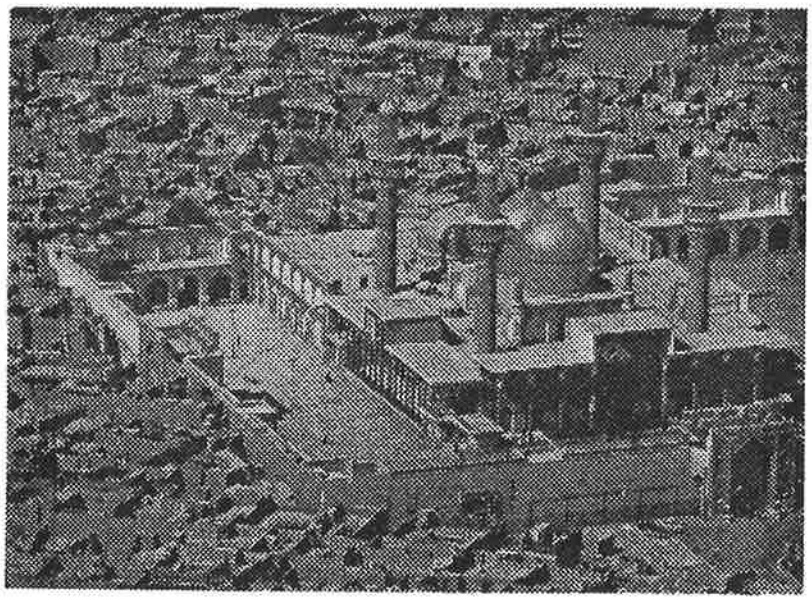
Illust. 8 Structure and constituents of medieval Muslim cities. Note the continuation of the bâzaar across the city structure. (Sources: (Top right and top left) Alsayyad, N. (1986), p20. Middle: Ismail (1972), p120. Bottom: Plan of Jerusalem, Sharon (1973), p116) Refer to page 135.

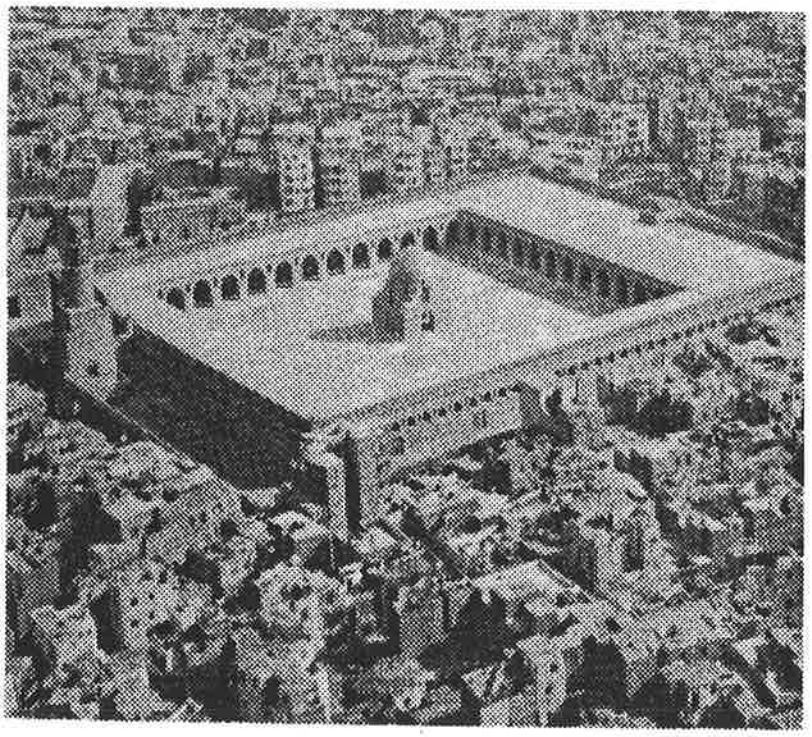


Illust. 9 Plan of Cairo' s street pattern; minor streets often ending in culs-de-sac randomly branching off one major street which runs across the city. (Source: Norberg-Schultz(1982), p67) Refer to page 136.

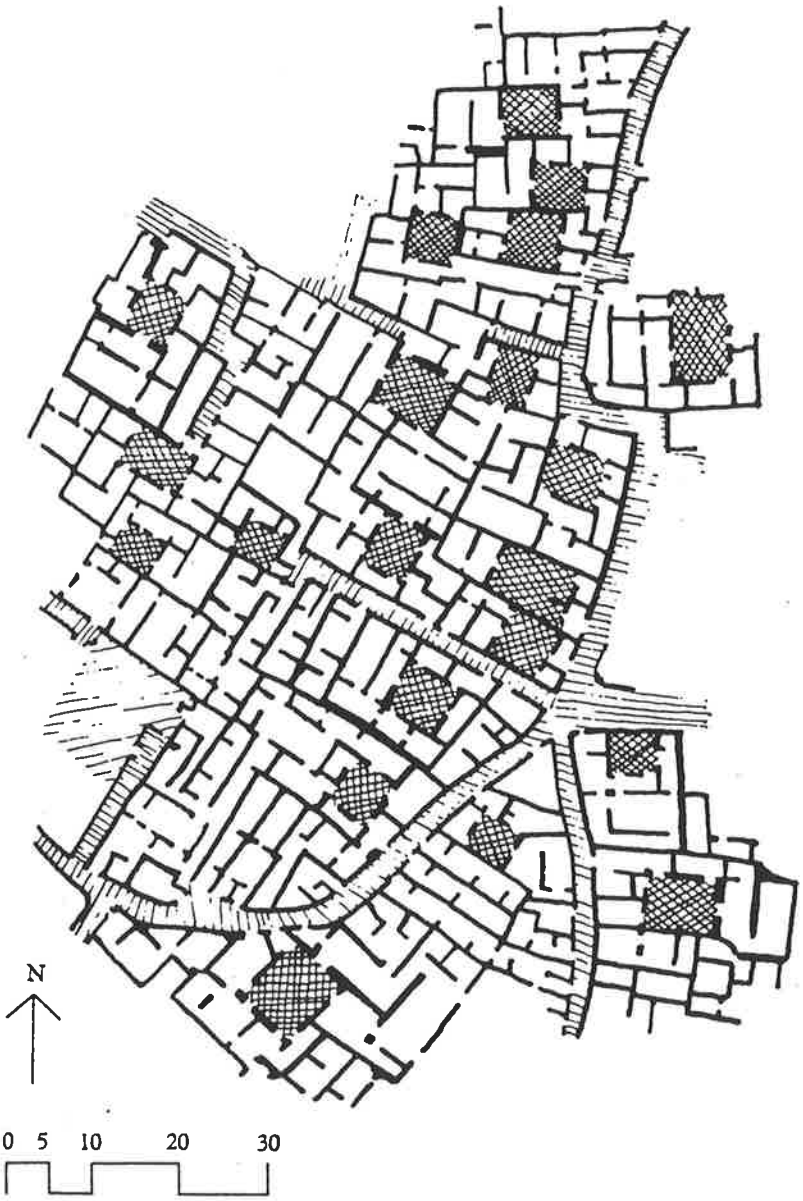
Illust. 10 Barnsley Fern (named after its creator). A product of computer simulation by the random application of simple rules. Its overall structural pattern has much resemblance to the structure of the Islamic city (see plan of Cairo in the previous page), which implies an ideological similarity between the two. (Source: Patterns of Chaos booklet (1990), p4) Refer to page 136.

Illust. 11 Residential quarters in Tunis: courtyard houses connected by a hierarchy of streets often ending in culs-de-sac. (Source: Modified from Fathy(1986), p145) Refer to page 136.

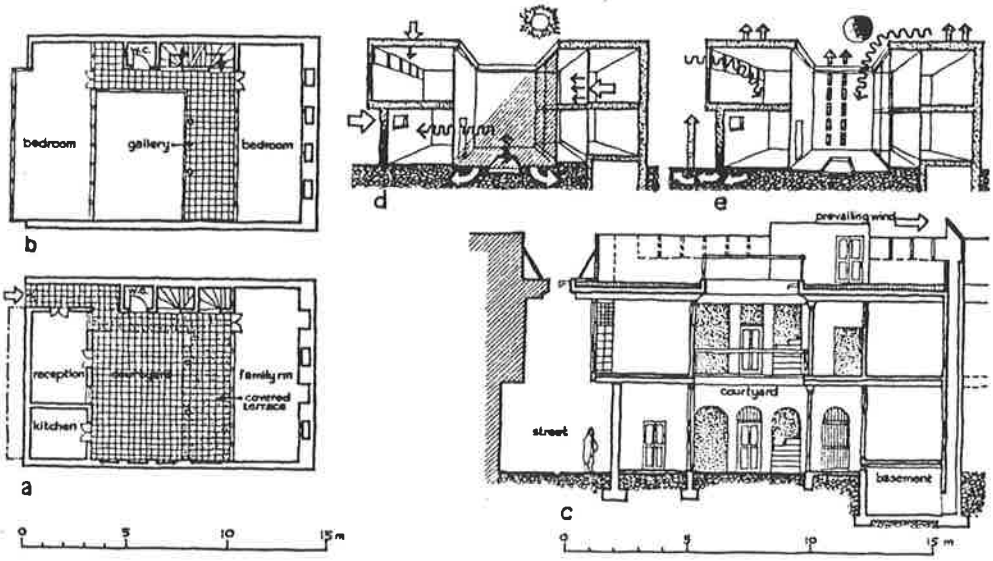




Illust. 12 Top: Kadhimain mosque in Baghdad. Bottom: Mosque of Ibn Tûlûn in Cairo. The spaciousness of the mosque's courtyard is in deep contrast with the compact structure of the city. (Sources: Warren et al.(1982), p205, and Abu Lughod, J. (1971), p15) *Refer to page 137.*

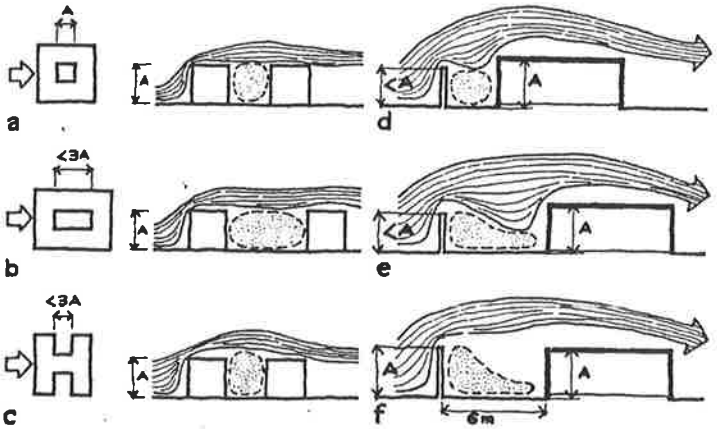


Illust. 13 Cluster of courtyard house, Ur, 2000 B.C. (Source: B. Hakim(1986), p95) Refer to page 137.

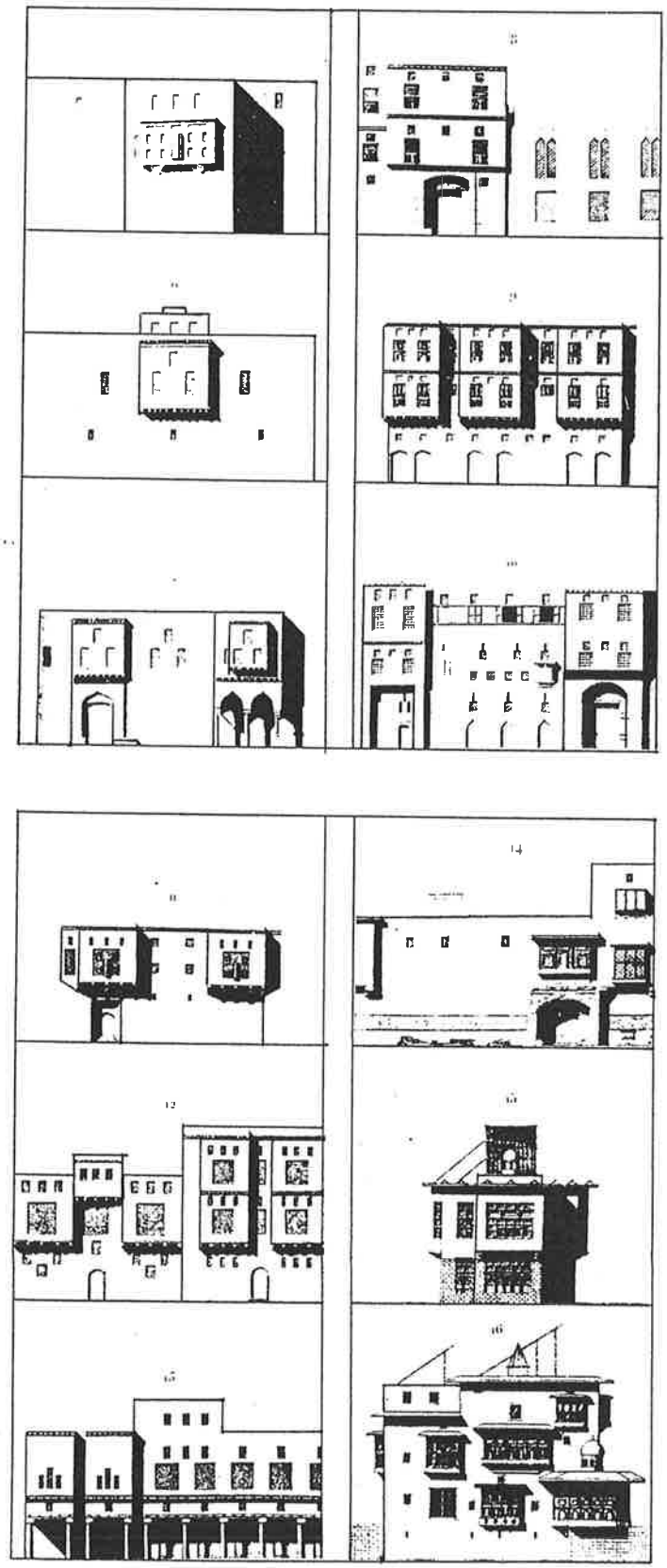


Illust. 14 A typical courtyard house in Baghdad, illustrating plans, sections, and thermal systems. (Source, Konya, A. (1980), P 39) Refer to page 137.

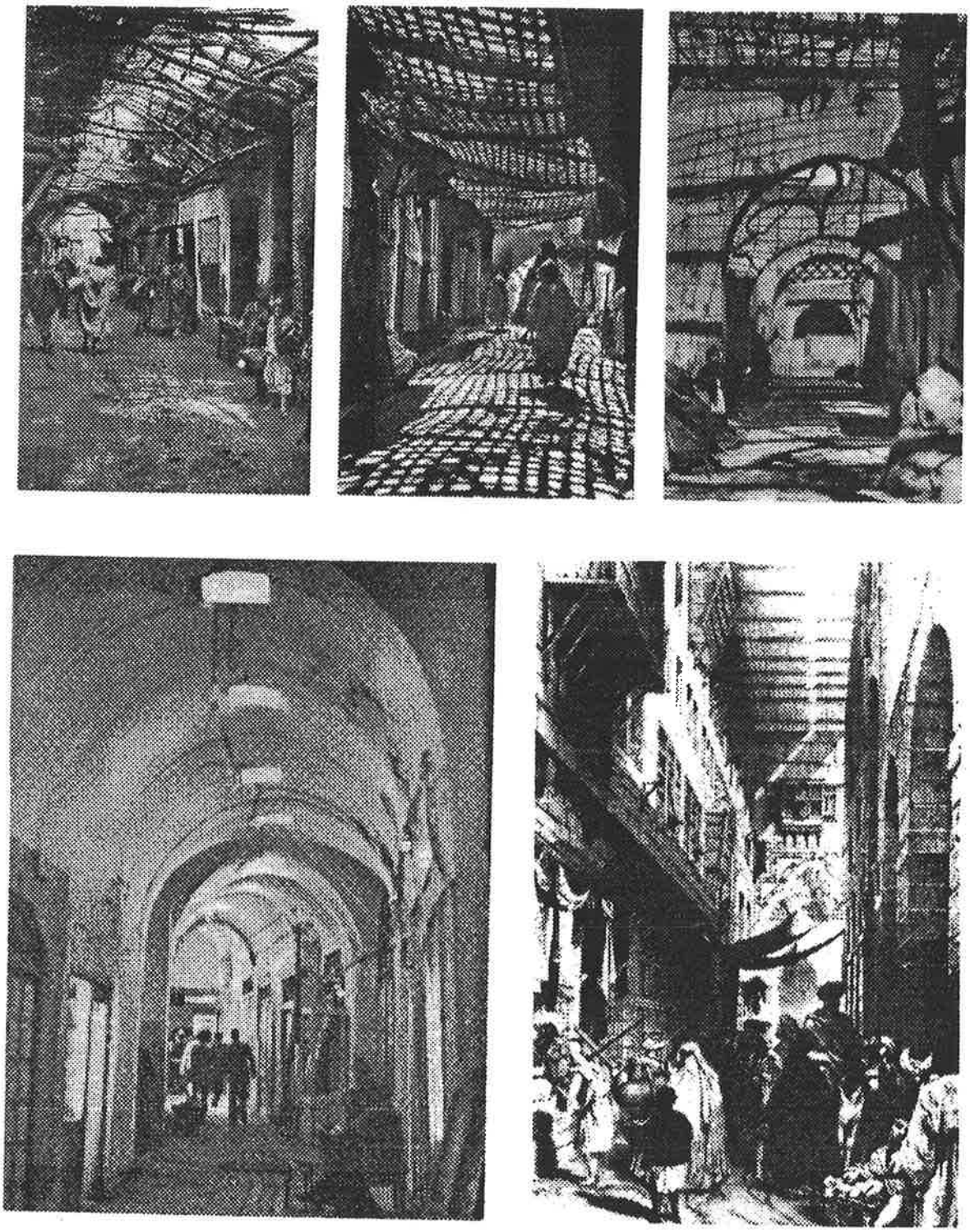
A square central courtyard offers good protection from windblown dust and sand (a). The depth of a rectangular courtyard should not exceed 3A unless the long axis is perpendicular to the wind (b). The same holds true for perimeter courtyards (c). Barrier screens must be of a suitable height and not more than 6 m from the building to provide protection (d–f)



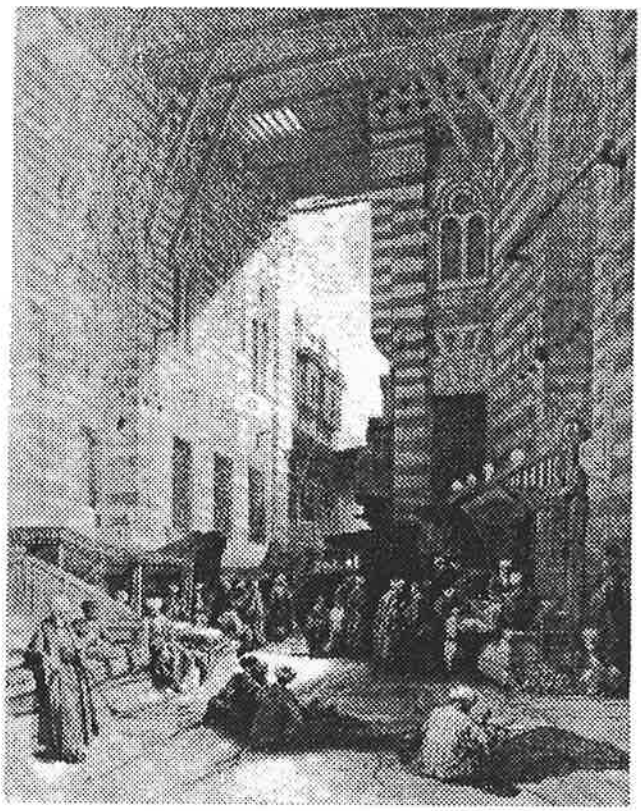
Illust. 15 The effect of an internal courtyard on air circulation. (Source: Konya, A. (1980), p72) Refer to page 138.



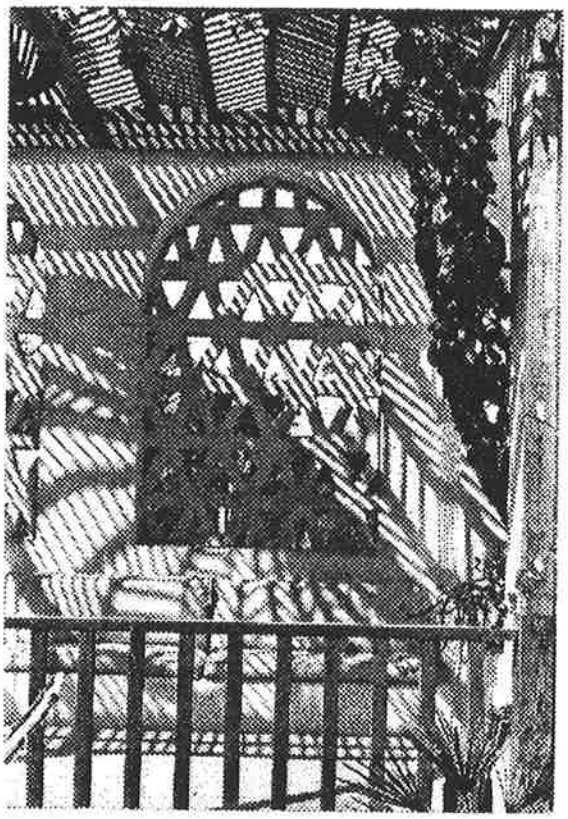
Illust 16 Examples of facade styles in traditional Egyptian cities. Note the near absence of windows on street level, and excesses on upper levels. (Source: Brown (1973), p 99) Refer to page 138.

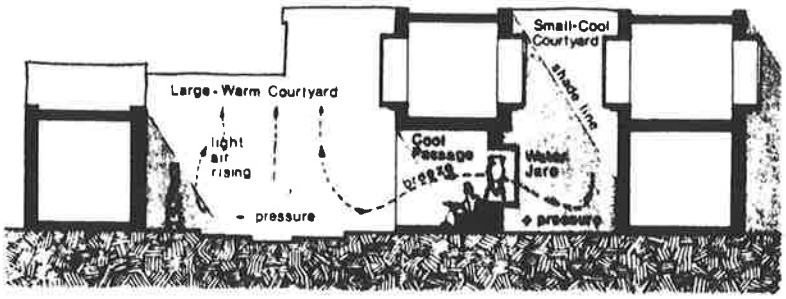


Illust. 17 Examples of shading patterns in internal streets. (From top left clockwise) Marrakesh, Morocco, structures of straw and saplings; Fez, Morocco, lattice supported by tree trunks; Tlemcen, Algeria, vaulted beam structures supported lattice for creeping plants; Cairo, Khan al-Halili, wooden structures on the higher levels; Suq Echaouchia in Tunis, totally covered with vaults and cross-vaults securing appropriate conditions throughout the year. (Sources: (The first three) Akbar, J. (1987), pp 158-159; (bottom right) Raymond (1984), p35; (bottom left) Hakim, B. (1986), p128) *Refer to page 138.*

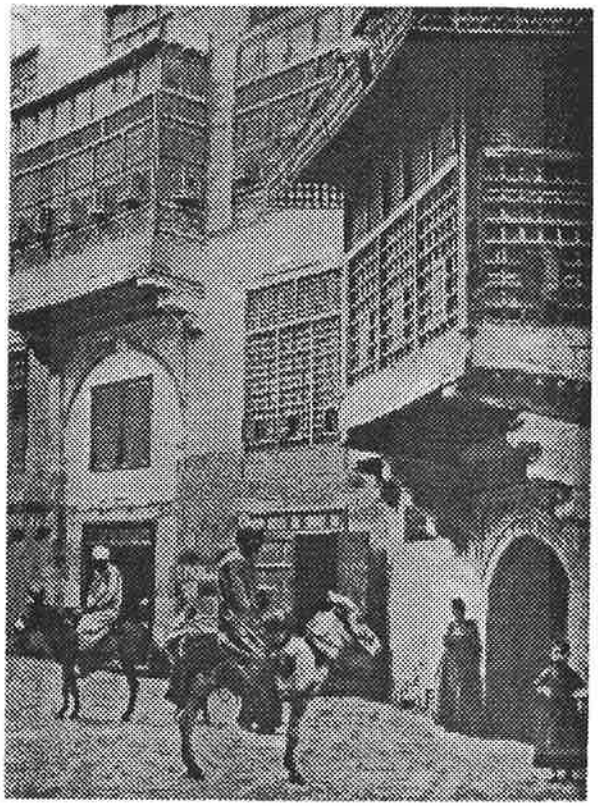


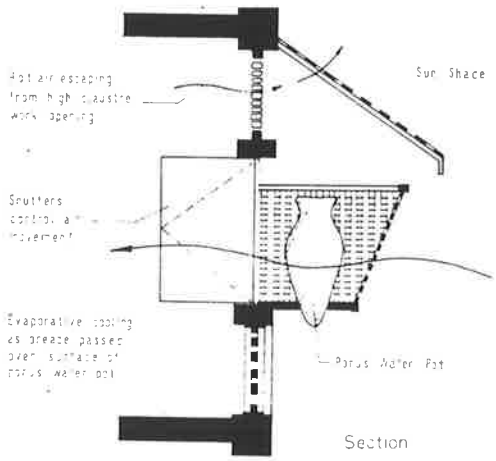
Illust 18 Top: Bâzaar of the Silk Marchents in Cairo ca. 1840. (Source: Abu Lughod (1971), p.62) Bottom: View from the city of Tunis. Note the various shading devices which are used, including wooden louvers on the higher levels in the first picture, and an underpass (or sabât) in the second. Refer to page 138.

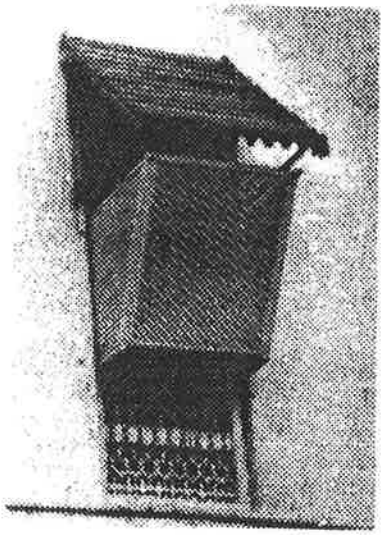




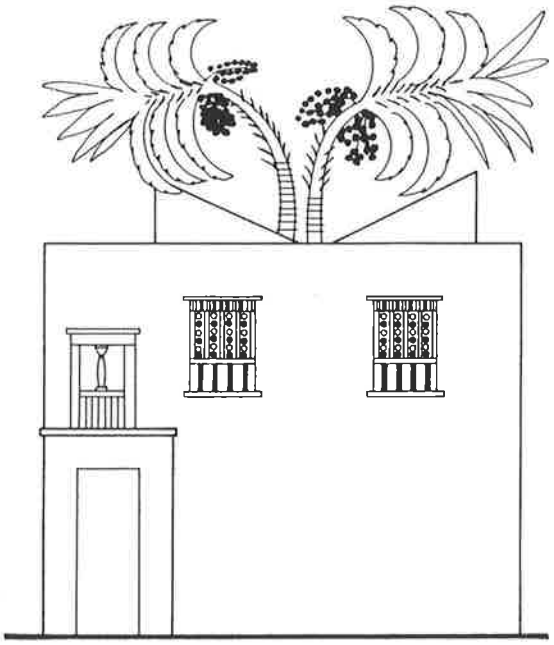
Illust. 19 The takhtabûsh principle, driving cool air from the shaded courtyard through an outdoor sitting area into the less shaded back garden. Top: View of takhtabûsh. Bottom: Cross-section illustrating a takhtabûsh arrangement. (Sources: Richards et al. (1985), p65; Cain et al. (1976), p63) Refer to page 138.

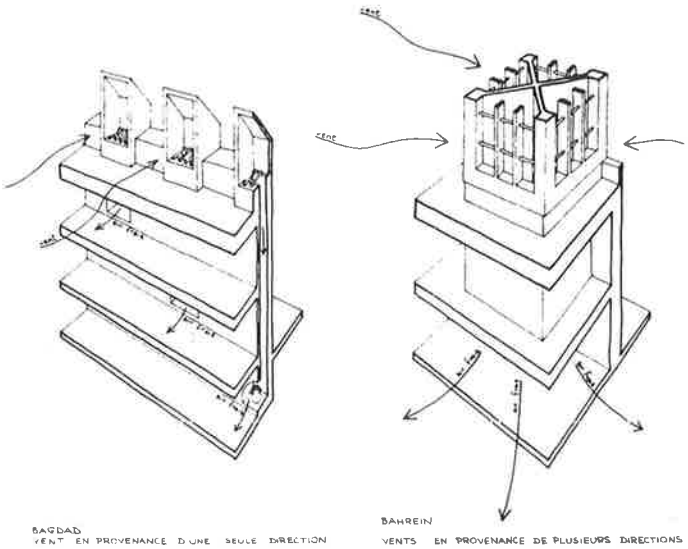




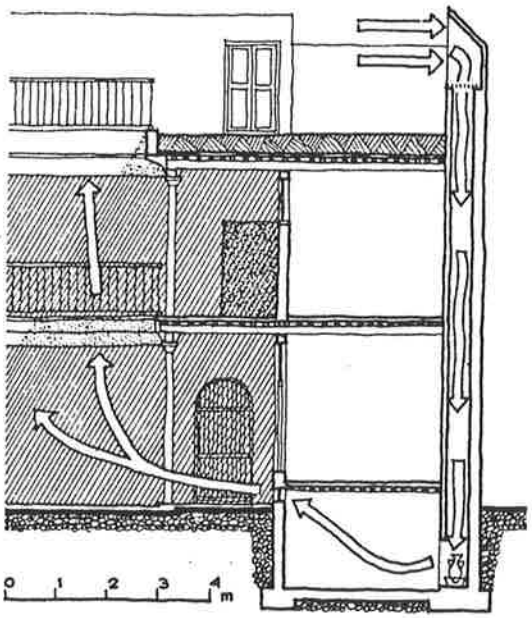


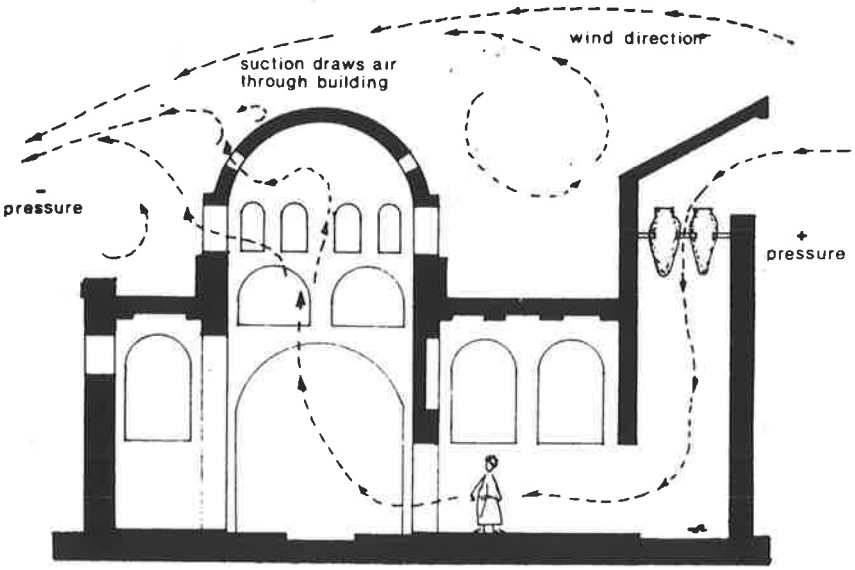
Illust. 20 The double-use of mashrabiyya as a cooling device and a window screen. Top: View of a street in Cairo which shows the excessive use of mashrabiyyas. Note little excesses on the mashrabiyyas, which were specially located to place a water jar. Bottom: Window details of a house in Muscat incorporating evaporative cooling system. Refer to page 139.



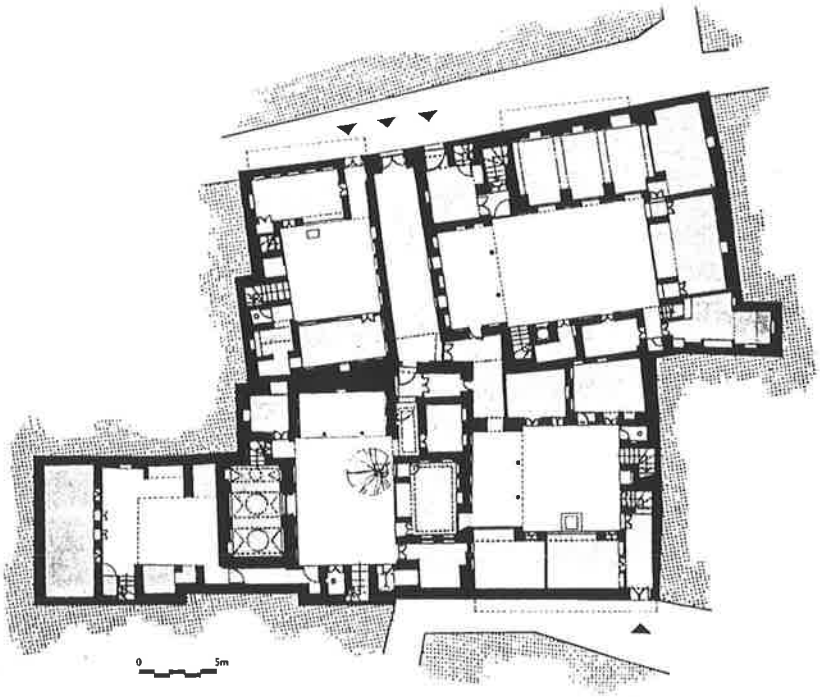


Illust. 21 The use of malqaf or badjîr (wind catcher). Top: Malqaf of the Pharaonic house of Neb-Amun, from a painting on his tomb, Nineteenth Dynasty (c.1300 B.C). Bottom: Illustrations of two types of malqaf. (Sources: Fathy (1986), p118; Abdulak et al. (1973), p14) Refer to page 139.

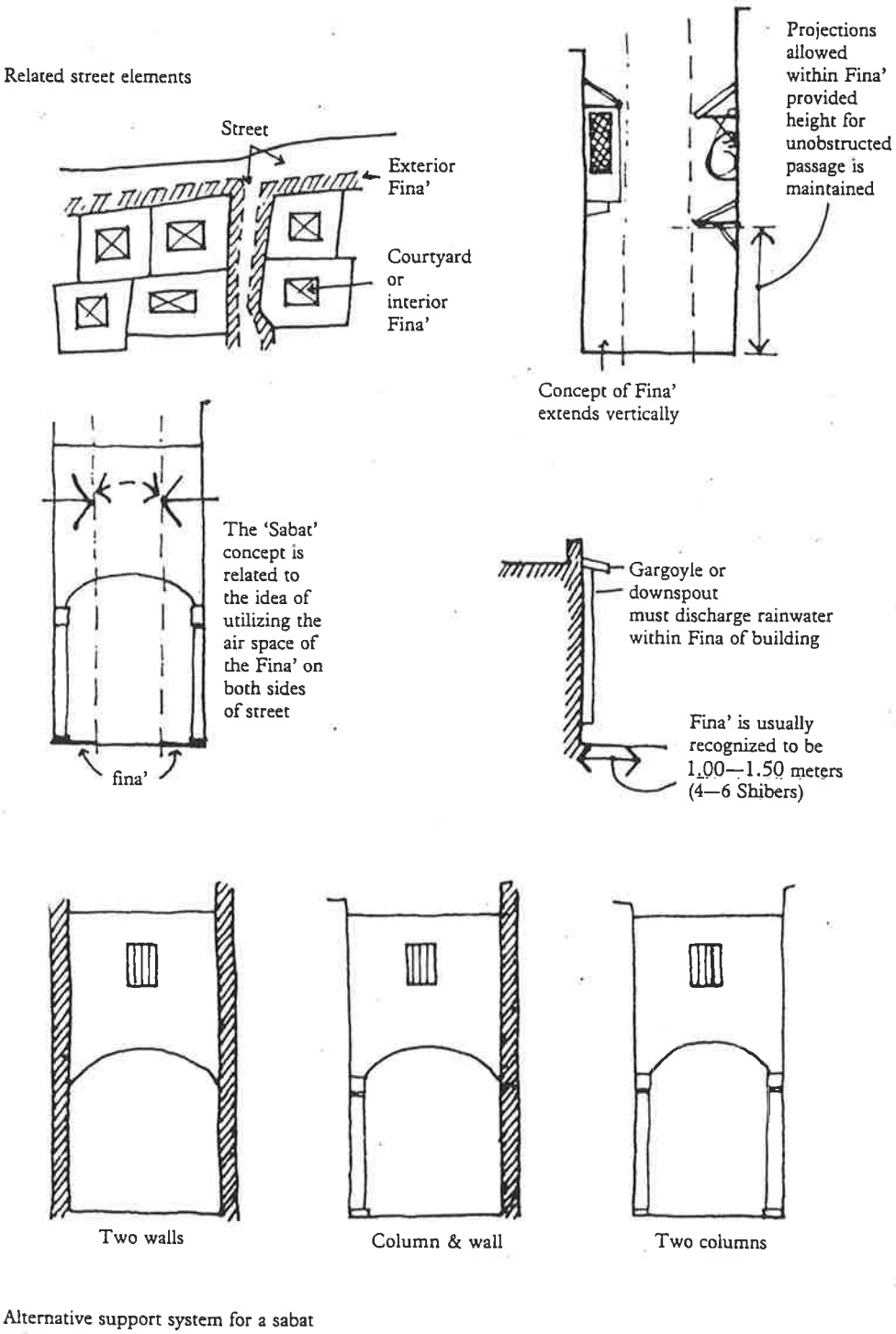




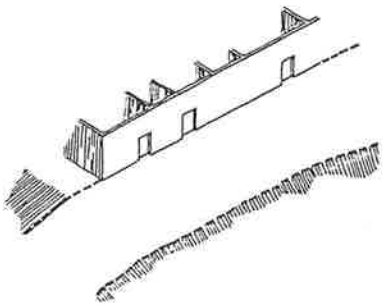
Illust. 22 Cross-sections of a house in Baghdad (top) and Nubia in Egypt (bottom) showing the use of malqaf. Note the water jars which are placed to reinforce the effect of evaporative cooling. (Sources: Konya (1980), Cain et al. (1976), p63) Refer to page 139.



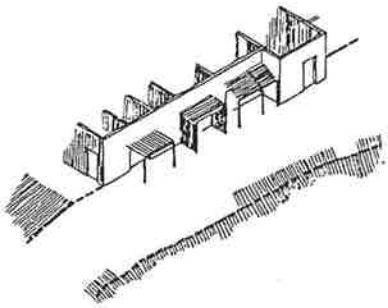
Illust. 23 A cluster of houses in (top) Fustat, c.11th century. (Source: Grabar, O. (1985), p15), and (bottom) Baghdad. (Source:Warren et al. (1982), p201) The irregularity of the houses implies the effect of transformation over time. Refer to page 140.



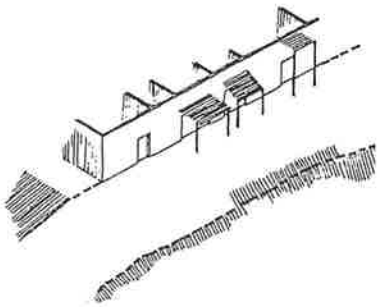
Illust. 24 The Finâ' of a building is its exterior adjacent space. (Source: Hakim(1986), p28). Refer to page 143.



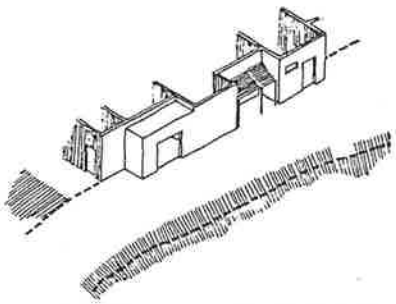
1 Establishing shops.



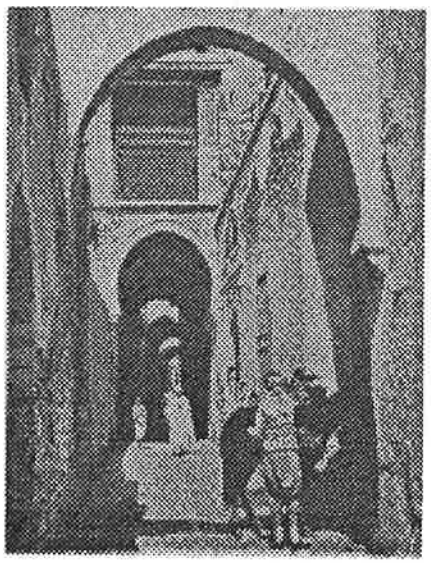
3 Building walls, connecting columns and shops.

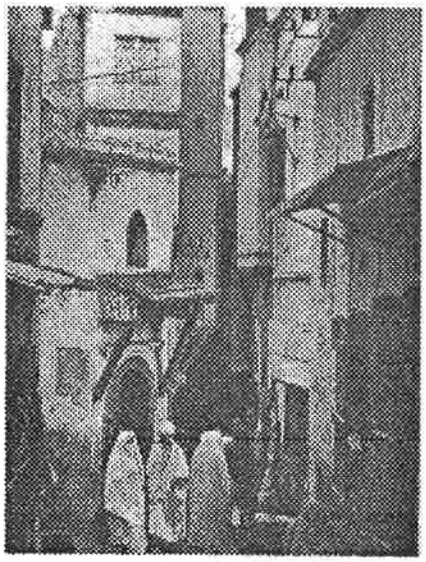


2 Erecting columns and roofing the appropriated space.

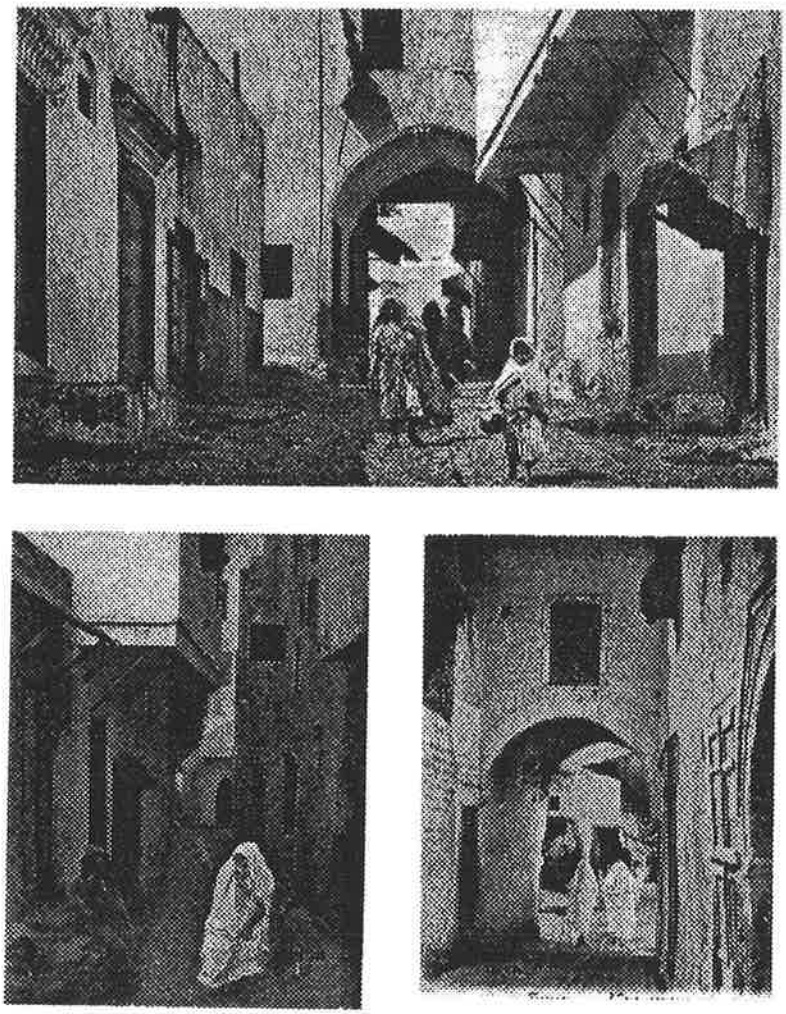


4 Extending property line by including the spaces to the property.



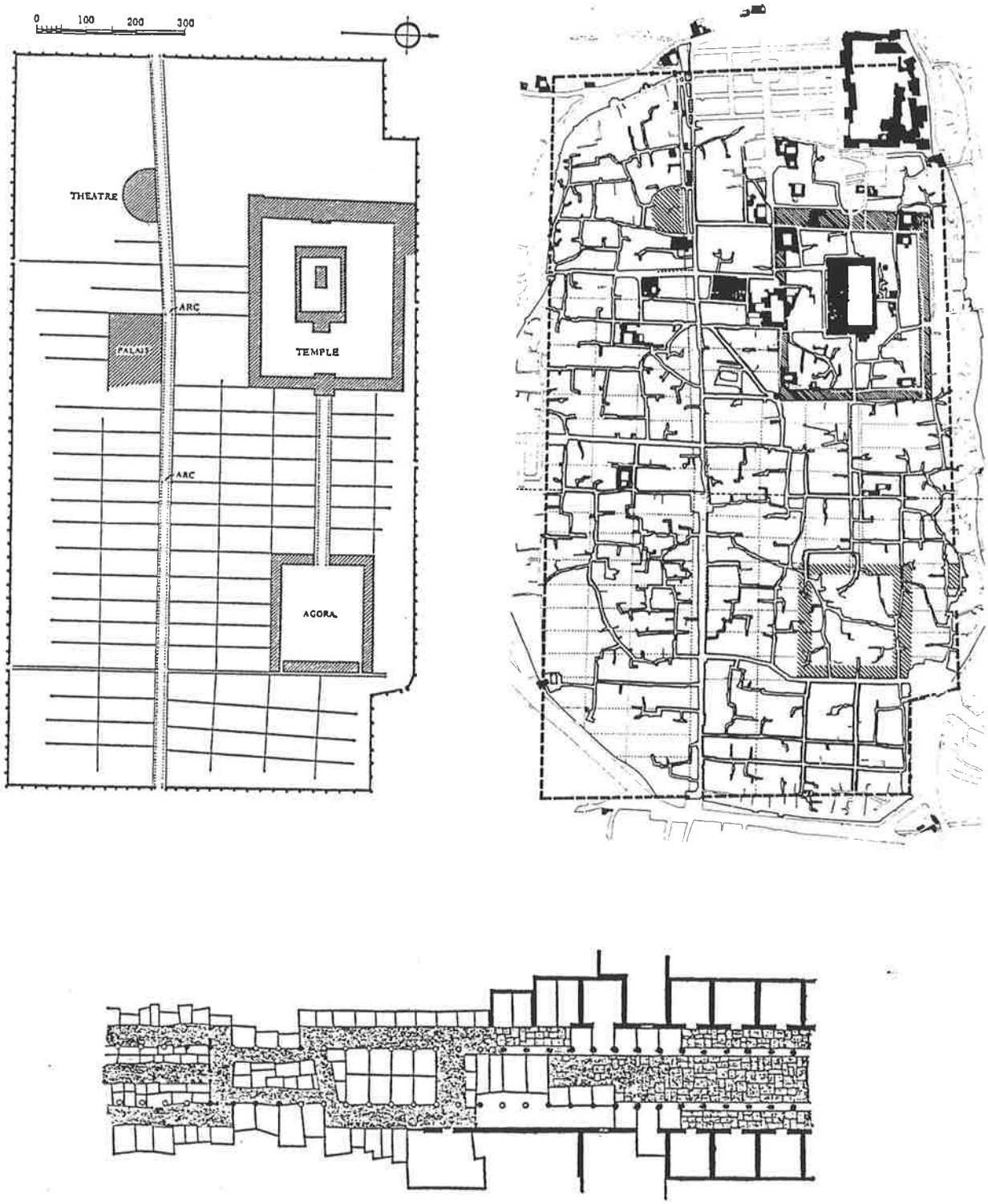


Illust. 25 Accretion principle - encroachment of public spaces. Top: Representation by Akbar of the sequence of accretion. (Source: Akbar, J. (1987), p116) (Below) Views of internal streets showing the effect of accretion (below right) Overpass or sabât, (below left) excesses and overhangs. Note the randomness in the picture to the left, where the buildings are almost touching on the higher floors. ,(Source: Akbar (1987), pp74, 75) Refer to page 143.

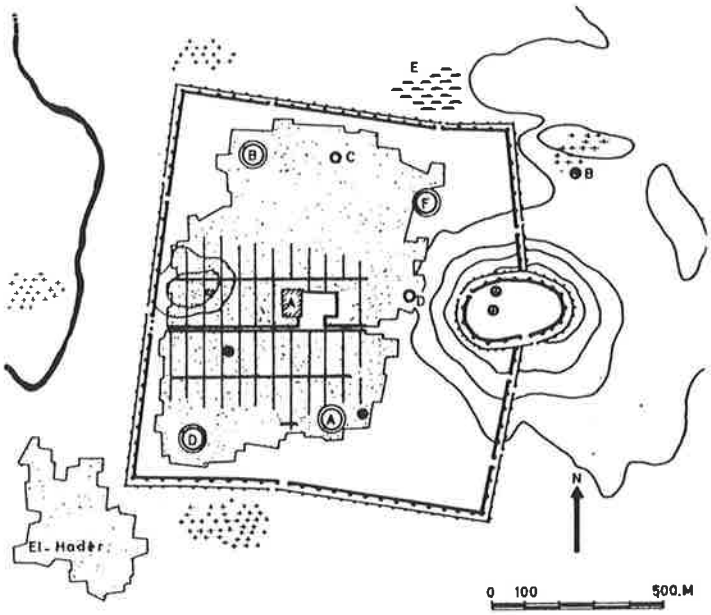


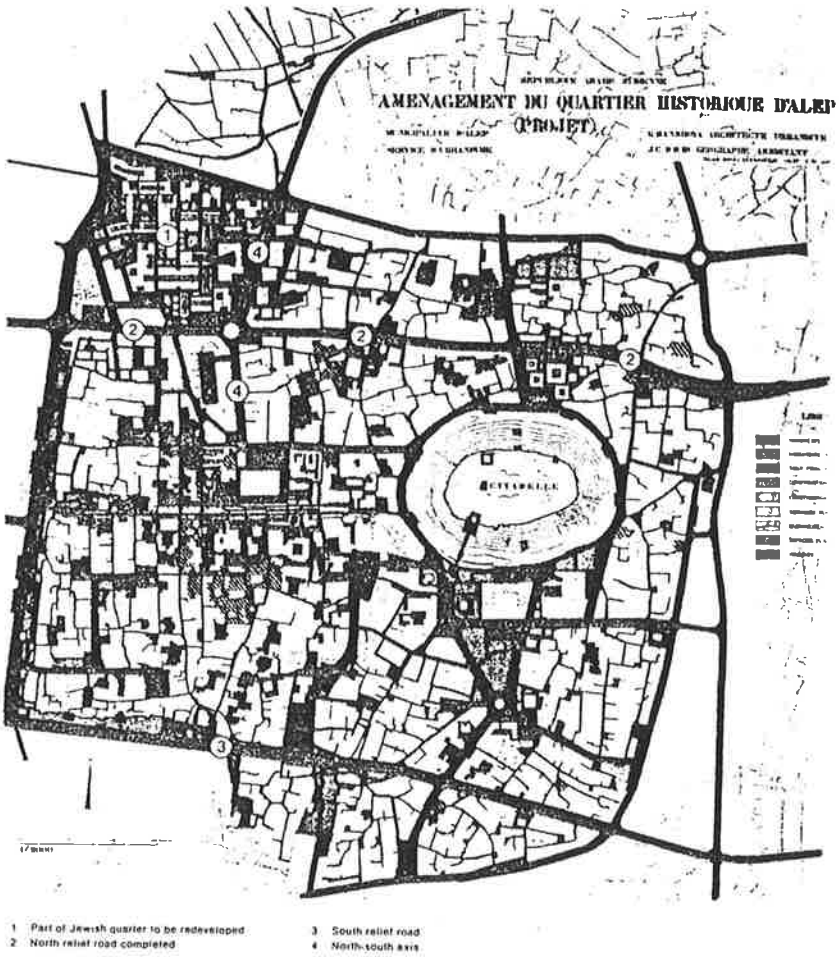
Illust. 26 Views of internal open spaces. Note the different supportive systems used for later additions in different cases. Top: Tanger. The window of the sabât is screened from the left side, so that not to overlook the private open spaces of neighbouring areas below. Below left: Tanger. Below right: Tunis. Sabât supported by two walls. (Source: Akbar (1987), pp 95, 75, 123) Refer to page 143.

Illust. 27 View of sabât (overpass) in Tunis. Note that the sabât is supported by its own columns in the space of the finâ'. (Source: Akbar(1987), p121) Refer to page 143.

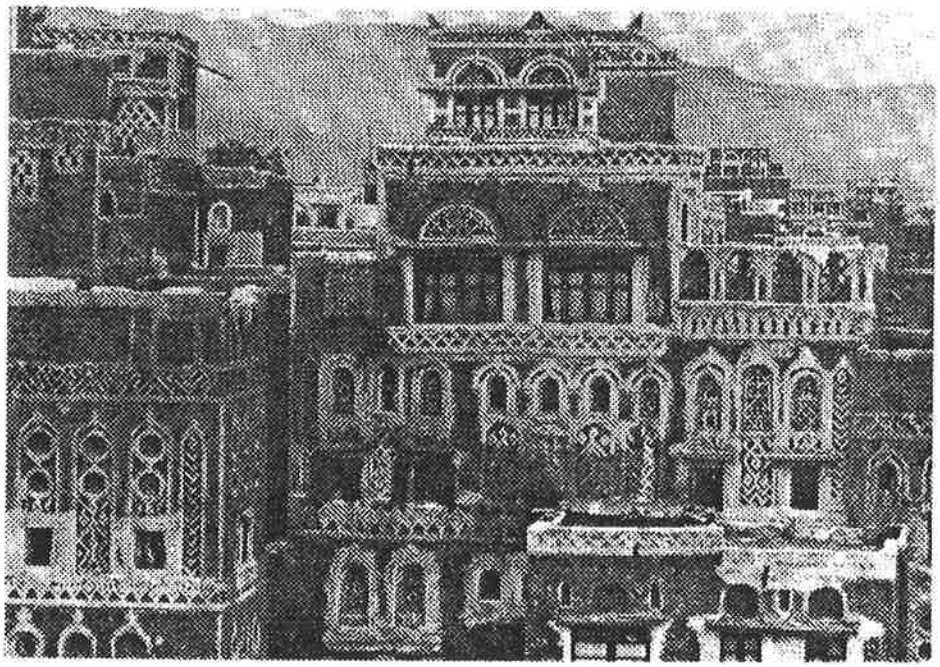


Illust. 28 Transformation of physical fabric of Damascus after Sauvaget. Top left: Original Hellenistic plan of Damascus. Top right: Plan of the same site in its present condition, showing the effect of spontaneous development. Bottom: Detail of the transformation of a Roman arcade into a shopping labyrinth. (Source: Elisséeff, N. (1970)) Refer to page 144.

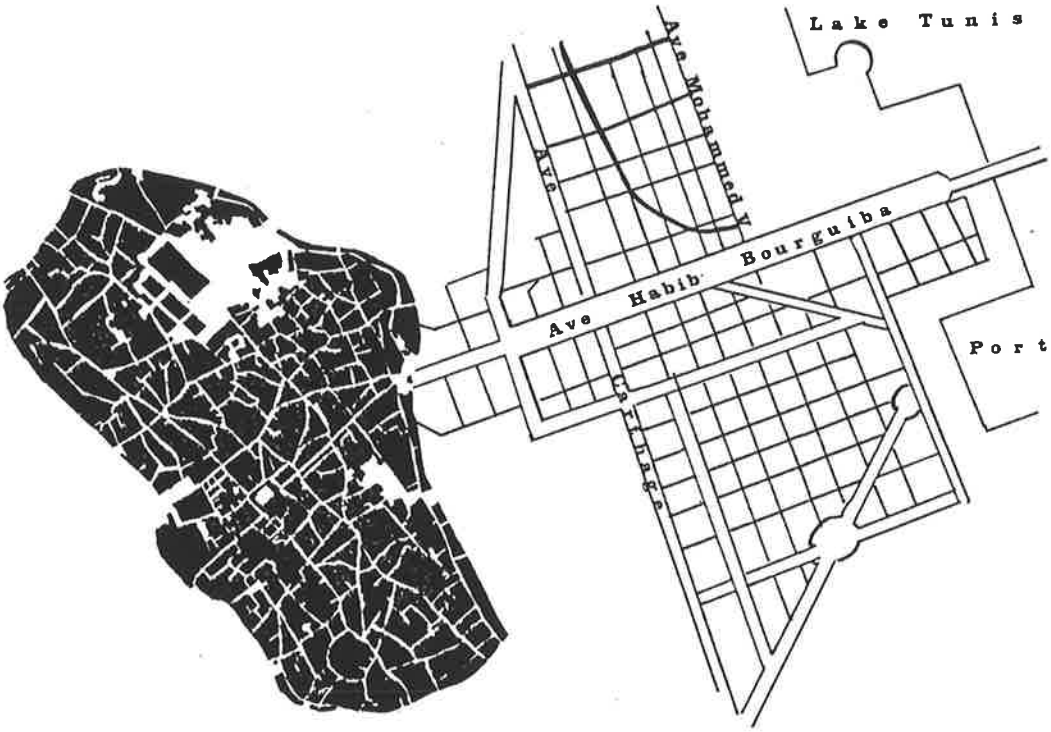




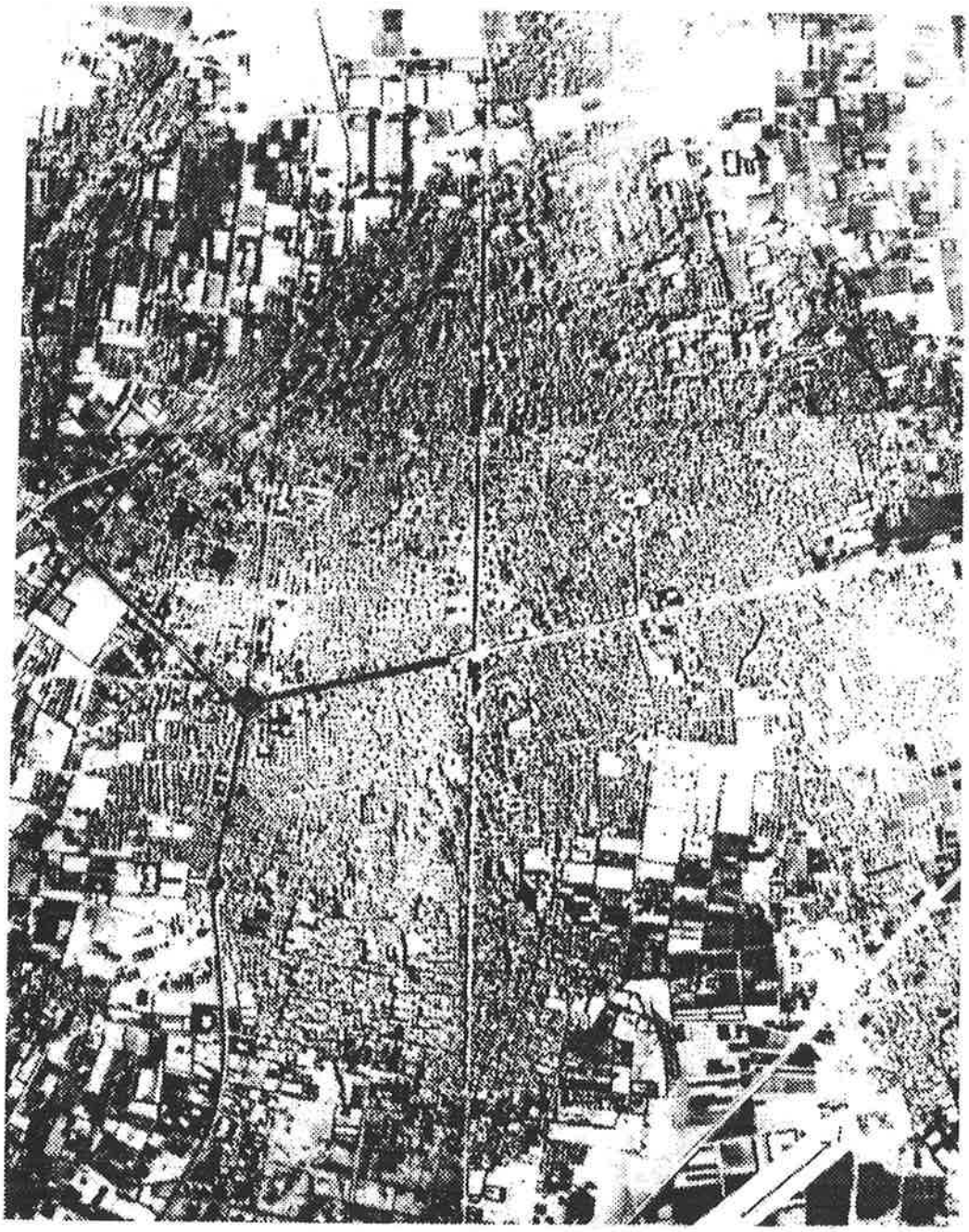
Illust. 29 Transformation of physical fabric of Aleppo. Top: The Byzantine original plan. Bottom: Present state. Note the a third layer of development in the form of new roads which cut through these settings. (Source: Cantacuzino(1976), pp368, 370) Refer to page 144.



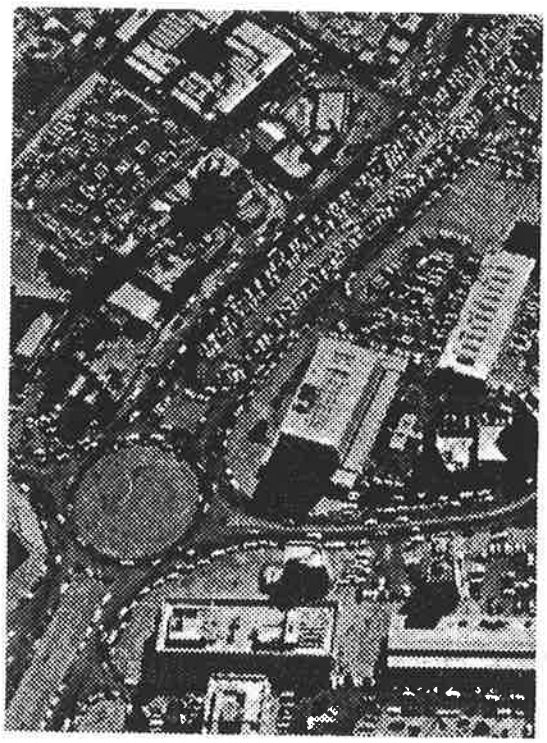
Illust 30 View of the city of San'a in Yemen. Mud-brick highrise buildings with no courtyards. The individual character of these building diverge widely from typical traditional Islamic structures. (Source: The Aga Khan Award for Architecture (1983), p41) Refer to page 146.

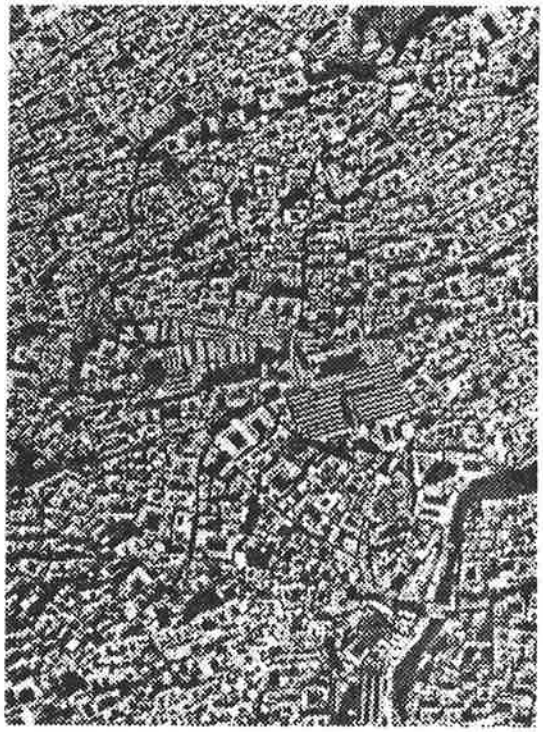


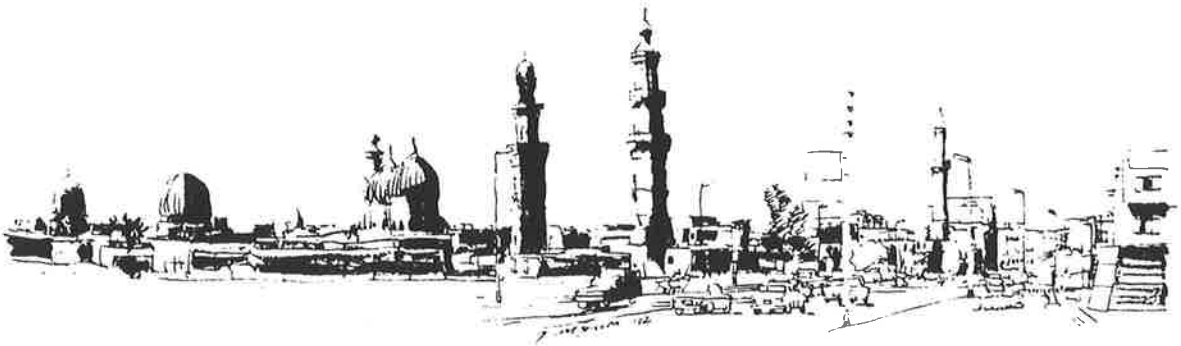
Illust. 31 The juxtaposition of old and new in Tunis. (Source: Carl Brown (1973), p29 and Mahmoud et al. (1974), p261) Refer to pages 147.



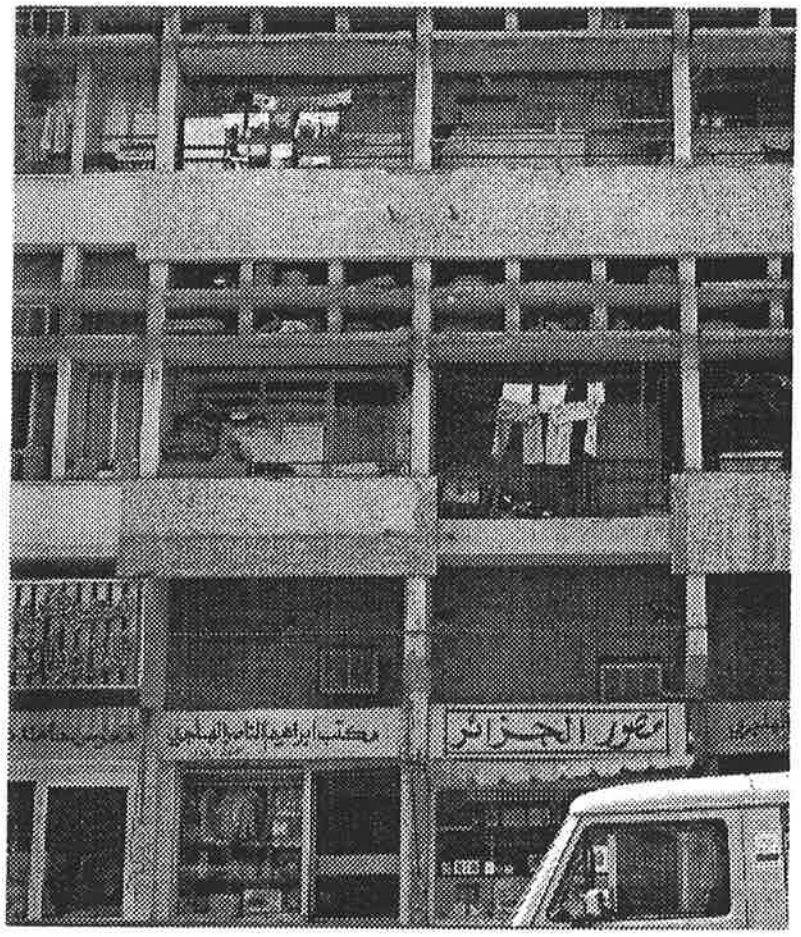
Illust. 32 Aerial view of Yazd, Iran, 1964, showing major roads and traffic circles cutting through the old city. (Source: Bonine (1983), p319) Refer to pages 147.

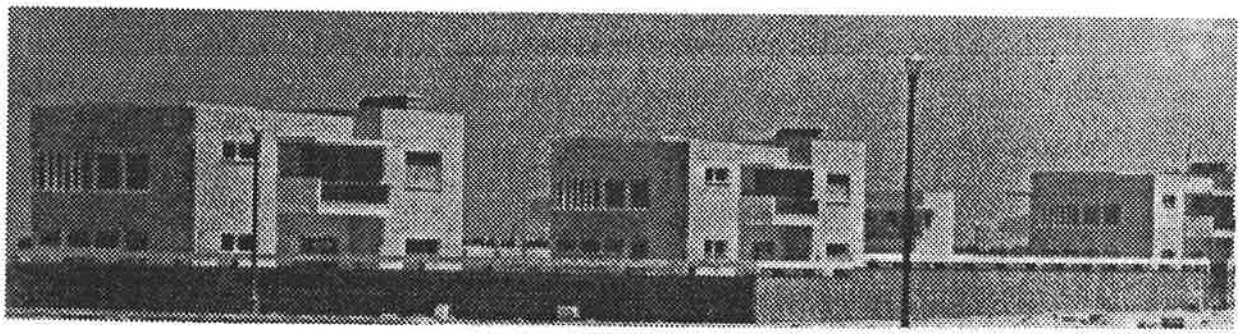


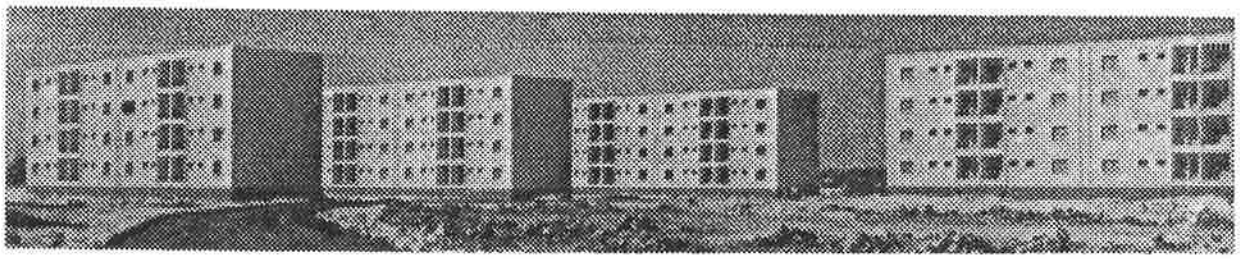




Illust. 33 Old and new; contrasts in urban forms. Top: Contrast between the dense structure of old city of Fez in Morocco (Lynch (1981, p 383), and the scattered paces in the new city of Kuwait (Gardiner (1983), p57). Bottom: Drawing by J. Antoniou (1982) showing the contrast between mosque minarate dominating the skyline in the left portion of the drawing, and motor vehicles dominating to the right. (in The Aga Khan Award for Architecture (1985), p54). Refer to page 149.

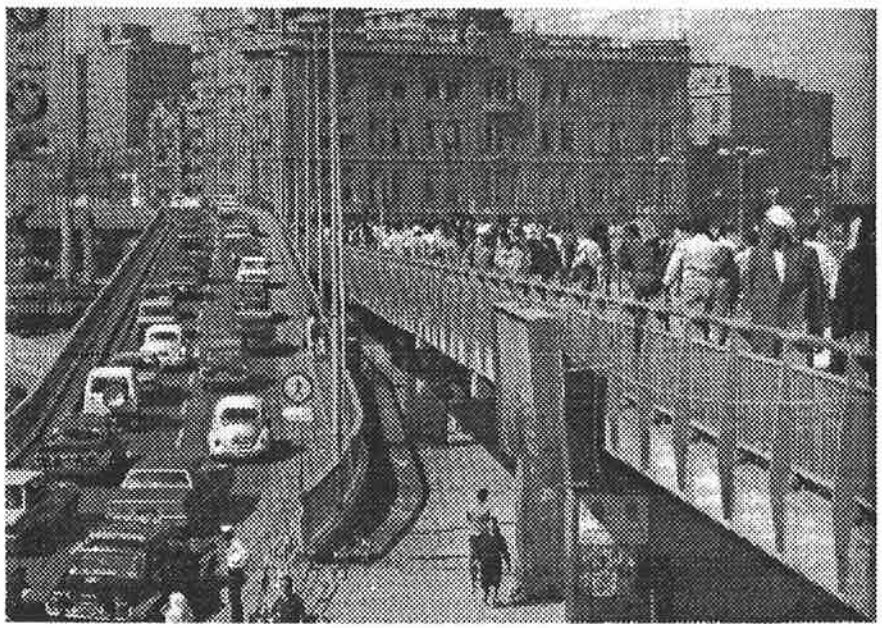




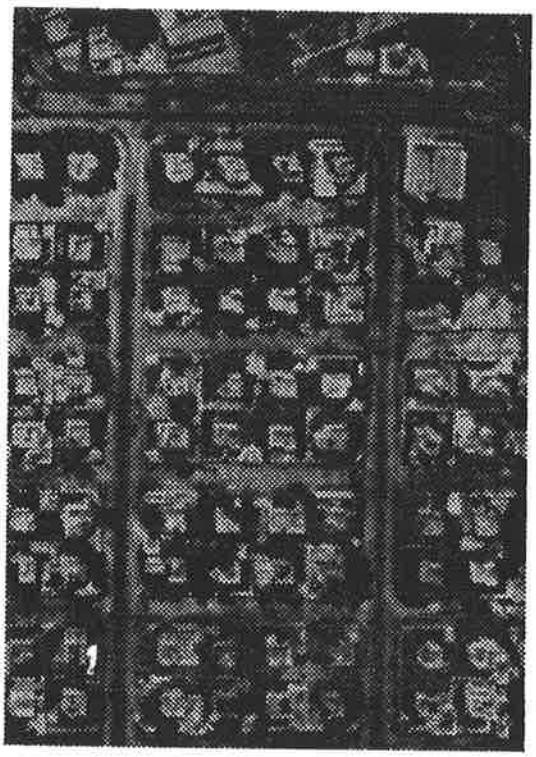


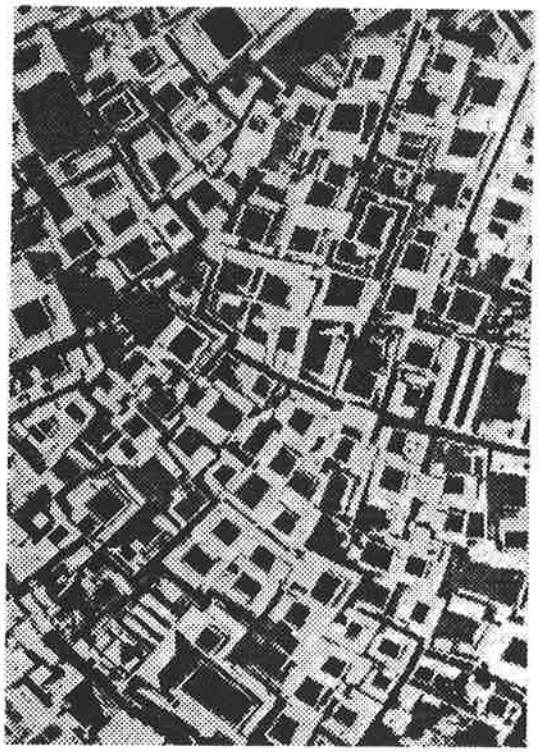
Illust. 34 Top: Housing block in Kuwait. Typical style of the fifties and sixties. (Source: Gardiner (1983), p25) Bottom: (above) Mass housing scheme Middle:-income employees in Helwan, Cairo. A typical apartment-block, low density scheme which spread across the region, and (below): Separate villas for higher income groups. (Source: The Aga Khan Award for Architecture (1985), p136) Refer to page 149.

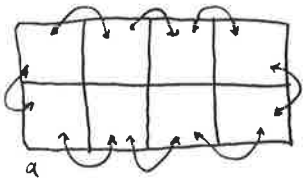
Illust. 35 The new metropolis. Cairo: Maydân al-Tahrir (i.e. Liberation square). A typical example of the influence that western ciy image had on Middle Eastern cities. (Source: Longrigg (1963), p176) Refer to page 151.

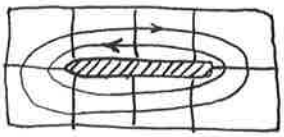


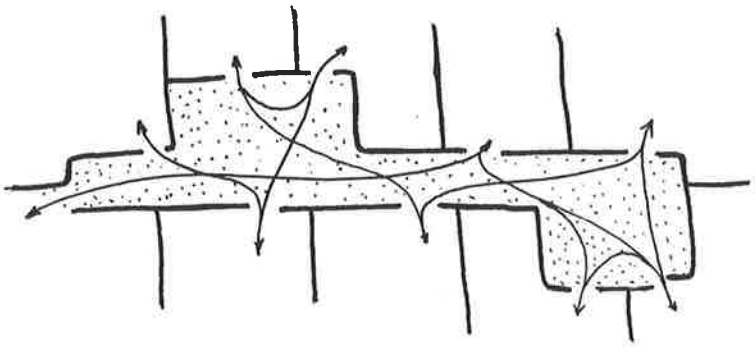
Illust. 36 Pedestrians vs. vehicles. View from Ramses Square in Cairo. (Source: Tareq Sweilem in Aga Khan award (1985), p149) Refer to page 151.



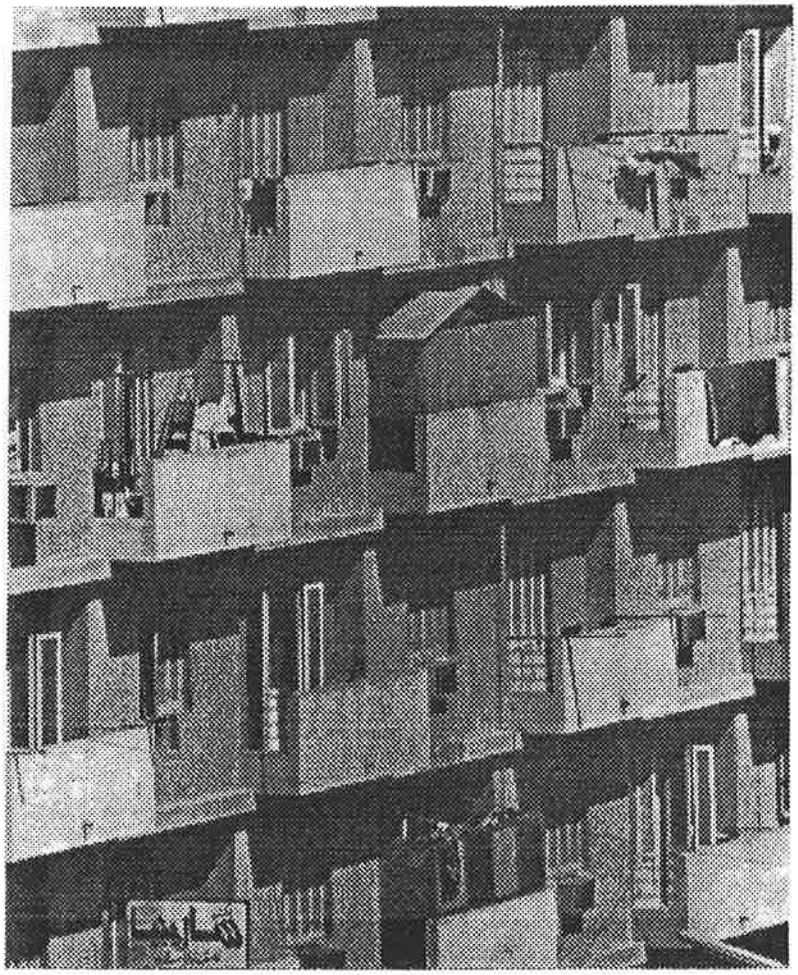




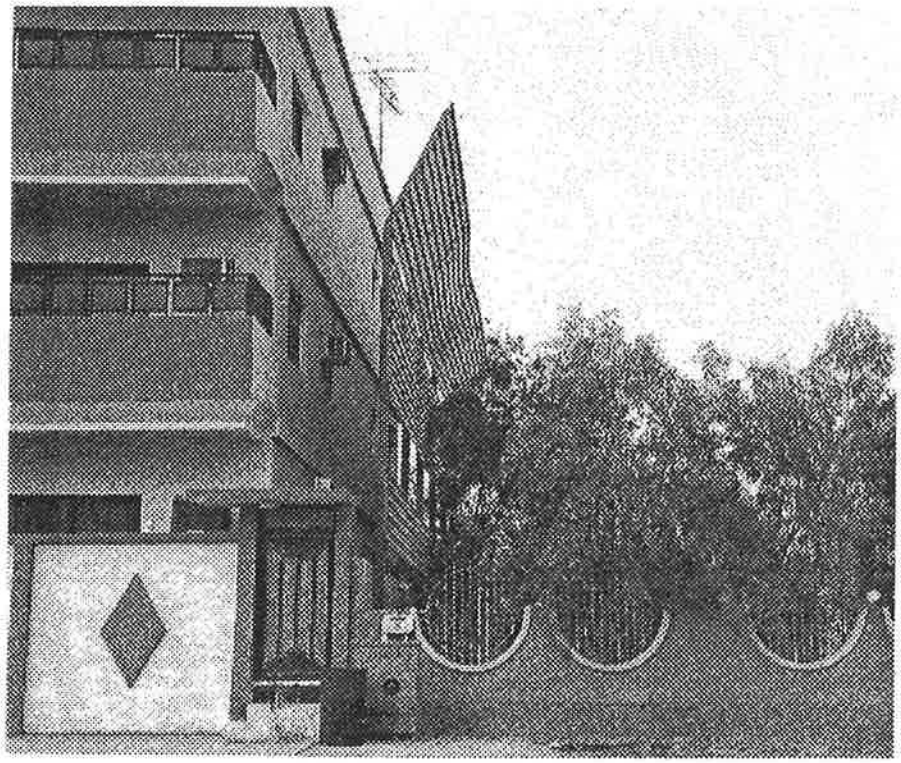


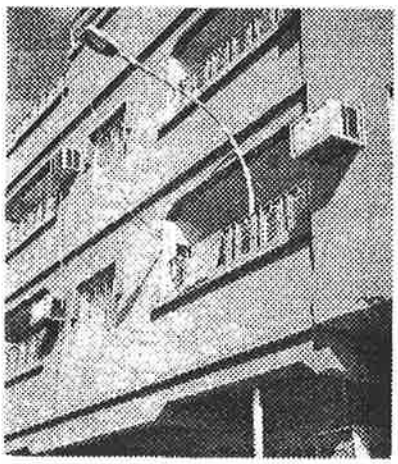


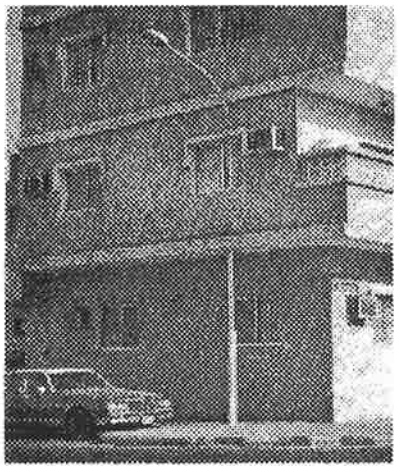
Illust. 37 Top: Two typical urban patterns from past and present housing environments in the Middle East. (Sources: (Right) Akbar (1980), p15. (Left) Marrakesh, Morocco, in Fathy (1986), p 144)
(Below) The effect of spatial aggregation on social interaction. (Source: Akbar(1980), p52) Refer to page 153.



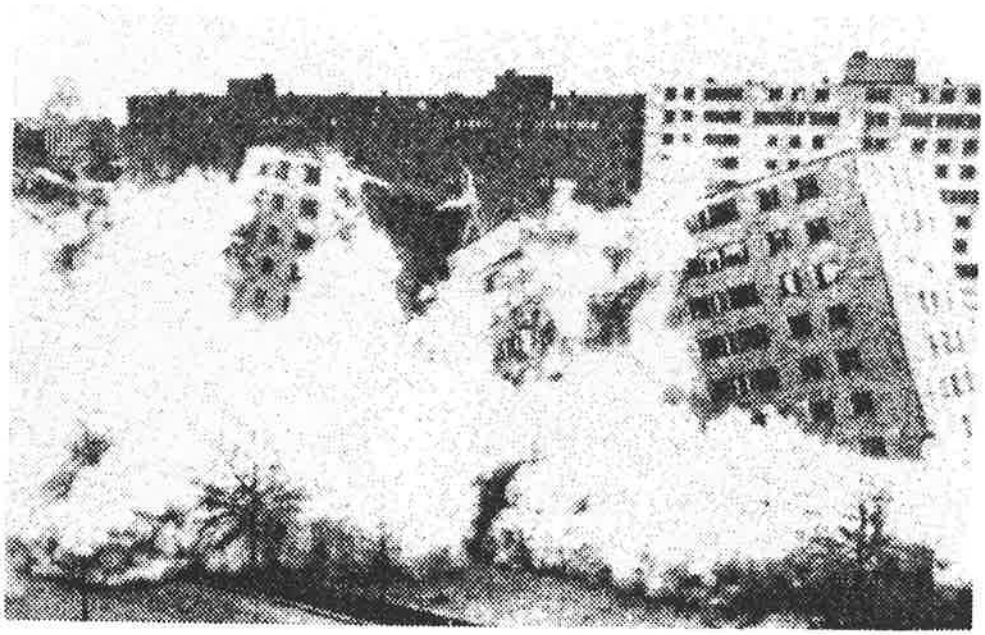
Illust. 38 Modern apartment building in Jeddah, Saudi Arabia. Note the lattice-work shutters added in two cases to secure privacy. (Source: Brown et al. (1973), p191) Refer to page 155.



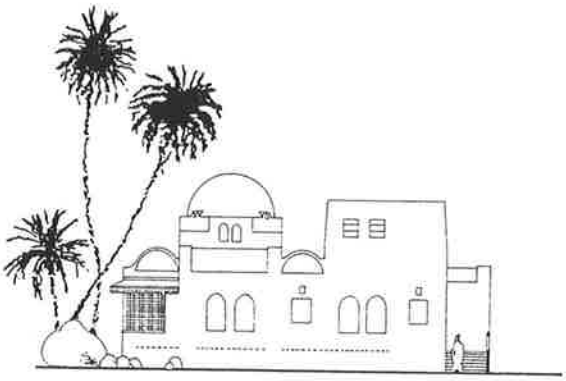




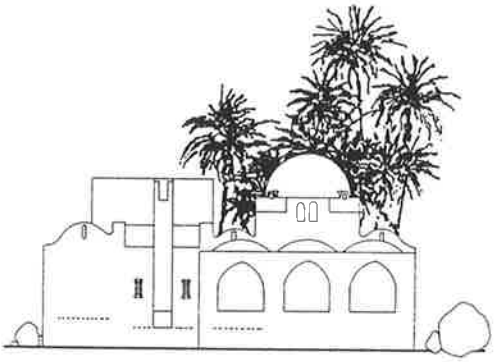
Illust. 39 Accretion at present, where it is allowed, happens at a greater cost. Top: Metal sheets added to a building to secure privacy. Below: The need and strong desire for more space in the higher floors led to the incorporation of the lighting posts within the new structures. (Source: Akbar(1988), pp 153, 154) *Refer to page 155.*



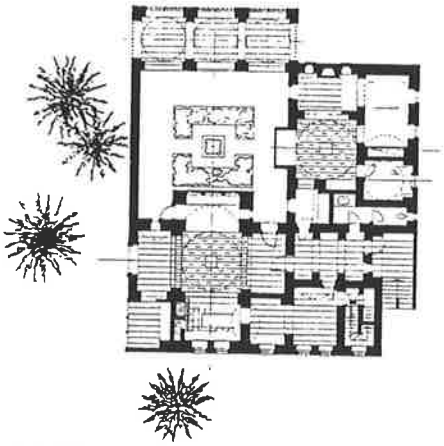
Illust. 40 "Modern Architecture died in St. Louis, Missouri on July 15, 1972 at 3.32 PM" - Charles Jencks (1984), p9. Pruitt-Igoe destruction. (Source: I. Serageldin, in Aga Khan (1986), p84) *Refer to page 164.*



South elevation. Sadruddin Aga Khan House.



North elevation. Sadruddin Aga Khan House.



Plan. Sadruddin Aga Khan House.

Illust. 41 Sadruddin Aga Khan House. Designed by Fathy (1980). Typical example of Fathy's use of traditional design and structural methods. (Source: Richards et al. (1985), p 167) *Refer to page 166.*

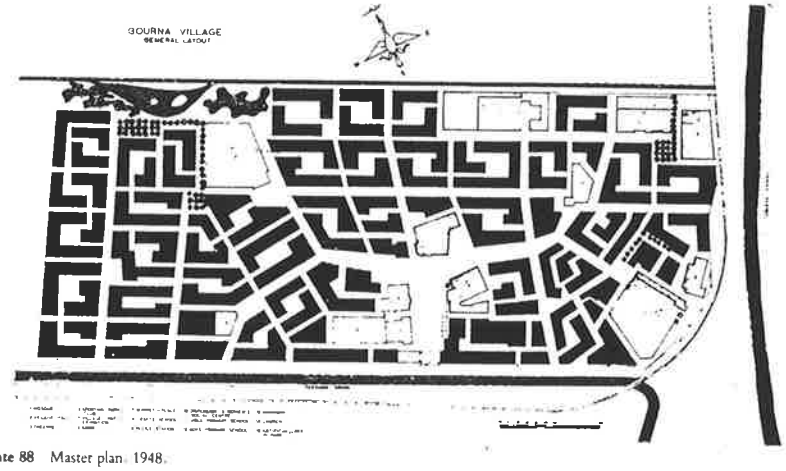
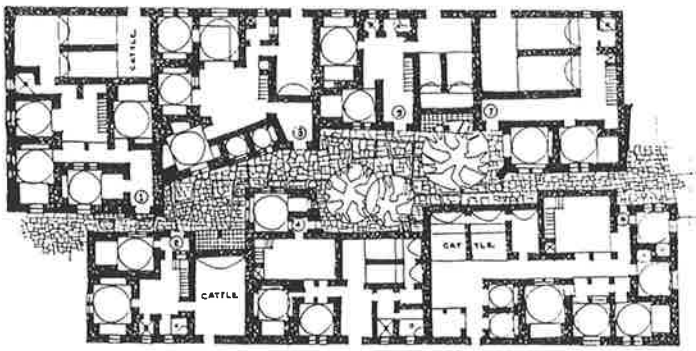
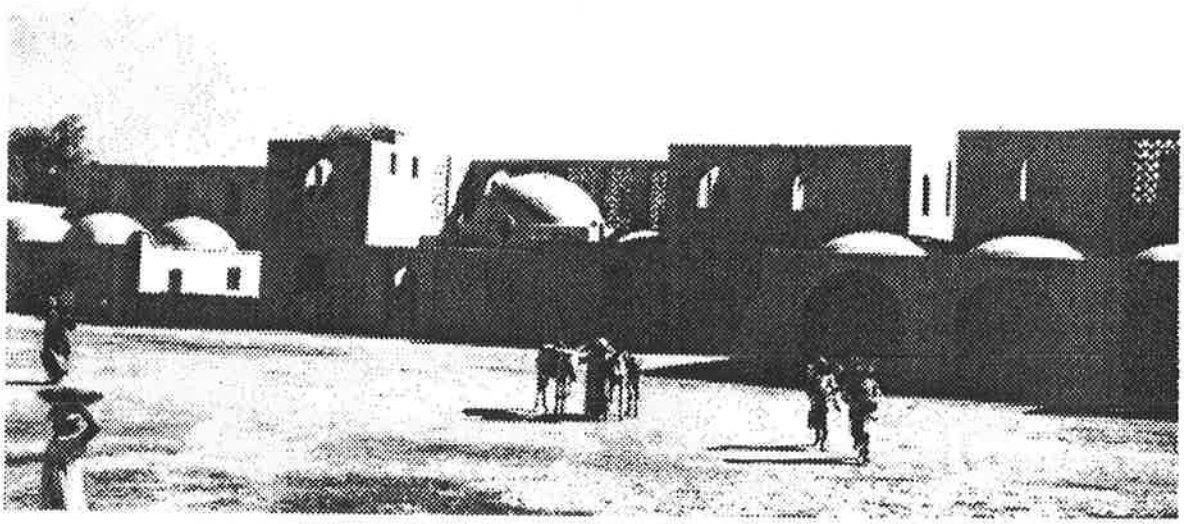
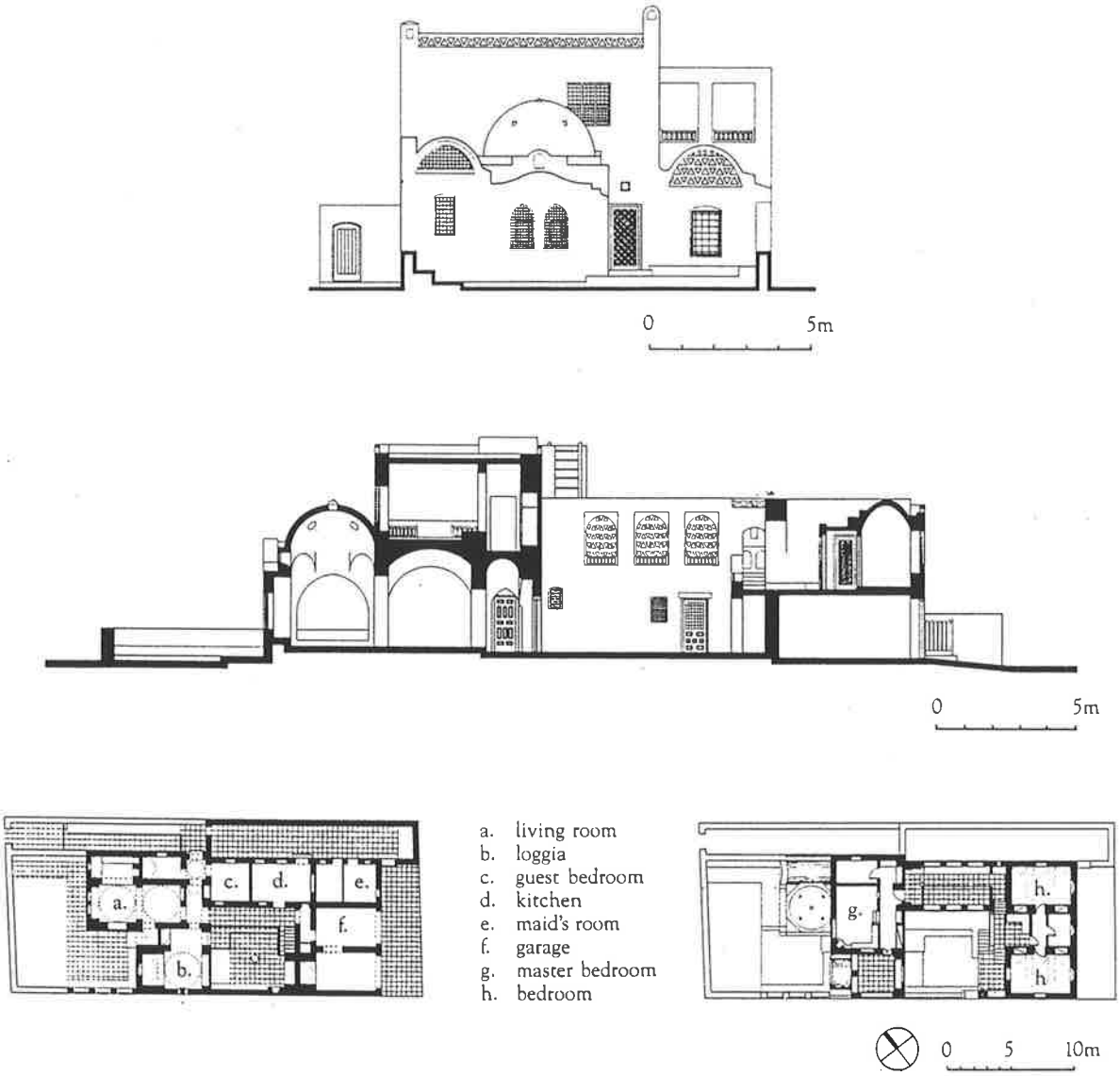


Plate 88 Master plan. 1948.

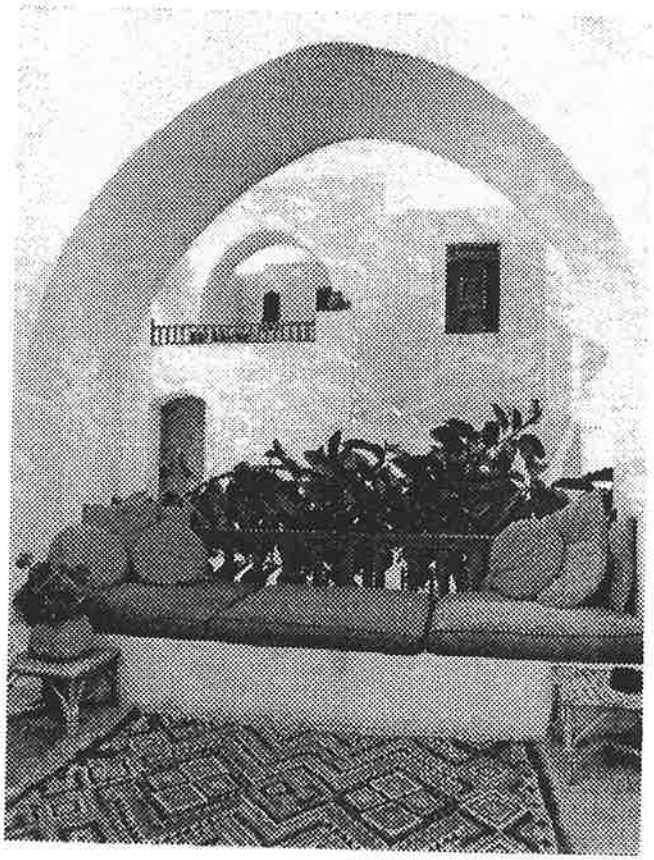




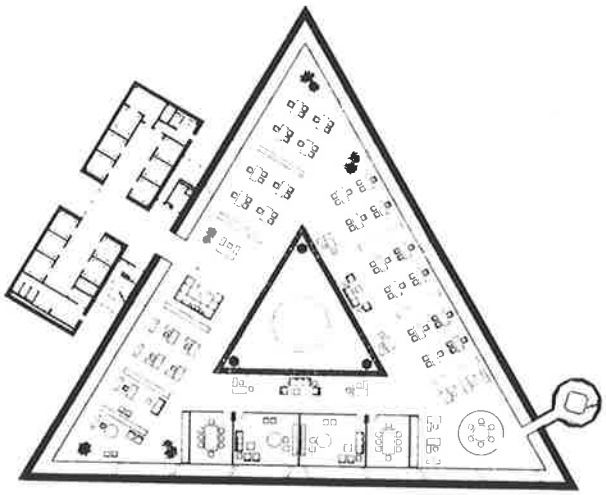
Illust. 42 New Gourna village. Top: Site plan. Middle: A Typical hâra (residential quarter) used in the village. Bottom: Street in the village. (Source: Fathy(1973) Refer to pages 166 and 168.

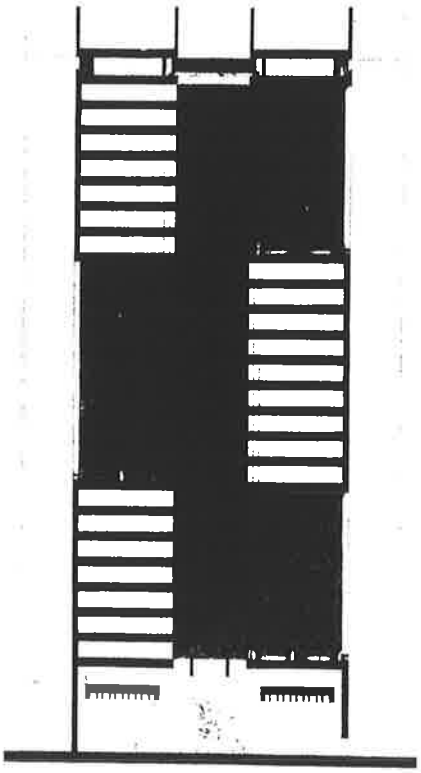


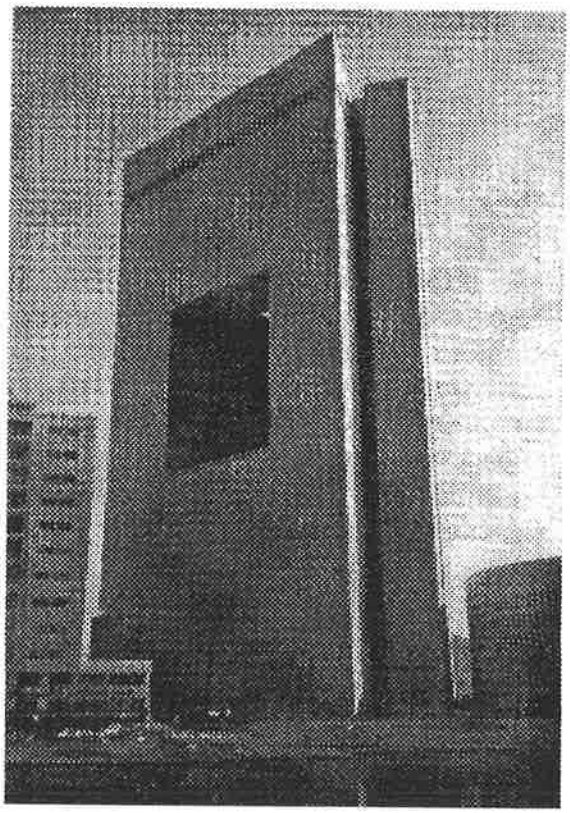
Illust. 43 Halawa house, Agamy, Egypt, by El-Wakil (1975). A recipient of the Aga Khan Award for Architecture in 1980. Modern interpretation of traditional methods and forms. Plans, section, and elevation. (Source: Aga Khan (1983), p115) Refer to page 166.



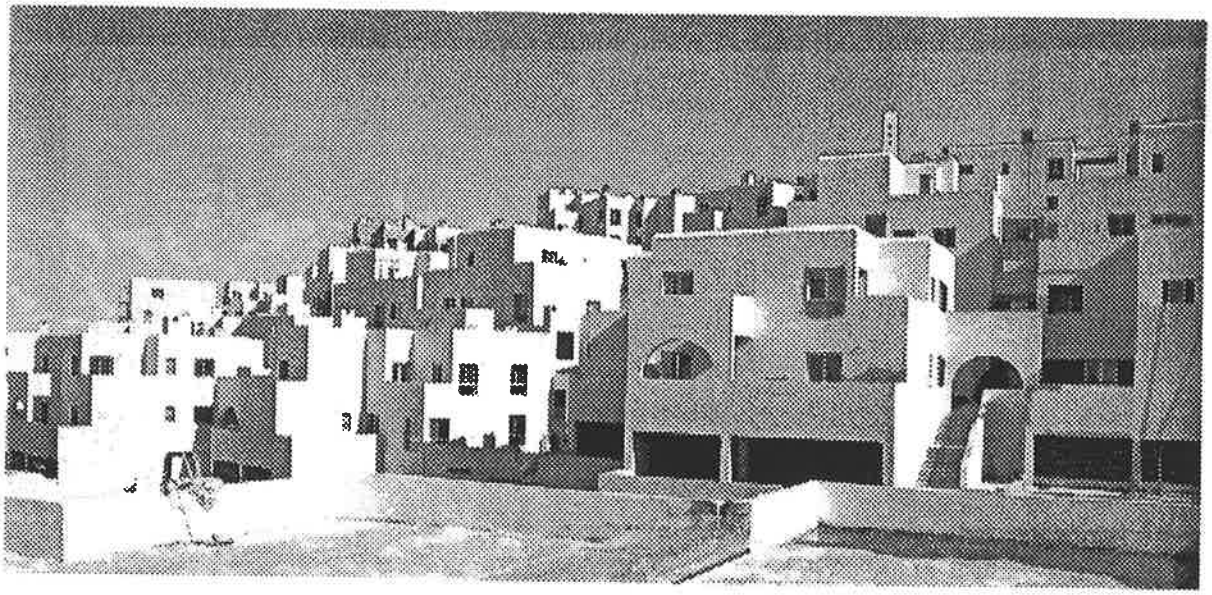
Illust. 44 View into the courtyard form the loggia (b) in Halawa House, illustrating the use of the takhtabûsh principle. (Source: Aga Khan (1983), p114) *Refer to page 146.*

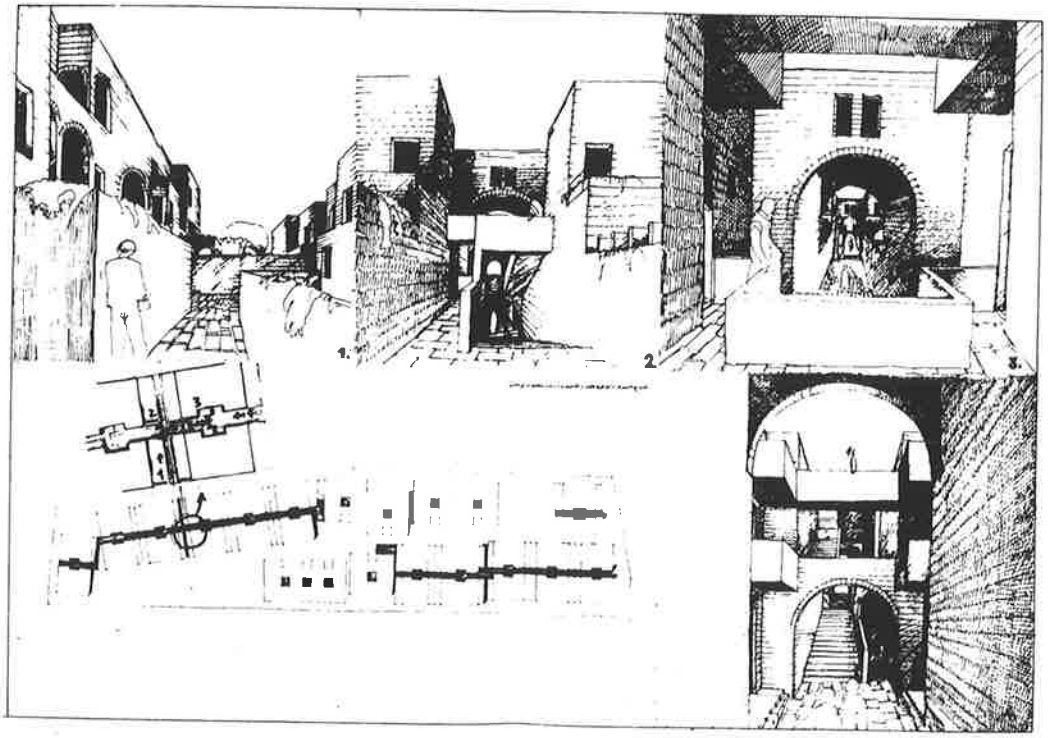




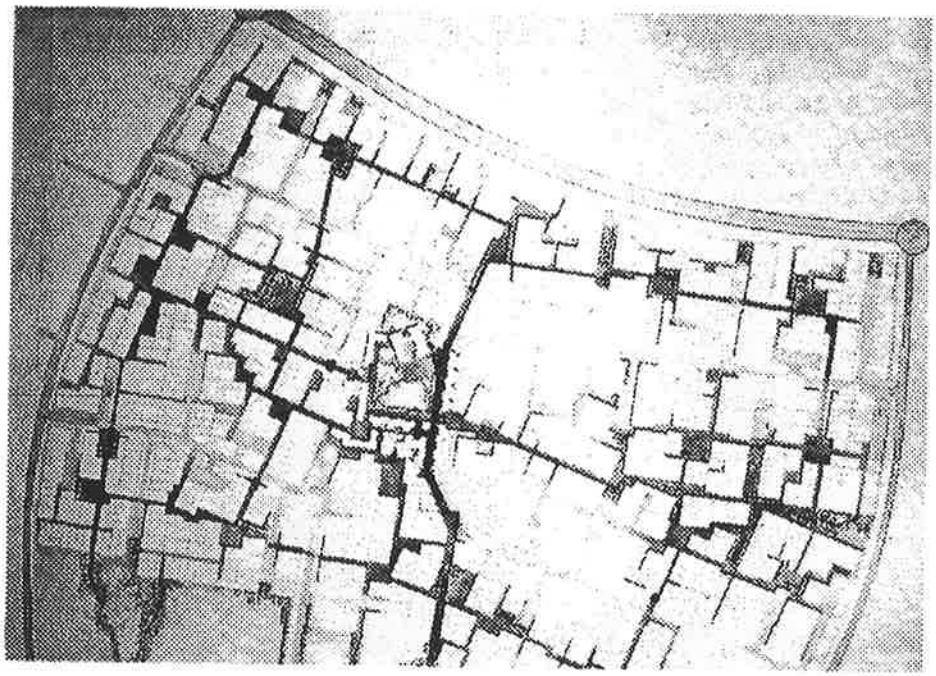


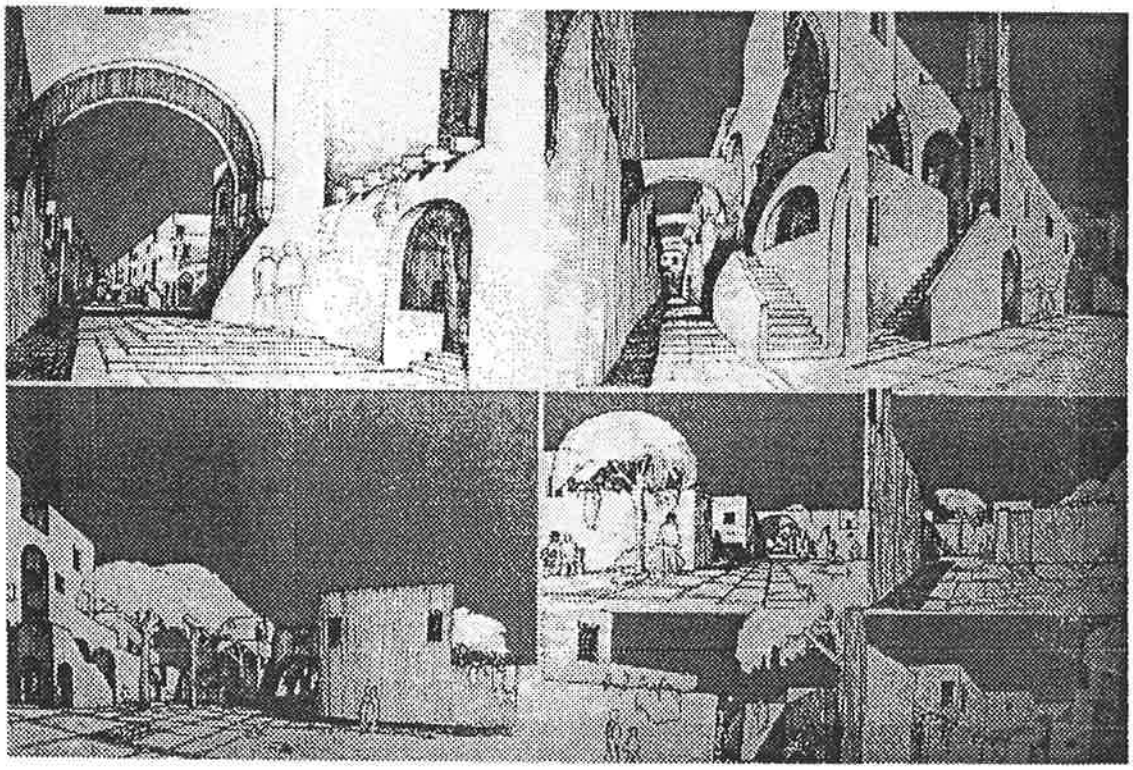
Illust. 45 National Commercial Bank, SOM, Jeddah. Sectional elevation and plan. An example showing modern interpretation of of traditional principles (courtyard and wind shaft). (Source: (Plan and section) Mimar 16, pp 36-41, (view) Serageldin (1986), p82) Refer to pages 166.





Illust. 46 Examples of Badran's work. Top: Cement Factory Personnel housing, Fuhais, Jordan. Bottom: Sketches by Badran of various visual experiences in the inner outdoor spaces. (Sources: Mimar 25, 1987, p60. Bottom: Personal collection of the author) Refer to pages 167.





Illust. 47 Master plan and drawings by Badran for the Queen Alia housing scheme in Amman, Jordan. (Source: Mimar 25, 1987, p62) Refer to page 167 and 168.

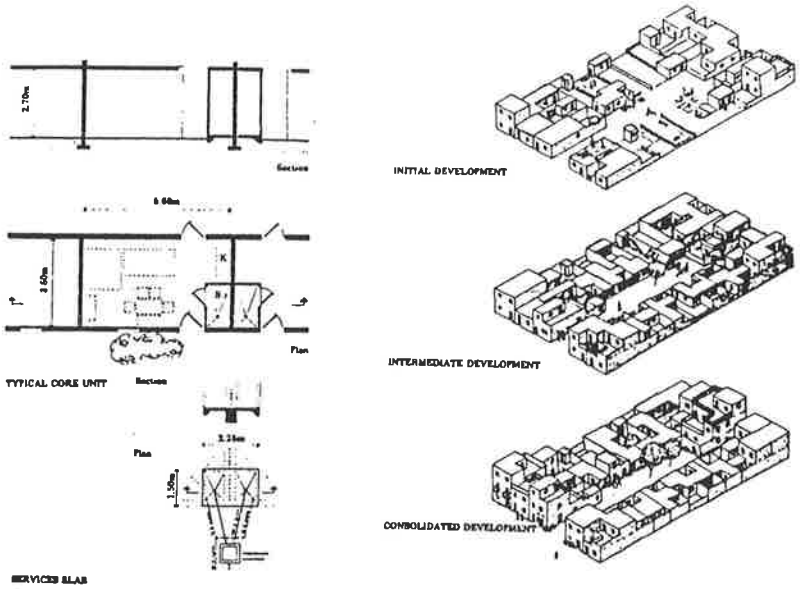


Fig. 1: Ismailia Demonstration Project
Source: Cairo University/M.I.T. (1979)

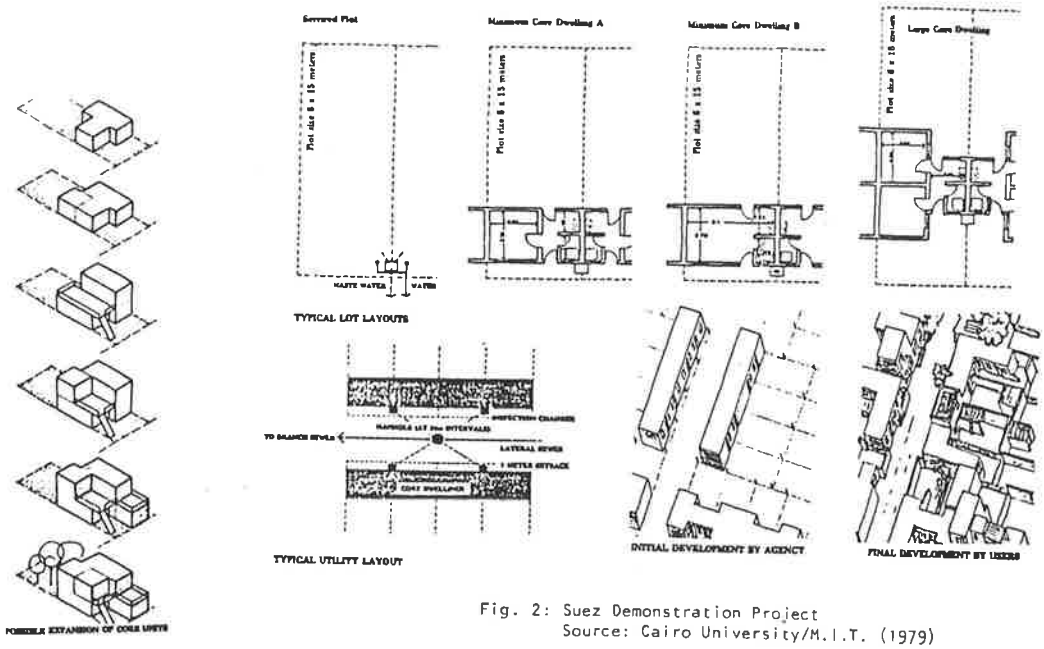
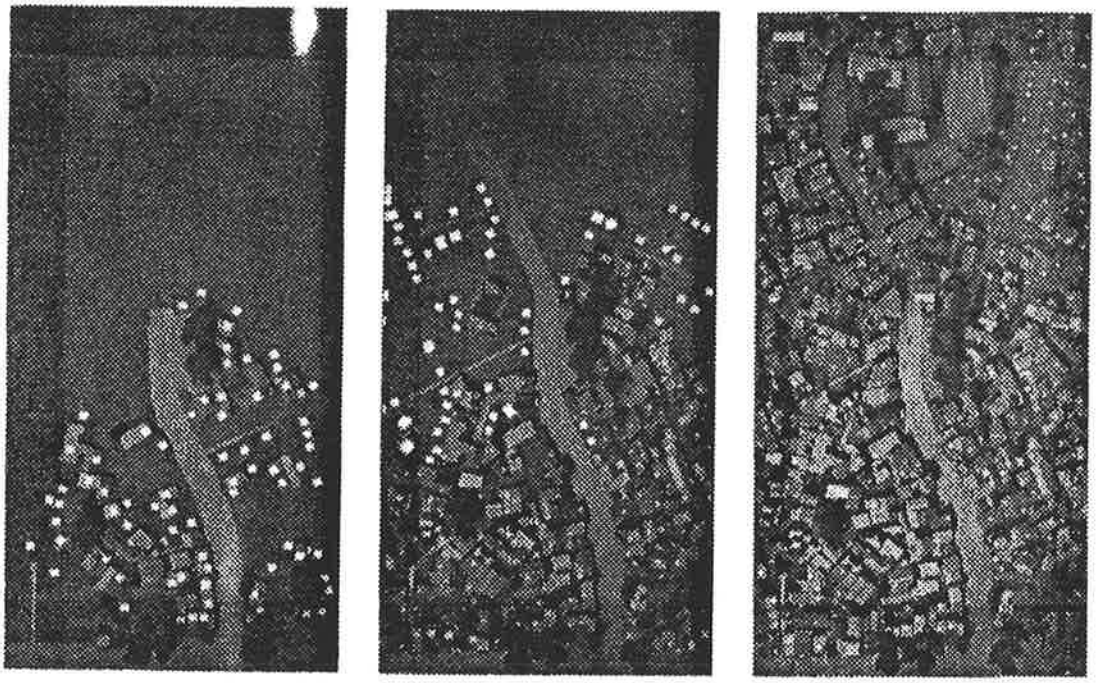


Fig. 2: Suez Demonstration Project
Source: Cairo University/M.I.T. (1979)

Illust. 48 Self-Help Housing schemes in Egypt. Examples of core-house systems which allow for gradual development through time in relation to needs. (Source: Hassan (1990), pp 20-22). Refer to page 182.



Illust. 49 Three stages in the evolving self selection process. A project called "how the other half builds", which aimed at developnig a new set of standards for the city of Indore, India, in order to enable users' involvement in the planning process. (Source: Witold Rybcznski et al. (1991), p 129) Refer to page 183.

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