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An Environmental Design Approach with Reference to the Egyptian Context

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Abstract

The Egyptian built environment has been influenced by different forces and cultural baggages carried by the international mass media and technology. This has resulted in serious change in people's attitude and the common sense they share towards the architectural identity of their places. People became unable to associate themselves with clearly defined quality of buildings or spaces. Nowadays, the experience of aesthetic values is created by inauthentic architectural features and solutions leading to a sense of alienation and lack of belongings.

The thesis's message is that in order to produce appropriate design solutions it is crucial and inevitable to consider their context. This is seen as an amalgamation of multiple physical and deep structured factors interacting within an inseparable whole. It is also important to re-establish that contrary to what is seen in the literature, these factors are not arbitrary but operate within a specific system of intricate and highly complicated network of interrelated relationships. In order to verify such notions the thesis came out

with its own Model to identify the various components involved in the system and most importantly define the structure of their relationships. This was an outcome of an extensive research and analysis of the Egyptian culture through its history and its ecological and social backgrounds. This thesis has made reference to many views and theories within Man-Environment area which were initially produced either independently from each other or been put in a way which lacks coherence. As a result many of these theories have been re-examined and critically analysed to conform to the objectives and requirements of the Egyptian context. This study has suggested that credibility of any theory of environment is achieved only when both physical and subjective forces are seen within their own system.

In order to make such notions available and accessible within the Architectural language, the concept of identity was chosen as it forms one of the most popular terms with concerns many architects as well as the ordinary people generally and in Egypt in particular. Identity was seen as an abstract of the multiple forces within that whole. It can be seen also as a holistic tool of evaluation and testing. The thesis has argued in its concluding section that disturbances in these systems will lead to damage to the sustainability of societies which will lead to perceived change in identity. Therefore, in order to maintain sustainability it is important to study the system which includes the cultural and ecological dimensions of each particular society. One may notice the emphasis now given to the physical criteria as inappropriate approach. This is because many of the cultural manifestations and features are products of peoples awareness of functional aspects such as climate, local resources, topography which became symbols and cultural values defining identity of that society.

Seen from this point of view the thesis has benefited very much from the concept of identity in shading light on numerous issues which are in particular related to architecture in my country. This however was done through evoking awareness of the Egyptian character leaving the translation of identity to the architects themselves. My idea was that having done this architects will find extremely rich source of inspirations for innovative and creative designs which are nostalgic to the culture of their society.

with Returns to the Egyptian Context

Submitted
for the degree of
PhD. in Architecture

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*Department of Architecture
Faculty of Architecture
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MAN, ENVIRONMENT AND PLACE IDENTITY

An Environmental Design Approach
with Reference to the Egyptian Context

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for the degree of
PhD. in Architecture

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I wish to express my grateful appreciation to the Egyptian Government, as well as to my faculty in Cairo for their support and help in carrying out this study. Finally, all credit is given to the school of architecture.

This thesis is dedicated to the memory of my father , whom I am missing at this moment...

To my kind mother who suffered a lot waiting for the day...

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INTRODUCTION

This thesis has been initiated as an expression of my personal feelings. Through my experience in both professional and academic fields, I felt that something inappropriate is happening to the architecture and planning aspects of the Egyptian towns. It seemed to me that the field of Urban Design would be the answer to my quest to stipulate design guide lines for the Egyptian settlements. Eventually I came to realise that there can be no Urban Design approach of universal application which responds to the specific problem of different countries. The appropriateness of Urban Design approach is achieved through the identification of problems within their cultural context.

0.1 The Problem

Two aspects of problem can be identified:

Firstly, there is the objective approach to urban solution which concerns most of the decision makers.

In the last 5-6 decades, Egypt suffered from economic problems of both governmental and individual levels, this occurred in a process that accompanied the increasing population. The density of urban areas was affected also by a great wave of internal migration, as a result of lack of facilities and job opportunities in the rural areas. This has led to a housing problem manifested in the great gap between supply and demand, and represented itself as a pressure on the existing urban society.

To overcome this problem, the government has established different housing projects. Unfortunately these projects were designed, constructed, and developed with a conceptual framework that was based only on economical, utilitarian, and technical considerations. In reality, the quality of both the residential units, and the structure of the city, were badly affected. This was expressed in many aspects, for example the

existence of new types of settlements not suitable for human life, old districts lacking adequate maintenance for facilities and services, and an increasing pollution rate due to the poor state of the infrastructure (K. Amin, 1989).

Although economics is a factor that has had a great influence on architecture, which no one can deny, it is less important than the following second factor. It is fairly clear that the first one is manifested mainly within the economic factors affecting housing supply; if the economic condition improves, the problem can be solved because housing equilibrium, between demand and supply, will be reached. Within this thesis, it is argued that this problem, though important, is conditioned by time and resources, thus it can be determined and solved.

Secondly, contrary to this problem, there are the socio-cultural factors. These which have been missed by many decision makers, are much deeper and have stronger effects on both the urban built form and the human beings. The seriousness of not realising these socio-cultural aspects is due to the nature of their effects which do not appear instantly, but take time. Hence, this makes them difficult to be observed for the majority of people, especially third world societies, which are consumed in the search for their basic daily needs.

Accordingly, the main problem of the Egyptian built environment, which gave rise to the topic of this thesis, can be clearly seen as loss of identity. This identity which resulted from the interaction between man and environment. Today, cities tend to be very similar to each other. These cities have been affected by influences alien to the people's thinking brought about by inappropriate technology and economic considerations. Urban forms provide only the basic utilitarian needs with total neglect of the values that relate people to their own

environment. By the absence of these common values, the urban structure has missed the real meaning of a place. Place identity has become a question of choice which reflects individuality, rather than the necessity of society.

0.1.1 Manifestations of the Problem

The problem of the contemporary urban form of Egyptian settlement – loss of place identity - has expressed itself through different manifestations. By using Cairo as a representative example, various aspects could be shown.

0.1.1.1 Regional Identity

At present, the urban form of Cairo does not express individual regional characteristics. In comparing the visual form of Cairo with any other city, one immediately raises the question of whether the city is Cairo, Liverpool or Toronto. It is clear that one would have difficulty knowing where one is. Urban features resemble each other in many aspects such as transportation systems, tower blocks and building materials (figure 0.1 & 0.2).

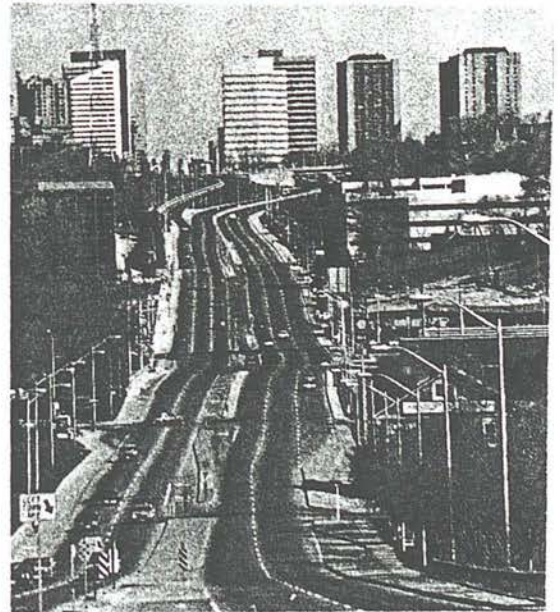


Fig.(0.1) Residential scheme in Maadi, Cairo Fig. (0.2) Residential scheme in North York, Toronto

Ref. By the author

Ref. Michael Hough, 1990

0.1.1.2 Urban and Rural Characteristics

In contemporary areas of high growth, the distinction between 'rural' and 'urban' areas within the city is not clear. Urban expansion engulfs a rural environment. What is left is a question: what are these places? Are they a form of urban or rural organisation? In fact they raise a confused feeling about the place identity (figure 0.3).

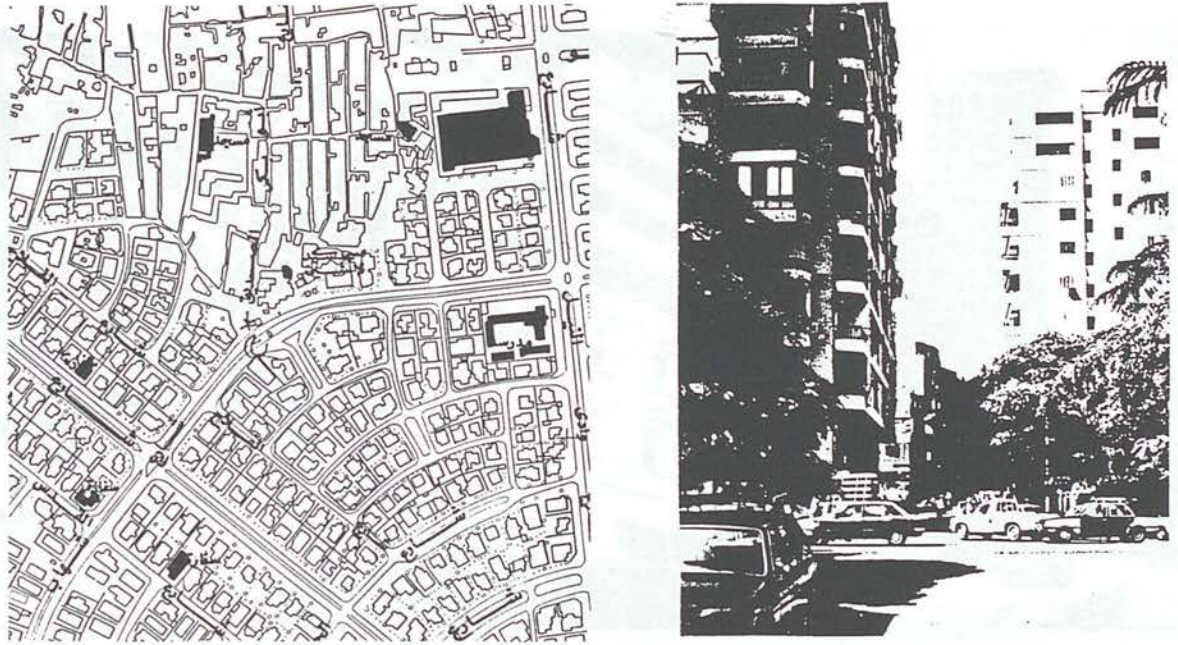


Fig. (0.3) Confused pattern in 'Mohandiseen' District - Cairo

Ref. By the author

0.1.1.3 Living and Transitional Space

Within Egyptian urban areas, the function of open space has changed from 'living space' full of people and activities which reflects both native ecological diversity and social structure, to 'transitional space' which is not used for living, and largely is controlled and shaped by the universal requirements of car movement and traffic engineering (figure 0.4).



Fig. (0.4) The disappearance of street life

Ref. By the author

0.1.1.4 Building Form

There is no perceived harmony among the various buildings in terms of their design concepts, forms, scale or materials. What is seen is total chaos, a variety of strange combinations and disintegrated buildings. Most of these designs are based on individual aesthetic consideration of the designer, or serve for the maximum profit of the developer (figure 0.5).

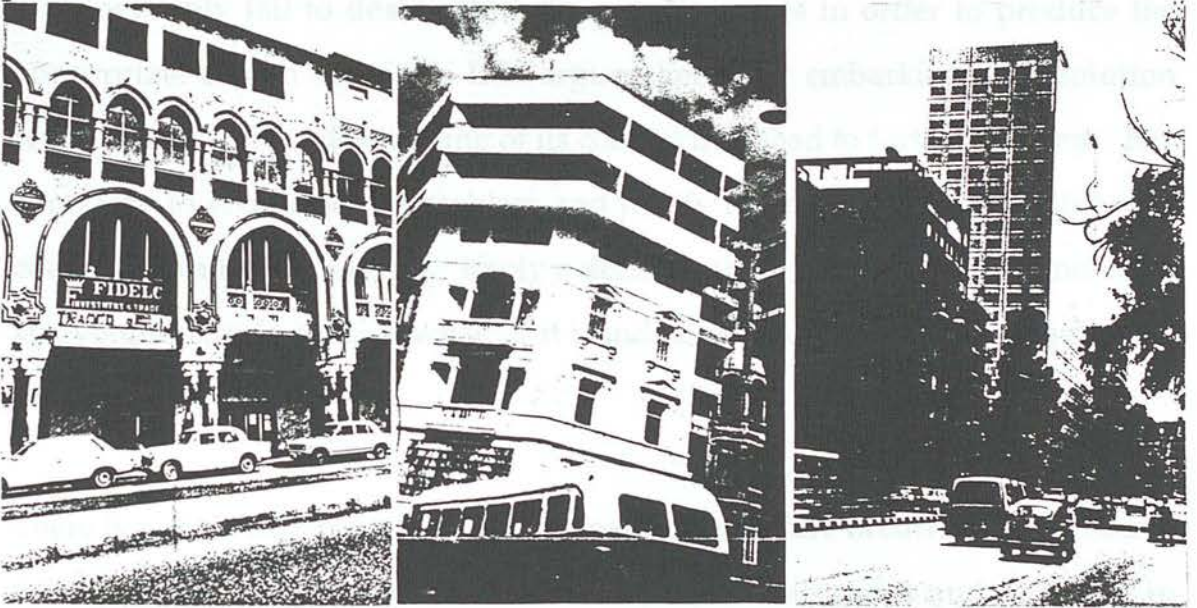


Fig. (0.5) Different types of building forms in Cairo

In such situation, a common communication on the various rules and ways of buildings was absent, and the built environment was dominated by lack of identity. Accordingly, people including users, designers, clients, and government were unable to associate themselves with clearly defined quality of buildings or spaces. Instead, they tend to experience aesthetic values in terms of superficial and unrelated architectural features and solutions, i.e. the urban spaces of most contemporary residential settlements in Egypt nowadays, are irrelevant to the natural and cultural potentials of the city, being only concerned with local view. Such is the concern with some visual aspects, e.g. proportion, scale, colour, etc., or the use of elements like seats, green, and pavement to improve the space quality.

0.1.2 Problem Factors

The role of architect is always oriented towards the solution of problems. However, it seems that within theoretical research the more fundamental goal is how to identify the problem. Beyond the problem's manifestation, as a product, lies in multiplicity of factors that led to the problem itself. These factors formulate the structure which without a real understanding of it, the designer will inevitably fail to deal with design requirements in order to produce the appropriate design solution. It is argued here that embarking on a solution without thorough understanding of its context may lead to further problem. It is necessary to recognise the problem and justify its relevancy to its indigenous context. As a result, this may imply a decision about whether a phenomenon is an evolutionary feature, or whether it is inducing trouble and hence requires an act of a certain kind.

There is a common agreement that dramatic changes are occurring at the social, economic and cultural level which result in new attitudes and practices in architecture. One can distinguish two types of changes:

- 1) Evolutionary changes: They relate to the dynamic and interactive nature of all societies, which allow local changes, or modifications to occur in various domains, e.g. the discovery of new economic resources, or the change from base economy dependant on agriculture to another one dependant on industry which may lead to different life style for the society.
- 2) Problematic changes: When disturbances take place in a sustainable system such as those relate to activities of basic and subsistence factors, e.g. society governed by foreign values, the society will suffer from different customs and traditions. This consequently will affect the social structure and indigenous habits of the society.

This part will trace the problem factors which affect Egyptian built environment. A full analysis of these factors will establish an adequate understanding of the nature of the problems, and consequently, an appropriate solutions for both types. These factors could be classified in two main types; universal current attitudes and Egyptian domestic factors.

0.1.2.1 Universal Current Attitudes

A) The Technocentrism (Obsession with technology)

Most urban areas throughout the world are affected by the current universal attitudes. The major tendency for most of these attitudes is to neglect cultural differences and their varied effects on the built environment .

In general, the study of Technocentrism affects the whole web of our present life, and has a crucial influence on the architectural realm in particular. It is hardly a coincidence that criticism of functionalism of the new urban areas and of the sprawling suburbs primarily has been directed specifically toward the neglected, the destroyed, and the missing public spaces. Telephones, televisions, videos, home computers, and so on have introduced new ways of interacting. Direct meetings in public spaces can now be replaced by indirect telecommunication. Active presence, participation, and experience can now be substituted with passive picture watching, seeing what others have experienced elsewhere.

According to Hays as mentioned by F. Ujam (1987), Technocentrism can be described as the application of rational and "Value Free" scientific and managerial techniques by a professional elite who regarded the natural environment as "neutral stuff" from which man could profitably shape his destiny. The difference between this approach and any other environmental approach lies with the "values" relating to this one. Technocentrists mode is identified, generally by rationality; the objective appraisal of means to achieve

given goals, by managerial efficiency, the application of organisational and productive technique, that produce the most for the least effort; and by the sense of optimism and faith in the ability of man to understand and control physical, biological and social processes for the benefit of present and future generations. As the main characteristic of the technocentric mode has always been its optimism based on scientific knowledge, the application of this approach to improve the condition of man is automatically accepted as fundamental, even though there are no commonly accepted yardsticks by which to measure improvement .

A new wave of thinkers today, especially the new environmentalists, believe that the responsibility in our contemporary period, lies with the technocentric movement . They argue that, in our days, human space is shaped, determined formed and deformed by technology. While the contribution of technology to human space is quite clear, its negative consequences towards social behaviour remain less visible. Some crucial problems have turned out to be the by-products of technological progress. With this progress, more sophisticated forms are assumed, and new relationships are created. Riordan can give an example for the environmentalists group. He cites that :

" The environmentalists associate the loss of identity, the dehumanisation, the pollution, the crimes, the impersonal and alienating atmosphere of the big cities and the whole urban decline with the passion for the high impact technology" (Riordan,T. O. 1976).

B) International Style and Modern Architecture

In architecture, it is clear that these attitudes have led to the replacement of diversity and the distinctive identity of places, with the similar and meaningless international style. These designs and mass fashions reflect the same values all over the world, and the subsequent destruction of local and regional architecture seems to have achieved this goal . Le Corbusier cited that:

" All men have the same organism, function, and needs. The social contract which has evolved through the ages, fixes standardised classes, functions and needs producing standardised products.... I propose one single building for all nations and all climate "
(Le Corbusier, 1946).

The failure of modern architecture could be referred to its concentration on the properties of physical flowing space at the expense of the more enclosed space, regarded as an important feature of a place. These western views on the importance of physical features solely on the built environment, can be seen through the following:

B. Brolin (1976) wrote describing modern architecture and the international style: The ideology of modern architecture is based on how people have to live rather than how they do live. It imposes an assumption about how buildings, streets and cities should be used with the stated belief that every one in the world has the same basic social and physical needs. The approach, based on rapid technological progress all over the world and that technological societies will share common criteria, neglects that each society has a different impact of culture and tradition on the peoples' characteristics. These link to their own past which expresses this connection through the visual scheme within the built environment.

The modern movement has many goals which include Louis Sullivan's "Form follows function", Frank Lloyd Wright's " Form and function are one," Ludwig Mies Van Der Rohe's "Less is more," and Le Corbusier's "Machine for living." At the same time it must be recognised that the results of applying the design principles of the modern masters have not always been as architects predicted. Others have retreated from modernism to a more romantic image of the architect as a fine artist gratifying his or her own concerns with abstract visual patterns and a view of society as a patron of the Arts. Le Corbusier and Walter Gropius argue for a machine aesthetic, based on the functional priority of engineering

products such as aeroplanes and airships. The result was that, although the modern movement was claiming to serve people, its primary concern more often focused on technical efficiency and the internal consistency of building components rather than on meeting a broad range of human needs (J. Lang, 1988).

Furthermore, the serious and harmful effects of applying this style all over the world is very clear. No doubt that this fashion, born out of an inner uncertainty will soon be obsolete, but its effects can be rather dangerous, because of the world-wide influence of the United States... There is a word we should refrain from using to describe contemporary architecture, "style". The moment we fence architecture within a notion of "style", we open the door to a formalistic approach. The contemporary movement is not a "style" in the nineteenth century meaning of form characterisation. It is an approach to the life that slumbers unconsciously within all of us. In architecture the word "style" has often been combined within epithet "international" though this epithet has never been accepted in Europe. The term "international style" quickly became harmful, implying something hovering in mid-air, with no roots anywhere (S. Giedion , 1967).

0.1.2.2 Egyptian Domestic Factors

A) Egyptian Cultural Gaps

People's behaviour in any society is influenced by many factors. One of the most important notions is tradition which has resulted from the effect of cultural variables throughout history. It is not just nostalgic or nationalistic vision, but is an expression of peoples' values and beliefs inherent along their history. Egypt has a long history of different cultural periods, which has left its influence on the social-cultural characteristics. This has led to periods of cultural disturbances which can be seen at present in the form of varying values and traditions within the society. In addition to these various cultural differences,

Westernization represents a major factor that has influenced the Egyptian characteristics and consequently their urban settlements.

B) Westernization in the Egyptian Society

Although Egypt was governed for long periods in the Islamic era by foreigners and many foreign experts and engineers were imported, the built environment expressed clearly both functional needs and natural characteristics for domestic materials. Having these experts work together with Egyptian workers and artisans, they were able to share with the society its daily needs, using their distinctive experience in building construction, that well understood the mutual correlation between climate and material.

In the modern era, the western wave has dominated architecture through both design ideas, and construction processes, which were applied in many public office buildings, palaces and elite villas (figure 0.6). As a result, new disposition occurred in people's perception of the architectural quality being represented in those design models. This trend stamped their way of thinking with the idea of modernisation and of progress, especially within the educated group.



Fig. (0.6) Private villa in classical order,
Heliopolis, Cairo
Ref. By the Author

The influential figures in Architecture and planning especially those who received their education in western countries transferred western ideas to Egypt. Although there were distinguished architects who tried to formulate individual Egyptian architecture depending on national characteristics, their affect was very limited due to the lack of publication of their ideas. Hassan Fathy was the exception in this case. He wrote and published his theory and national call for building with domestic material and available technology (Abdel Baki I. 1987).

C) Local Resources and Industrial Technology

The contemporary urban form was affected by technological progress through two main approaches:

Firstly, the transportation system especially traffic pattern. The problem is apparently in the way the city form was shaped which was depending only on the physical requirements, while the human factors were neglected according to the contradiction between the fixed scale of human space and the unfixed scale of traffic space. Through rapid increase in numbers of cars and the penetration of streets into residential areas, the relationship between man and his environment was altered.

Secondly, during the last two decades, industrial mass housing projects have been used in Egypt, as well as in other Arab countries in the same way. Many of these projects were unsuccessful , failing not just in social terms but also in economic terms (figure 0.7).

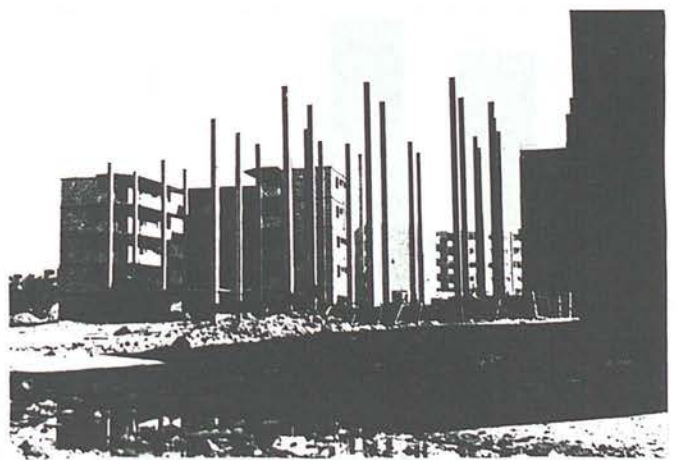


Fig. (0.7) Semi- prefab buildings in Salam City, Cairo

Ref. By the author

Mekia's opinion was that: "Technocrats have manipulated the housing market for quick return and personal status and credibility. The architectural profession has failed to deal with mass housing through useless drawing board experiments. This instant housing has created the importation of the prefab sold via influential local agents. Survival has been dependent on easy money, mismanagement of vast labour, ironically all in the services of 'getting the most in quick return by spending the least'. How is it possible that so many specialists, experts, analysts, armed with illustrious charts and documents which read so well on paper, aided by such literature of the United Nation centres, relevant organisation, conferences and so on, each individual involved with a curriculum vitae and puzzling initials worthy of 'Who's Who', have a net result and achievement in the housing projects of Middle East which accounts for almost zero in architectural synthesis of past and present" (M. Mekiya, 1986). It is essential to note here that the problems related to industrial technology lie not in their applications in general, but in their appropriateness for different culture and ecological resources among different environments, e.g. concrete or steel high rise buildings which could function in developed countries with high technology and cold weather, represent a wrong choice for developing countries with hot weather - Egypt example (figure 0.8 & 0.9).

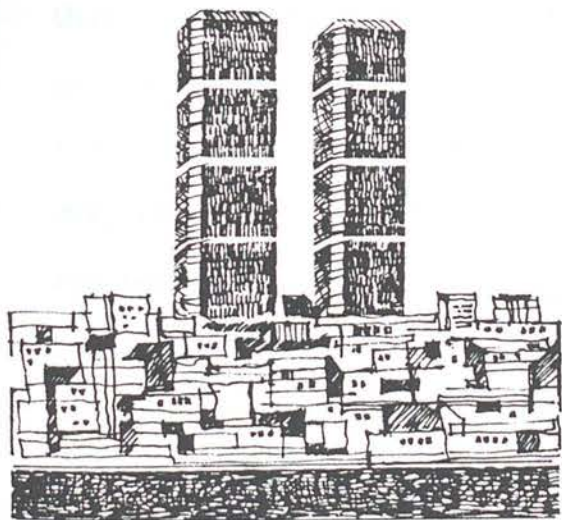


Fig.(0.8) Public office building, Cairo

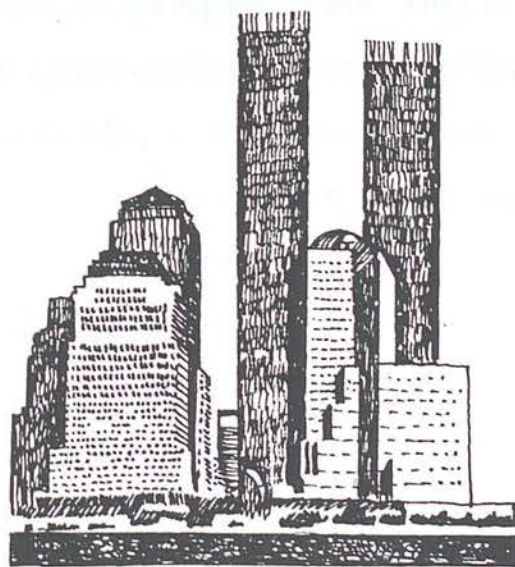


Fig. (0.9) High rise buildings, New York

Sketches are drawn by the author

0.1.3 The Dilemma of Place Identity

Searching for place identity, therefore, has become a dilemma for Egyptian designers in the new evolving urban forms. But, the difficulty of the study of place identity can be demonstrated through the following opinions :

The first group argues that, in terms of speaking about the Egyptian built environment, the priority has to be oriented towards the physical problem, which particularly affects the basic needs of the society in Egypt , a country which is considered a third world developing country. There is no other alternative to the use and acceptance of technology to optimise the whole aspect of life. Speaking about identity seems to be a kind of subjective problem which is based on the individual views but does not necessary reflect views of the majority of people who live virtually in these places. This group correlates the topic of identity with the past. Accordingly they believe that in contemporary design it is just as much romantic nonsense to force the old regional identity upon the existing built form, as it is to expect people to give up cars, washing machines and televisions which are seen as responsible for a good quality of life.

The second group, on contrary, believes that the loss of identity as the main problem, and not only concerns architecture but all aspects of life. They argue that it is interesting in its own right as a fundamental expression of man's involvement in the world. Identity is not just subjective phenomenon based on the individual view or nostalgic feelings, it has components which can be defined. However, this group rejected the universal form as the outcome of rational thinking. The predicted universal acceptance of modern architecture has never come to pass. The view based on considering the whole world environment as "neutral stuff" and dealing with it through rational and "value free assumption", has led to a homogenising influence , its manifestations all over the world appearing to be the same: the destruction of local and regional architecture and landscaping. This has led to the loss of the individual identity

for each culture and has contradicted human tendency for being different and distinguished. Such attitude was confirmed in Islam. It was mentioned in Qur'an that we were born in different societies and different countries ,i.e. different cultures and identities. This differentiation encouraged people to be keen to know each other, and to spread all over the land (Qur'an, Sura: 49.13 - 11.118). Two examples will be given .

Firstly :

O mankind ! We created
You from a single (pair)
Of a male and a female,
And made you into
Nations and tribes, that
Ye may know each other
Not that ye may despise
(Each other). Verily

The most honoured of you
In the sight of God
Is (he who is) the most
Righteous of you.
And God has full knowledge
And is well acquainted
(With all things) .

(Sura 49.13)

Secondly :

If thy Lord had so willed,
He could have made mankind
One people : but they
Will not cease to dispute,

(Sura 11 . 118)

The opposition to the contemporary theme, is not necessarily implying a rejection of modernism but of the uniform solution imposed by modern architecture and the international style through the use of similar methods and technologies everywhere in the world. Furthermore, architects at present are more engaged in typology of their own, mainly based on visual enterprises that deny history, traditions and indigenous cultural continuity whose value and meaning interact with the physical environment. It is essential to keep the advantages of a traditional way of life and its visual heritage with the built environment. No one can deny that tradition evokes a sense of a conflict with modernisation , but this does not mean that the cultural symbols have to be abandoned. The perpetual values should be kept in harmony with the processes

of social changes. The opinion of B. Brolin is significant about the great difference between the context of American society and a society with traditional culture. He cited that :

" We in the West particularly in the United States, find it difficult to understand the importance of tradition. We look to the future for the good life, partly because we worship progress in the form of science and technology which we seem to feel, can solve all problems. Change has become our traditions - we hesitate not to change for falling behind- and we find it difficult to conceive of the value of continuity. But as long as continuity does not imply rigidity, it is a powerful and positive force" (B. Brolin, 1976).

There are no better evidences for the failure of that attitude than those represented in the new attempts of western architects. Many architectural and planning concepts have been adopted to ensure indigenous identity by respecting the relation between man and environment. Within this attitude many architectural vocabularies provide architectural solutions which seem to be compatible to our Egyptian context (figure 0.10 & 0.11).

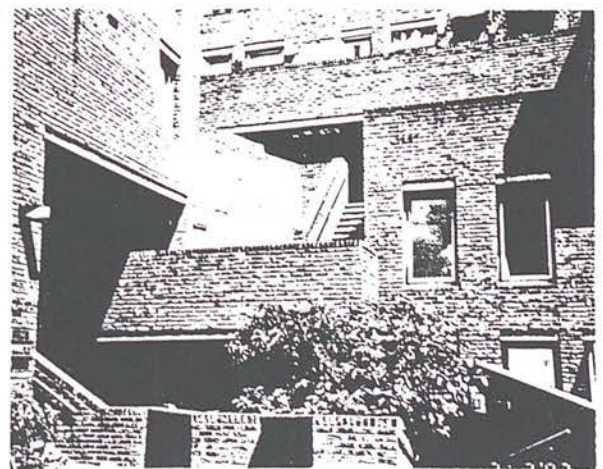
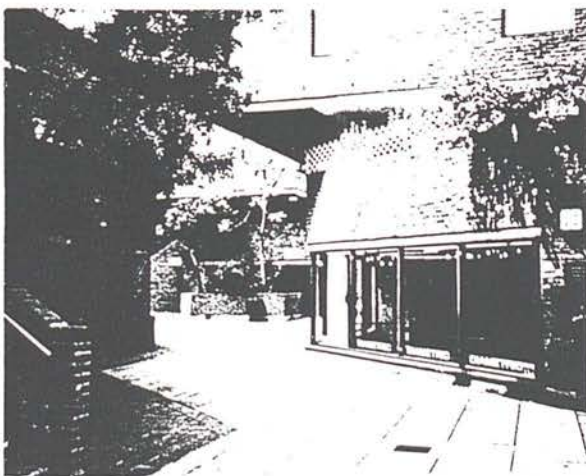
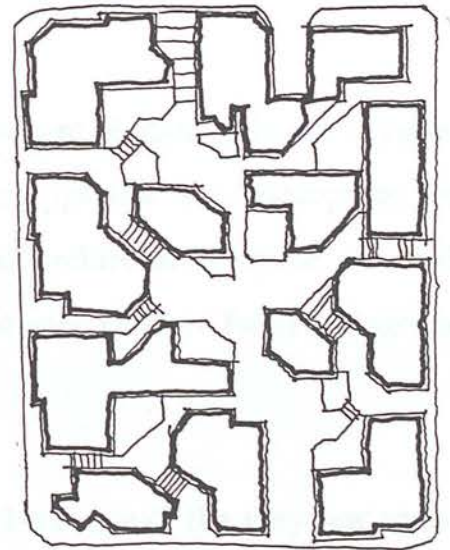


Fig.(0.10) Residential scheme, Covent Garden, London

Ref. By the author



Fig. (0.11) Residential scheme, Cergy Pontoise, France

Ref. By the author

A great controversial discussion related to the concept of identity in the Egyptian context is the degree of failure or success of applying this concept by the Architect Hassan Fathy, a well known Egyptian architectural figure. In such discussion the key issue is the relationship between Hassan Fathy's ideas and his applications .

The importance of Hassan Fathy is that he has been one of the very few to call attention to the value of traditional integrity and cultural identity at a time when people of Middle East as a whole and / or the Egyptians in particular were strenuously attempting to eradicate and deny their heritage. The lure of western ideas which were, and still are in many cases, considered far more progressive and desirable, was too strong. He has methodically searched for and empirically uncovered an all - but - forgotten method of construction deep within the Egyptian cultural context, In addition, he has been engaged in an extensive personal survey of the surviving remnant of the past, in an attempt to identify a continuity of standards that might serve to replace a highly subjective and individualistic set of design variables imposed by those from outside his traditional frame of reference. (James Steele, 1988).

The evaluation of Hassan Fathy's theory and ideas could be a separate study, which is not the aim of this thesis, but his main message about the role of continuity within the society and through the architects work could be summarised through the following quotation:

" Our architecture was not formed from the individual work of one man in a single life span, because it had to have a tradition. There are cycles that need more than one life span to crystallise. Now, when we are cut off from our tradition , we are forced to deal individually with problems that need more than our life span to solve, it is beyond our means. We oversimplify any problem to tackle it" (Hassan Fathy, 1978).

On the other hand, the architectural implications of Hassan Fathy were always under a controversial debate. Apart from his anachronistic romance, is that his main idea is limited to domes and vaults built in mud brick, which could not be used beyond the rural settlements (figure 0.12).

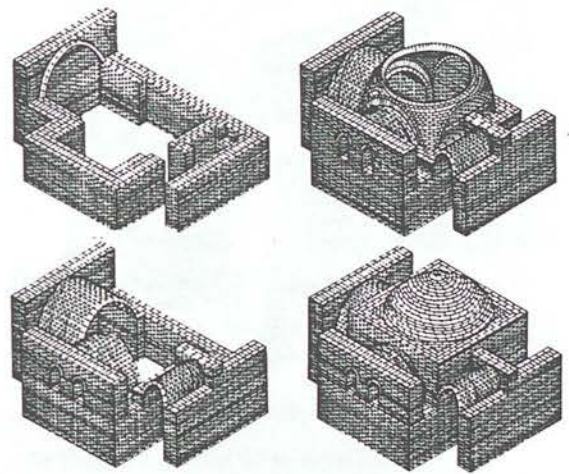


Fig. (0.12) System of dome construction

In addition, although domes and vaults are a direct response to the natural environment, they contradict the symbolic references of most of the Egyptians in urban areas. Domes for Cairenes, as example, are always related to the religious buildings and the tombs of Mamluk era (figure 0.13).

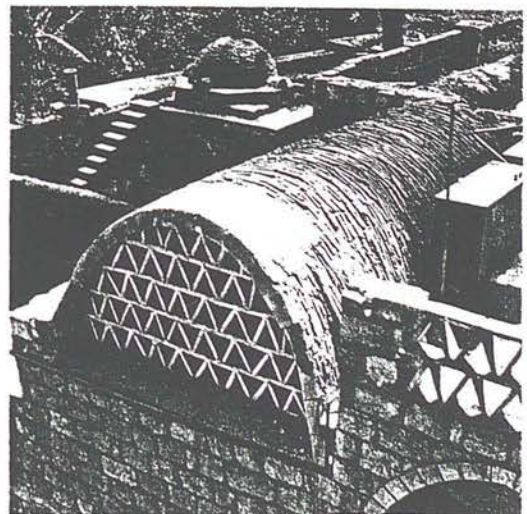


Fig. (0.13) Fouad Riyad House, Giza - Egypt

Ref. James Steele, 1988

By putting this debate a side, what concerns us here is his message which has not gone unheeded. For after a life spent as a lonely voice calling for Egyptian architectural identity, more people, nowadays, have become aware of their

heritage. Accordingly different examples can be given. Although these projects are still limited in their number, they represent the starting point, from which this way of thought will influence the general attitudes of new generation of designers and decision makers (figure 0.14 & 0.15).



Fig.(0.14) The Cultural Park for Children, Cairo
Architect : Abdelhalim Ibrahim

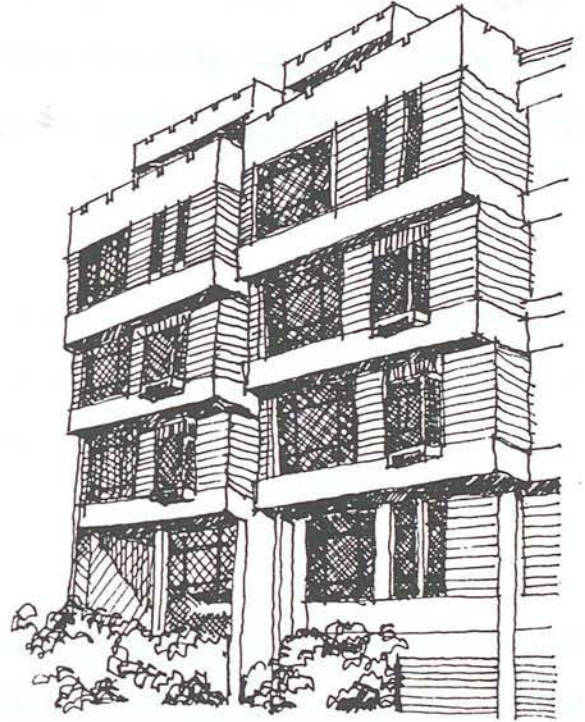


Fig.(0.15) Office building, Heliopolis, Cairo
Architect : Abdel Baki Ibrahim

Sketches are drawn by the author

0.2 Research Objective

This research will explore and develop support for the value of the second group view, i.e. looking towards our identity and searching for a new means to express continuity of the Egyptian society as the main role of designers nowadays. The goal has clearly emerged due to its significance from the education point of view. Yet there is a serious lack of understanding among the designers and decision makers of the knowledge needed in designing contemporary towns. In planning new cities, or in forecasting, the knowledge or lack of knowledge among designers is a most important factor, and must be taken in account. But what sort of information must designers have to be

effective? They need to understand the problem of human settlements in its holistic scope, and to realise the wide range of totality that must be consulted in making any sort of architectural or planning decision. Almost all designers faults are faults of partiality, of not being comprehensive enough or not being thorough enough. It is also because the status of architecture is affected by education and its role in the enlightenment of society. Does the architect as a midwife simply allow the society to express itself through him, or to lead the society, and put it on the right track?

I have adopted in this thesis the second notion simply because the cultural gaps, fragmentation in the society and the disturbances in values, attitudes and orientation have left the society unable to play its role in the architectural processes.

Although loss of identity seems to be a local problem , it is also an universal phenomenon which has become a critical concern for many philosophical writers. Therefore, recent years have seen a revival of the concept of place in the theoretical discussions of different disciplines such as architecture, psychology, and geography. It came as a response to the problem presented above. A general unease about technological innovations in design and the destruction of existing landscape and historical places has precipitated a growing literature and international concern. Studies of buildings and landscapes which concentrate exclusively on the physical properties of setting have come under criticism . Perhaps here is a real opportunity to entice some architects out of their environment. Most architectural theory have concentrated on the study of buildings. They have emphasised the work of the architectural figures. Less attention has been focused on the composition and meaning of the built environment as a whole, including buildings as one of its elements. The literature on 'place', represents divergent approaches and definitions. However what can be gained from that is to notice that there is one common thread

running through, entitled the spirit, patterns, sense and psychology of place demonstrating the feeling that people have been left out of the design process. The discussion so far has shown that apart from being functional in the conventional sense, the built environment must satisfy additional requirements. Recently, both concepts of design methodology and man - environment studies have developed as a response to a set of felt needs to do with dissatisfaction with the way design is done and with its relative ineffectiveness. Whereas design methodology concentrated on the way information was structured and how designers processed it, man - environment studies approached the question of what kind of information should be used in design. The basic premise which was associated with this field was that since design is for people, then to design properly one needed to know about the different factors that affect human beings in the broadest sense. In designing for people, its approach is to endeavour to discover how people behave, their desire, needs and references rather guessing or making arbitrary assumption. Rapoport suggests that, in setting goals and formulating design hypothesis one needs to understand how the human mind works, the role of perception, cognitive preference, meaning and symbolism, one needs to consider the role of culture in man - environment interaction, e.g., differences and standards.

Among the important aspects of man - environment studies, 'cognition' could be seen in the heart of this concept, therefore has shown a rapid growth in recent years. Within this thesis, cognition is the link between a person and his environment, which is concerned with knowing the environment and making it meaningful. Theories of cognition suggest that people acquire knowledge of the environment through interaction and adaptation. They also inherit genetic influences which evolved during early stages of human history. These are responsible for people's preferences and their perception of environmental quality.

Briefly, this thesis is an attempt to provide a holistic framework of looking at place identity. It is hoped that this will ensure and redirect attention towards a broader aspects of man - environment relationship. The quality of built environment should not be seen through the physical elements only. It is based on man's cognitive values which are an outcome of an interrelated system which necessarily must include man, culture and ecological factors.

In this study, I have avoided to impose any rigid framework or individualistic design solution. This is due to the assumption that such a profound understanding would certainly allow flexibility of creative design thoughts that are compatible with the cultural core. This is not a search for a design guidelines because, now, I believe that any dictated rules of design, however loose would certainly destroy the diversity of the environment. To study the architectural outcome in all its forms and details will be fruitless without relating them to their generative resources. Accordingly, the research will not focus on the study of architectural elements of buildings or their facades proportion, shapes of windows, etc.. . These will be dealt with by individual architects in their creative designs that collectively ensure and confirm the identity of people and the place they live in.

0.3 Research Methodology

Having set a holistic vision to the topic, the various progressive parts of the study emerged as a result of development process in which certain theories and concepts were introduced to fulfil the general structure. Accordingly, the research is subdivided into six chapters:

Chapter One : Background of the Egyptian Cities

Before exploring the various concepts and components which form the discourse on the environmental studies in Egypt, we have to give a brief account of background and history of the Egyptian context. By context, we refer to the

factors which affect or formulate Egypt and Egyptian characteristics. For achieving this goal, two main topics have to be discussed, natural environment and human factors. The study of the human role has to include both the contemporary and historical impact. If the present explicit circumstances have a great effects on the human life, the historical dimension, which may be implicit, is more vital and essential.

Accordingly, this chapter consists of two parts:

The first introduces the necessary background information to clarify aspects of the geographical and climatic conditions. In addition to this, is the socio-economic data which includes population, social and economic structure. This introduction is an overall description of Egypt, which necessary for the undertaking of the forthcoming chapters.

The second part deals with the evolution of the urban space through Egyptian history. This will be related to the city of Cairo, as a case study, in order to identify the factors that establish a sense of continuity with the past, in other words, the constants and variables within the Egyptian society.

Chapter Two: People and Place Identity

This chapter is about the study of identity in its two aspects: Firstly, to define what we mean by identity in general, and secondly how this concept can be applied to the study of places. The common definition of identity refers to a persistent sameness and unity which allows certain things to be differentiated from others. Identity is founded both in the individual person or different groups and in the culture to which they belong. Within this research, identity is defined as sharing of cultural values, which in our point of view seems to be at the heart of the concept.

Although there is a similarity between identity and place identity, the difference which should be noted is the relationship between identity "of" and identity "with". This indicates that identity which a group has "with" that place is more important than identity "of" that place. In other words this chapter is concerned with the difference between place and space . While places were derived from people's sharing values, today, spaces represent unrelated values only express the individual views towards the physical form of the built environment (placelessness).

More emphasis has been oriented, in this chapter, towards the study of conscious and unconscious human senses, this is due to their strong relationship with creating place identity. Experience of place is the integration of both self-conscious and unselfconscious sense of place. The former; the self-conscious sense of place is the shallower level of insideness experience for authentic place. The later is the deepest level of the insideness experience. The unselfconscious sense tends to give rise to places that reflect the total physical, social, aesthetic, spiritual, and other aspects of "Culture".

The study of place identity and its components, emphasised the importance of studying culture , environment and pattern of behaviour which is presented in the following chapter.

Chapter Three : Culture and Environment

This chapter is concerned with the study of each component of culture and environment and the mutual interaction between them. To achieve this goal, three questions have been studied:

- 1) How do people shape their environment. What characteristics of people as individuals or groups are relevant to the shaping of a particular environment ?
- 2) How, and to what extent, does the physical environment affect people

and their way of life ?

3) What is the mechanism that links people and environment in this two way interaction ?

Through the study of man - environment interaction, several important approaches were studied such as evolution, adaptation and stability of culture. Cultural Ecology has been considered, within this thesis, as the most appropriate concept which ensures the mechanism and mutual correlation between man and environment . The built environment in that way, can be seen as a behavioural setting which respects the biological needs, cultural needs and man's ability of adaptation to the environment. Consequently, components of environmental behaviour, especially related to the Egyptian society, such as privacy, territory, personal space and crowdedness were introduced demonstrating their important role in conditioning the built environment.

Chapter Four : Social Patterns of Activity

Based on the previous chapters, social activity has expressed its importance in different locations in this thesis. It emerged in the background and the historical review as one of the constants of the Egyptian society. It occurred secondly in the concept of place identity as one of its three components. Finally, it was mentioned as the main aspect of environmental behaviour, especially within the Egyptian context. Social activity could be seen as the main element of creating life between buildings, to achieve the urbanity , and to improve the quality of spaces. Therefore, this chapter is oriented towards studying the methods of achieving these social activities within the built environment. Two main approaches have been followed:

- 1) Spatial use, assembly and dispersing of activities through both the planning and urban design context
- 2) Spatial structure, integration of spaces between local and global views

Chapter Five: Space and Environmental Quality

In order to achieve the appropriate quality of built environment, the previous undertakings have emphasised peoples' conscious and subconscious expressions of their long term preferences, patterns of behaviour and the way of doing activities within the built environment .

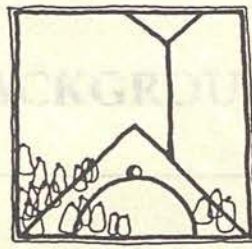
A concept of formal aesthetics based on the universal impact has come under criticism. Cognitive psychology introduces the concept of schemata (mental image) which is responsible for storing information about forces affecting people's perception. Accordingly, chapter six has introduced the study of environmental quality and aesthetics from this point of view. Two main components have been discussed:

- A) Biological aesthetics
- B) Cultural aesthetics.

Chapter Six: Conclusion

The process of addressing the previous chapters and their various aspects has led to the formulation of a thorough discourse which is necessary for the environmental understanding. Accordingly, the basic holistic framework for evaluating, judging and designing the proper quality of the Egyptian built environment has been achieved. Without such natural research process, the body of knowledge which may include hypothesis, statements and views would tend to be arbitrary. In other way, the thesis structure represents an authentic core of environmental thinking whose credibility lies in its natural order.

GENERAL BACKGROUND OF EGYPT



CHAPTER ONE

In order to understand the relationship between a man and the built environment within the Egyptian society, the first part of the book will be devoted to a general background of the country, which affects its development and Egyptian characteristics.

For achieving this goal, the main aspects have to be discussed, namely, environment, human factors, and the role of the land. Here, what has to be mentioned is that a narrow view of geographical studies, usually concerned with the physical characters, such as topography, climate, direction, soil composition, etc. But the more important view is what can be called super-geography (Cox and Meade, 1961), which overcomes the limitation of physical characteristics to the deeper level, the philosophy of the place. This raises the importance of mutual correlations between geographical studies and human cultural factors which include interrelationships between the economy, political factors and so on. It is added to emphasize the human role and says that its studies must include both the contemporary and historical aspects. In the present context, circumstances of a geographic factor in human life, the historical dimension should be taken into account.

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Based on the above, the following chapters will deal with the general background of the country, but the author is going to deal with the socio-cultural aspects, which have to be separated from this chapter. As a result, the aspects which are Egyptian urban factors, such as the urban design, scale, and belief, which are partially related to urban topics, are presented. Although the main theme of this chapter is related to the research and development of the

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Introduction

In order to understand the relationship between man and the built environment within the Egyptian society, we first have to deal with the Egyptian context. By context, we refer to the components which affect or formulate Egypt and Egyptian characteristics.

For achieving this goal, three main topics have to be discussed, natural environment, human factors, and historical background. Here, what has to be mentioned is, the common view for geographical studies, usually, concerns with the physical characteristics such as topographical differentiation, soil conditions, ... etc. But the more important view is what can be called super geography (Gamal Himdan, 1981), which overcomes the limitation of physical characteristics to the deeper factor; the philosophy of the place. This raises the importance of mutual correlation between geographical studies and human cultural factors which include inhabitants social structure, base economy, political forces and so on. In addition, emphasising the human role indicates that its studies has to include both the contemporary and historical impact. If the present explicit circumstances have a great effects on the human life, the historical dimension, which may be implicit, is more vital and essential.

Based on the above, the following chapter will deal with these three components, but it worth noting here that these issues needs special comprehensive studies which have to be separated from this thesis. As our aim concerns with the Egyptian urban form within the urban design scale, a condensed brief, which essentially related to our topic, will be presented. Although some of the material mentioned in this chapter is related to the research, and will be referred to in the

following chapters, some other facts have been added to give an overall general description of Egypt, which might be necessary to the reader unacquainted with the country.

1.1 Physical and Climatic Data

1.1.1 Site

The Arab Republic of Egypt lies in a distinctive middle location within the whole world, especially among the old world, Asia, Europe and Africa. It occupies the north-eastern corner of the African continent, and is bounded in the north by the Mediterranean, in the south by the Sudan, and in the east by the Red Sea, and in the west by Libya.

This location represents not only a centre position geographically, but also the heart of cultural core of the old world, Mesopotamia culture - Iraq, Mediterranean cultures - Syria, Greece, Italy, and Islamic culture - from Saudi Arabia in the east to Morocco in the west (figure 1.1).



Fig.(1.1) Location of Egypt within world cultures

The area of Egypt is 1,002,000 sq. Km, but only 4% can be said to be permanently settled, the remainder being desert. Egypt lies between lat. 22 and 32n. The greatest distance from north to south is about 1024 km, and from east to the west is 1240 km, giving the country a roughly square shape, with the Mediterranean and Red seas forming the northern and eastern boundaries respectively. The Egyptian coasts have a total length of approximately 2936 km. (The Middle East and North Africa, 1992).

Egypt can be divided into three distinct physical parts. The western desert, the eastern desert, and the Nile valley. The western desert comprises nearly two thirds of the land. It is an arid region covered by vast, rolling plains of sand, shifting dunes and large depressions, many of which lie below sea level (figure 1. 2).

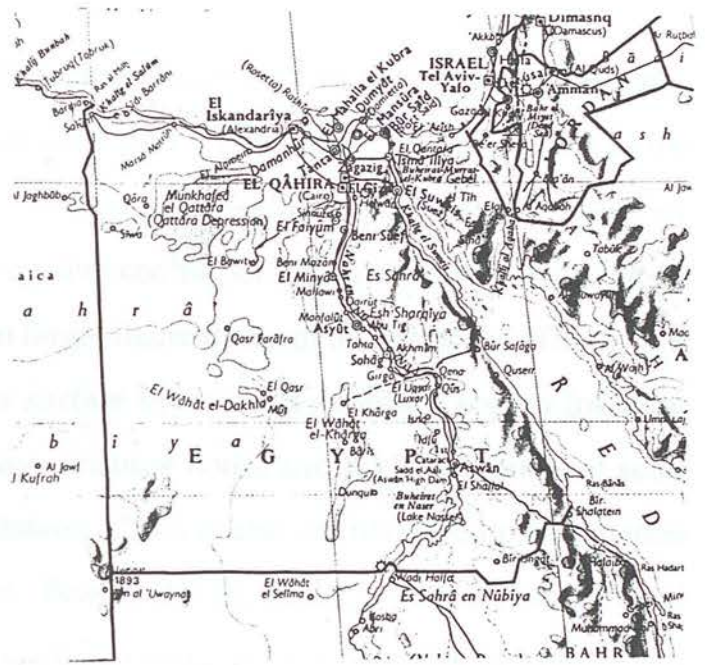


Fig. (1. 2) Map of Egypt
Ref. Concise World Atlas, 1991

The eastern desert extends from the Nile valley to the Gulf of Suez and the Red Sea. It consists of a chain of rugged mountains, the Red Sea high lands, flanked on the north-east and west by a considerably dissected limestone and sandstone plateau. This region is on average 656 metres high, but includes some peaks over 2300 metre. The Sinai peninsula is separated from Egypt by the Suez Canal. It is an irregular plateau, high in the south where its core is formed by a complex of crystalline rocks. The northern part is a coastal strip, while the central part is covered with gravel (Statistical year book, 1991).

The Nile Valley consists of two parts. The first region is upper Egypt – south of Egypt where the mountainous land on both sides of the valley rises to 1000 metres above sea level in the east and 800 metres in the west. The Nile runs from the north of Aswan to Cairo through a valley with a width ranging from two to ten kilometres. It is widest at Kom-Ombo, where it is 15 km. The second region is Lower Egypt, twenty five Kilometres north of Cairo. The Nile forks there into two main branches : the Rosseta and Damietta branches. Between these two branches lies the Delta, one of the most fertile areas of Egyptian land .

1.1.2 Climate

Egypt lies within the north African desert belt, in the hot dry zone. Such climates are characterised by clear skies and a low water vapour content in the atmosphere. Since water vapour is a principal absorber of solar energy, and since it acts as a blanket to prevent excessive cooling of the earth, a low atmosphere content of water vapour results in large fluctuations in temperature. This is due to excessive heating of the earth's surface by day and excessive energy losses to the atmosphere by night. Lengthy sunshine hours and high intensities of solar radiation are usual under such climates. Glare is also an integrated phenomenon as a result of continuous sunshine. Briefly, the Egyptian climate is characterised to be biseasonal with short cold winters lasting from November to March, and long hot summers from May to September with short transitional periods in between .

Wind affects temperature, evaporation, the rate of moisture loss and transpiration from vegetation. There are four wind directions in Egypt. The dominant wind always blows from north or north west to south and is most prevalent in summer and autumn. Sand or dust storms – Khamasiyyn – occur from March to June, caused by tropical winds from the south moving northwards. The Khamasiyyn storm is accompanied by a sharp increase in temperature.

One of the most important features of Egyptian desert climatology is the relatively high variability of the rainfall with respect to time and place. There is little rainfall in Egypt, this being largely in the winter months, mainly from November till February. The months from May till September are almost dry for the whole country. The amount diminishes sharply southwards, accordingly, rainfall is almost limited to the coastal area, and occasionally on top of high mountains in the east (figure 1.3).

The relative humidity, which refers to the water vapour content of the atmosphere gained as a result of evaporation from exposed water surfaces and moist ground and from plant transpiration, is very low in Egypt. It diminishes noticeably from north to south, and on the desert fringes. Along the Mediterranean coast, the humidity is high throughout the year but highest in summer (figure 1.3).

Observatory Location	Season	Temperature		Humidity Percentage %	Rain fall Mm
		Max.	Min		
Alexandria	Winter	18.2	9.1	62	124.4
	Summer	29.1	21.4	66	0.0
Cairo	Winter	18.2	8.8	54	1.9
	Summer	33.3	20.5	55	0.0
Aswan	Winter	22.9	9	47	0.0
	Summer	40.8	24.9	31	0.0

Fig. (1.3) Temperature and rainfall by observation location and seasons

Ref. Statistical year book, 1991

1.2 Socio-Economic Data

1.2.1 Population

The population of Egypt was estimated at 48.2 million in the 1968 census, with an annual rate of growth of 2.8%. Depending on different sets of assumptions, however, the projected population by the end of this century could range between a low of 60 million, and a high of 76 million. The impact of rapid population growth on economic development in Egypt as other similar developing countries could be severe. However, Egypt's situation may be more acute in view of the largely inelastic supply of cultivated land and land suitable for settlement. These limitations have entailed a serious rise in population densities in the Nile Valley and the Delta. Over 97% of the whole population is crowded in about 4% of the total area of Egypt (one million square kilometres). Much of the remaining 96% of the land area is desert. The concentration of

population in the Nile valley and Delta, gave Egypt in 1986 a density of 48 persons per square kilometre for the total area, but over 1170 persons per square kilometre of habitable land (Statistical year book, 1991).

According to the same census, the population of urban areas shows an anomalous case. This can be clarified as following: nearly 42.4% of the total urban population live in the two cities of Cairo and Alexandria. Cairo has a population of about 10 million or about half of the country's urban population, increasing at the rate of almost 4% annually in what is termed greater Cairo.

In 1937 only 28% of the population of Egypt lived in cities and towns, but it was 44% urbanised at the time of the 1986 census. Migration has played a role in this urbanisation process occurring due to many reasons such as the shortage of portable water, lack of electricity, absence of sewerage system and poor quality of health services. All of these features of backwardness, and of course the limited supply of arable land, have encouraged migration from rural areas to cities and towns, attracted at the same time by the urban economic opportunities. However, the role of migration has declined in the last 20 years, due to the following:

- A) The dramatic increase in population in urban areas, has not been matched by corresponding increases in provision of urban services and facilities, which has led to saturated conditions in these areas.
- B) The development of rural social structure, constructing new domestic universities, supplying most of the villages with services, and raising the individual quality standard.
- C) The orientation of the population towards new settlements (towns) in desert areas.

1.2.2 Housing

During the fifties of this century, Egypt started facing a serious shortage in urban housing stock . This situation subsequently became aggravated by increased immigration from rural to urban areas, lack of national income and housing investment, and the rapid population growth. A Ministry of Housing survey (1970) showed that 55% of one bedroom flats were occupied by four or more persons; 40% of two-bedroom flats were occupied by seven or more, and 36% of three-bedroom flats were occupied by ten or more persons. There was a gap between demand and supply. Between 1960-1970 about 300000 housing units were built. The increase of the urban population, however was estimated at more than 4,000,000, during the same period; i.e., for every new housing unit built, 13 persons were added to the urban population. It was estimated that housing needs during the 1970s would amount to more than 1,200,00 units (K. Amin, 1989).

The residential units of low income groups represent the main part in the previous figures. The responsibility for construction of these units was mainly with the Government and Co-operation Organisation. Today, the informal sector plays a great role in solving housing quantity problems, however they ignore many planning and architectural criteria, and also building regulation and codes.

1.2.3 Culture and Tradition

Egypt has long story which has begun from Pharaonic era 5000 years ago, passing through Greco-Roman and Christianity era, Islamic and Medieval era, Modern era till our contemporary period. Due to the distinctive geographical location of Egypt, it was occupied through history by different armies that carried different cultures, but although Egypt has had to undergo cultural and ethnic penetration by Circassians, Turks , French and English in turn, it remained ethnically homogeneous over the majority of the population.

Egypt represents an area which human characteristics for the three parts of the old world were integrated. This can be clearly noticed through the common agreement that the basic regional characteristic for each continent represents itself clearly along the boundaries. There is evidences for European, Asian and pure African in Egypt. This decreases in the middle at the point of contact. From this point of view, three different human regional characteristics with variations can be seen in Egypt. What has to be noted, although this is the case no one can perceive Egypt as mixture society. It is as a result, a unique case based on its strong ability of adaptation and absorption for different cultures through its moderation and intermediation .

The strength of Egyptian culture and its physical and psychological potentials kept it from absorption into other cultures, but this is not to deny that it was affected by them to formulate its final form. This form was mainly formulated by Islamic religion . Most of Egyptian behaviour and beliefs have been shaped by religious thoughts and ideas. Nowadays, the western culture has perceived as the main external influence on the Egyptian characteristics , which relates to technological improvement and economic prosperity. Gamal Himdan (1981) describes this relation as the mutual contact between the Egyptian culture and the western culture which can be seen not as enculturation rather than transculturation or crossculturation. Therefore, the Egyptians have kept their identity without losing their authentic characteristics. This mutual contact has three stages :

- 1) Imitation of the European style
- 2) Rejection of western style and new national social structure
- 3) Balance stage between inner and outer world

It is difficult to define the Egyptian identity without its regional characteristics. Accordingly, Egypt might be seen through two different views:

On one hand, as a land of paradox, or land of anomalies – the lush Nile valley and the surrounding desert, hot sunny days and cool nights, distinctive architectural quality of Pharaonic monuments and poor rural houses and great gaps between social groups.

On the other hand, views which consider the previous approach as a handicapped one. Among them Gamal Himdan ensures that Egypt is a rare case in its regional identity and characteristics. It has to be seen a collector for different aspects due to its richness and fertility, which has characterise Egypt with what he called "A king of medium solution". A middle in different varies – cultural historical role, energy and resources and in war and politics. Himdan indicates the Egyptian identity by using a word "sui genius". He referred the Egyptian identity to the interact between Egyptian site and situation.

The former indicates the Egyptian environmental characteristics, mainly with the mutual correlation to the special nature of the flooded river body as a source of Egyptian life. Natural homogeneity as a main characteristic for the Egyptian environment can be referred basically to the Nile which unified the whole landscape with the same harmony for living. The later point, the broader relationships, is a distinctive location of Egypt between different continents, oceans and seas, and cultures. Intermediation is not only an important way to define the identity and soul of Egypt, but we can say that full understanding cannot be achieved without it. It is Egypt in itself which has resulted from place and time, regional characteristics and historical dimensions.

Intermediation can be clearly related to Egypt as site and situation, and consequently related to the Egyptian himself. It is an expression of his mental, psychological and moral characteristics. Mainly it indicated his tendency to lie in peace without radicalism, and his ability of adaptation. For these characteristics, the secret of Egyptian continuity, through history can be referred.

1.2.4 Social Structure

The Egyptian society can be socially described mainly through religious, educational and economic aspects.

Religion:

Islam is the official religion of Egypt, and the religion of about 94% of the population. Since 640 A.D. Egypt has been considered to be an Islamic country. The university of Al Azhar is the oldest existing university, and still the most influential centre for Islamic learning. Egypt adhered to Sunnism followed by the majority of Muslims. The Qur'an is the basis of all things for the Sunnities. It is enlightened by the Sunna, the body of customs and teachings of Mohammed, which explicates the revealed text. The Christian population of Egypt represents about 5% of the whole of Egypt. Copts (Christian Egyptian) being the majority of these . The rest of the other religious groups form about 1% (Statistical year book, 1991).

Education:

The homogeneous identity was encouraged by using the Arabic language as the main language for nearly the whole society, though there are a few exceptions in some areas along the geographical boundaries. Although the percentage of illiteracy has been reduced recently, Egypt has a great number of illiterates both male and female (about 50% of the whole population). In addition, people who can just read and write represent an extra percentage, which cannot be neglected (about 20%). The rest of the population is assumed to be entirely educated - within primary, secondary or university certificates (Statistical year book, 1991).

Income:

The Egyptian individual income in general is very low. Although this is the case, great differentiation have occurred in the contemporary period. Egyptian society can be divided to three main groups. The first one is the high level group, which is limited. The second one is the medium income level group, which formulate the great division in urban areas . Normally, they are governmental employees

being unable to save or invest within their income. The third one is the low income level group.

1.2.5 National Economy

The Egyptian economy as a direct response for its ecological resources is based on agriculture which is based on the fertility of the Nile Valley. It plays a major role in the structure of the national economy. Agricultural production is closely connected with the livelihood of the people, and it represents the source of income for a considerable percentage of the population.

Since the Egyptian revolution in 1952, the government has established Socialism as a political structure. Consequently, the national income has been based on the creation of public sector, capable of bearing the responsibility of carry out urban projects and heavy industries.

Over the last few decades, especially after 1973, the Egyptian economy has been fundamentally influenced by various political vicissitudes , in particular, the wars and then the peace. In recent years the government has waved away from state socialism towards a market economy. A great changes have occurred based on the introduction of the private sector that participates in the development and execution of the overall development plan. Underneath these changes of direction , however, lie the important physical constraints of large and rapidly growing population, and the dearth of land available for agriculture.

There are other sources of income, but the two main resources are tourism and the Suez Canal. Egypt is enriched with tourist resources due to historical, cultural and geographical potentials and the Suez Canal still has its importance in saving distance and time for commercial ships. But in general, Egypt's economy suffers from the same problem of developing countries; at both the governmental and individual level.

1.3 Historical Review of the Evolution of the Egyptian Cities

The historical background of any society could enable us to deduce the domestic society's circumstances through which this history passed. The need for this historical background is also to enable us to define the important periods that affect the urban forms of towns as well as the life of their people. One should establish how societies are related to their countries, and this will lead to the possibility of analysing and deducing the way in which the contemporary physical built environment can be correlated to the city potentials.

The history of ancient Egyptian cities is long, beginning 5000 years ago. Therefore, the study of the evolution of the Egyptian urban form has two approaches:

The first group argues that to start this study by describing the earliest periods of Pharaonic cities would be fruitless; this is due to the lack of architectural remains and for the total difference in most criteria between the ancient and modern city potentials. In addition, any study of urban settlements before the Islamic period, will lead to irrelevant information because it will be derived from physical and climatic factors alone. This is because Islam is not just a religion for worship, but rather it dominates all aspects of behaviour and beliefs. Islam is a code of life and a value system, consequently it has affected the city and the urban built form altogether.

The second group, which is followed through this thesis, argues that domination of Islam on the Egyptian behaviour and their costumes and beliefs is an obvious fact, no one can deny. But for dealing with environmental problems, and particularly with theoretical aspects of the man- environmental interaction, we cannot ignore thousands of years of experience, insights derived from the slow development of balanced interactions between many generations and their settings. It seems difficult to believe that all our problems are so new that our sample must be limited accordingly. Therefore, a sample ranging through time

and different periods is necessary for a thorough understanding of these concepts.

Based on this argument, the study will start from the Pharaonic period to deduce these environmental impact. More emphasis will be oriented towards the following periods starting from the Islamic period through Cairo as a representative sample. Cairo as the capital of Egypt, represented an adequate sample of Egyptian urban areas due to the following: firstly, it is there that one can find the historical development including all periods, which clarifies the interplay between the physical environment and socio-cultural factors. Secondly, on the quantitative level, Cairo's population estimated at the last census (1968) at 12 million, forms about 50% of all the Egyptian urban population (statistical year book, 1991).

Cairo, be considered as a radiating source affecting the characteristics and perception of the Egyptian people in all other Egyptian urban areas. Furthermore, most of the new settlements built in the last 20 years, were constructed around Cairo, sharing similar circumstances such as geographical, climatic, and social factors (figure 1.4).

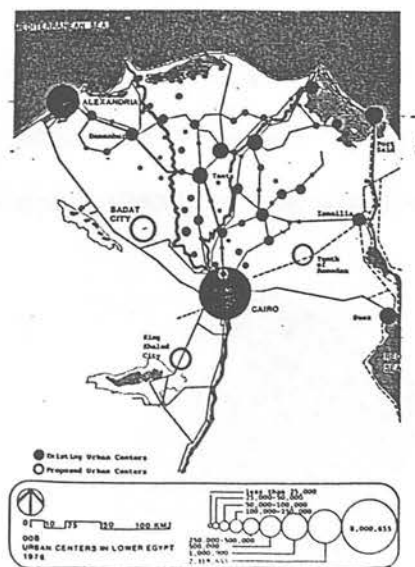


Fig. (1.4) Location of Cairo within Egyptian cities in Delta region. Ref. Sadat City, final report, 1978

It worth noting that: First, the research involves the whole Egyptian built environment, and Cairo will be used as a tool not as an aim in itself. Second, the information within this part is mainly based on the writings of Abu Lughod (1971), Edward Lane (1836) and Abdel Baki E. (1982, 1987).

1.3.1 The Pharaonic Era

Egyptian settlements in Pharaonic era were influenced by both the physical and cultural components of Egypt and Egyptians. The locations of these cities were always spread along the Nile river. Due to the richness of Pharaonic history, there are different attempts to classify the Egyptian cities . According to Eric P. Uphill (1988), three main types could be presented. One example will be given for each type .

1.3.1.1 Workmen's Villages , Deir Al-Medina

Although it is only a small village, Deir al- Medina is extremely informative about urban development. Different planning and architectural considerations have been respected such as needs of security, socio- economic impact, self actualisation of individuals and climatic effects.

The village was surrounded by a mud brick wall for several purposes: they were a protection against outside enemies and prevented the occupants of the town from being flooded out. The city appears as if the co-operative activity that was required from the city inhabitants could only assured through permanent police supervision (Eric P. Uphill, 1988). The city had central street, each end of it was closed by gates at night. The houses were huddled together, saving wall building and giving protection from heat and sun. The corner of the enclosures were rounded to resist wear and tear related to sandy wind (figure 1.5).

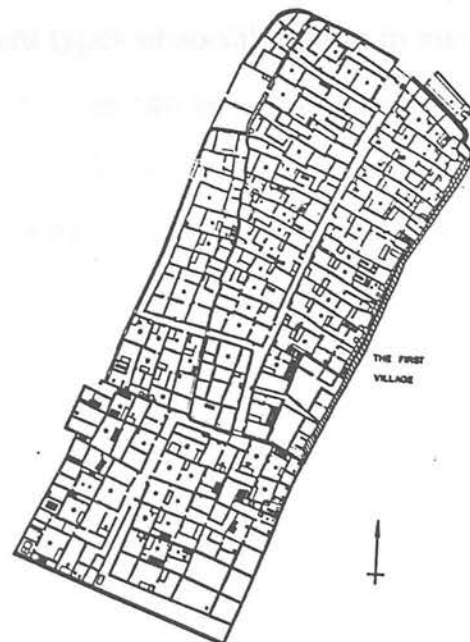


Fig.(1.5) Plan of Deir al-Medina
Ref. Eric P. Uphill, 1988

1.3.1.2 Royal Residences and Frontier Towns , Kahun

Through city of Kahun, two main aspects could be mentioned. Firstly, the geographical influence on the grid of the layout. Secondly, the effect of social impact on the city zoning.

The remains of Kahun shows that there used to be two unequal separate residential districts separated by a wall. among the two parts of the city, there were different types of buildings with great variety in size and scale. In the western quarter (ruled part) , the rectangular or grid street plan spaced house blocks is at once apparent. Similar pattern has appeared in the eastern quarter with bigger houses for ruling class (figure 1. 6).

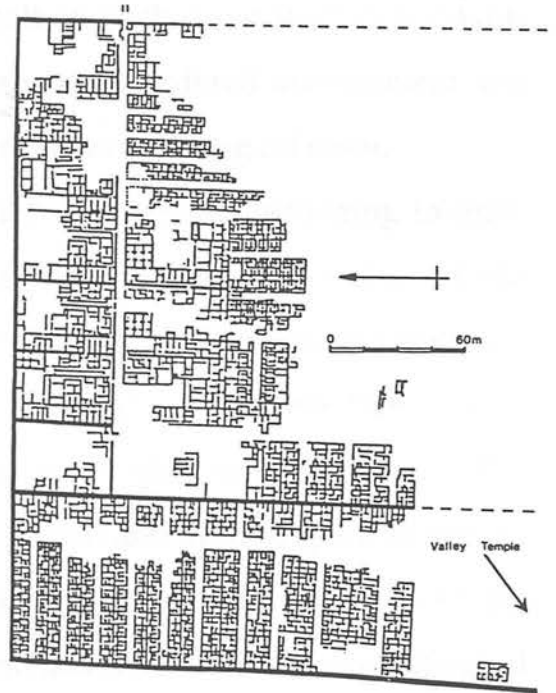


Fig. (1.6) Plan of Kahun
Ref. Eric P. Uphill, 1988

This is a very early example of two different types of social zoning in an urban community, where the size and sitting of houses can be seen to have been at opposite extremes. Not only were the houses of the well-to-do very large and based on a different ground plan , they also had the advantage of being in the area of the market place and temple.

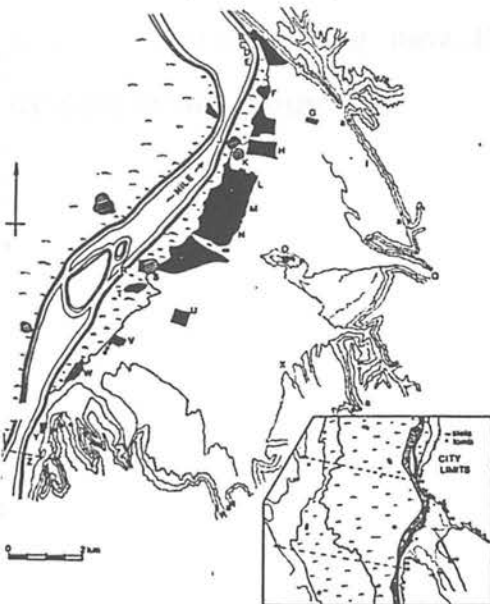
1.3.1.3 Imperial Cities , Tell Al-Amarna

Developed planning concept can be noticed in Tell Al-Amarna, which includes distinctive land use elements such as administrative, housing and services area. The city was divided to two parts. The western part, lies along the Nile, includes the governmental palace and the temple, eastern part had the residence palace. Both were separated by main road and were linked by the

bridge which was used mainly in official and governmental festivals. The eastern part also includes the tomb chapel and separated workmen's houses .

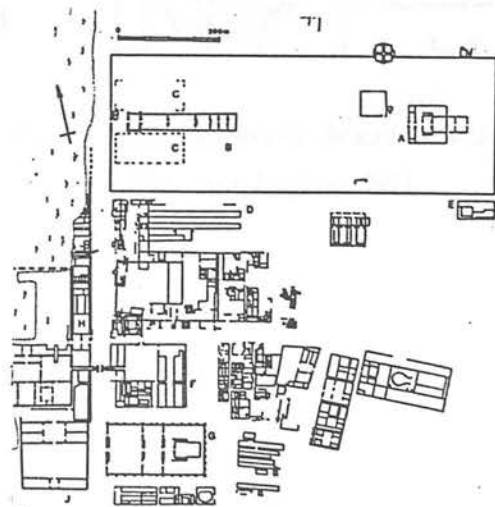
The official buildings and central city area were the only parts laid out on a truly regular plan. The rest of the urban land appears to have been built up in piecemeal sections, great nobles' houses gathering those of their dependants round them. nevertheless there was some general ordered arrangement and three great roads ran from north to south with streets opening off them.

Houses could be distinguished in eight types of dwelling, belonging to three classes of inhabitants. The lower group, forming 54-59 per cent of the population, lived in four of these types in which the crowded conditions were evident, whereas the middle class, forming 34-37 per cent, inhabited three other types of house whose features indicated a comfortable living standard. The upper classes formed 7-9 per cent of the population and lived in spacious houses or mansions with ample areas round them for served yards with workshops, stables, granaries and even gardens, and often had several small houses attached for servants (Eric P. Uphill,1988).



30. Amarna. General plan of the area of Akhetaten and of the city boundaries: A, north city limits; B, customs house; C, great wall; D, east palace; E, north city; F, north palace; G, altar; H, north suburb; I, northern tombs; J, El Til; K, Esh; L, great temple area; M, palace; N, main city; O, tomb chapel; P, workmen's village; Q, royal wadi; R, river temple; S, Hagg Qandil; T, El Amarna; U, royal enclosure; V, Maru Aten; W, Hawata; X, southern tombs; Y, southern entrance; Z, south city limits. (a) stelae. Inset: Lines of city territory. (Drawing by Helena Jacschke.)

Fig. (1.7) General layout of
Tell al-Amarna
Ref. Eric P. Uphill ,1988



31. Amarna. Plan of the central city zone and its most important buildings: A, sanctuary; B, Gem Aten; C, offering tables; D, stores; E, High Priest's house; F, private palace; G, Hw Aten temple; H, harem; I, major temple complex; J, coronation hall. (Drawing by Helena Jacschke.)

(440 ha) but this does not include parts not yet excavated, and a figure of 3000 acres (1200 ha) may be more realistic. The immense scale is best conveyed by the fact that Rome within the walls of Aurelian covered nearly 3500 acres (1400 ha).

Fig.(1.8) plan of the central city zone of
Tell al-Amarna
Ref. Eric P. Uphill ,1988

1.3.2 The Islamic Era

There are two types of early Islamic towns, which have been classified as follows: the first type is the army camps which eventually developed into permanent cities, while the second type is the princely towns which are founded to mark the birth of dynasties and to affirm their authority.

The clear example of the first type is the city of Fustat. This city was founded by Amr Ibn al-'As, in 640 with the pre-existing town of Babylon. Other towns are all examples of the second type. Firstly, al-'Askar, which was founded by the triumphant 'Abbasids in 750. Secondly, al-Qata'i which was located on the north east of al-'Askar in 870 at the region of Ahmed Ibn Tulun. Finally, al-Qahirah [Cairo] that represented the princely town for the new Fatimid dynasty in 969 (figure 1.9).

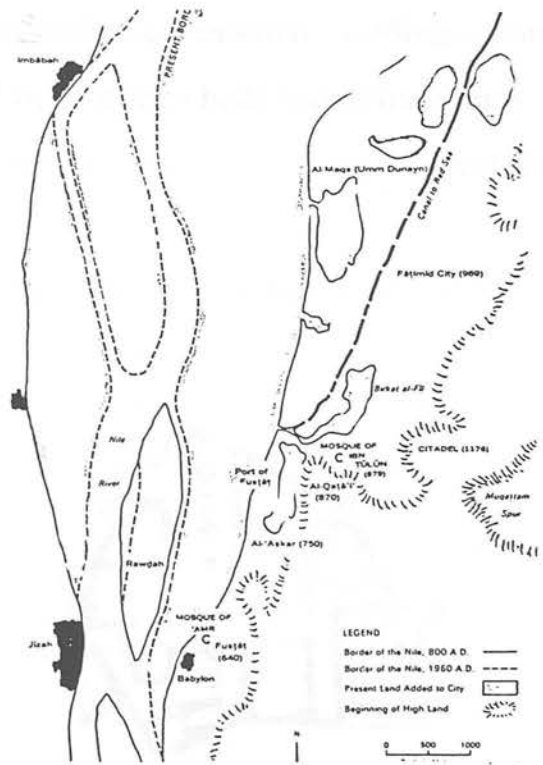


Fig. (1.9) The location of Islamic towns - Cairo
Ref. Abu Lughod, 1971

1.3.2.1 The City of Fustat (640-751 A. D)

This is the first Islamic capital in Egypt, founded when Amr reached it in 640 A.D. Fustat was formed when Amr appointed four of his leaders to plan the land surrounding the main Mosque (figure 1.10) in order to form residential areas, so that every tribe had its own space.

The town's constructions – as most early Islamic cities – were simple, reflecting the simplicity of its residents, and the minimum of their needs. Originally, the town planning elements of Fustat can be clarified as following:

A) City centre that contained two essential elements. Main Mosque representing the religious, political, educational and governmental centre. Market which surrounded that Mosque.

B) The residential buildings formed the main part of the town's built environment. They were divided into four communities and formed as nearby (houses) surrounding the main Mosque and its radiating markets. The typical houses were built from ground floor, containing : internal buildings centred around water fountains and surrounded by reception halls and living rooms. As for light and ventilation these were accommodated through courts, and there were no large openings (Figure 1.11)

C) The craft industry in Fustat included some trade (crockery and textiles) which was located beside the Port on the Nile river.

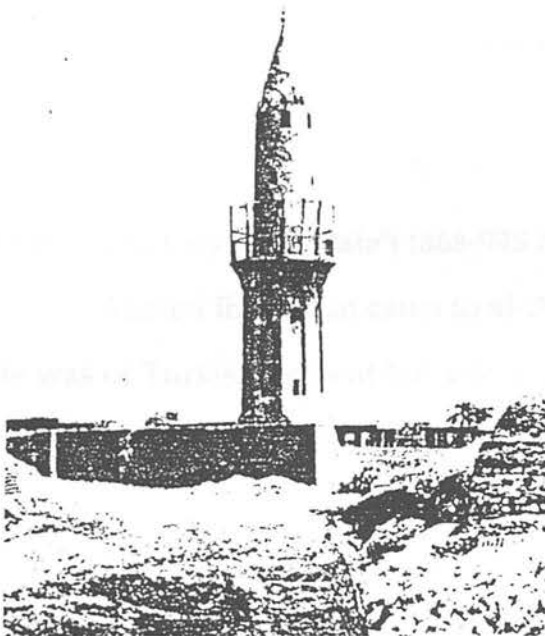


Fig. (1.10) Amr Ibn al-'As Mosque, Cairo
Ref. Abu Lughod, 1971

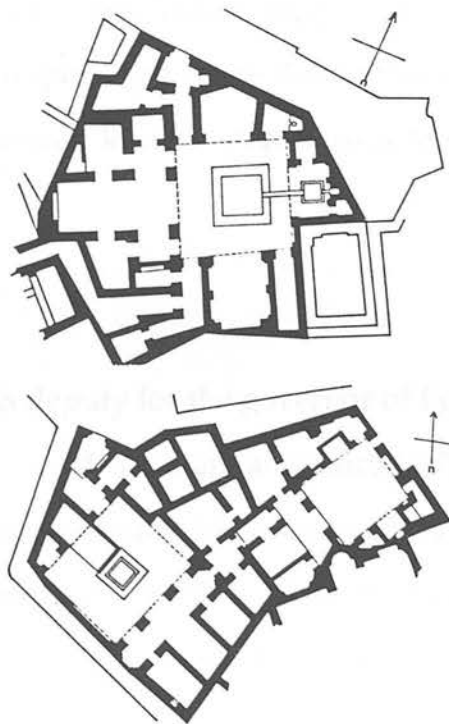


Fig. (1.11) Types of Fustat houses, Cairo
Ref. James Steele, 1988

1.3.2.2 The City of al-'Askar (751-868 A.D.)

Al-'Askar is considered as the second capital of Islamic Egypt. It was originally constructed by Saleh Ebn Aly el-Abasy in the year 751, in order to be an abiding place for the empire of the new Abasian town. Al-'Askar was planned as a permanent settlement whose core was the official residence, the Dar

al-Imarah, together with the central mosque around which the markets were concentrated.

This typical nucleus was surrounded by some luxurious residences of members of the court and the various regiments, whose double responsibility was to defend the administrative suburb from popular uprising and to repel any attack on Fustāt from the ridges above it. It is noticed that the planning of al-'Askar was extended from the Fustat planning concept. This was due to the transfer of government from the Amawy's family to the Abasyn family which was just a change in government' policy, not in the Islamic civilisation. As a result of this , the Abasy's society was not much different to the previous society, in relation to the people's behaviour and way of living.

Since the establishment of al-Qata'i by Ahmed Ibn Tulun, people began to abandon al-'Askar for the new town. The importance of al-'Askar therefore reduced, and the only towns which became well known were Fustat and al-Qata'i .

1.3.2.3 The City of al-Qata'i (868-905 A.D.)

Ahmed Ibn Tulun came to al-'Askar as deputy for the governor of Egypt. He was of Turkish descent but was raised in the Mesopotamian princely city of Samarra. In 870, two years after his arrival, he found his own princely city located on the higher land east and slightly north of al-'Askar. This community was called al-Qata'i [the wards] reflecting its feudal base; by dividing the town into sectors (wards) and giving every group of his soldiers and followers a special sector.

Ahmed Ibn Tulun with his culture and perception of the built environment, affected the Egyptian urban space through both concepts of planning and building forms. At the heart of this city were the palaces of the ruler and his deputies, central maydans (open spaces) for sports and tournament, and the

awesome Mosque of Ibn Tulun . The maydans were considered the premier public open spaces in the Islamic towns of Egypt, and the Mosque was the greatest building in al-Qata'i town. It had a similarity with Samara Mosque in Iraq , especially in the form of its minaret which is known as Malwia (figure 1.12).

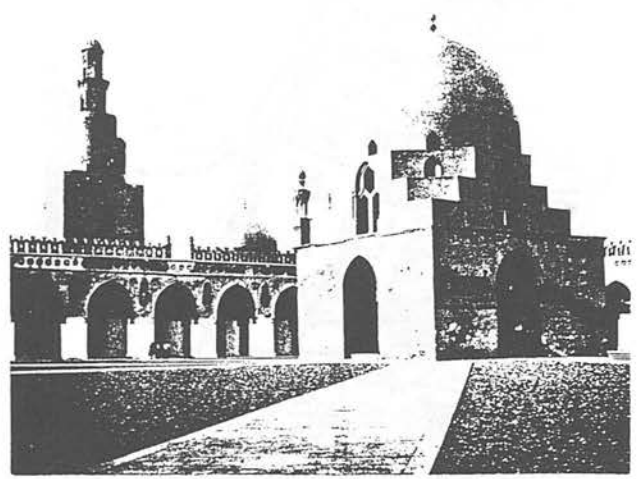


Fig. (1.12) Ibn Tulun Mosque, Cairo

This heart of the city was surrounded by rectangular feudal fiefs that belonged to supporters of the ruler. The majority of the population occupied the peripheral boundaries of the city. Most of the Tulunian houses expressed a similar concept that still dominated the building form, based on an internal court. The land limits and shape affected both the court shape which was either square or rectangular, and certainly the design solution possibilities. When the Abbasid troops destroyed al-Qata'i town in 905, there was nothing left of the town except Ibn Tulun Mosque.

1.3.2.4 The City of Fatimid al-Qahirah (905-1170 A.D.)

In the Fatimid period, Jwahar – the leader of el-Mu'izz's troops – constructed a new settlement in a separate area , north the previous cities. This was the abiding place of the Fatimid Caliphate in Egypt. Beside being a centre to spread Islam, it was also a fortress. Therefore, he began to construct the walls which were to enclose the new rectangular city. Since Jawhar was a Roman, the planning of Cairo was similar to that of the Roman towns in its perpendicular road grid. It worth noting here that the same pattern appeared firstly in pharonic era (see article 1.3.1.2). The city extended until it joined Misr al-Fustat and became the largest Islamic city. The urban built form of , Fatimid suburb was affected by political, physical and social factors (figure 1.13).



Fig. (1.13) The City of Fatimid al-Qahirah
Ref. Doris behrens - Abousief, 1985

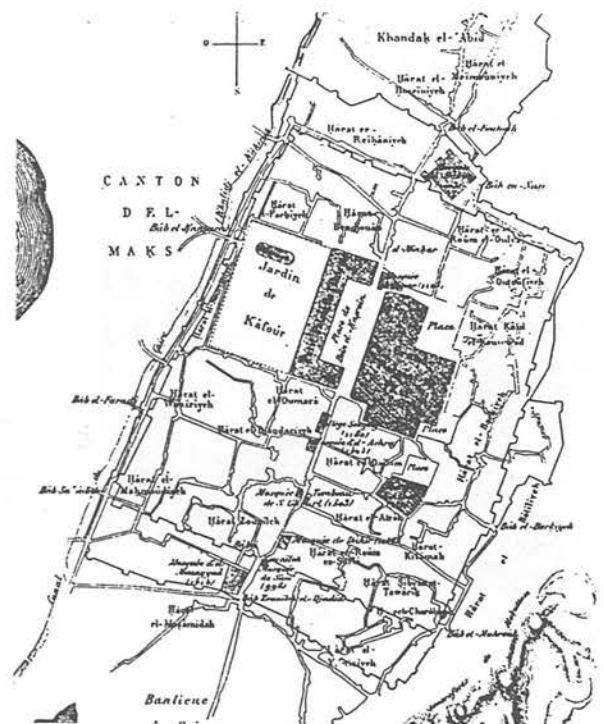


Fig. (1.14) Maydan Beyn al Qasreyn, Cairo
Ref. Marcel Clerget, 1934

For the first time , the Mosque location was not to be the main and central space of the city. This heart place was instead represented by both the Calipha palace and the governmental centre. Al-Azhar Mosque was built in this era, by the side of the al-Mu'izz street, which was the most important road, extending from north to south within the walled city. Al-Azhar was considered to be both the religious and cultural centre, but it was separated from the main space between the two palaces . Instead of the mosque, there were two palaces in Fatimid al-Qahirah. The largest was the east palace, and the smaller was the west one. Between these extended a public space which was known as Beyn al-Qasreyn (literally between two palaces). There was no direct link between the two palaces through the space in between, but through an private path that enabled El-Calipha to use both palaces without using the space in between (figure 1.14) .

The main element in shaping the urban form of this city was the intimate connection between the physical organisation and the social institution that expressed itself in the 'harat' (narrow streets) . These harat in which members of

the ethnically organised military units of Mu'izz were installed. Physically, a harah (sing) is a subsection of the city. Having only limited access, usually through a street terminating in an open square, it is equipped with walls and gates which can be closed at night, that could help in residential security and were also used as a unit for administration control (figure 1.15).

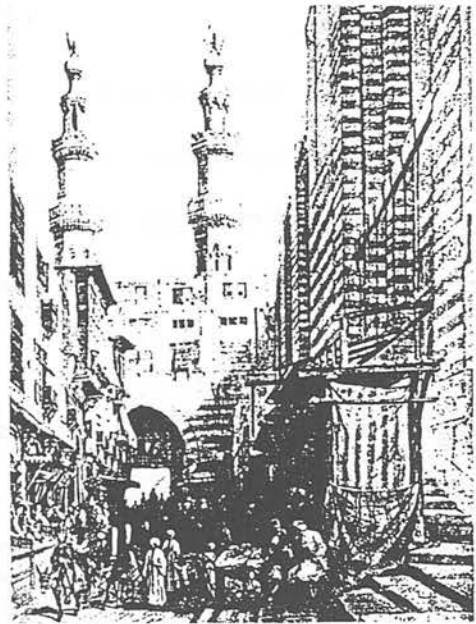


Fig.(1.15) Bab Zuwaylah in the southern wall, Cairo
Ref. Abou Lughod, 1971

Socially, the harah is a group of persons usually unified by ethnic and or occupational characteristics as well as by racial ties, and segregated physically and socially from other subgroups of the city. Urban form were developed under the Fatimid social beliefs and life style . More attention oriented towards the public space to celebrate religious and domestic festivals .

1.3.3 The Medieval Era

The heritage of medieval Cairo from its Fatamid period was very important. In spite of changes in the ruling dynasties, the urban built form was still effect by its both physical organisation and social instruction.

On the other hand, the medieval settlement which was concentrated in the southern part of the modern metropolitan region, left its mark in the form of residential houses or public buildings. These could provide us with evidence from which to deduce and trace the factors affecting its urban built form. The medieval era began with Salah Al-Din who founded the Ayyubid dynasty, followed by the Mamluks (Bahari-Circassian) then the Ottoman period until the Napoleonic occupation in 1798. It was in this period that Cairo was introduced to modernism.

1.3.3.1 Ayyubid Cairo (1170-1250 A.D.)

When Salah Al-Din became governor of Egypt, there was nothing to indicate that he was planning to make a total transformation in the physical boundaries of Cairo. He was involved in many successful military campaigns. In terms of development in the city physical form, little was done until his triumphant return from these campaigns.

Salah Al-Din conceived the plan for his Citadel and for the gigantic walls to encircle the two cities of Misr (Fustat) and al-Qahira. The key stone of his defence system was to be the Citadel which he conceived originally not only as a fortress for his troops but as a residence for himself (figure 1. 16).

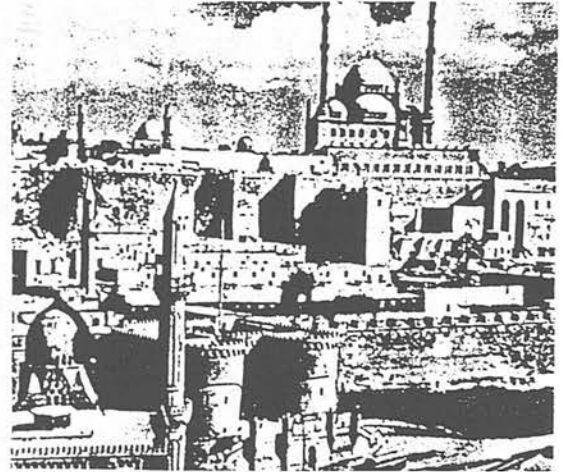


Fig. (1.16) Salah al-Din Citadel, Cairo

In the newly unified and expanding capital, people constructed everywhere within the larger streets and maydans, gradually effacing the basic outline of the original symmetrical plan. This physical regional development was encouraged by the increase of land due to the changes in the Nile river's course during the twelfth, thirteenth, and fourteenth centuries. It is important to note that the Ayyubid period mainly affected the physical expansion of Cairo itself through its new wall boundaries, rather than providing distinctive evidence for urban spaces in Egypt.

1.3.3.2 Mamluk Cairo (1250-1517 A.D.)

The Mamluk era which includes the period of Bahri Mamluk 1250/1382 and of Circassian Mamluk 1382/1517, is considered to be the golden period of Islamic Architecture in Egypt. Cairo's most beautiful architectural constructions date from that era. Economically, in the growing trade between east and west,

Egypt was a critical link in the geographical route. Thus, Cairo experienced her greatest growth and development during the medieval era, corresponding with the rule of Bahri Mamluks .

As a result of this commercial benefit, the urban built form was affected through the construction of wekalat (hotels) and Khanat (markets). On the other hand, it was also affected by the many public buildings - especially Mosques - that dominated the physical form and expressed human social aspects (Figure 1.17). The greatest remains of Mamluks are in the architecture of these buildings, even some of them were the attempts of Mamluk rulers in memorise their reign.

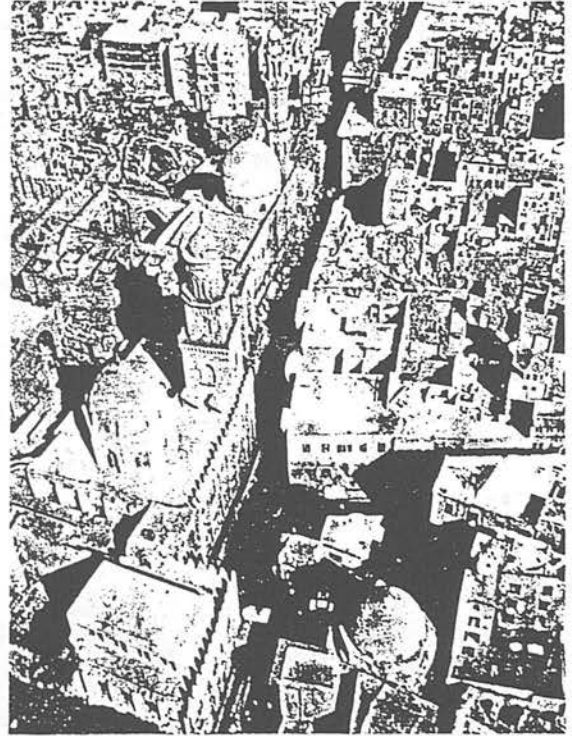


Fig. (1.17) Aerial view of al- Muz Street showing hospital and mausoleum of Qalawun and college mosque of Ibn Qalawun

Ref. Abu Lughod, 1971

Since the pre-industrial city which evolved into its final developments after the 15th century, remained virtually constant in extent and size for the ensuing 300 years, Cairo at the time of French expedition (figure 1.18), can provide evidence and an adequate picture of medieval urban form. This map showed that the city was divided into 53 harat, each of which in turn consisted of several durub (closed narrow streets); perhaps 30 dwellings grouped around common access alleys which were barricaded nightly. In more commercialised sections of the city, each darb or group of durub was devoted to a particular craft or product. Not only were goods produced and sold there, but in addition, residing there were some individuals involved in production and distribution. Hence the same

unit might contain the luxurious home of a prosperous merchant, the humbler but still substantial dwelling of the master craftsman, and poorer quarters for apprentices, porter, unskilled labourers, and menials. Within the same unit were shops and dwellings for small tradesmen catering for daily needs of residents, at least one coffee shop for recreation, and in the larger units a public bath, a small mosque with an associated kuttab (Qur'an school), possibly a meeting hall, and warehouses and inns for the convenience of visiting merchants. Even outside the commercial hub of the city similar admixtures of workshops, stores, and residences were to be found. This picture slightly changed in the bigger thoroughfares which include a row of shops along each side. Above these shops were apartments which did not communicate with them, and which were seldom occupied by the person who rented the shops.



Fig. (1.18) The built - up area of Cairo, 1800

Ref. Abu Lughod, 1971

Building shapes and forms of houses have a strong effect on the built environment. They were influenced by social, climatic, geographic, and technological impact. The medieval house represented a mature sample of the concept which was used before the modern era. These houses (figure 1.19 & 1.20) could be described through the following :

The foundation-walls, to the height of the first floor are cased externally and often internally with the soft calcareous stone of the neighbouring mountain. The alternate courses of the front are sometimes coloured red and white, particularly in large houses; as is the case with most Mosques. The superstructure, the front of which generally projects about two feet, and is supported by corbels or piers, is of brick and often plastered. The roof is flat, and covered with a coat of plaster. The common architectural style for the entrance of the private house is often ornamented. The ground floor apartments next to the street have small wooden grated windows (mashrebiyyeh) placed high sufficiently to render it impossible for a person passing by in the street , even on horseback, to see through them.

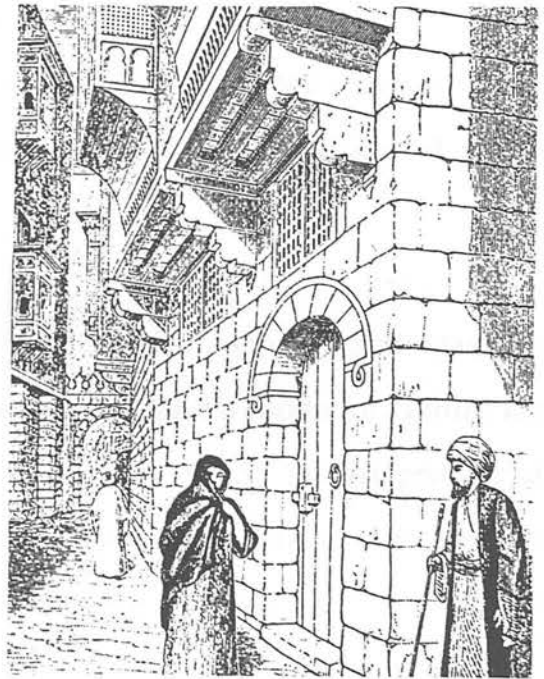


Fig. (1. 19) The typical house of the medieval era
Ref. Edward Lane, 1836

The windows of upper apartments generally project a foot and a half or more, and are mostly formed of turned wooden lattice-work. This is so close that it shuts out much of the light and sun, and screens the inmates of the house from the view of persons outside, while at the same time it admitting air. They are generally of unpainted wood, but some few are partially painted red and green, and some are entirely painted. In general, the houses are two or three storeys

high, and almost every house that is sufficiently large, encloses an open, unpaved court (hosh) which is entered by a passage constructed with one or two turnings, for the purpose of preventing pedestrians outside, from seeing into it.

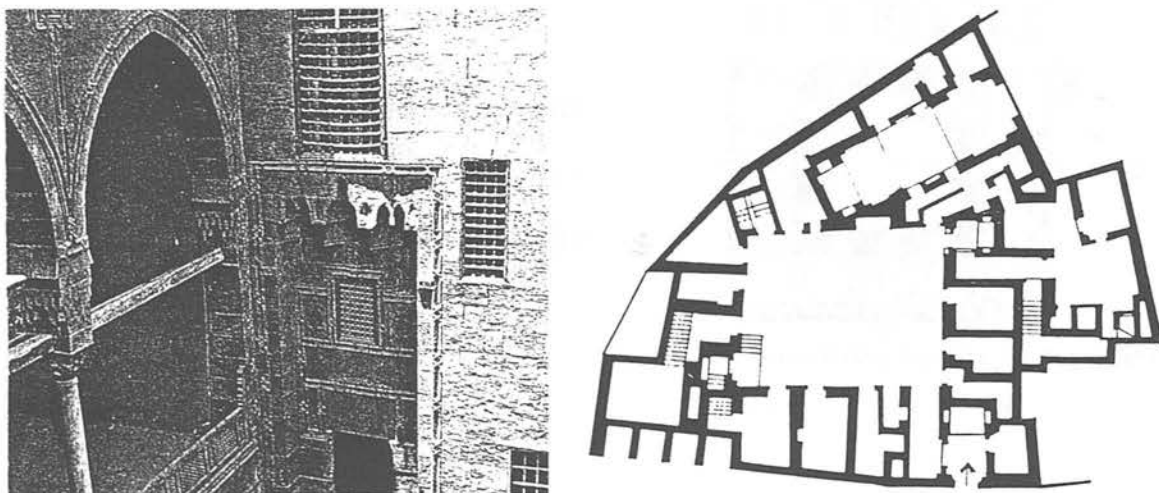


Fig.(1.20) Interior court of Gamal Al - Dahabi House , Cairo
Ref. James Steele, 1988

By the end of medieval era , the east-west trade route had shifted, decreasing the economic base of the community. At this time, the Ottoman Turks had risen.

1.3.3.3 Turkish Cairo (1517-1798 A.D.)

Cairo, after its prosperity during the Fatimid, Ayyubid and Mamluk periods considered at the centre of world commerce and a model of culture for the Islamic world, passed into the hand of Turks and became merely provincial capital subordinate to Constantinople. During the period between the Turkish conquest and the Napoleonic Expedition, there is no doubt that Cairo deteriorated gradually but steadily in all aspects of Egyptian society. Under Turkish rule, it lost her cultural characteristic and faced the first stage of a setback which was reflected in the built environment through unrelated state architecture.

The Turks exported most of Egypt's skilled architects, craftsmen and workers, and neglected not only the construction of new building, but also the maintenance of old ones. This situation continued for a long time until some of these groups returned .

While houses were built in the local manner, they started to construct buildings in Ottoman style which was affected by the Byzantine architecture . In addition, the Ottoman architectural elements such as domes, semi domes and pointed pencil shaped minaret were used for Mosques (figure 1.21).

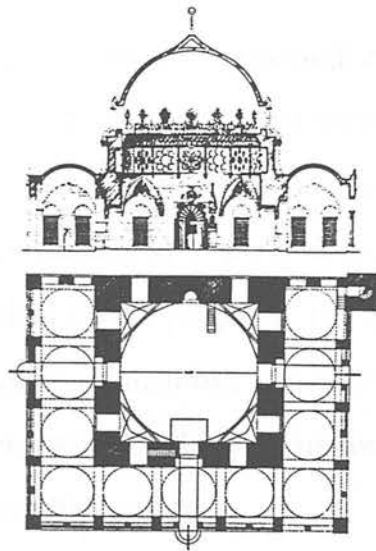


Fig. (1. 21) Sinan Pasha Mosque, Bulaq, Cairo
Ref. Ismail Serageldin, 1989

1.3.4 The Modern Era

It is conventional for historians to date Egypt's entry into the modern era from the French Expedition in 1798 A.D., after the decline of the Ottoman Empire. Seven years later Mohammed Ali of Albanian origin became ruler of Egypt. His successors reigned Egypt even after it became a British colony. Although these successors were officially the rulers of Egypt, the country was virtually governed by the British consul. The monarchy came to an end through the Egyptian revolution of 1952.

1.3.4.1 French Expedition (1798 - 1801 A.D.)

The effect of the French Expedition on Egyptian society - including the urban form - cannot be measured merely through its short period, since these troops were present in Egypt for three years, while the British governed the country for forty. Yet, contemporary Cairo is stamped by the French style, not in the British mould. For example the French language was prominent on newstands, in advertisements on bill boards, and even in conversation. Although this situation has changed today, the French influence can still be seen in Egyptian courts and in law, and also in the language used by the elite. Such factors show the long term effects of the Napoleonic occupation which were minimal in their time span.

The impact of this period on the Egyptian built environment expressed itself in two aspects. One was the organisation of Cairo's administrative districts. The French, combined the city's existing harat to 8 arrondissements, which were later modified and have been substituted by the aqsam (districts) of the new quarters of Cairo. The second impact was on the physical street pattern. For purely military reasons the French began to regulate a number of important communicating streets in the city, since European armies could not cope with the confusion and potential for ambush in Cairo's maze like system.

Although there are little evidence for the influence of French expedition on the physical structure, it is clear that this period opened the gate towards western culture. Consequently, the Egyptian urban form was affected by European style.

1.3.4.2 Mohammed Ali (1805-1848 A.D.)

Mohammed Ali had come to Egypt almost by chance as lieutenant commander of a small corps of Albanians in the Turkish army which helped repel the French. In his period, not only the physical environment, but also all social aspects were destroyed during the Turkish era. This situation was hardly an enviable inheritance for Mohammed Ali who was subsequently considered to be the founder of the modern state. His programme of reform was a comprehensive plan aimed at bringing the agricultural land back into productivity, to devoting some of it to the new staple crop of cotton, which was to play an important role in the future of the Egyptian economy. Besides that, he oriented attention to the reorganisation of the governmental system of local administration, in order to establish adequate security for settlements. Finally in a parallel program to foster industrial and military development, Mohammed Ali introduced European models and factories by importing foreign teachers and advisors. Furthermore, the use of French experts and educational missions to France were to influence Egypt with the French style. This method was further adopted by his grandson Ismail.

The urban built environment was affected by this trend in residential or public buildings, and in street patterns by the technological progress of the modern era. European palaces were built for Mohammed Ali and his Royal family within the distinctive residential areas in the city (figure 1. 22).

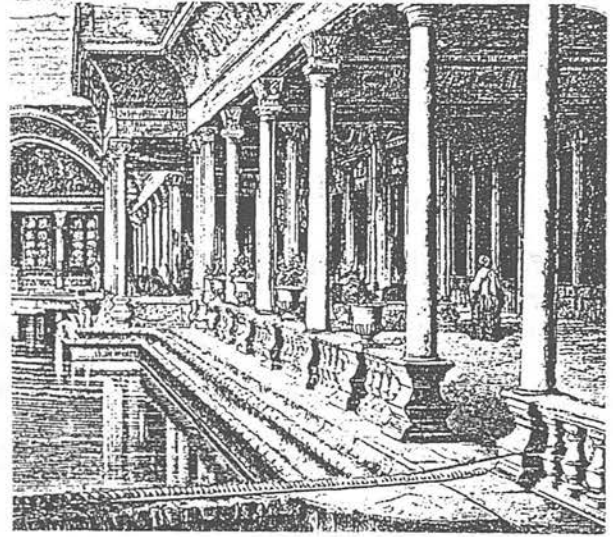


Fig. (1. 22) Mohammed Ali's palace, Shubra, Cairo
Ref. Abu Lughod, 1971

Furthermore, the influences of rapid technological and the increased number of cars on the urban built environment started from this period. The problem was that the streets which had been regulated by Napoleon's troops were too narrow to accommodate the traffic. The primary solution began by removing street projections (masatib), but these piecemenal efforts failed to provide a basic solution to the growing problem of circulation. As a result, Mohammed Ali chose a direct approach by providing new or enlarged streets with no respect to the existing urban fabric.

The urban built form changed and lost many of its earlier domestic characteristics. Consequently, the urban spaces became a function of physical need formulated by technology, ignoring their role in expressing natural and cultural human needs.

1.3.4.3 Mohammed Ali's Successors (1848 -1952 A.D.)

This period was one of the most important ones in formulating both the urban built form of Cairo, and the perception of people towards the quality of spaces within the Egyptian built environment.

In political term, Egypt in 1847 was still a semi-autonomous member of the Ottoman Empire, ruled in eastern fashion by an easterner. By 1897, although still

nominally within the Ottoman fold, Egypt had been governed by a representative of the British government. Socially, a duality appeared in society due to the existence of two opposite population groups: European nationals and elite Egyptians monopolised the important government posts, and enjoyed many privileges. They lived in a western life style, separating themselves from the majority of Egyptians who were still stamped with the original traditions. Physically, although the structure of the city changed gradually, the period of Ismail can be considered to be one which had most dynamic era of city building that Cairo had experienced in hundreds of years.

In the early years of his era, Ismail was interested in regional projects ; preparing new settlements by providing them with canals, or upgrading existing residential areas by connecting them with infrastructure projects. Later, Cairo was physically to enter a new stage of city building. With the festivals to mark the opening of the Suez Canal, Ismail decided to change Cairo into a European city, in accordance with the style of Paris. In doing so, he ignored the whole of the old city. Instead, he paid a great attention to the facade of a new Cairo on the western edge of the city.

In order to copy the Parisian style, Ismail imported two leaders of the French engineers: Baron Haussman for planning development and Barillet Deschamps for landscape management (figure 1.23 & 1.24). In addition, the urban built form was affected by many palaces and public buildings which were designed and constructed by both western engineers and construction firms.

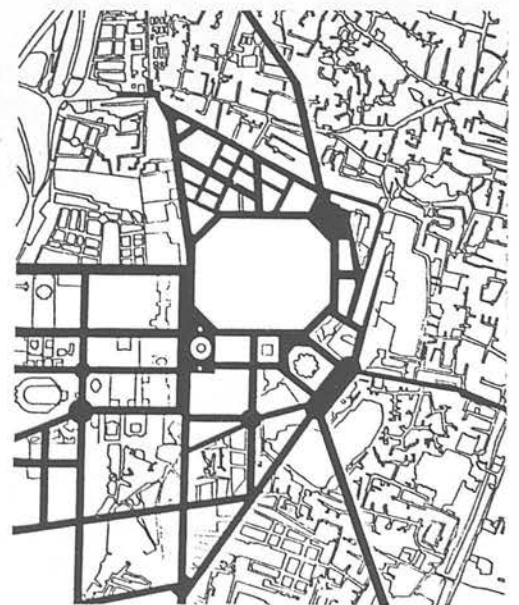


Fig.(1. 23) New development of Cairo-Haussman
Ref. Doris behrens - Abousief, 1985

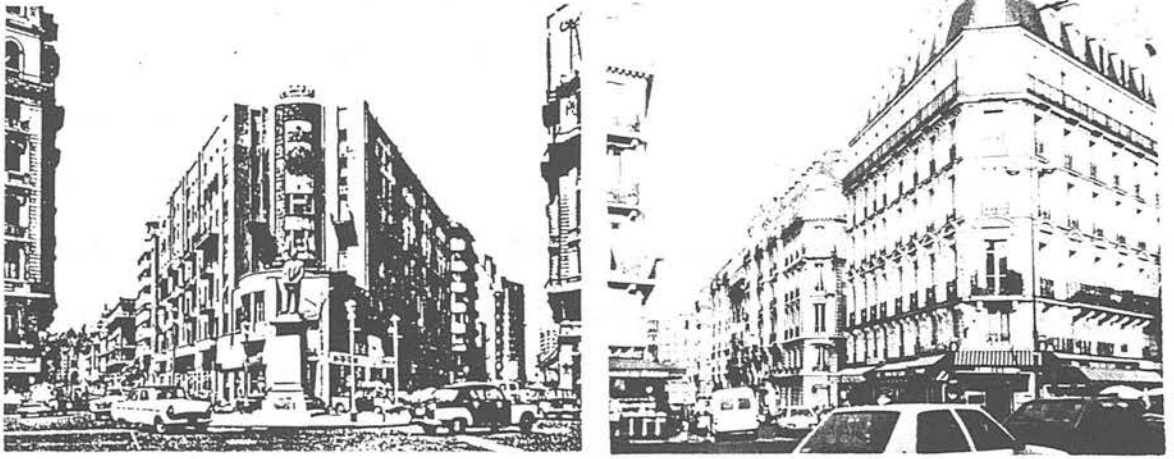


Fig. (1.24) The similarity between the urban form of Cairo and Paris

By the end of the nineteenth century, the urban form of Cairo was described by Abou Loughod (1971) as follows: "Cairo consists of two distinct physical communities, divided one from the other by barriers much broader than the single street that marked their borders. The discontinuity between Egypt's past and future has appeared as a small crack in the early nineteenth century... To the east lay the native city, still essentially pre-industrial in technology, social structure, and way of life, to the west lay the "colonial" city with its steam-powered techniques, its faster pace and wheeled traffic, and its European identification. To the east lay the labyrinth street pattern of yet unpaved harat and durub, although by then the gates had been dismantled and two new thoroughfares pierced the shade ; to the west were broad straight macadam flanked by wide walks and set back, militantly crossing one another at rigid right angles or converting here and there in a round point or maydan" (figure 1.25 & 1.26).



Fig.(1.25) Ismail's palace al-Jazirah , west Cairo



Fig.(1.26) Azbakiyah environs, east Cairo

Ref. Abu Lughod, 1971

1.3.4.4 British Occupation (1882-1952 A.D.)

The British troops entered Cairo in 1882. Politically, the situation was still anomalous. Egypt remained a member of the Ottoman Empire subject to the authority of Khedevé, but in reality, the decisions had to be approved by the British Consul. The impact of British occupation expressed itself in two approaches. Firstly, attention was mainly oriented towards agricultural re-organisation, chiefly on cotton cultivation. Barrages, canals, and the dam at Asswan helped in this issue, these and other irrigation projects helping to increase Egypt's agricultural productivity, and expand the area under cultivation. Coupled with establishment of elementary health and sanitation measures, the population was increased, especially that of Cairo which had an increasing rate of internal immigration. The transportation system was improved by the technological revolution, and also by the setting up of an adequate road network in order to connect the newly expanded areas.

Due to the improvement of transportation and increasing population, it was natural that Cairo expanded physically during this era. However, most of this expansion took place in the areas that had been established in Ismail's period. So, the two parts of the city had completed their physical expansion. The old native city had been abandoned by former attitudes, and its physical pattern contradicted new technology. On the other hand, the new European style city continued as a French model. However, there were new garden cities following the British planning concept (Figure 1.27).

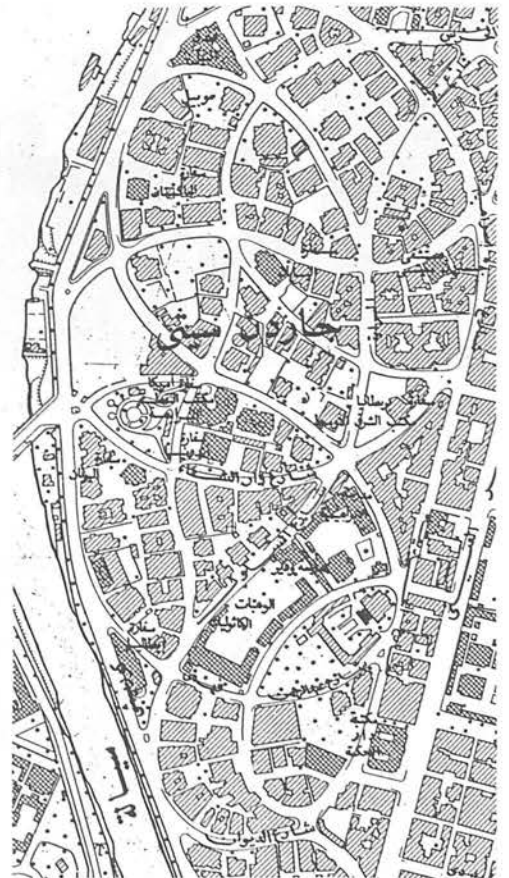


Fig. (1. 27) Garden City District, Cairo

1.3.5 The Contemporary Era (from 1952)

After the revolution of 1952, Egypt has entered a new era, governed by Egyptians . In addition, there has been a radical transformation in terms of political, social, economical and educational aspects of society. By following socialist thought, the government aimed to achieve a homogenous society through a levelling of the top, and an increase from below. As a result of this homogenisation, both duality and westernisation decreased. On the other hand, the urbanisation was increased as attention focused on industrialisation which corresponded to the increasing population and internal immigration to the urban areas.

The urban built form of contemporary Cairo reflected these factors where the government constructed residential districts for low income class groups in prototype units . These mass housing projects were largely spread in many parts of the city. Due to economic factor, as a main criterion, the Government reduced the cost of these units by using minimum dimensions for rooms, poor finishing materials, and low standard of building construction. As a result, the quality of built environment was badly affected (figure 1.28).

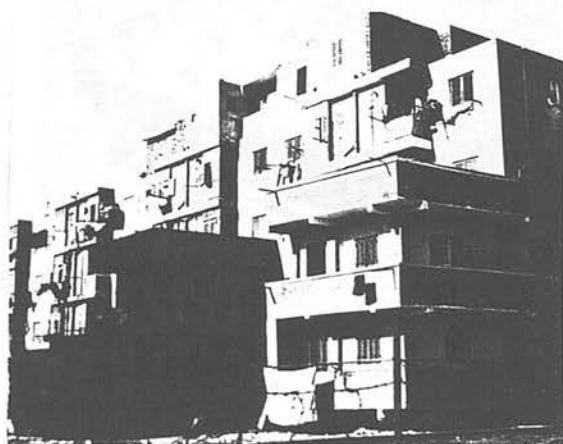


Fig. (1.28) Low income housing, al- Darassa, Cairo

The urban forms of the middle class group could be figured in different subdivisions that based on the use of the international style. This includes both the planning concept and building regulations that emerged from western context (figure 1.29).

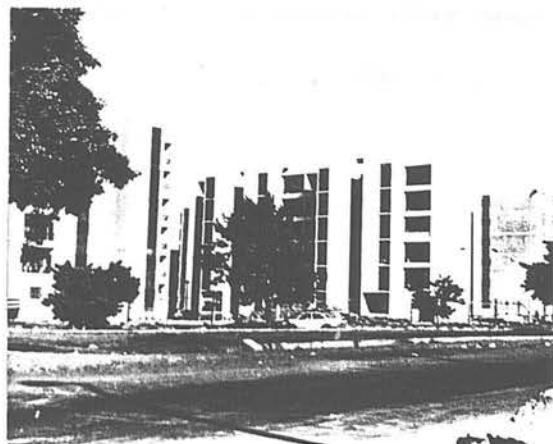


Fig.(1.29) Residential scheme, Nasr City, Cairo

Ref. By the author

After the 1973 war, there was a radical change in society for the following part of this era. New orientation was towards Democratic policy and free economy. The pace of this unexpected change has led to a great gap between the individual incomes of different class groups. This disturbed duality expressed itself in the urban form of the city by high rise buildings that built with highly technological method of construction . In the same time, the informal housing sectors were spread along the city boundaries. Although buildings were built , within this sector , in illegal procedure and without governmental support, it represents a way in which people close to solve their problem. Furthermore, it produced a great number of residential units within the whole housing stock (Figure 1.30).



Fig. (1.30) Informal housing sector, Cairo

Ref. By the author

Housing problem has increased and the expansion of existing settlements has become very crucial. The growing population was at the expense of cultivated land, and the existing urban utilities, which already overloaded, were badly affected. To overcome this problem, the Government was supporting a planning program for constructing new towns. The main idea was to drag people from the overcrowded valley by creating new urban areas on desert land beyond the urban areas of the Nile and the Delta, especially of Cairo. The success of establishing these towns is not an easy role because they were faced by many difficulties. Two main factors will be mentioned here: Egyptian , from psychological point of view, have used to live close to the Nile valley. The opportunities of work are still related to the existing urban areas.

Physically, architectural and planning policy for these towns could be seen as a continuation of ignoring concepts which compatible with environmental dictates. For example, although these towns were built in hot desert land, designs of buildings and open spaces expressed western and international style and standards inappropriate to this specific context (figure 1.31).



Fig. (1.31) Open spaces of new cities, Tenth of Ramadan City

Ref. By the author

Summary

By relating both the physical and socio - economic data to the study of the evolution of the Egyptian urban spaces, the characteristics of the built environment could be identified. Although, Egyptian place identity has affected by different periods starting from the Pharaonic era , it is formed and shaped mainly by two crucial periods, medieval-Islamic and modern periods.

The built environment in Pharaonic era was dominated by two main factors, natural and Symbolic cultural ones. Houses were built in compact order with internal courts. Streets were very narrow in rectangular grid plans. Pharaonic cultural symbols were related to their believes in the idea of "oneness", of the second life after death, and of the Nile river as the source of life. Both town planning and architectural form concepts are the direct reflection of these beliefs. The locations of these cities were always spread along the Nile river , and were put carefully between the desert and agriculture land. These cities were built in the east of the Nile river where the sun rise, while all tombs were put in the west where the sun set. Architectural elements including form, scale and materials were different in relation to religious buildings such as temples or tombs, and to the residential houses. The continuation of this distinctive attention towards the Egyptian tomb could be seen through all periods starting from Islamic era until our days .

The urban spaces of Islamic period reflected the relationship between man and environment, through the respect of natural factors – geography and climate – and cultural factors based mainly on religion and social behaviour. The planning concept, in the early stage, based on central orientation towards the mosque which was surrounded by courtyard houses that expressed the simplicity of Islam principles and the climate. When the new social beliefs have appeared in the Fatimid period, both the physical environment and social organisation were shaped in the way which became the foundation of the medieval era.

The Egyptian built environment, within the medieval era expressed an Egyptian Islamic mould, it is clear that the city urban form especially within the Mamluk period represented the matured peak point in the evolution of Egyptian cities in which their potentials derived from the influence of Islamic values , and the domestic circumstances of Egypt. "Harah" was the main element in that built environment which considered as a social unit within the division of the city. It dictated by ethnic and occupation distribution. Although economic functions unified the residential groups, the religion and regional relationship strengthened the ties between people themselves, and also people with their place. While the primitive technological level, which used animals for movement effected the urban form and accordingly encouraged security and belongings, it provided opportunities for man activities through external space. People used it as a place for meeting, talking and sitting.

The urban form expressed itself in compactness order. The layout was as a one solid mass, which made it difficult to determine its separate districts . This mass was distinguished with the similar heights for all buildings except the Mosque minaret which dominated the city skyline. Both the internal court voids of houses, and linear voids of harat expressed the type of life that oriented towards inside due to social and climate factors. The dimension of harat and the proportion which could be cleared through the percentage of its shade reflected the available technology, climatic impact, and the respecting of the human scale.

Through the modern era, urban space has given way gradually to change. The urban spaces of modern period was mainly concerned with the physical demands correlated with the western influence and the progress of technology. Later, the economic situation became as an essential factors in this problem.

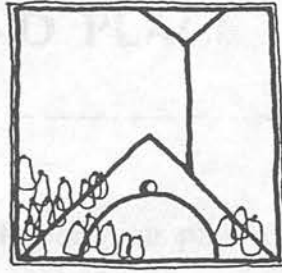
The western social influence increased, instead of the effect of Egyptian social factors that decreased in all life aspects. The social duality in that period reflected itself on the urban form through two ways. State architecture that was

formed by both western style especially French one, and technological progress, and society architecture that shaped by peoples' traditional method of construction. The Egyptian housing problem expressed itself in different manifestations. New types of housing appeared as informal housing sectors which have been built on illegal land without governmental permission. Deteriorated slums which mainly consists of cottages made of wood or metal. The last one is a type of living in tombs, unsuitable area for human beings.

The urban form of the most urban areas was dominated by the grid pattern . A parcelling system based on prototype sub-divisions used on a large scale that led to sort of similarity and monotonous. Building were separated from each other. Yet, there exist no longer space for social activities between buildings . They occurred only through public gardens or social sporting clubs.

Briefly, the Egyptian built environment represents a sort of fragmentation in both planning and architectural context, and an incompatibility between man and his environment. In other words, loss of identity which gives a rise to the topic of the following chapter.

Chapter Two
PEOPLE AND PLACE IDENTITY



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Introduction

Based on the previous chapter, the problem of the urban form of the Egyptian built environment has expressed itself in inadequate design solution based mainly on the utilitarian and physical needs within foreign technology and materialistic thoughts. This has had the consequence of values being overlooked and lead to the loss of place identity.

Although this case is quite clear within the Egyptian context, it also represents the general case through the world today, to the extent that many western writers have become conscious about the consequences to societies of loosing affinity to their values. L. Von Bertalanffy (1964) argues that the diagnosis of the sick society is one that gives most attention to biological needs, at the same time, neglecting the spiritual ones. Many disadvantages result from the meaninglessness and emptiness of life, and lack of desirable authentic goals. An example has been shown through the psychotherapists. They tell us: beside the classical neuroses caused by stress, tension, and psychological trauma, a new type of mental sickness has developed for which they have even had to coin a new term, existential neurosis, mental illness arising from the meaninglessness of life, the lack of goals and hopes in a mechanised mass society. Our contemporary life is filled with many evidences for this disturbance in values; status seeking was a perfectly normal human ambition, simply a quest for self-realisation. But as there is no real status in our mass civilisation which does not respect the value of the individual, this yearning can only be satisfied by less important status symbols; prestigious one – the type of cars or scale of the swimming pool. In spite of all our skyscrapers, artificial comfortable home and our doubled life span we are not fortunate. We seem to have lost our soul somewhere on the way of achieving the technological progress .

This chapter therefore, attempts to define the different types of values in general, and how shared values of the society are expressed through people identity, and consequently in their built environment - place identity .

2.1 Types of Values

At this point, we have to define what we mean by value. Unfortunately, the theory of value is one of the most difficult, obscure and controversial fields in philosophy and behaviour science. Its definition therefore, will not be uncontradictable. Generally values are things or acts which are chosen by and are desirable to an individual or to society within a certain frame of reference. We have to trace where these values came from, from what ultimate concept they can be derived, and what their consequences are for human behaviour.

Naturalistic Theory

This is the first concept to explain this question. According to this theory "human values are derived from and ultimately reduced to biological needs, drives and principles. Biological values are essentially maintenance of the individual, survival of the group, and evolution of the species. The basic doctrine can and has been formulated in many different ways. For example, it is the classic philosophical doctrine of hedonism, maintaining that pleasure is the ultimate goal. It is also Freud's doctrine that behaviour is governed by the pleasure principle and the principle of sustaining the homeostatic equilibrium of the organism in answer to changing environmental influences... The ultimate goal of behaviour is to maintain the psycho physical organism in a biological, psychological and social equilibrium" (Ludwig Von Bertalanffy, 1964).

Human Culture

On the other hand, this theory argues that a large part of behaviour play and exploratory activities, creativity, and culture in general , simply does not fit in the scheme. Man (and organisms in general) are not stimulus – response

machines with so-called function pleasure as an important part of behaviour. Life and behaviour are not simply utilitarian, trying to come to a so-called equilibrium with minimum expense of physical and psychic energy.

Man as the old saying goes, is a dweller of two worlds. He is a biological organism with the physical equipment, drives, instincts and limitations of his species. At the same time, he creates uses dominates and is dominated by a higher world which theological and philosophical implications, and in behaviour terms can be defined as the universe of symbols. This is what we call human culture; this complex structure of values and aesthetics. If man is creative, seeking satisfaction of his biological existence, he also lives in the higher realm of culture which is defined by the very fact that it represents more than biological needs. Traditions, status in society, full realisation of potentialities, religion, art, science – these are some of the needs deriving from man's cultural existence, and are what man tries to achieve beyond satisfaction of his biological needs and drives. In turn, it governs and controls his behaviour. Starvation at this symbolic level leads to disturbances of the mental organism, just as starvation at the biological level leads to disturbances of the physical organism, which is a well established fact of psycho pathology (Ludwig Von Bertalanffy, 1964).

By looking for those two previous concepts of values , it seems that there is common acceptance for the values correlated with culture. But in terms of practical one, there is a difficulty represents itself in two ways. Firstly, to what extent, we can generalise the same value for the whole society? Secondly, how these values can be expressed through the built environment?

The first question raises the issue of general identity and the value's differences between the main components of culture and its various sub components. The homogeneous society produces sharing values including its sub cultures. This

does not mean it has to have the same value in everywhere. Values could be seen as an expression of the cultural core of any society (see article 3.1.1). Each culture has a certain hierarchy in achieving these values. Accordingly, values can be changed within a limit related to the different hierarchy in cultural core elements.

The second question can be answered through the notion of place identity, which argues that the experience of the man towards his built environment is a way of how he sees the whole world around in other words the global perception towards a context for the understanding of individual experiences to the physical built environment. Values are normally expressed within the built environment through the individuals as the professional designer by producing the architectural solutions that carry the value which he thinks is right. The other way that it can be done is by the direct reflection from people themselves as in vernacular design.

2.2 Identity and Place Identity

The general meaning of identity and its importance, seems to be logical, easy, and straight forward. But when involved in more specific study that aims to identify the place, and how people are affected within their built environment by the nature of this notion, the task begins to appear more complex. Therefore, firstly we will define what we mean by the identity in general meaning. Secondly, how this meaning can be applied to the places.

2.2.1 General Meaning of Identity

We recognise the identity of people, plants, place and even nations, possibly because it is so fundamental. Identity is a phenomenon that evades simple definition, although some of its main characteristics are apparent. The

identity of something refers to a persistent sameness and unity which allows that thing to be differentiated from others. This identity is founded both in the individual person or object and in the culture to which they belong. It is not static and unchangeable, but varies as circumstances and attitude change; and it is not uniform and undifferentiated, but has several components and form.

According to Rapoport:

"Dictionaries give multiple meanings, the two most relevant referring to the unchanging nature of something under varying aspects or conditions, and the conditions of being one thing and not another. Both in fact seem relevant, but the latter notion seems to be at the heart of the concept as it applies to the questions being considered. In some way and some how, the unit in question sees itself, and is seen by others, as being different to other units. This would seem to involve both an inside or contents and a boundary to the outside"(A. Rapoport, 1981).

The differences in expressing both individual and group identity are very clear when comparing the artistic work with the designed built environment. If we take an example, the painter can express his view without constraints, and freely expresses his deep identity structure, a mixture of feeling, notion, history, tradition,... etc. The artist can see the link between his identity and his work, but it is very difficult for the outsiders. For the architect, whilst part of his work is an expression of his artistic individual feeling, he can not reflect just himself, as his work does not just belong to himself, but has to be referred to the whole society (figure 2.1).

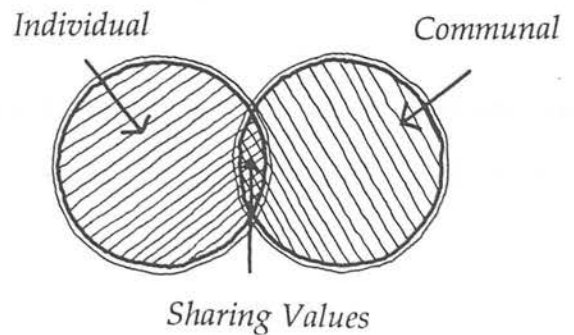


Fig.(2.1) Sharing values within general identity

The quality perceived and experienced in the man-made built environment has to be achieved as an expression of peoples' ideas and attitudes which they share. I agree with Francis Tibbalds that architecture has more importance rather than any other art, and has more influence on people behaviour. He argues that:

"Architecture and urban design are creative art forms. The design process requires a high degree of creative excellence and originality and this must be allowed for and encouraged to the full. However, unlike such art form of painting, sculpture, music and literature, the users and perceivers of architecture and urban design cannot exercise the same choice in what they experience. You cannot, unfortunately, turn off an ugly building or one that just doesn't appeal to you, nor can you send it back to the library ! This does place an enormous additional burden on the architect and urban designer. It simply isn't possible to say ' I am an artist. I can do what I like. Take it or leave it'. Architects and urban designers must recognise that they have a responsibility to a wider patronage than an individual client" (Francis Tibbalds , 1992).

The various forms of identity can be communicated in different ways: non-environmental, environmental or in both. The individual identity can be expressed non-environmentally through distinctive personal characteristics, way of looking at the world , kind of behaviour, type of dressing, and so on. The group's identity is indicated itself through their unity; similar characteristics and shared territory. Furthermore, it can be communicated at different environmental scale, ranging from regions, cities, neighbourhoods, communities as well as buildings, spaces, gardens, plants, furnishing,...etc.

The principle question which is argued here: should neighbourhood or residential settlements be homogeneous or heterogeneous and what are the related advantages? According to Rapoport (1980), different advantages of homogeneity could be listed :

- 1) Homogeneity allows for a large number of psychological, cultural and other 'defences' to operate more effectively and is in itself a major defence.
- 2) Homogeneity provides mutual support at times of stress and cultural changes...in fact, helps cultural groups survive.
- 3) Homogeneity leads to agreement about notions of environmental quality and hence reduces conflict about various standards.

4) Homogeneity allows meanings to be taken for granted, i.e., it leads to much more clearer and more effective non - verbal communication. It becomes easier to understand body of language, behaviour and physical cues in the environment, to relate them to values and hence to appropriate situation and context.

On the other hand, when people are sharing a concept of a heterogeneity which based on ideological ground, it gives them another degree or kind of perceived homogeneity which is compounded with main criticism. When the natural process of selection by perceived homogeneity are blocked, other forms of homogeneity will tend to emerge which are less desirable because artificial rather than natural. These may based on imposed and arbitrary rather than subjectively defined and hence not work nearly as well. Therefore, in answering the previous question , homogeneity or heterogeneity, it seems clearly to be homogeneity.

Environmental scale represents one of the main factor affecting the concept of homogeneity. There have been many generalisations which relate more or less to scale as a variable in social organisation. Perhaps the best - known and widely attempt to deal with scale in such a meaning is Redfield's characterisation of the folk and urban continuum. The former represent the small scale, and the later represents the large scale. He cites that:

" The ideal type of primitive or folk society , as contrast with modern - urbanised society is small, isolated, nonliterate, and homogeneous, with strong sense of group solidarity. The ways of living are conventionalised into that coherent system which we call ' a culture'. Behaviour is traditional spontaneous, uncritical, and personal, there is no legislation or habit or experiment and reflection for intellectual ends. Kinship, its relationship and institutions, are the type categories of experience and the familial group is the unit in action "(Gerald D. Berreman , 1978).

By applying the notion of homogeneity on the contemporary Egyptian society, informal housing sector (see article 1.3.5) is an example which has to be studied

in more details for many reasons:

- 1) It represents a sample of a homogeneous residential settlement
- 2) It produces a great percentage of the housing units in contemporary Cairo as a whole .
- 3) It is a main debate, nowadays, about the advantages and disadvantages of these settlements

By putting aside the illegal procedures which include constructing on the land without an authorised permission and neglecting of the official building regulations. One could ask what is wrong with these settlements in terms of a way people solve their problem to achieve their needs and identity?

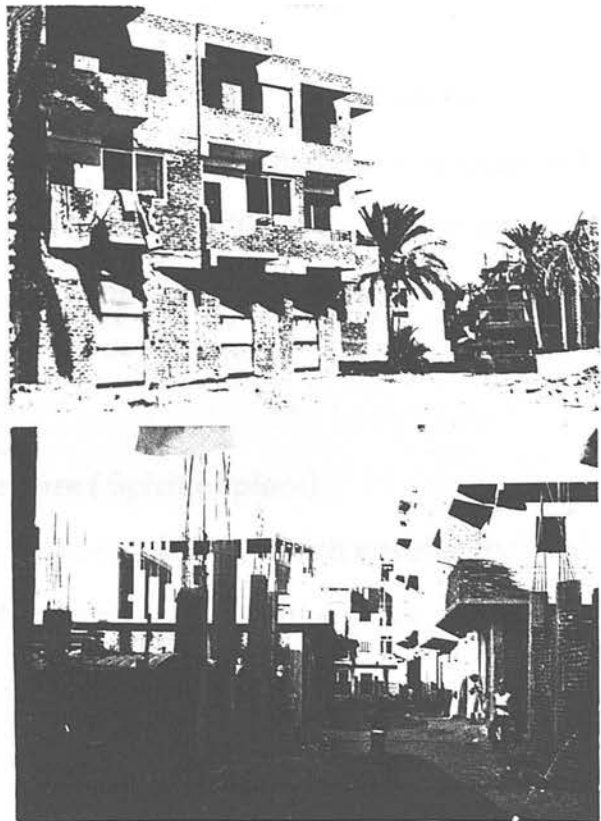


Fig.(2.2) Patterns of informal housing layout

Ref. K. Amin , 1989

Fig.(2.3) Typical informal housing residential unit

Ref. By the author

In short, these settlements (figure 2.2 & 2.3) represent a group of people with similar socio - economic criteria. There is no great difference in their occupation, age, education, etc.. . This gave them not only implicit sharing values but also an explicit way of expressing their behaviour and the preferred quality of the built

environment. Is it fair to describe their settlements with a term 'Slum' as they were built according to certain criteria not matching with the knowledge of other group's view about how this quality should be, e.g., designers or decision makers. It is far from clear even what a 'slum' is, and hence what an improved one might be. Informal areas are commonly defined as slums on the basis of the use of certain materials, the presence of certain environmental quality variables such as vacant lots, litter bad maintenance and so on. On the other hand, from insiders point of view, although they could suffer from the poor appearance of the physical quality, they satisfy in terms of living within a context which related to their way of life, their needs and wants, and their preferences.

2.2.2 Concept of Place

The literature of 'place' has different approaches, and consequently many definitions for this term have been used. This part therefore, is oriented to deduce various issues which are relevant in order to edge close to what one can mean by 'place' or 'placelessness', and their implications within the built environment.

2.2.2.1 A Phenomenology of Architecture (Spirit of place)

Norberg-Schulz has espoused a theory of place which ensures the quality of a person's existence or "being in the world". Existential space, for him, is of central importance to architecture, which should be a direct response to the meaning as well as physical properties of the environment. He suggests that man dwells when he is able to concretise the world in building and things. Place is the architectural way which provides man with the feelings of belonging , and help him to dwell. Within this meaning of place, two main psychological functions have to be considered: orientation and identification. To gain an existential foothold, man has to be able to orient himself, he has to know where he is, but he also has to identify himself with the environment, that is he has to know how he is in a certain place (Norberg -Schulz, 1971).

"In the Egyptian pyramid we find the strongest expression of absolute existence; it is not a place for human activities in the normal sense of the word, but the goal for the path of life. Tombs, in fact, generally have a centralised form. The ability of a mass to serve as a 'centre', could be described by the term 'concentration'. Concentration is a function of the main shape, as well the treatment of details" (Norberg-Schulz, 1971), (figure 2.4).

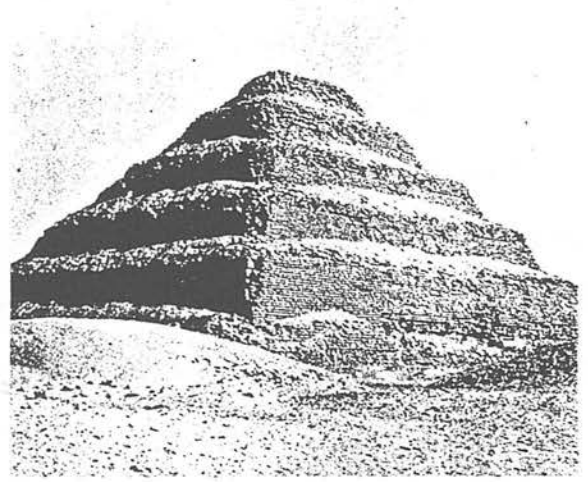


Fig.(2.4) Stepped pyramid, Saqqara, Egypt

In keeping with a phenomenology of architecture, Norberg -Schulez (1980) regards space as an existential as opposed to a mathematical dimension. Adopting the Roman concept of 'Genius Loci', he defines a 'place' as space plus character. Schulz argues that the root of genius loci, the spirit of place, is the natural environment or natural place, as he calls it. Places are essentially what they are because of inherent qualities in site and physical environment. In this view, human intervention is most successful when it identifies the essential character of place and creates human environments that are in tune with it rather than discordant and therefore imposed arbitrarily. Natural environment in his opinion can be interpreted in terms of five dimensions: things, order , light, character and time. Things and order refer to the spatial qualities of landscape, light and character relate to overall atmosphere. Time involves both consistency and change in the landscape, especially in regard to daily and seasonal rhythms of weather, climate, vegetation and animal life (figure 2.5).

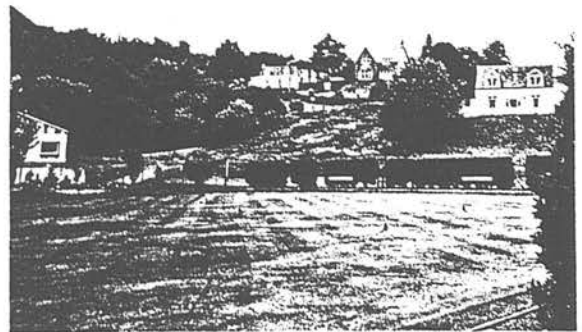


Fig.(2.5) Natural landscape as a main component of identity , Highlands, Scotland

2.2.2.2 Humanistic Geography (Sense of place)

Through the literature of humanistic geography, the concept of place has seen the greatest revival , and was largely discussed. Humanistic geographers emphasise the dangers of geographers preoccupying themselves with the objective physical environment. The notion of place has been used in different senses by geographers, three of which will be mentioned here as they are related to our topic. First, place has been used to refer to the entire surface of the earth as the place of man. Second, it has been used to refer to a unit of space such as a city, province, or country. Third, it has been used to refer to a particular and specific part of space and what may occupy that space, e.g. when we indicate our place of residence.

Unlike Norberg-Schulz who uses natural environment as the foundation of place, Relph begins with human experience defining places as significant centres of our world. He argues that places are the integration of human and natural order. They express our immediate experience of the world. Therefore places are defined by physical characteristics (location, landscape,...etc.), and more importantly by the focusing of the experience and intention onto a particular setting. As places are experienced phenomena of the lived world, they can not be an abstracted concept. They represent an important source of individual and communal identity full of meaning, and a profound human centre to which people have deep emotional and psychological ties (E. Relph, 1976).

In this respect a place cannot and perhaps should not be created in absolute terms on behalf of other people. It is often important for people to be involved in their environment. Therefore places have to be seen through their congruence with both the properties of physical environment, and the experience of people towards these places due to their cognition about the desirable quality of living world spaces. In other words, place by definition, extends the focus of attention beyond geographic space to the experience people have of being in a particular landscape environment .

Experience of place

For most architects, image of place seems to be its identity. An image has to be seen as a mental picture that is a product of experience, attitudes, memories and immediate sensation. The image of place consists of all elements associated with experiences of individuals or groups and their intention towards that place. Such images may be considered by others to be narrow and biased, but for those who hold them are complete and constitute the reality of that place. Experience of place can range in scale from part of a room to an entire continent, but at all scale places are whole entities, syntheses of natural and man-made objects, activities, functions and meaning.

The relationship between "insiderness" and its opposite "outsiderness", is a fundamental dialectic of human environmental experience and behaviour. Through different degrees of insiderness and outsiderness, different places take on different identities for different people, and human experiences take on different qualities of meaning and feeling.

Edward Relph describes seven levels of experience with place. The first he terms as "Existential outsiderness" which describes an individual's non-involvement with a place, someone who knows he does not belong, a cultural alien, or a man who has no understanding for his environment; the place he observes is only distinguishable by its superficial nature. The next level of cognition he terms as "Objective outsiderness"; at this level, the non-involvement is conscious. The observer takes a step back, separating himself emotionally from the place, so as to give a logical and scientific appraisal, a stance typical of the designer, whether planner or architect. Stage three is "Incidental outsiderness"; here the non-involvement is again subconscious. Probably the majority of our relationships with places coincide with this category. It is a category where another element of the environment has overriding importance; the place becomes relevant only as a place of work, the rest relegated to merely a back drop. The remaining four

levels are concerned with "insiderness" experience. "Vicarious insiderness"; the ability to experience a place, often with quite a depth of emotion, without ever physically visiting. Second-hand experiences delivered by the narrator or artist, rely on our own past experiences, our imaginations and of course the skill of the artist. The next two categories are very similar. It is perhaps the conscious effort required to achieve the second category that gives it its difference. These two categories will encompass the tourist, someone who visits the place to actively observe it, rather than experiencing the place as a background element as with "Incidental outsidership". "Behavioural insiderness" consists of being actively aware of the appearance of the place, this is our immediate experience and primarily is one due to sight. "Empathetic insiderness", is where the importance of the visual is no longer so important, as it becomes an emotional relationship. Such identity with place does not come automatically, the observer must be open to impression and meaning. A last level is "Existential insiderness", one of complete understanding; an understanding of a place without any deliberate or self-conscious assimilation, a sense of belonging, and all the other feelings associated with "home" (E. Relph, 1976).

Some levels of perception are therefore conscious, some sub-conscious, some relate to visual elements while others relate to meanings and emotions. While an individual can assign a particular identity to a place, a place's "common identity" is a combination of all the individual identities. Therefore to assess this "common identity", we must be aware of each of these levels. Thus, it worth mentioning here that the experience of place can be created by the integration of both self conscious and unself-conscious sense of place (figure 2.6).

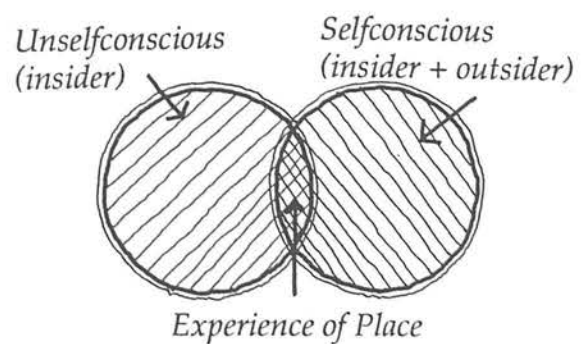


Fig. (2.6) levels of place experience

The former, the self-conscious sense of place, is the shallower level of insideness experience for authentic place. It aims to achieve the significance of a space without being conditioned by the narrow intellectual views of stylistic fashions. It is associated with a design process, and may involve finding innovative solutions to problems. At the same time, self-conscious sense of place is the experience of a sensitive and open-minded outsider trying to produce places in such a way that suit those who dwell in them. This attitude seems to be the simplest and most direct possibility for producing an authentic place in contemporary time.

The latter is expressed within the unselfconscious design procedure which may be reached either by consulting tradition or by logical reasoning and scientific analysis. Both processes should yield the same result, for tradition embodies the conclusions of many generations' practical experiment with the same problem, while scientific analysis is simply the organised observation of the phenomena of the problem. It tends to give rise to places that reflect the total physical, social, aesthetic, spiritual, and other needs of "Culture".

At the deepest level of the insideness experience, there is a home, where one is born and rooted to. Unconsciously or subconsciously, one feels safe and secure. This place represents to the individual a field of care and concern. David Seamon writes that:

"Each person has natural place to which he belongs, and only this place can properly be called the zero point of his reference system. Normally, this natural place is the home" (D. Seamon, 1982).

The previous analysis of people's experience will ensure the meaning which has been termed by E. Relph as a "sense of place". The basic meaning of place, i.e. its essence, does not come only from locations, nor solely from the functions that place serves, or the community that occupies it, though these are all common and perhaps necessary aspects of place. The essence of place lies in the largely

unselfconscious intentionally that defines places as profound centres of human existence. The value of this term could be seen in highlighting the sense of identity of particular environment.

2.2.3 The Identity of Place

Although there is a similarity between identity and place identity, in particular the difference which should be noted is the relationship between identity "of" and identity "with". Kevin Lynch (1960) defines the identity "of" a place as that which provides its individuality or distinction from other places and serves as the basis for its recognition as a separable entity. This tells us only that each place has a unique address, that it is identifiable. On the other hand, and relating to the identity "with", Ian Nairn recognises that there are as many identities of place as there are people, for identity is in the experienced eye, mind and intention of the beholder as much as in the physical appearance of the city or landscape. But while every individual may assign self-consciously or unselfconsciously an identity to particular places, these identities are nevertheless combined inter subjectively to form a common identity. Perhaps this occurs because we experience more or less the same object and activities and because we have been taught to look for certain qualities of place emphasised by our culture groups (I. Nairn, 1965).

This indicates that the identity which a group has "with" that place, is more important than identity "of" that place. This raises the issue of whether people are experiencing it as insiders or as outsiders. The real meaning of identity can not be appreciated from outside. To be inside the place is to belong to it, and to identify with it. One can visualise a town as it appears through buildings and physical objects, and observe from outside people moving through it. But the insider experiences these buildings and activities more far than this, they are beautiful or ugly, alien or friendly, . . .etc. In short, they have related meaning to the insider.

Based on these views, we can define the components of the identity of place as follows: A place is a whole phenomenon, consisting of the three interlinking elements of a specific landscape with both built and natural elements, a pattern of social activities that should be adapted to the advantages of a particular location and a set of personal and shared meaning (figure 2.7).

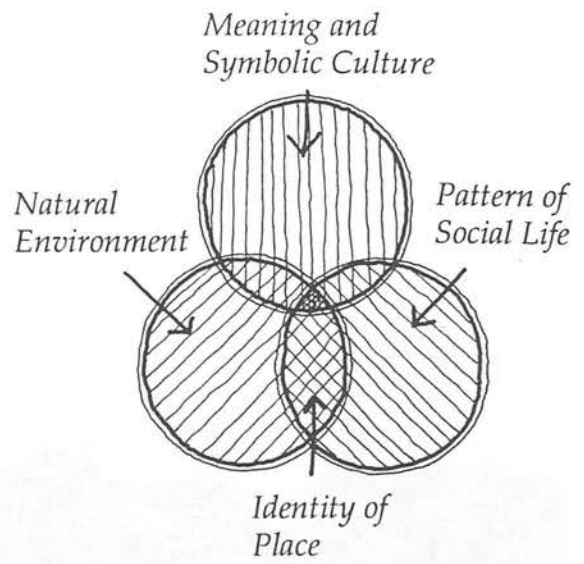


Fig.(2.7) Components of place identity

The best examples for creating place can be seen through vernacular settlements and the medieval cities. These cities developed where there was a need for them, and shaped through natural process. The city was not a goal in itself, but a tool formed by use. It was based on the best choice of available technology and the integration of both physical and cultural factors that related people with environment through an appropriate regional identity. The result of this process, which was based on a multitude of collected experiences, was urban spaces that even today offer extremely appropriate conditions for people's life. Many beautiful towns and buildings which we now appreciate have combined a superb use of their available technology, physical features of the site and culture symbols (figure & 2.8 & 2.9 & 2.10 & 2.11 & 2.12 & 2.13 & 2.14).



Fig.(2.8) Enclosed spatial design of Piazza del Campo is ideally working as meeting place for social activities

Ref. Spiro Kostof, 1991



Fig.(2.9)A distinctive identity of Edinburgh lies in the blending of architecture with both topography and cultural symbols, city centre, Edinburgh

Ref. by the author



Fig.(2.10)White walls, small windows and narrow stepped streets of the village buildings respond to geographic as well as climatic impact, Mijas, Andalucia

Ref. By the author

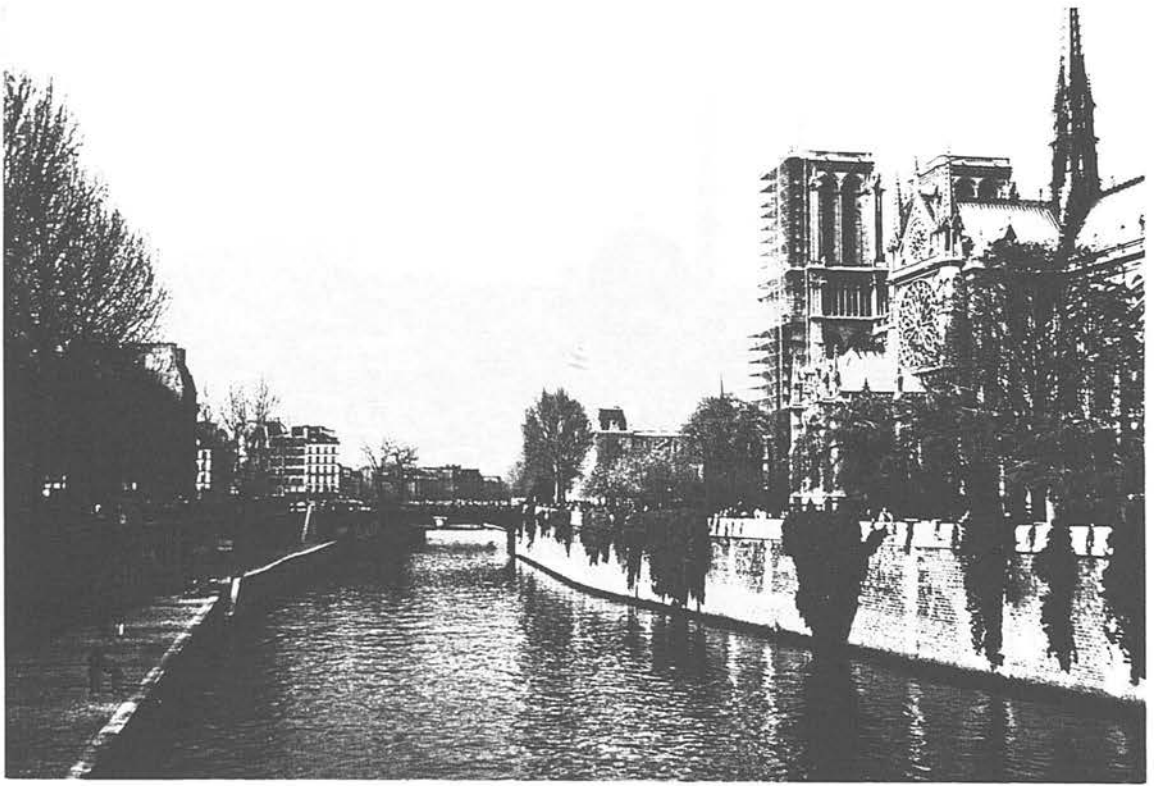


Fig. (2.11) The identity and unity of built environment are a result of an integration between natural elements, ecological resources and cultural symbols, Paris

Ref. By the author



Fig.(2.12)The presence of the great mosques dominating the city's skyline and symbolising the place, Istanbul

Ref. Michael Hough, 1990

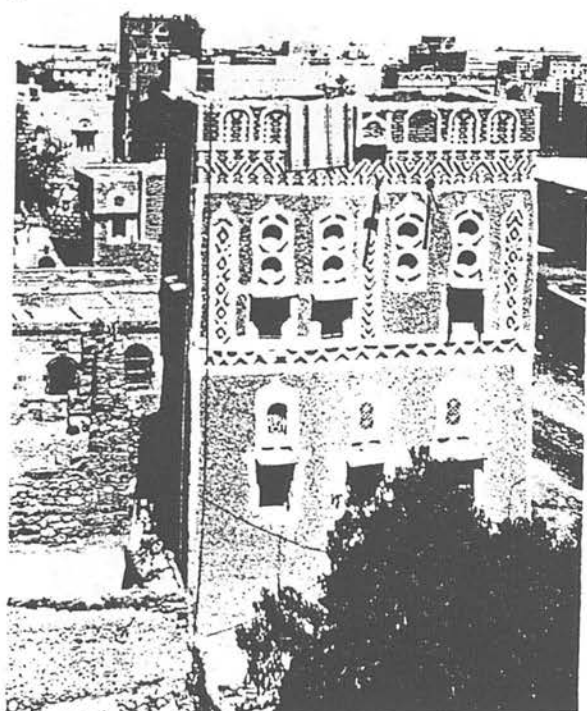


Fig.(2.13) Much of the rich decoration to be found on the exterior of Yemen houses derives from material that are used and the form and functions of elements in the buildings

Ref. Paul Oliver, 1987

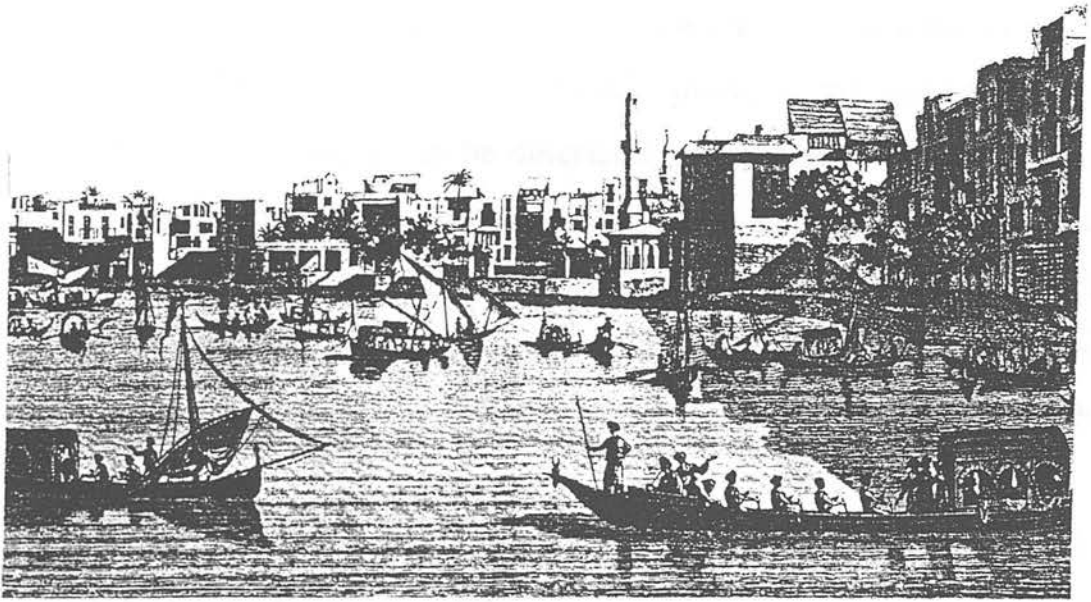


Fig.(2.14)The limitation of agriculture, native materials, climate and the Nile River are the main physical factors shaping the medieval cities, Cairo

Ref. Abousief, Doris Behrens, 1985

2.2.4 Placelessness (Deserted Planning)

Relph has coined the term placelessness to refer to the physical, locales which no longer have an identifiable 'sense of place' that make them individually distinctive. In contrast to the authentic place, is the superficial level of insiderness, which simply can be described as the experience of place without significance. It reflects the lowest level of place quality, cutting the inherited roots and symbols. There is no more sense of continuity with place, which it was believed so necessary for people's sense of reality and so essential for their identity, and so the meaning of place has become as ephemeral as their physical form. Having said that, it is natural for us to examine the extent to which urban planning principles and architectural trends of different historical periods have influenced the place and its identity.

The renaissance period has produced the radical change. The city was no longer merely a tool but became to a greater degree a work of art, conceived, perceived and executed as a whole. No longer were the areas between buildings and the functions to be contained in them the major points of interest, but rather attention was turned to their spatial effects. In this period, it was primarily the appearance of the city and its buildings – the visual aspects – that were developed and transformed into criteria for good architecture and urban design (figure 2.15).

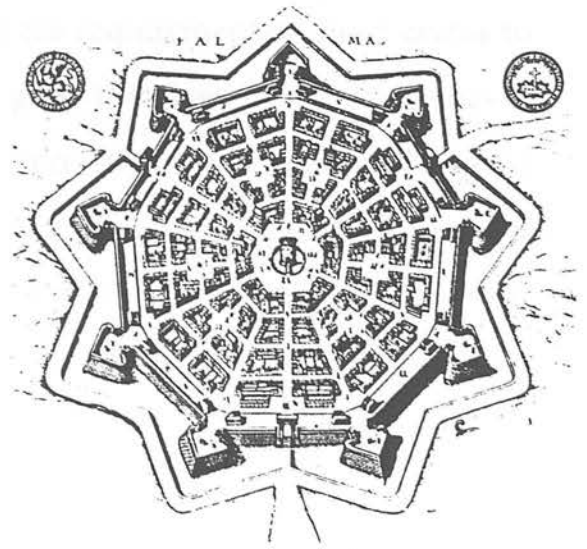


Fig. (2.15) General city plan, Palmanova
Ref. Spiro Kostof, 1991

The second important development in the basis of planning took place around 1930 under the name of functionalism. The basis for this approach was primarily the medical knowledge that had been developed during the 1800s and the first decades of the 1900s. This new extensive medical knowledge was the

background for a number of criteria for healthy and physiologically suitable architecture around 1930 (Jan Gehl, 1980).

Dwellings were to have light, air, sun and ventilation, and the residents were to be assured access to open spaces. The requirements were for detached buildings oriented toward the sun and not, as they had been previously, toward the street (figure 2.16).

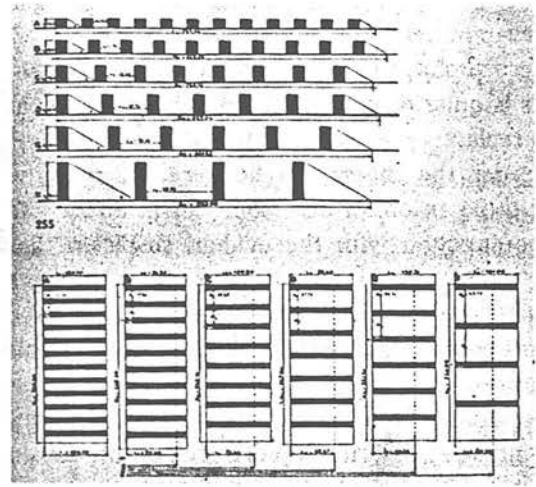


Fig. (2.16) The development of a rectangular site with parallel rows of blocks of different heights.

Ref. C. Rowe and F. Koetter, 1988

The requirement for separation of residential and work areas was formulated during this period in order to assure healthy living conditions for the individual, and to distribute the physical benefits more fairly. If we demand residences of equally high hygienic standard for all, then the requirement of direct access to sunlight for all dwellings will come to give the new residential areas a completely new character. It is therefore a necessity to have an open building principle with parallel buildings positioned according to the sun: east-west in the case of through-going apartments, otherwise north-south. The former alignment of building has, however, the advantage in that it permits cross ventilation and gives the residences a truly effective sunny side. What has to be noticed here is the total contradiction between the western context, and the Egyptian one. While the former is looking for sun, the latter is searching for shades and shadows.

The functionalists made no mention of the psychological and social aspects of the design of buildings or public spaces. This lack of interest is also evident regarding public spaces. That building design could influence play activities, contact patterns, and meeting possibilities was not considered. Functionalism

was a distinctly physically and materially oriented planning ideology. One of the most noticeable effects of this ideology was that streets and squares disappeared from the new building projects and the new cities. Throughout the entire history of human habitation, streets and squares had formed focal points and gathering places, but with the advent of functionalism, streets and squares were literally declared unwanted. Instead, they were replaced by roads, paths and endless grass lawns.

The consequences for the social environment were not discussed, because it was not recognised that buildings also had great influence on outdoor activities and consequently on a number of social activities. On the contrary, it was thought that the extensive grass areas between the buildings would be the obvious location for many recreational activities and a rich social life. Perspective drawings teemed with life and activities. The extent to which these visions of the function of green spaces as the uniting element in building projects were correct was not challenged or investigated. Not until twenty to thirty years later, in the 1950s and 1960s, when the big functionalistic multi-story residential cities had been built, was it possible to evaluate the consequences of a one-sided physical-functional planning basis.

It worth mentioning here that there is a great difficulty to maintain these green areas within the Egyptian context. Therefore, most of these areas have become abundant spaces or areas for dirtiness (figure 2.17).



Fig.(2.17) Neglected space between buildings,
Tenth of Ramadan City Ref. By the author

A review of just a small selection of the most common planning principles from functionalistic buildings projects illustrates the effects of this type of planning in relation to life between buildings. "Desert planning" is the term introduced by Gordon Cullen (1961) to describe their consequences on the built environment.

The spreading and thinning out of dwellings assured light and air but also caused an excessive thinning of people and events. Differentiation in function among dwellings, factories, public buildings and so on may have reduced the physiological disadvantages, but it has also reduced the possible advantages of closer contact. As shopping centres have become virtually the only contact points, they have special attention in terms of architectural forms and details. On the other hand, they encouraged people to be separated from their environment (figure 2.18).



Fig.(2.18) Metro Centre, Newcastle upon Tyne
Ref. By the author

Great distances between people, events, and functions characterise the new city areas. Transportation systems, based on the automobile, further contribute to reducing outdoor activities. In addition, the mechanical and insensitive spatial design of individual building projects has had a dramatic effect on outdoor activities.

Many examples can be used here as evidence for this phenomenon. America and its urban spaces produce a clear one (figure 2.19 & 2.20) which was illustrated by many writers. Altman cited that:

"We live in historical period when cities and urban life are considered bad. Our images of large cities like New York, Chicago, and Detroit are of crowded, crime -ridden places. Furthermore, we often perceive urban residents as discourteous, pushy, selfish, and unsympathetic. Of course, we sometimes have positive feelings about cities. We value their unique cultural opportunities, excitement, high - style clothing and fashion, cosmopolitan people, and restaurants. But on net balance, it is probably fair to say that cities in the present - day United States are viewed rather unfavourably and probably fit the cliché a nice place to visit, but I wouldn't want to live there" (E. Altman, 1984).



Fig.(2.19) Renaissance Centre , Detroit



Fig.(2.20) The mid-town boxes along Sixth Avenue

Ref. Design for High - Intensity Development, 1986

2.2.4.1 Placelessness Under Criticism

The placelessness phenomenon which has resulted from the rational thinking, encouraged by technical and scientific groups, is today rejected by environmental and anthropologist groups. This can be illustrated through the discussion of both views :

The former groups argue that contemporary place identity has been affected by our ways of doing things. The need to protect ourselves from nature, has never been so urgent. This which represented, in the past, the necessary connection between the man and environment as a fundamental relationship of regional identity. Furthermore, the difference between the pre-industrial and modern culture lies in the complexity and intensity of meaning attached to place. People no longer live in a world which has spirit and symbols, nor even in a world where there are significant holy places. Now we live in the world of science and technology. An example may be seen in Jacques Ellul's view which demonstrates the opinion of this group who support the placelessness attitude.

He writes: " The attitude of scientists at any rate is clear. Technique exists because it is technique. The golden age will be because it will be. Any other answer is superfluous (J. Ellul's, 1967).

The previous argument indicates that we can not longer think in terms of other factors than those of technical, utilitarian and physical needs. Hence, they represent the only approach that our place has to be shaped through, because it is the new language we have to speak and use.

The latter groups whose opinion I appreciate, argue that no one can deny the changes in the world, but this does not mean that we have let the technique from one point of view, shape our life. We have to keep and maintain our sense of place for many contemporary reasons.

The criticism raised here is, there are a lot of these sciences tools that have harmful effects due to their neglect of human values, producing kind of pleasure and optimisation of people effort. At the same time, they decrease the social relationships between people of the large scale through the community, and in the small scale through the family. Hassan Fathy cited that:

"There are traditions which, although they have appeared only recently and ought to be in an early phase of their cycle, were in fact born dead. Modernity does not necessarily mean liveliness, and change is not always for the better" (H. Fathy, 1988).

Furthermore, the new necessities are now tied to ecological values and principles, to the notion of environmental and social health, to essential bond of people to nature and to the biological sustainability of life itself.

"Yet the value that expose a truly sustainable future will only emerge when it is perceived that there are no alternative. It is possible that over time the fragility of earth life system will create an imperative for survival on which a new ethic can flourish. The international agreement to protect the earth's ozone layer signed in 1987 may be one indication of this trend" (M. Hough, 1990).

The opinion of the latter group has not to be understood as the way of just keeping history, or as an attitude against science and technological development. In terms of Egyptian Muslim society, Qur'an encourages science and scientists as well as the procedure of gaining knowledge. There are various evidences in different locations within Qur'an, but here , one will be given for example:

- | | |
|---|---|
| <p>1. Proclaim ! (or read!)</p> <p>in the name</p> <p>Of thy Lord and Cherisher,</p> <p>Who created -</p> <p>2. Created man, out of</p> <p>A (mere) clot</p> <p>Of congealed blood</p> | <p>3. proclaim ! And thy Lord</p> <p>Is Most Bountiful, -</p> <p>4. He Who taught</p> <p>(The use of) the Pen, -</p> <p>(Sura, 96.1-4)</p> |
|---|---|

Having said this, this approach has highlighted the dangers of architecture which does not try to preserve the particular "identity of place". Its main concern tends to be on preservation of existing physical settings which have evolved over time, rather than a clear guide to the creator of new places. Furthermore, the problem is neither in science and technology nor in tradition, but in how we apply them in our world in order to suit our cognition and cultural values.

Summary

The general meaning of identity has been referred before to a persistent sameness and unity which allows that thing to be differentiated from others. What has to be mentioning here is this definition represents a simplistic or superficial meaning. The proper understanding for identity could be obtained when the tools of this unity and sameness are the shared human cultural values. The differentiation between various identities have been formulated through different knowledge or criteria perceived or conceived by people. This kind of people identity expresses itself when the majority of people make the same response due to the common agreement for something, without previous arrangement. This declares that they have something to share without documents or laws, and the way for making such decisions of any group are the response to a very complex kind of deep structure of human values that everyone is fully aware of, consciously or unconsciously.

Through the study of identity of the built environment, two terms have been discussed; place and placelessness. The full awareness towards these two terms, will eventually lead to clear meaning of place identity, as they formulate the main spine for this notion.

Placelessness could be figured through the modern movement and international style. Various aspects of their implications on the human being have been criticised. Based on the review of different literature, it is clear that divergent approaches for designing spaces have been adopted. However, what could be noticed as common between them is that people have been left out of the design process. More attention was given by architects towards the physical properties and geometric of spaces rather than experience people have with these spaces. Although the importance of understanding the relationship between people and physical environment, there was limited attention to peoples' action and almost non at all to the objective physical environment which architects have to

manipulate. The modern movement has produced some exciting innovations in design, but at the same time it has left us with impersonal public spaces and meaningless building forms and facades.

Within architecture, geography and psychology, the concept of place came as an appropriate response to the problem presented above; the link between architecture which has concentrate on the geometric properties, and psychology which has put more emphasise on human behaviour. Accordingly, concept of place has become an interesting topic for different writers and academic approaches.

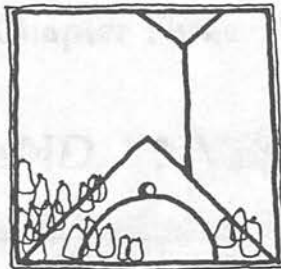
Place is defined through the phenomenological approach as something more than abstracted location, place is a space plus character. This environmental character means a totality made up of concrete things, having material substance, shape, texture and colour. While the previous approach ensures the role of natural environment in creating place, the humanistic geographic one emphasises the role of psychology. Place is a fusion of human and natural order. It is not abstraction, but is directly experienced phenomena of lived world and consequently full with meaning.

Accordingly, the real meaning of identity of place, could not seen through the visual quality 'of' that space, but by the interaction of people 'with' that place. Through peoples' experience, places facilitate or constrain human activity, and cannot be considered independent of people. Individuals are one of the most important characteristics of places. The scale of experience varies from the individual to communal, insiders to outsiders, and conscious to unconscious sense. Because places through people's experience have meaning, places can be seen as a sign to know oneself and others, providing qualities for the symbolic framework of culture as shared unified system of values.

The components of place identity were defined in three main elements:

- A) The physical environment, specific landscape with both built and natural environment.
- B) A set of cultural symbols, which express the deep structure of the society and their implicit values.
- C) A pattern of social activities, which should be adapted to the advantages or virtues of a particular location.

Accordingly, the next chapter will be oriented toward more broader study of the first and second component; culture and environment. More attention will be oriented towards the study of behaviour as a mechanism that links between them. This which could produce the theoretical basis for the relationships between man and his environment. The study of the third component, Pattern of social activities, will be studied within chapter four.



CULTURE AND ENVIRONMENT

CHAPTER THREE

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Introduction

In the previous chapter, the identity of place, awareness has raised of the importance of culture and environment, and in particular, how they relate to both man and his built environment. The contemporary design principles can be defined in two main approaches. One is design methodology and the other is Man-Environment studies. Both fields have developed as a response to a set of needs relating to a dissatisfaction with the way design was being done, and with its relative ineffectiveness. Whereas Design Methodology concentrated on the way information was structured and how designers processed it, Man-Environment studies approached the question of what kind of information should be used in design. The basic premise which was associated with this field was that since design is for people, then to design properly, one needed to know about human behaviour in the broadest sense. That is in designing for people, the appropriate approach is to endeavour to discover how people behave, what are their desires, needs and preferences. In setting goals and formulating the design hypothesis, one needs to understand how the human mind works, the role of perception, cognition, preference meaning and symbolism; one needs to consider the role of culture in Man-Environment interaction. This brings up an important issue. Planners and designers can be seen as constituting a subculture, with particular set of values and objectives which may be different to those of particular groups who are the users of the environment. These users themselves are also vary in attitudes. While there are differences between needs and wants, there are different notions of environmental quality among different groups .

According to the complexity of Man-Environment variables, it can be argued that any specific question about Man-Environment interaction can be seen as falling into one of three general questions:

- 1) How do people shape their environment? What characteristics - of people as individuals or groups- are relevant to the shaping of a particular environment ?
- 2) How and to what extent does the physical environment affect people, and their way of life ?
- 3) What is the mechanism that links people and environment in this two - way interaction ?

One can suggest that culture is an aspect of question one, the nature of environment is an aspect of question two, while responsiveness relates to question three - the mechanism that links culture and environment.

This chapter will attempt to provide answers to these three questions. It is worth noting here that although this chapter will deal with them to some extent separately, to reach a better understanding of these relationships, we have not separated the three issues, but considered them as being strongly integrated .

3.1 Culture

In literature on culture, there are numerous and different views as to what it means. Many apparently contradictory approaches have become commonly familiar in sociological, anthropological, and psychological studies. They can be seen as attempts to define what culture is. Accordingly culture has many different definitions. These have been applied to many different sized units of society, from Islamic culture, Western culture and suburban culture, and perhaps even family culture to very small social units. Too tight a definition is not desirable as there is yet no one clear way of viewing culture and its direct relation with the built environment.

Most anthropological opinion considers culture as important in defining humanity. Due to its importance, it is clear that it has many definitions, but in terms of our purpose which aims to study the relationship between culture and the built environment, these following three views of culture by Rapoport(1977) are significant : One defines it as a way of life typical of a group. The second defines it as a system of symbols, meaning and cognitive schemata transmitted through symbolic codes. The third defines it as a set of adaptive strategies for survival, related to ecology and resources.

Irwin Altman (1984) argues that culture has several key components:

First, it refers to beliefs and perception, values and norms, customs and behaviour of a group or society. Culture includes what people believe to be true of the world, their lives, and the environment. It also includes their values, or what they hold to be good and bad, acceptable and unacceptable. Still another part of culture is a set of rules and beliefs about how to behave or do things. Thus, cognition, perception, values, and modes of appropriate behaviour constitute a cluster of characteristics implied in the concept of culture.

Second, the term culture is used to indicate that cognition , feelings, and behaviours are shared among a group of people in a consensus way. That is for a culture to exist, people must agree, with or without verbalising their agreement, that there are common ways to view the world and to behave. This does not mean that they agree in all respects, but only that they share a common core of a consensus.

Third, the term culture implies that these shared beliefs, values, and the socialisation and education of new members of culture help preserve consensus from one generation to the next. Thus, children learn eating manners appropriate to a family, they learn to share and compete, work and play. Social virtues are also taught, along with other beliefs and practices, including prejudices toward other groups.

Fourth, a society's values, beliefs, and practices involve more than mental

and behavioural processes; culture appears in objects and public buildings, often explicitly reflecting the values and beliefs of a culture .

Therefore, culture can be described on two levels: the explicit behaviour, and the implicit values. John Berry (1976) argues that the former is an overt form often (called explicit culture), which is the readily observable regularity in the behaviour of the group. The latter is the covert form (often called implicit culture), which is the set of value patterns , or the structure inferred to account for this observed regularity (figure 3.1).

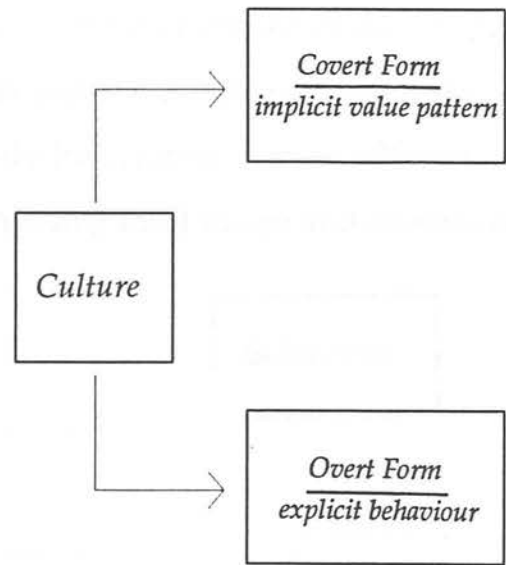


Fig. (3.1) Explicit and implicit culture

It should be noted that this dual approach is not accepted by all. Many anthropologists prefer to limit the concept to the implicit level, and leave the directly observable behaviour - especially individual behaviour - to other disciplines such as psychology. In terms of this research, it is not acceptable to exclude behaviour as such from culture. No one can deny that behaviour is affected by the common agreements of the society, which are transmitted among the society through culture inheritance.

In summary, culture can be described as a group of people who live within a certain place, distinctive for its specific ecological resources, and have a set of shared values, beliefs and norms - the culture core. These shared elements are transmitted and passed on to others, with socialisation and education of new members of the society helping to preserve consensus from one generation to the next- with the exception of dramatic events. Cultural changes are slow and evolutionary, partly because so much of a culture is implicit, taken for granted

and difficult to label. The concept of culture reflects a multifaceted set of principles, from abstract ones about how to view the world to more concrete actions, such as ways of behaving and relating to the environment. The system of sharing resources and values leads to similar or unified choices for the most common requirements of society. This unity in choice expresses itself in two ways, as cultural manifestations: firstly by creating certain patterns of behaviour and life style, and secondly by imposing ideal image and distinctive typology for the built form (figure 3.2).

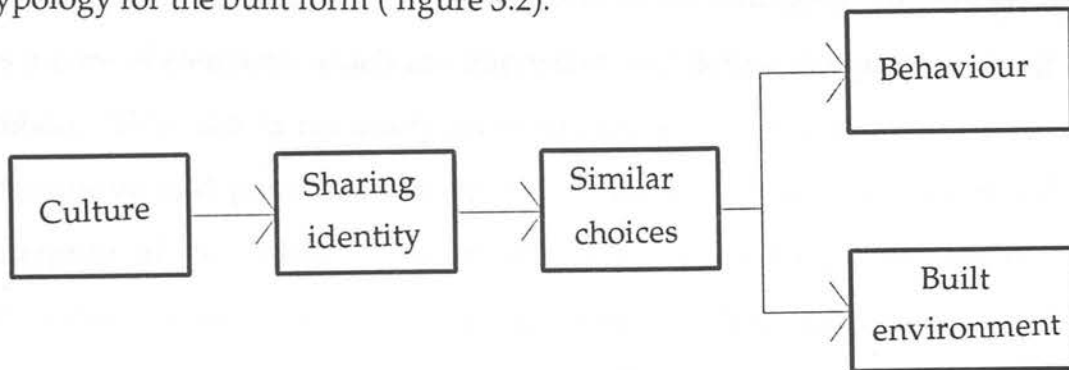


Fig.(3.2) Sharing values and cultural manifestations

Referring to the previous chapter, one could relate "identity" to these sharing values and similar choices. Amos Rapoport cites that:

Many cultures through history have disappeared for various reasons. One of these is that they took a wrong choice. The seriousness of this problem is more than what is concern with the individual level and the wrong choice of people through their environment, which led to incompatibility with the physical setting. The problem is related to the response towards changing their behaviour and life style, which represents itself in the loss of differentiation and culture disappearance (A. Rapoport, 1981)

Therefore, it is wrong to deal with the identity only as a kind of nostalgia – even it has this meaning , or a way of getting visual character for the space – which may be possible. The significance of the identity lies not only in terms of architectural view, but also in its implications of survival of various domestic culture.

3.1.1 Culture Core

To sustain any community and maintain its identity, the main elements which form the culture core and represent the source of identity, must be retained. Many anthropologists concentrated on the concept of cultural core, as they argued that all aspects of life can be compatible with the human being, as much as they maintain strong ties with the core of the culture .

Amos Rapoport identified the culture core as the following : for any group there is a core of elements which are important and define the group to itself and to others. This core is not easily given up, but a sudden change in the core being disruptive and potentially destructive. Its disappearance does threaten the integrity of the culture. The culture core is the source of continuity and reproduction for the culture. The significance of these components varied from one environment to another due to the availability of resources. He argues that, since ultimately group identity depends on the survival of the group and its culture, identity over time becomes a central issue , and change in the environment under conditions of high criticality can lead to the destruction of cultures, and consequently the loss of identity (A. Rapoport, 1977).

Yet, defining the elements of both cultural core and cultural manifestations are still under investigation. What has to be excluded or included is controversial. In contrast with Amos Rapoport, as example, Behaviour patterns, social activities, way of dressing or eating,...etc., are not included within cultural core.

They represent products or manifestations of culture. Within this thesis cultural core elements in general case are natural environment, ecological resources, historical legacy and cultural symbols (figure 3.3).

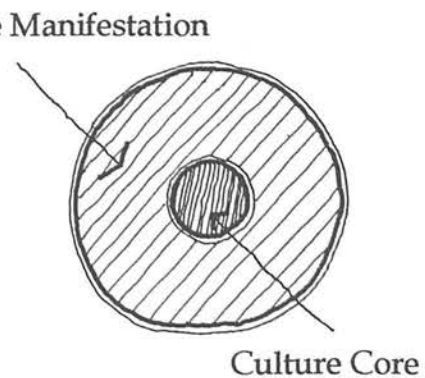


Fig.(3.3) The basic structure of culture

It is worth noting here that to maintain the culture core does not mean it should remain fixed or unchangeable, but that it is evolving correspondingly with the dynamic nature of life. The main issue here is that these changes must be natural and correlate with the gradual changes of human affairs, not forced in such a way that can undermine man's ability of adaptation (see article 3.1.3).

The culture core of the Egyptian society , could be seen in two main sources:

First is the symbolic structure, based mainly on Islam and historic process. Islam and the ethical forth of Islam has played a major part in shaping the country's customs, behaviour, and architecture. In Mohammed Arkoun's article about place of Gamaliya in Cairo, he cites that:

" Why is there such a continuity in such a place, in such a quarter, in a Muslim town? I think that here we can touch upon one aspect of what could be considered as essential in our tradition. The essential here is the ethical force of Islamic tradition developed through history, especially in al- Azhar. There are leading Muslim figures symbolising religious values and attitudes, transmitting it to average people through schools, mosque, festivals, daily language, social institutions and relationship. All this has created a typical Islamic ethos which explains the particular attitude and sensibility we find in Cairo and Egypt more than anywhere else" (Mohammed Arkoun, 1989).

Second is the physical environment and ecological resources. Egypt has a variety of geographic and climatic conditions within its boundaries. From the Mediterranean climate at the north, to the hot dry climate at Aswan in the south; from mountain in the east, to the desert in the west. Although this is the case, most Egyptians live along the Nile valley and delta, providing them with similar environmental factors. This which unifies their perception and cognition towards the world through a sharing of resources of living and base economy. Egyptian society is based on agriculture as a base economy. Egyptians settled by the Nile banks, the delta and valley. They produce their resources without need for travelling or searching for these economic resources. The effect of the

Egyptian culture core is expressed or manifested in the way of living which creates a strong relation with the land , and also in the pattern of social life seen in the tendency to live in community and extended family.

Although Egypt underwent many cultural influences through its long history, it still has its distinctive culture, which can be seen through its shared values , and the common criteria. This is due to its coherent culture core and the power of society's adaptation towards external cultural forces. The evidences of this exists in people keeping their own nationality, religion and language .

Muslims represent the majority of the population, an essential ingredient of the Egyptian identity. The pride of belonging to the "Umma" (Islamic world) goes hand in hand for most Egyptians with the consciousness of their country's special position among Islamic nations. The minority are of one religion: Christianity. The Egyptian Christians have a special term, i.e. Coptic, as they are one of the constituents of Egyptian identity. 97 percent of the Egyptian population have the Egyptian nationality, which has led to unified feeling of belongings towards the land and place. With the exception of the few groups living along the boundaries, all Egyptians speak Arabic creating strong links of communication, and opportunities for intellectual interaction (see article 1.2).

It should be noted here that although this is the case in general, there are particular factors which seem to challenge Egyptian homogeneity. These are the duality of the society, and westernisation , which have been caused by the various foreign cultural influences in the history of Egypt, and great differences in family incomes . As a result, different perceptions were created ,which reflect themselves in the variety of explicit responses to environmental choices and architectural solutions (see article 1.1).

3.1.2 Culture Manifestation

On the other hand, the cultural identity produced by the similar choices of the society is expressed through culture manifestations. These are external elements which are peripheral to the culture core and are more easily given up, but their importance is derived from the fact they create a media for certain behavioural patterns that distinguish the culture and play a role in maintaining its meaning and quality.

The culture manifestations are represented in two ways:

Firstly, in observed Social Behaviour: This includes different components which express people's way of living such as :

- Manners and verbal communication
- Family and kinship structure
- Residence pattern (privacy, territoriality, neighbourhood.....)
- Home range behaviour (Food habits ,)

Secondly, through artefacts (man made products) : the objective manifestation of culture, is expressed through the artefacts , all kinds of man made products like hand made crafts, clothing,...etc. The built environment is the most representative sample of the culture manifestation, e.g. different cultures and identities can be clarified through people's distinctive built environments (see article 3.2.2).

3.1.3 Evolution, Adaptation and Stability of Culture

Evolution, adaptation, and stability are three terms which have to be studied together, for their mutual correlation.

A) Culture Evolution

Evolution is the principle that every scholar must study if he intends to understand either the world he lives in or its history. There are different concepts for defining the term evolution. For some anthropologists evolution is

simply change. To others, it is growth or development, which is a special kind of change. Sahlin and Services noted that in both its biological and cultural spheres, evolution moves simultaneously in two directions. On one side, it generates progress: higher forms arise from, and surpass, lower forms. On the other side, evolution creates diversity through adaptive modification: new forms differentiate from old. The first of these directions, is general evolution, and the second is specific evolution. However both are aspects of the same total process, two contexts in which we may place the same evolutionary things and events. Any given change in a form of life or culture can be viewed either in the perspective of adaptation, or from the point of view of overall progress (M. Sahlin and E, Service, 1960)

B) Cultural Adaptation

Adaptation ,the securing and conserving of control over the environment , is the orienting process of the specific evolution of both life and culture. In both the biological and the super organic realm, the adaptive process has two characteristic aspects: creativity and conservation. There is evolution of specialised structures and patterns that enable a culture or a population of organisms to achieve a requisite measure of adjustment to its environmental setting. On the other hand there is a tendency towards stabilisation, the conservation of the adaptive structures and modes that have been achieved.

Culture adaptation can be studied through two opposite concepts. Firstly, Leslie White cites that:

"A culture consists of three interrelated subsystems, technological , sociological, and ideological. The technological component is the fundamental determinant of the others and technological development is the impetus for general progress" (L. White, 1960).

Secondly, Sahlin and Service view a culture system as a series of three horizontal strata: " the technological layer on the bottom, the philosophical on the top, the sociological stratum in between. These positions express their respective roles in the culture process. The technological factor is the determinant of a cultural system as a whole" (M. Sahlin and E. Service, 1960)

Leslie white views culture as a closed system. That is, culture is taken out of a particular historic context. Considered as such ,White is saying , without regard to the actual course of development or environmental circumstances, that the general form of the social and the ideological sphere of a culture is determined by its technological achievement which may be useful in general evolution. But when attention shifts to adaptation, to specific evolution, then Sahlin and Service (1960) view culture in more proper consideration , as an open system mechanism. They argue that through different aspects(economically, politically, and in other ways), a culture also adjusts to the other cultures - to the super organic part of its environment. Cultures are organisations for doing something, for perpetuating the human life of people and their survival. The orienting process of development is adaptation of outside cultural influences - external forces through the indigenous resources . In this orienting, adaptive process elements within a culture are synthesised to form new traits, an event we call " invention", and items made available from the outside are incorporated in a process we call "diffusion" or sometimes "acculturation" (figure 3.4).

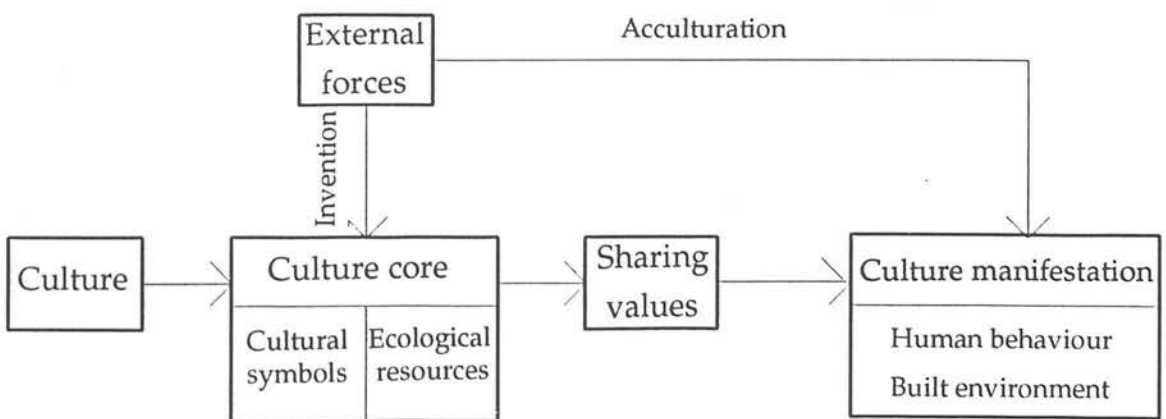


Fig.(3.4) Cultural adaptation process

Faozi Ujam (1978), argues that culture continues the evolutionary process by new means. Since these cultural means are unique, cultural evolution takes on distinctive characteristics, but still culture diversifies by adaptive specialisation and still it successively produces overall higher forms. Culture , like life, undergoes specific and general evolution. Culture is man's means of adaptation. It provides the technology for appropriating nature's energy and putting it to service, as well as the social and ideological means of implementing the process.

Briefly, adaptation can be illustrated through the specific perspective on evolution that involves a conception of culture as an open or adaptive system. Adaptation embraces both relation to nature and- except for completely isolated societies to other culture systems. Adaptation to nature will shape a culture's technology and its social and ideological components. Yet adaptation to other cultures may shape the society and its ideology. These in turn act upon technology and determine its future course. The total result of the adaptive process is the production of an organised cultural whole, an integrated technology, society and ideology, which copes with the dual selective influence of nature on the one hand and the impact of outside culture on the other.

B.1) Acculturative Influences Components

We have already devoted considerable attention to one form of cultural change – that of adaptation to environmental forces. However a more important source of change in recent history has stemmed from the contact of peoples leading to the diffusion of cultural forms. While it is true that many of these changes have been mutual, with both groups in contact having some influence over each other, it is also true that in most cases of contact involving European expansion, the resultant changes have been far from equal in both cultures.

This process of culture change resulting from contact is often referred to as acculturation, and in keeping with the observation above, this process has largely involved a one-way flow of cultural characteristics from Western Euro-American societies to non-Western peoples in many parts of the world. Despite this imbalance, the more neutral term "acculturation" will be used here, rather than the more frequent (and politically loaded) term westernisation.

Acculturation influences can be illustrated as follows. A first element to consider is the History of Influence by the dominant culture which includes the purpose, length and persistence of contact. Since the focus here is limited to those societies influenced during the period of Euro-American colonial expansion, we may distinguish two main purposes: colonisation (settlement), and trade. These purposes have associated with them different degrees of length and persistence of contact; for example, contact persistence has generally been higher where settlement has occurred than where trade has been the purpose of contact.

Three elements stem from this descriptive, historic one. The first two influences, urbanisation and wage employment, have been general throughout the past two centuries of contact. Wherever groups went for purposes of colonisation, the tendency to form settlements, towns, and eventually cities has been apparent, even in those ecological settings where traditional cultures were not sedentary. Thus we may discern a general influence placed upon traditional cultures for them to become increasingly settled into larger population units and become absorbed into the new wage economy. This tendency has been less, though, where the purpose was merely to trade. However even around trading posts there began a process of settlement and employment which led to the establishment of population units larger than those found in traditional cultures.

A third major influence is that of education (both formal and informal) in the skills, values, and technology of the dominant culture. In formal terms, classrooms, compulsory attendance, and deliberate instruction in the language, religion, and knowledge of the dominant society is widespread. In less formal terms, the people in contact are educated by the media and informal interaction with those who have come from the dominant society.

C) Cultural Stability

Stabilisation is a process in itself, induced and necessitated by environmental factors. The tempo as well as the success of the process is determined by the rate and character of environmental modification. It may be, for example, that the alteration of some aspect of environment is so sudden, that no new equilibrium state is possible. In such a case, cultural destruction could be the result. Or it may be that during periods of rapid change when environmental changes are of such a quantity, rate, and character that a whole series of internally and externally directed adjustments are set off, and the equilibrium point itself is set in motion. However, this latter possibility should not be allowed to obscure what is really significant- the persistent tendency toward stability that is characteristic of all cultural systems (M. Sahlin and E. Service, 1960).

The principle of stabilisation seems to be a statement about the nature of culture, and becomes in itself a very significant phenomenon . It means that cultures tend to persist unchanged, and under the influence of external factors will act to maintain their basic structure through adaptive modification, i.e. there are two characteristics aspects of cultural adaptation, creativity and conservation. Through divergence and radiation, convergence and parallel development, new forms and elements of culture are produced. But because of their systematic nature, culture tends toward stability and self- maintenance , and under the influence of external pressure frequently develop special features solely for preserving their basic structure and orientation.

In order to understand Egyptian society according to this concept of adaptation, a general case has to be mentioned. The rate of external cultural forces controls the man's ability of adaptation. In the past, Egypt has had transitional periods between the effects of different cultures. This helped the society to adapt to their indigenous culture and strengthen their identity with the external forces. The problem has emerged in the contemporary period due to rapid and dramatic changes that occurred in the second half of this century, which include political, social, and economic systems of the Egyptian society (see chapter one).

Sahlin's definition will be useful in relating the concept of culture core to the Egyptian contemporary context. He declares that any culture in its general situation represents an equilibrium state based on the homogenous changes in the culture core. Many interrupted events may lead to temporary periods of culture gaps, that have different and unrelated characteristics of that society in this certain period. But if the culture core still exists or is slightly changed after the influence of the external forces, the culture will adapt itself again to continue in its state of equilibrium. By applying that notion for the Egyptian context, importance of concern with culture in our contemporary life will be asserted. This is because the external forces that led to these culture gaps were merely coming to end (see chapter 1). Now is the time to look towards human development from a different viewpoint, which includes the realms of architecture and urban design.

Gamal Himdan (1981) explores that meaning in the Egyptian culture. He cited in his holistic study for Egyptian identity that generally, things tend to continue as a straight line in one direction without any kind of change or divergence, unless they are faced by greater opposite forces. Although this phenomenon is a common case for any culture, it represents a unique one in Egypt based on the interaction between people site and situation. A term "Intermediation" has a distinctive significance in this interaction (see 1.2.3).

3.2 The Environment

The term 'environment' is widely used today; so that there is of confusion over its use and means. Thinkers from different disciplines are studying the impact of environment within their areas. For example, a geographer may be referring to land forms and climate, a psychologist to people and their personalities, a sociologist to social organisations and processes, and an architect to buildings and landscapes. Some analysts distinguish between the physical, the social, the psychological and the behavioural environments. The physical consists of the geographical setting; the social, the interpersonal and inter group organisation that exists; the psychological, the image that people have in their heads and the behavioural of those elements to which a person responds. The basic point of such a classification system and others like it, is the differentiation between the actual, real, or objective world that surrounds an individual, and the phenomenological world that is perceived and that consciously or unconsciously affects people's behaviour pattern and emotional responses .

Architects, landscape architects, and urban designers usually use the term environment in two ways: natural environment, and built or man - made environment.

3.2.1 Natural Environment

Natural environment refers to places and geographical features, such as mountains, valleys, and ocean, and environmental conditions, such as temperature, and rainfall, flora and fauna. All forms of life exist within a specific geographic context. Some things are constant everywhere on earth but other things vary. M. Abou el-Ela (1990) writes that God given elements of nature are either major or minor. The major natural elements are the dominants ones, that can be altered little, if at all. Unchangeable elements, accepted as they are, include such topographical forms as mountain ranges, river valleys, and coastal

plains. The minor ones are natural elements of lesser consequence such as hills, groves, and streams which can be modified.

Natural environment affects People in their ways to alter their built environment. Two main approaches could be defined: direct and indirect response to the environments.

3.2.1.1 Direct Response to the Environment

Generally speaking, geographic and climatic factors represent the main factors that affect any built environment. They distinguish the different regions and countries, by shaping the urban form of the cities and also their spaces, through determining of the appropriateness of location and design of sites. As a result, the domestic identity of different places has been created. This explains the importance of concentrating on these natural elements in the design process.

In reality, the effects of both geographic and climatic factors on built environment are correlated to each other. But, in terms of this theoretical study, they will be separated to identify their components though that may lead to a kind of repetition.

A) Geographical Aspects

This part will be concerned with the study of the relation between geographical factors and the urban form, the layout of buildings and landscaping.

Form and layout of buildings

Topography influenced by contour and slope, determines the acceptability and value of the site. It greatly affects the layout of buildings and how they can be arranged. This dictates the basic spatial relationship and building organisation. Without denying the role of other factors, topography is one of the most important factors which gives settlements their character and distinctive pattern.

Although, it is assumed that the best type of topography for housing, is generally considered to be levelled or gently rolling terrain with slopes less than 10-20%, we cannot neglect the advantages of rugged contour. The extended nature of a plain may suggest a sprawling form, or by contrast a clustered development reinforcing the sense of place, which valleys tend to generate linear groupings of built form or clusters on ridges and hill tops. Buildings may be designed to look like local land-forms or may be incorporated to the land form. Thus building forms may respect surrounding forms, such as a building stepping down a hillside, its roof pitch matching the slope, or buildings may add contrast to an area such as a tower in predominantly flat landscape (F. Ujam, 1987).

Egyptian geomorphology can be described as flat desert forming most of the land, with the River Nile running through the middle from south to the north, with its two parts, Nile valley and Delta. Thus, it is clear that most Egyptian land from the contour and slope points of view, are suitable for development, except for the mountainous areas in the east and the El-Qatara depression in the west (see article 1.1).

This case of such simple geographic structure and regularity has imposed a kind of building form and layout of building units, that interacted with the desert. There is no view to look out , but a strong need to be protected. The result on building form was a mass almost closed in its external boundaries, and opened on internal courts (figure 3.5).

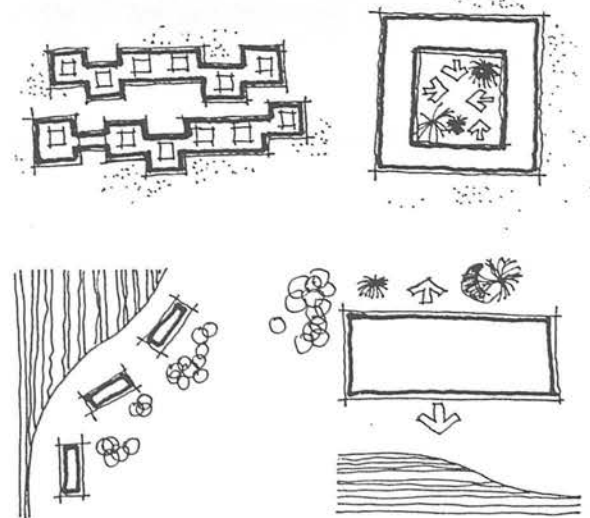


Fig. (3.5) The relation between geographical factor and both layout and form of buildings

The pattern of external spaces in Egypt was shaped by the effect of land contour. This flat contour does not create any kind of constraints that give

meaning for diversity in shape or direction . Norberg-Schulz asserted this fact :
 "Egypt's simple geographical structure provided a basis for symbolising existential meanings. In physical environment these were concretised as axially organised and orthogonally structured enclosure, which were disposed in accordance with the great longitudinal space of the Nile valley. This also holds true for layout of settlements and towns" (N. Schulz, 1973).

This was seen in the Pharaonic period, in that the buildings were located in parallel lines in geometric order. The city grid of medieval Cairo had a similar pattern, with the main harat and secondary alleys (figure 3.6 & 3.7).

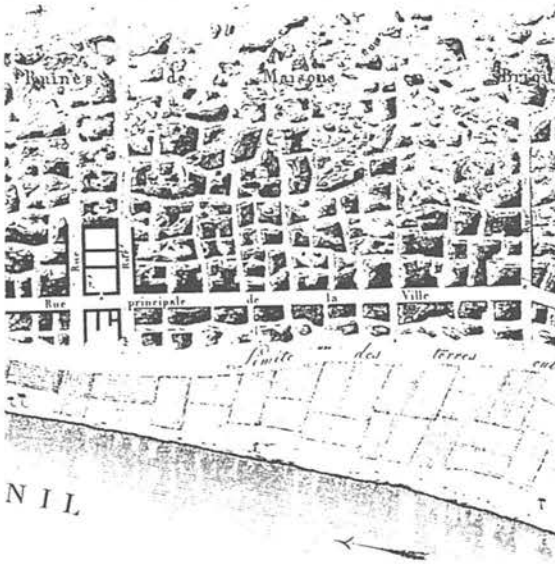


Fig. (3.6) General layout of Pharaonic town
 Ref. Monvments of Egypt, 1987

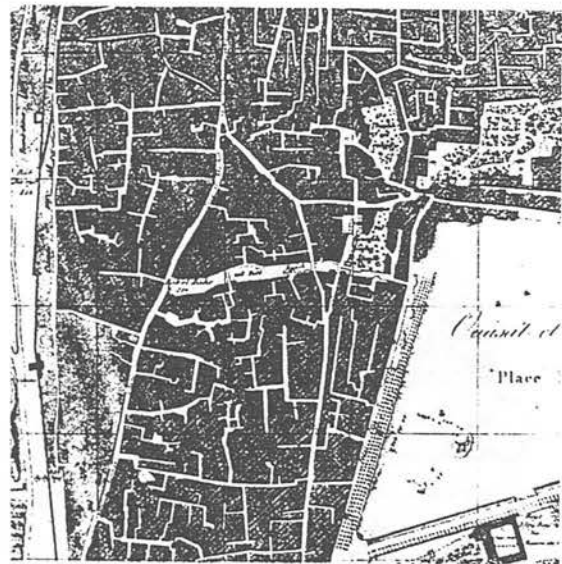


Fig. (3.7) General layout of medieval Cairo
 Ref. D. Behrens Abouseif, 1985

Landscape of Spaces

Landscaping of space has a clear relationship with the geographical factor, through both the water and soil element. Generally speaking, water bodies have an influence on the urban form by affecting building arrangement, or by imposing a special kind of land use. Soil controls the structure of the building within its carrying capacity, and also affects the building organisation by its role in the selection of the infrastructure system. Furthermore, soil and water together determine the effectiveness and ability of growing grass, plants and other vegetation. It is essential here to note that the existence of these landscape elements has many advantages to urban spaces. Climatically, these are very useful in hot weather to achieve the human comfort zone. The trees provide

shade and shadow, the plants refresh the air, and the green prevents ground reflections from the sun rays. In addition, these elements affect the urban space where they are used as architectural elements in both vertical and horizontal plans. As was mentioned in chapter one, Egypt's water resource is limited largely to the linear Nile river. The soil condition is generally sand with a high capacity of water absorption, resulting in restricted plant growth due to the high level of maintenance required. Accordingly, Egyptians have perceived the existence of plants as a value, not only in terms of their physical aspects. The green colour has become a symbol for spiritual meanings.

The officials' garden at Thebes consists of rectangular and axial arrangement of flower beds, ponds, enclosures and a vine trellis under which one walked from the gate to the house. Fruit trees were planted for shade (figure 3.8).

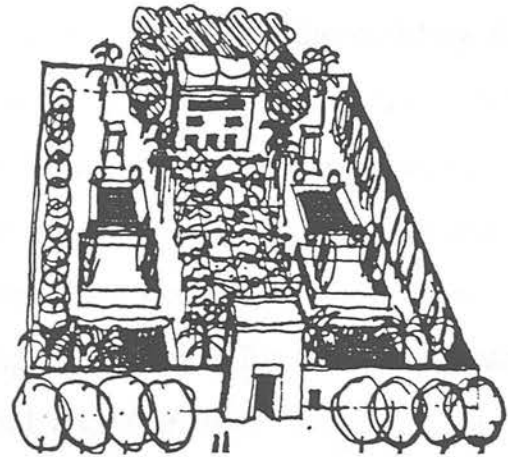


Fig.(3.8) The Pharaonic garden , Thebes, Egypt
Ref. Michael Laurie (1976)

The internal court of the Islamic house represented that importance. Egyptians were very interested in how they could improve the quality of this limited area and achieve the comfort zone by using trees, shrubs and greenery. More attention was oriented towards its landscape elements because it symbolised the heaven (figure 3.9).

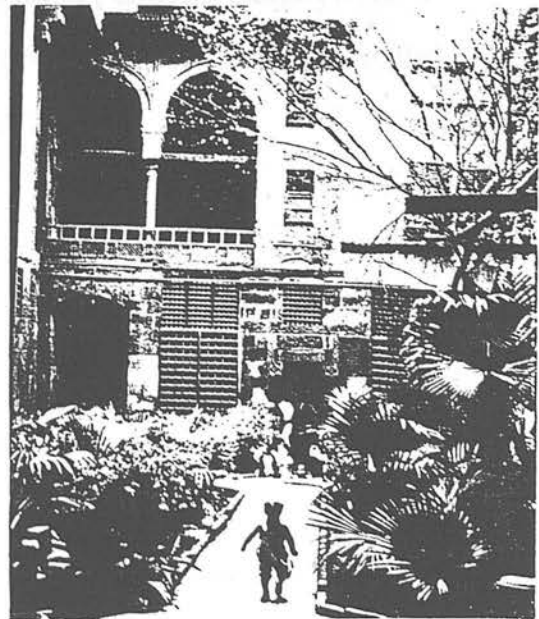


Fig.(3.9) Internal court of al- Souheimi House

B) Climatic Factor

There is no doubt that one of the main goals in architecture is to control the thermal conditions through designing physical environmental elements. Within the arid zone, the most effective factors on the urban form are the high temperature and solar radiation. Therefore, the comfort zone will be achieved successfully through providing maximum shade in both streets and public open spaces, as well as within houses. The urban form should also minimise direct and indirect solar radiation (especially reflected from the ground) to avoid heating the air. The form should moderate the effect of winds which are hot during the day, by creating natural ventilation. Therefore, the building form, organisation, and the orientation should be designed in relation to these factors, and should recognise that they affect each other. The design of dwelling form should not only be related to improvement of the internal environment, but also to the creation of comfortable conditions in the external space between and around buildings. This is particularly important in hot climates when outdoor spaces can be used in commercial, social and recreation activities. So, the outdoor spaces must also be designed in relation to shade, for breeze or for protection against the wind. They should never be considered as 'left-over space' remaining after the internal spaces are defined (Gideon Golany,1983).

Examples which could be given within the Egyptian context are mainly through building forms and building organisation.

Building Form

Generally speaking, the building form – from Pharaonic era till modern one – was mainly as mass which merely closed in the outer skin or had little openings in one of its facades. Most of living areas opened on the internal court that distinguished with its natural condition, by using water fountain, both green and trees, and unpaved ground cover. The horizontal and vertical elements must be clarified as follows:

A) Roofs

It is evident that the roof is a determining element in the general form and appearance of regional house type. There is also a marked correlation between the zone of a climate map and the types of used roofs. Egyptians recognised the importance of roofs in terms of climate treatment. They realised that the amount of radiation received on horizontal roof surface in long summer time, exceeds all other sides, and its heat impact demands special attention. Many considerations affected their choice of materials, shapes and structure types. Therefore there were many alternatives, varying from flat roofs to domes and vaults. In spite of the thermal benefits for a roof in a hot dry climate which encourage the use of vault or dome, the flat roof represented the majority, as it was more suitable for human use in other activities, some times due to the available construction technique. Many elements were used to provide shade on this flat roof to reduce the effect of solar radiation as the use of courtyard, different roof levels, and different projected elements in both vertical and horizontal plane. Both vaults and domes were used especially, in the extremely hot arid region in Nubia south of Egypt (Figure 3.10).



Fig. (3.10) Roofs within hot climate
The village of Abou-Riche, near Aswan
Ref. James Steele, 1988

B) Walls and Facades

The urban form – especially in terms of visual aspects – is strongly affected by walls and facades of buildings, which formulate the vertical enclosure of the space. Climate is one of the most important factors in shaping these walls and facades. While the relationship between solid and void indicates the amount of heat radiation that penetrates from outside to inside, within the Egyptian city three side walls were usually blanked and the last side was distinguished with its high ratio of solid to void. Mashrabia, these wooden lattice work, which prevent

both light and sun from the full penetration had become the main features for these voids (figure 3.11).

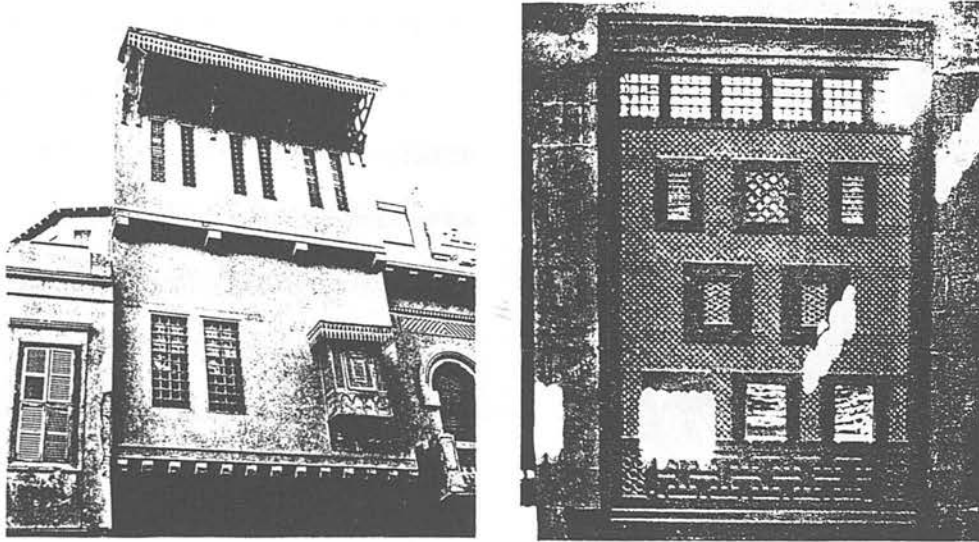


Fig.(3.11) House of Muhibb al - Din Muwaggi , interior and mashrabiya
Ref. James Steele, 1988

Increasing the shades on walls by breaking the wall line in both vertical and horizontal planes is an effective way in reducing the effect of the reflection of solar radiation to avoid heating space. The shades are also obtained by the projection of both first floor and Mashrabiyya .

Building Organisation

Physical configurations that have resulted from the systems of building organisation moderate the micro climate of the site. This occurs through different ratios of total shaded space, or by modifications controlling the wind through the city. Gideon Golany's opinion (1983) was that compact forms are effectively adjusted to hot and climatic stress in hot arid zone. Their compatibility is not only for the climate issue but also for social and economic aspects.

Throughout history, Egyptian compact cities have been built for such reasons. The ratio of shaded space was created through the vertical direction. The proportion between the horizontal distance at the ground floor, and the vertical height of the facade, also spacing between the opposite buildings, all together

increased the shade within the external space. Example were in the construction of the second floor wider than the first, and in covering the public spaces such as markets and Bazaars . The same effect was achieved in the horizontal direction through the pattern of layout which was based on zig-zag patterns (Figure 3.12).



Fig.(3.12) Bazaar of the silk mercers, Cairo
Drawn by David Roberts

There was a second importance for this zig-zag pattern within the compact form. As the problem of a desert climate is the soil structure, which early moved by the wind, the resulting dust storm cause human discomfort, and may accelerate the deterioration of buildings. As a result, in terms of climate, narrow zig-zagging harat was a successful choice solution to minimise the disadvantages of this dust storm effect, thus without denying that this pattern was the reflection of other factors as technological and social aspects.

3.2.1.2 Indirect Response to the Environment

There are general orientations, attitudes, and beliefs that people have about nature and the environment. People have positive or negative feelings about the built and the natural environments; they have diverse attitudes towards various places, such as mountains and oceans, and diverse perceptions and cognitions about horizontal and vertical dimensions of the world and the universe.

Irwin Altman (1984), cited that Tuan carried out interesting analyses of attitudes held towards such places. Tuan argues that mountains often were symbols of the power and dominance of nature. They played an important role in the

religion and cosmology of many cultures. Islands have been perceived positively as idyllic places where one could live away from the burdens of complex societies (romantic quality). He observed that some places have been almost universally viewed in a positive way. Beaches, seashores, and rivers sides were probably the original habitats of people . The valley or basin, coupled with the streams and rivers that flow through , have been perceived as a desirable place. Valley may symbolically represent a shelter and may be a place protected from the elements by surrounding mountains and hills and a site where one can easily farm and grow food. Valleys and their water supplies provided a continual source of new and rich soil and are generally a placid and secure place.

Different cultures view the world along two main approaches: vertical dimensions seen in the division of the cosmos into the sky, and along horizontal dimension (central/ peripheral) of closeness to, or distance from themselves.

A) The Vertical Dimension

Heaven, earth and hell are the three vertical dimensions representing the universe for some cultures. They see the endless sky, and it is easy to speculate about heaven. They are on earth, and it is all around them every day. Hell is not so visually evident, but it is easy to extend the vertical dimension downward, especially when they use a negative pole as a counterpoint to the heaven.

People refer to the heaven and stars as "above" (rather than distant) and they tend to equate "above" with "good". That which is above is a place of freedom and the good life, perhaps symbolised by the sun rising to provide warmth and help nature supply them with food. "Below" is typically bad as the sun drops below the earth, cold and fearful as night prevails. The importance of the vertical dimension is that "up" correlated always with the ideal position . Height is also associated with status and positive things. The positive connotations of high places are evident in people's lives. It is important to realise that not all people

attach meaning to verticality. For example, people who live in the heavily vegetated rain forest can barely see more than hundred yards in any direction, because the forest is so thick. The sun's rays are more scattered, the stars are barely visible, and they therefore have little reference to the heaven and sky .

Egyptians attached considerable religious meaning to their homes , referring to the vertical dimension. The sky is a roof over the earth, and heaven consists of hemispheres stacked above the sky. The house itself is considered to be a small scale version of the whole universe (figure 3. 13).

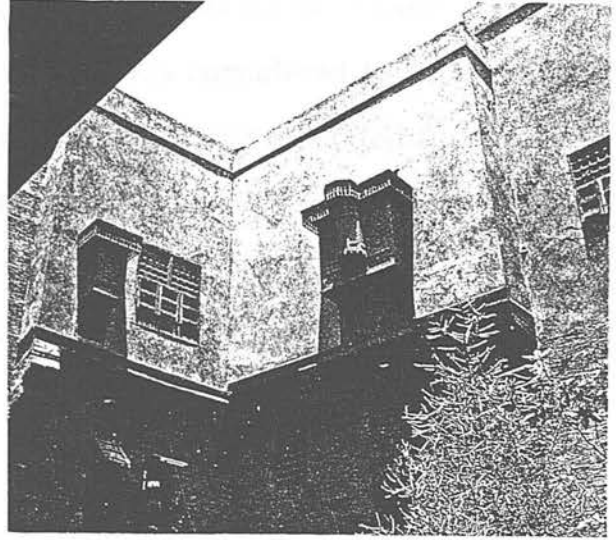


Fig.(3.13) Courtyard of Gamal al - Din Dahabi, Cairo
Ref. James Steele, 1988

Although our main concern is with the Egyptian context, we should pause to discuss the planning of a house as an Arab architectural expression, examining how nature and the environment have contributed to the characteristics of both the Arab and the style of his housing. The natural environment of the Arab is the desert. It has formed his habits, his view of life and his culture. He is indebted to the desert for his simplicity, his geometry, his love of science, mathematics and astronomy, his way of life and his family relationships. It is also important to see how the desert influenced him in the planning of his cities, once he had decided to settle down in one place and have a house for his family. Since the Bedouin knows the severity of the climatic conditions in the desert, he does not see any need for his house to be open to the outside on the ground floor. The only merciful element for the Bedouin is the clear blue sky which brings a pleasant breeze in the evening, more than that, it is the main source of water, the giver of life. The vast desert is not as big as the sky, thus, it is no wonder that for the desert dweller, the sky became the home of God .

Hassan Fathy's explanation will be useful here . He cited that "this instinctive tendency to see the sky as the kindly aspect of nature gradually developed into a definite theological proposition, in which the sky became the abode of the deity. Now with his adoption of a settled life the Arab began to apply architectural metaphors in his cosmology, so that the sky was regarded as a dome supported by for columns. Whether or not this description was taken literally, it certainly gave a symbolic value to the house, which was considered to be a model or microcosm of the universe. In fact, the metaphor was extended further to the eight sides of the octagon that supports, on squinches, a dome symbolising the sky, these eight sides were held to present the eight angels who support the throne of God. Because the sky is for the Arab at once the home of the holy and the most soothing face of nature, he naturally wants to bring it into his own dwelling" (H. Fathy, 1973).

The main way of doing this , for the Egyptian as for the Arab, is the courtyard. The house is a hollow square, turning blind, windowless to the outside, with all its rooms looking inwards into a courtyard from which only the sky can be seen. This courtyard becomes the owner's private piece of sky. The space enclosed by the rooms of his house can alone induce a feeling of calm and security that no other architectural feature can, while in every case the sky is, as it were, pulled down into intimate contact with the house, so that the spirituality of the home is constantly replenished from heaven (figure 3.14).

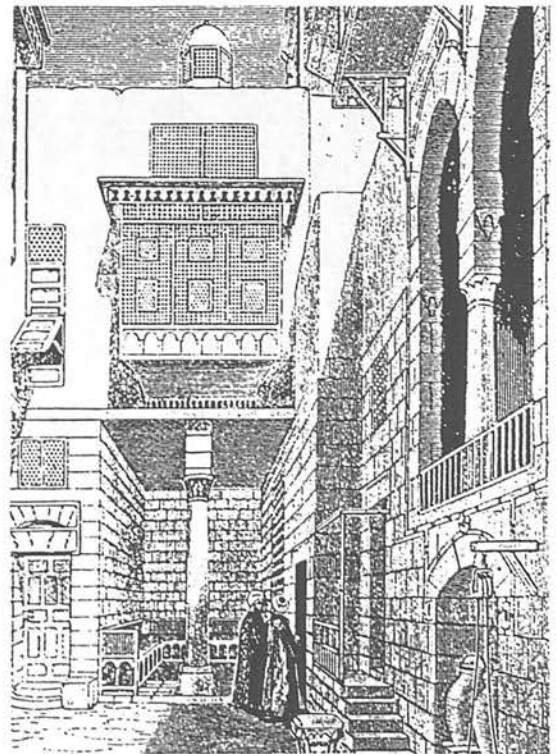


Fig.(3.14) Court of a private house in Cairo
Ref. E.W. Lane 1836

Two main points have to be mentioned here. Firstly, the courtyard has been influenced, as mentioned before, by the symbolic religious meaning. On the other hand, climatic conditions of the desert have dictated this idea of a house opening up to the inside. Therefore, we also find that the people of the Mediterranean do the same, just calling it by a different name. The courtyard, called 'Deyar' in Syria, 'Sahn' in Egypt and 'Bathyf' in Morocco, becomes 'Cortile' in Italy and 'Atrium' in Greece. Climatic conditions are obviously different in Scotland, Denmark and Detroit, but people there still request houses with interior courtyards because of the calmness and privacy they afford. This is what sells these kind of houses.

Secondly, although the dome, as architectural feature, produces a suitable design solution, which can achieve both the symbolic meaning, and climatic treatment, it has not been used on a large scale within the Egyptian urban houses. The most examples were found in southern Egypt, while the north has largely overlooked them. The thesis refers this phenomena to the effect of the Mamluk period on the Egyptian. The great use of domes for the Mosques and tombs imprinted on the Egyptian perception, the idea that these domes are suitable for religious buildings and the places for Islamic city ensures the same meaning. The urban form of the city was in a compact unity, with similar heights for all buildings except the mosques. The minarets raised up to indicate the sky and dominate the visual aspects of the medieval Cairo (figure 3.15).



Fig.(3.15) Domination of mosques' minarets on the city urban form
Ref. Abu Lughod, 1971

b) Horizontal Dimension

People see things and places on the earth's surface that are near or far , close or distant . They see the land stretching out on a horizontal dimension. One very pervasive aspect of the horizontal dimension is the idea of centre and periphery. There is widespread bias that the centre, usually focused on the self or one's society or nation, is worthy. Thus, the perception of self-at-centre is linked with what is both desirable and undesirable in the world.

The analogous conception appeared among the ancient Egyptians. They looked on themselves as a superior culture, and they believed that the Nile valley was the centre of the civilised world. The Nile River running north south, was of crucial importance to the survival of people because of irrigation. The Nile had fertile lands on each side of its banks, and deserts beyond, yielding a cosmology with strong symmetrical values. The earth was believed to be the centre of the cosmos. Above it was the domain of the sky gods, and below it was the underworld - each like a symmetrical pan that faced the earth in the centre. The sun was crucial to the lives of the Egyptians. The result was a north-south axis (the Nile) and an east-west axis (movement of the sun). Such strongly held symmetrical orientation were carried over into Egyptian architecture.

For example, The pyramid is made up of four equal isosceles triangles converging on a single point. The base is an exact square oriented precisely to the cardinal direction. The interplay between pyramid and cosmos is stressed by the precision of orientation. The square base and the isosceles triangle emphasise the urge toward symmetry in the Egyptian life (figure 3.16).

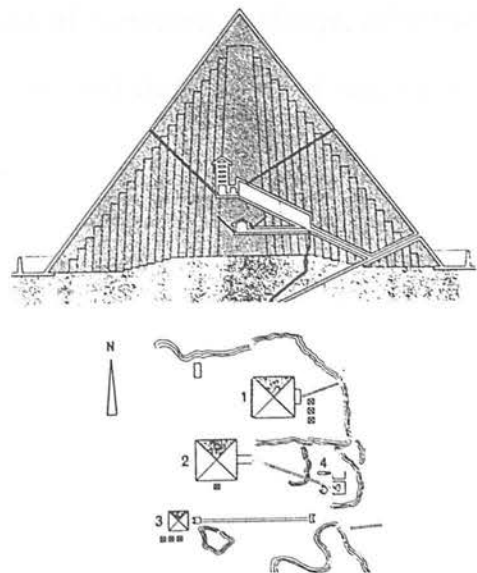


Fig.(3.16) The great pyramid, Giza

In summary , the fabric of culture often contains a rich blending of vertical and horizontal dimensions towards the environment. This meshing of environment and culture illustrates that environment, culture, and psychological processes function as a unity and that one cannot easily determine which factors "caused" certain outcomes. Often, all one can know is that relations among variables, exist. All come together in a coherent pattern that permits people to better understand and live in the world about them.

3.2.2 Built (man made) Environment

Fundamental to an understanding of the role of the built environment in people's lives is an understanding of what is meant by environment. The key attribute of any definition is that the environment surrounds. So, any definition, description, or explanation of the nature and functioning of the environment must be with reference to something surrounded. Of particular interest to us, is what surrounds people at an ecological level - the level of everyday human behaviour. The basic point made is that the surroundings of humans consist of geographical setting, social and cultural components.

The built environment comprises of physical and non-physical variables. The former comprises of the artificial arrangement of different surfaces, of different materials with different textures, illumination, and degrees of transparency or translucency, and of the spaces between them. This is the result of peoples alterations of environments to achieve their physical functional needs. The latter includes the symbolic meaning within the geometric space. Places cannot be created through the physical attributes alone, but through the activities that take place there, related to the cultural values of the societies. Therefore, it is an incomplete view to limit the built environment in its geometric properties. It has to be regarded as geographical and cultural environments. The way people structure the surfaces of the world around them affects all the interactions between them and the physical environment.

The properties of the environment can be changed to afford new activities and new aesthetic experiences or to make old ones better. These changes have been made so that all types of environments should serve an individual's or group's purposes. The changes reflect the beliefs and attitudes and resources of time and help provide a pattern for the future. Sometimes everybody gains through the changes that are made (vernacular solutions), sometimes some people gain at the expense of others (architect's solutions), sometimes short-term gains result in long-term losses, and sometimes everybody will lose.

As this research deals with the architectural context, the role of the architect is to define the core elements in its hierarchy of values, and to relate them with the built environment within the corresponding hierarchy of man needs. Maslow suggested that human needs can be arranged in a hierarchical fashion, with strongest-level needs taking precedence. His hierarchy, in descending order, is as follows: physiological needs, such as hunger and thirst; safety needs, such as security and protection from physical and psychological harm; belonging and love needs, which concern the relationship of responsive, or affectionate, and authoritative needs; esteem needs of an individual to be held in high esteem in his own eyes as well as those of others; self-actualisation needs, which represent the desire to fulfil one's total capacities; and cognitive and aesthetic needs, such as the thirst for knowledge and desire for beauty for their own sakes.

In using this classification, it must be recognised that an individual's or a group's perception of its needs cannot be simply correlated with socio-economic status. Even for people of the lowest socio-economic levels, the needs for belonging or for esteem are very important. Some hypotheses can, nevertheless, be suggested about the relative importance of architectural symbols for people with different basic needs. When people are struggling for survival, the symbolic aesthetics of the environment will not be the focus of attention. The physical character of the environment will still communicate messages about the status of the people

concerned; they are likely to be well aware of this, but they will have little energy and thus inclination to act to purposefully change the symbolism. For people whose prime concern is with safety, architectural variables - particularly those associated with symbolic barriers representing territorial demarcations - become more important, but it is in fulfilling belonging and needs for esteem that architectural symbols are particularly important (Abraham Maslow, 1970). It is worth noting here that, at each level in Maslow's hierarchy, needs are largely fulfilled through social and cultural mechanisms unrelated to elements of the architectural environment. The attributes of the built environment are, however, important, so it is necessary to recognise the variables that can carry symbolic meaning. These architectural variables include spatial configuration, building configuration, and materials .

Referring to the Egyptian context, there is an essential issue that has to be considered, in terms of culture. It is quite clear that each country must have its economic structure to survive, to maintain the identity, tradition, life style,..etc. This indicates that the priority is to ensure that people survive before we concern ourselves about perceiving our culture, motivated by nostalgia. Economy has to flourish before all other things flourish equally and proportionally. This was the case in Egypt during the last thirty or forty years, but since the end of the wars, all the efforts must to be oriented towards the Egyptian human being. The architects role has to achieve this through the built environment.

3.3 Man- Built Environment Relationship

The mutual correlation between man and the built environment is the essential notion to be discussed. How do the characteristics of people as individuals or as members of cultural groups affect the way in which the built environments are shaped, and what are the effects of the built environment on the human being?

The previous part about culture and people's choices can illustrate that man's characteristic is affected by environment through both its ecological resources, and culture variables, which together play a major role in formulating the identity for each group. By this identity, people perceive the environment through their distinctive values and beliefs, which give meaning to their choices. In turn, they affect the decision about the form of the built environment. The design of this can be seen as a result of the set of choices among many alternatives. These choices impose certain ideal images and cognitive schemata which express themselves through building form, landscape material, colour, etc... . In other word, it imposes certain typology for that group which distinguishes their place according to their identity and proves their differentiation from the others.

This situation was very clear through history. Built environments were cultural products, created by the similar choices of people. The architects did not have a role in imposing spatial types by abstract means of architectural expressions and forms. Their role was in adapting the building type to the site and environment, and they could express their personal talent by improving the quality of the type in terms of proportion of facades, building structure systems, and so on.

The effects of the physical environment on people are more difficult to answer, than those of how people shape their environment. Therefore, there are few persons today who totally understand or realise the importance of these effects.

The problem seems more complicated when dealt with by the decision makers as they shape the built environment through their own solutions.

Many contemporary thinkers orient their attention in different ways and through different kinds of research, to study the relationship between man and environment, and hence it has different definitions. But the current view is that the built environment can be seen as a "behaviour setting" – a setting for human activities – which may be neutral, inhibiting or facilitating. A behaviour setting may be facilitating to the extent of acting as a catalyst in releasing latent behaviours. It cannot however determine or generate activities. Similarly, inhibiting environments will generally make certain behaviours more difficult but will not usually block them completely. It is however easier to block behaviour than to generate it, i.e. there is a mutual interaction between human behaviour and the designed environment. When an appropriate physical setting for a certain group is provided, behaviour is thus reinforced by reminding people how to act, how to behave, and what is expected of them. Changes in forms of environments can affect the behaviour; increase satisfaction, and influence social interaction. Furthermore, the fact that people do act and behave differently in different behaviour settings suggests another important point, which is that people act appropriately in different settings, because they match their behaviour to the setting.

When the designers tried to impose a new typology, a new type of building, regardless of the people who live there, the inhabitants response will be explained in two ways:

Firstly, people adapt themselves to this inappropriate setting possibly with feelings of being in the wrong place. If you ask the average of Frenchman, for example, what is the image of the house, he will draw a house with roof and chimney, with classical windows and doors. He does not refer to the modern type of house produced by Le Corbusier (Serge Santelli, 1989).

Secondly, people declare their rejection towards the environment through a kind of violence. Oscar Newman related the increased rate of crime in America to the effect of the built environment with its huge spaces and high rise buildings. He mentioned that "The crime problems facing urban America will not be answered through increased police force or fire power. We are witnessing the breakdown of the social mechanisms that once kept crime in check and gave direction and support to police activity. The small town environments, rural or urban, which once framed and enforced their own moral codes, here virtually disappeared. We have become strangers sharing the largest collective habitats in human history. In our society there are few instances of shared beliefs or values among physical neighbours. Although this heterogeneity may be intellectually desirable, it has crippled our ability to agree on the action required to maintain the social framework necessary to our continued survival. The physical environment we have been building in our cities for the past twenty-five years actually prevents such amity and discourages the natural pursuit of a collective action. Police forces operating without community consent, direction, and control are wasting effort. Means must be found for bringing neighbours together". Where the physical design of the living environment can be used for this purpose it must be so exploited" (Oscar Newman, 1972).

As a result , the architect's role can be defined as the way of socialising the space, and spatialising the society; creating the suitable space for social behaviour ,i.e. providing the designed context with an appropriate behaviour setting. The achievement of this appropriateness through the physical layout is controversial . For one group, the architect has to have clear control over what can occur there, and to define who its users are to be including both strangers and residents. This will help the group to be able to set their sharing norms and beliefs that lead to certain kind of possible behaviour and activity within a particular place. For the other group, they believed that comings and goings of people will ensure the continuous movement and high rate of safety through the defined space. This

feeling of confidence towards the space will encourage people's activity (chapter four will introduce further studies for this argument).

3.3.1 Mechanism of Man and Environment Interaction

Culture and physical environments are linked with people through various psychological processes, which together comprise two main classes: mental activities and behavioural activities.

Mental activities include things that occur in the minds of people - what they see, hear, and smell and their interpretation of the physical environment. Mental activities also include beliefs and attitudes, concerning environment. Accordingly, the way we perceive and feel about our environment also affects how we act to change and create the physical environments. Thus, people may learn to build different structures as a result of their understanding of and feeling about climate, or they may drastically alter the physical environment as a result of cultural views about the functions of the environment in the lives of people.

A second facet of psychological processes involves overt behaviour, or what people do and how they act in relation to the environment. Such behaviours include among a host of others, attempts to achieve privacy and to establish and control territories or uses of the land. Although many anthropologists and psychologists are interested in how people in different cultures behave with respect to the physical environment, we have to be aware that behaviour is formulated by people's implicit values, perceptions, cognitions, and attitudes (figure 3.17).

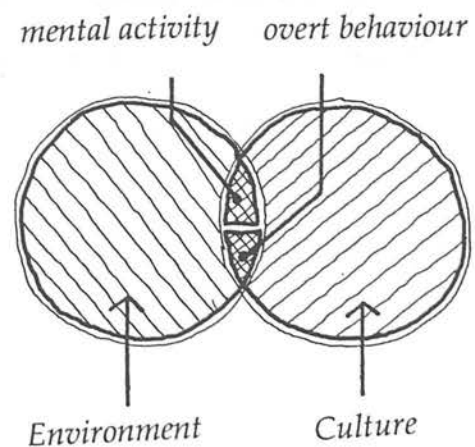


Fig. (3.17) Man and environment interaction

Due to the importance of the relation between people, culture, and environment, this represents the back bone of several disciplines in the social and behavioural sciences, and has been studied in different ways. According to Irwin Altman (1984), three approaches will be introduced.

3.3.1.1 Determinist Theory

Altman cited that the inadequacy of this model, which has been the basis for much modern architectural ideologies, has resulted in a misunderstanding of the man-environment relationship. Most of these ideologies are based on a naive stimulus response model of the relationship between environment and human behaviour. In this model, the built or natural environment is regarded as the stimulus and human behaviour as the response. The result is that architects and others have often assumed that because two variables are correlated, they also are linked causally. This has led to erroneous conclusions about the effect of the built environment on people. A special example of this, is the belief in architectural determinism. Facilities are said to create communities, architectural unity to create social unity, and architectural magnificence to lift spirits.

The Determinist Theory, the oldest approach, states that urban settings act directly on their inhabitants and that certain physical characteristics of cities can lead to social and personal behaviour. Its central theme was that the large size of cities, the variety of people who were forced into contact with one another, and the diversity of urban experiences and stimulation, had a marked impact on the lives of people as individuals, families, and cultural groups. Determinist theorists believed that these features of city life often led to negative outcomes, such as alienation, poor physical and mental health, breakdown of the family, increased crime, and deterioration of the larger social system. Even in places where the residents find the built environment and landscape very pleasant, the social objective of establishing a cohesive community through the physical layout of neighbourhoods has not been achieved. According to determinist theories, cities and urban life acted directly on people, often in negative ways.

3.3.1.2 Compositional Theories

A more recent position hypothesises that urban settings do not directly affect social behaviour. Rather, the crucial factor affecting behaviour is the ethnic, national, or other qualities of subgroups in cities. This theory is based on people everywhere living and functioning in small primary and secondary groups - family, extended kin groups, neighbourhood, and small communities. Even in highly populated areas, where people have frequent contacts with strangers, the important parts of their lives are generally restricted to small groups of family members, neighbours, and friends. Compositional theories, unlike determinist theories, believe that such factors as city size, heterogeneity, and density have little direct effect on the average person.

3.3.1.3 Subcultural Theory

This is an integration of the two preceding theories. It agrees with the compositional view that the lives of city dwellers generally occur within particular ethnic, occupational, religious, or other group. Subculture theory argues that ecological aspects of cities- size, density, heterogeneity- also have an impact on people. There are complex interactions between various ecological qualities of cities and the functioning of a subcultural group. And it recognises that such physical factors facilitate the creation of new subcultures, affect existing groups, and also bring subcultures into contact with one another, generating a new blend of social structure. This theory led to more recent concept, which has been used largely in the study of man, environment, and culture relationships.

3.3.2 Ecology and Cultural Ecology

The current interest in ecology occurs not only in the field of geography but throughout the social sciences. Most writings in human geography have implicitly embodied an ecological perspective. Yet points of contact between man and environment, interactions between cultural systems and their surroundings

have remained the central content of the discipline, whether defined as the study of man- environment systems or as spatial structure of human behaviour.

The term 'ecology' was first used to refer to the relationships among organisms living within a defined space and their pattern of adaptation to their environment, as used by plant and animal ecologists. More emphasis was placed on the measurable biological effects of these interactions. The concept of ecology has naturally been extended to include human beings since they are part of the web of life in most parts of the world. Man enters the ecological scene, however, not merely as another organisms in terms of his physical characteristics. He introduces the super-organic factor of culture, which also affects and is affected by the total web of life.

A new emphasis was placed on man - environment interaction per se rather than on the effects of these interactions. In ecology, for example, human ecology moved from this biological orientation to defining human ecology as the study of the spatial and temporal relations of human being as affected by environmental forces, or alternatively as the study of the form and development of the human community.

This ensures that the interaction of physical, biological, and cultural features within a locale or unit of territory is usually the ultimate objective of man - environment relationship study.

But , it must be noted here, that there is more difficulty in explaining man's cultural characteristic, than his biological one. Cultural patterns are not genetically derived and therefore cannot be clearly analysed in the same way as organic features. Although social ecologists are paying more and more attention to culture in their enquiries, an explanation of culture per se has not, so far as I can see, become their major objective. Culture has merely acquired greater

emphasis as one of many features of the local web of life, and the tools of analysis are still predominantly borrowed from biology. Since one of the principal concepts of biological ecology is the community – the assemblage of plants and animals which interact within a locality – social or human ecology emphasises the human community as the unit of study. But "community" is a very general and meaningless abstraction. If it is conceived in cultural terms, it may have many different characteristics depending upon the purpose for which it is defined. The tendency, however, has been to conceive of human and biological communities in terms of the biological concepts of competition, succession, territorial organisation, migration, gradients, and the like. All of these derived fundamentally from the fact that underlying biological ecology is a relentless and raw struggle for existence both within and between species – a competition which is ultimately determined by the genetic potentials for adaptation and survival in particular biotic-environmental situations. Biological co-operation, such as in many forms of symbiosis, is strictly auxiliary to survival of the species.

Human beings do not react to the web of life solely through their genetically-derived organic equipment. Culture, rather than genetic potential for adaptation, accommodation, and survival, explains the nature of human societies. Moreover, the web of life of any local human society may extend far beyond the immediate physical environment and biotic assemblage.

The general view point of the cultural ecology emphasises the role of the physical environment as one powerful determinant of customs, life style, and behaviour in different cultures. In particular, it studies the interactions of societies with the natural environment in order to comprehend those processes of adaptation and transformation that operate to alter social institutions, human behaviour, and environment.

Julian H. Steward (1972) defines cultural ecology as the study of those processes by which a society adapts to its environment. He stresses processes of adaptation to local environments as a source of change in social institutions and human behaviour. For Steward, this is not an environmental determinist approach (see 3.3.1), man is an ecological dominant by virtue of his cultural capacities, but no universal statement can be made concerning the relationships of man and nature; detailed specific investigation of these interactions must be the cases for theory building.

Vayda cited in Human Ecology that many anthropologists do not admit any role for ecological factors, while those who do, claim a number of differing points of interaction and influence. Essentially, there are two extremes between which cultural ecologists vary, in terms of relating culture, behaviour and environmental phenomena: either showing that the environmental phenomena are responsible in some manner for the origin or development of the cultural behaviour , or else showing that items of cultural behaviour function as part of systems that also include environmental phenomena. The former (the strong version) is a causal approach which attempts to account for cultural origins, while the latter, (the weak version) is a correlative approach which emphasises the functional interdependencies between physical environmental and cultural variables (John Berry, 1976).

It is not difficult to explain this first assumption, and illustrate the influence of geographical environment upon forms of inventions. The variety of habitation used by tribes of different areas offer an example of its influence. The snow house of the Eskimo, the bark wigwam of the Indian, the cave dwelling of the tribes of the desert are many examples of the way in which protection against exposure is attained, in accordance with the available materials. Many other Environmental influences appear in the territorial limits of certain tribes of people, as well as in the distribution and density of population. This occurs even in the more complex forms of mental life (John Berry, 1976).

Altman's model (social system) fits with our purpose in terms of culture/ environment relationship. It represents a framework of relevant variables and a general statement of their relation. What is provided is more a way to view the field, than it is a precise statement of exact relations among variable. Figure (3.18) outlines this approach which is compatible with the weak version of the cultural ecology factors, which are important to understanding the relation between culture and environment. These are: the natural environment, world views and environment orientation, cognition and perception of the environment, environmental behaviours and processes, and finally environmental outcomes or end products of behaviour .

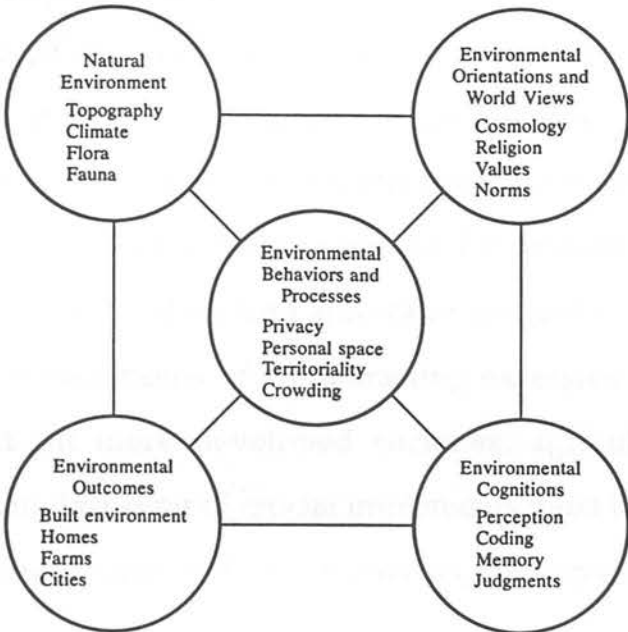


Fig. (3.18) A framework of culture / environment relations

Ref. Irwin Altman, 1980

The natural environment includes such features of the physical environment as temperature, rainfall, terrain and geographic features, flora and fauna. Environmental orientations and world views are global views of the environment that relate to religious values, and dominant modes of thought. Environmental cognitions are perceptions, beliefs, and judgements that people make about environments. Environmental behaviours and processes, such as personal spaces, territorial behaviour, and privacy, are the ways that people use the environment in the course of social relations. Environmental outcomes, or

products of behaviour , include the results of people action, namely, (1) the built environment of homes, communities, and cities and (2) modifications of the natural environment, such as farms, dams, and climate changes .

3.3.2.1 The Method of Cultural Ecology

Although the concept of environmental adaptation underlies all cultural ecology, the procedures must take into account the complexity and level of the culture. According to Julian H. Steward, a pioneer in cultural ecology, three fundamental procedures of cultural ecology are as follows (Julian Stewart, 1972).

Firstly, the interrelationship of exploitative or productive technology and environment must be analysed. This technology includes a considerable part of what is often called "material culture", but all features may not be of equal importance. In primitive societies, subsistence devices are basic: weapons and instruments for hunting and fishing, containers for gathering and storing food, transportational devices used on land and water, sources of water and fuel, and in some environments, means of counteracting excessive cold (clothing and housing) or heat. In more developed societies, agriculture and herding techniques and manufacturing of crucial implements must be considered. In an industrial world, capital and credit arrangements, trade systems and the like are crucial.

Secondly, the behaviour patterns involved in the exploitation of a particular area by means of a particular technology must be analysed. Some subsistence patterns impose very narrow limits on the general mode of life of the people, while others allow considerable latitude. The gathering of wild vegetable products is usually done by women who work alone or in small group. Nothing is gained by co-operation and in fact women come into competition with one another. Seed gathering, therefore, tends to fragment into small groups unless their resources are very abundant. Hunting , on other hand, may be either an

individual or a collective project, and the nature of hunting societies is determined by culturally prescribed devices for collective hunting as well as by the species. The use of these more complex and frequently co-operative techniques, however, depends not only upon cultural history - i.e. invention and diffusion - which makes the methods available but upon the environment and its flora and fauna.

The third procedure is to ascertain the extent to which the behaviour patterns entailed in exploiting the environment affect other aspects of culture. Although technology and environment prescribe that certain things must be done in certain ways if they are to be done at all, the extent to which these activities are functionally tied to other aspects of culture is a purely empirical problem. In the irrigation areas of early civilisations the sequence of socio - political forms or cultural cores seems to have been very similar despite variation in many outward details or secondary features of these culture. If it can be established that the productive arrangements permit great latitude in the sociocultural type, then historical influences may explain the particular type found. The problem is the same in considering modern industrial civilisation. The question is whether industrialisation allows such latitude that political democracy, communism, state socialism, and perhaps other forms are equally possible, so that strong historical influences, such as diffused ideology - e.g., propaganda - may supplant one type with another, or whether each type represents an adaptation which is specific to the area.

The third procedure requires a genuinely holistic approach, for if such factors as demography, settlement pattern, kinship structures, land tenure, land use, and other key cultural features are considered spatially, their interrelationships to one another and to the environment cannot be grasped. Land use by means of given technology permits a certain population density. The clustering of this population will depend partly upon where resources occur and upon

transportational devices. The composition of these clusters will be a function of their size, of the nature of subsistence activities, and of cultural - historical factors. The ownership of land or resources will reflect subsistence activities on the one hand the composition of the group on the other. Warfare may be related to the complex of factors just mentioned . In some cases, it may arise out of competition for resources and have a national character. Even when fought for individual honours or religious purpose, it may serve to nucleate settlements in a way that must be related to subsistence activities .

Having said that, cultural ecology can be described as a methodological tool for ascertaining how the adaptation of a culture to this environment may entail certain changes. In a larger sense, the problem is to determine whether similar adjustments occur in similar environments. Since in any given environment, culture may develop through a succession of very unlike periods, it is sometimes pointed out that the environment, the constant, obviously has no relationship to cultural type. This difficulty disappears, however, if the level of socio-cultural integration represented by each period is taken into account. Cultural types therefore, must be conceived as constellations of core features which arise out of environmental adaptations and which represent similar levels of integration.

3.3.3 Main Aspects of Human Behaviour

The need for privacy, personal space and territory is universal and contributes to the meeting of other human needs such as security, affiliation and esteem. The form in which the need is expressed and the mechanisms used for its attainment are manifested very differently in different societies.

It is worth mentioning here that these factors have a great influence on the Egyptian urban settlements as an Islamic context, e.g. space in the medieval Cairo has been constantly seen as merely an expression of the society that produces it, responding to cultural ideals of Muslim society, with a particular

emphasis on family privacy. The failure of modern architecture can be referred to some extent, in the unsuccessful attempt for its buildings to meet the varying privacy and territorial needs. The reason is so clear, that most aspects of these behaviours occur unconsciously. If we are unaware of attached diversity, as universal pattern, it is impossible to consider it explicitly in design.

The purpose of this part therefore, is to bring attention to the subtler factors of privacy, personal space and territorial behaviour that affect the perceptions of environmental comfort and quality. In addition, more attention will be given to concentrate on the topic of privacy, a concept that we use as a bridge between personal space and territorial behaviour; this concept addresses the means by which individuals regulate their dealing with the social world and make themselves more or less accessible to others. Furthermore, the concepts of personal space and territory can be viewed as behavioural mechanisms by which people regulate their privacy.

3.3.3.1 Privacy

Associated with any standing pattern of behaviour is a desired level of privacy. The structure of the built environment screens activities and provides affordances for personal space and territorial needs if properly configured. There is a correlation between our ability to call an area our own and our psychological comfort with it and our willingness to look after it.

There are several kinds of privacy, each of which serves a different purpose. A. Westin (1970), classified four types: solitude - the estate of being free from the observation of others, intimacy - the estate of being with another person but free from the outside world, anonymity, the state of being unknown even in a crowd, and reserve the state in which a person employs psychological barriers to control unwanted intrusion. Four purposes served by privacy have been determined: it provides for personal autonomy, it allows for the release of emotions, it helps

self-evaluation, and it limits and protects communication. Thus, privacy is important in terms of the relationship between an individual or a group and the rest of society.

The type and degree of privacy desired depends on the existing pattern of behaviour, on the cultural context and on the personality and aspirations of the individual involved. The use of walls, screens, and distance, are all mechanisms for attaining privacy which the environmental designer can control to some extent. The qualities of surfaces (translucent, transparent, sound-absorbing) cut off the flow of information from one area to another to a lesser or greater degree (figure 3.19).

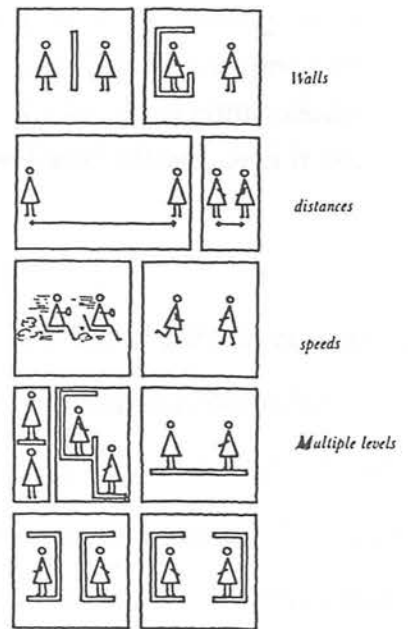


Fig.(3.19) Different methods for privacy

The goal of privacy can be examined at two levels:

Firstly, privacy regulation involves the management of social interaction. By regulating our openness/closeness, or accessibility/inaccessibility to others, we can manage our social contact with others in accordance with our personal desires, the intimacy of our relationships, and the situational circumstances. Management of interpersonal relations is an important goal of privacy regulations.

Secondly: there is more at stake in privacy regulation. Altman hypothesised that the psychological viability or well-being of people and groups centres on the successful management of privacy. That is, success or failure at privacy regulation may well have implications for self identity, self esteem, and self worth – or the very well-being and survival capability of people and groups. Altman cited that:

Self identity is a person('s) or group's cognitive, psychological, and emotional definitions and understanding of themselves as being. It includes a person knowing where they begin and where they end, which aspects of the physical world are parts of self, and which aspects are parts of others. It encompasses self understanding of one's capabilities and limitation, strengths and weaknesses, emotions and cognitions, beliefs and disbelieves. Furthermore, self identity has a strong evaluative (positive or negative) component: that is, am I a worthwhile person to myself and others, and if so, why" (I. Altman , 1984).

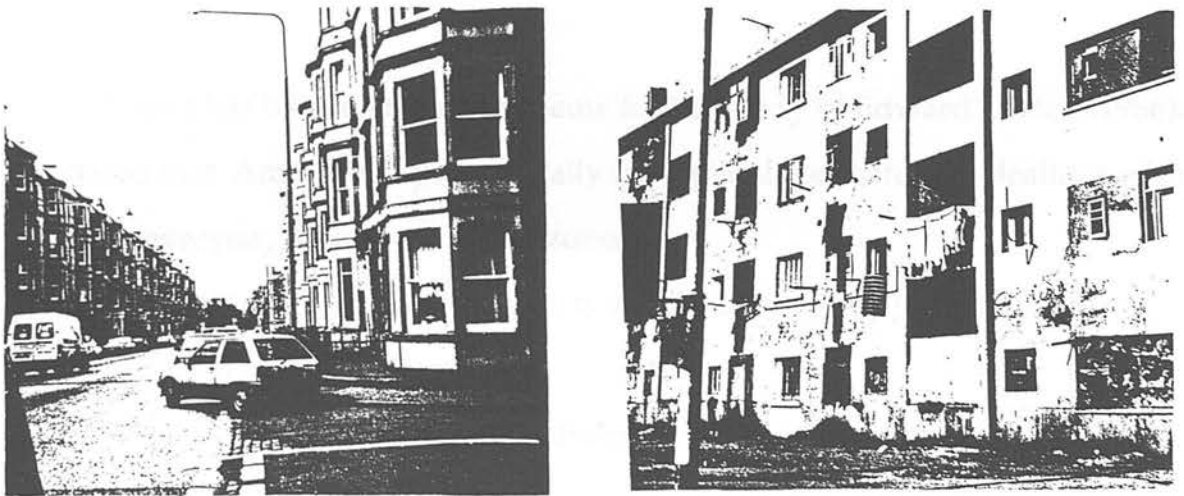
Thus, self-identity and a sense of self worth involve the ability to control one's boundaries in relation to others. Such boundary identity and boundary control probably derive from a successful history of learning how one relates to others. This indicates the heart of the issue regarding privacy and culture. The process of privacy regulation can be considered as central to human function that it is hypothesised to be present in all culture.

Differences in the need for privacy are partially attributable to social group attitudes – the roles people play in society and their socio - economic status. In any particular housing type, space is an indicator of status and becomes a symbol of it. It must be recognised, however, that the norms of privacy for any group represent adaptations to what they can afford within the socio - economic system of which they are a part. In low-income groups, for instance, crowded living conditions force a lack of privacy. It should be noted here that although this was the case in medieval Cairo, Mashrabiah has produced a distinctive solution for achieving privacy within compact order (figure 3.20).



Fig.(3.20) Privacy within compact order

The layout of districts, buildings, and rooms depends on how people relate to each other in space, and thus it varies considerably by culture. There is a hierarchy of strengths of privacy needs. Each level in the hierarchy involves different degrees of personalisation, ownership, and control. The perceived quality of the built environment is partially dependent on our ability to achieve desired levels of privacy. While the desire for privacy through personal space and territorial controls may be universal, its manifestations vary considerably from culture to culture. Some cultures have more complex privacy demands and gradients than others. This is reflected in both the internal and external organisation of houses. The internal organisation of houses in which people feel comfortable very much reflects their culturally based attitudes toward privacy. While some people accept almost any relationship between the living, cooking, eating, and sleeping areas of a house, others have privacy needs that may affect not only the location of rooms but also, the location of doors, size of windows and the use of ground floor (figure 3.21).



- Fig. (3.21) Different use of ground floor in residential building in Edinburgh and Cairo
Ref. by the author

3.3.3.2 Personal Space

A fundamental way in which we use the environment in social interaction is to distance ourselves from other people. By moving closer to or farther away from others, we make ourselves physically and socially more accessible or less accessible to them. Robert Sommer cited that:

"Personal space refers to an area with an invisible boundary surrounding the person's body into which intruders may not come. Like the porcupines in Schopenhauer's fable, people like to be close enough to obtain warmth and comradeship but far enough away to avoid pricking one another. Personal space is not necessarily spherical in shape, nor does it extend equally in all directions. It has been likened to a snail shell, a soap bubble, an aura, and breathing room" (R. Sommer, 1969).

Thus personal space is the space within an invisible boundary around people, which is with them everywhere they go. Personal spacing is not fixed and unchangeable. Sometimes we move closer to others and sometimes we move away, as we attempt to maintain an appropriate or desired level of contact with them. As soon as a person stops or is seated in public places, there balloons around him a small sphere of privacy which is considered inviolate. The size of the sphere varies with the degree of crowding, the age, sex and the importance of the person, as well as the general surroundings. Anyone who enters this zone and stays there is intruding

This concept has become the main theme for the study of Edward T. Hall (1966). He stated that Americans systematically use spatial zones in their dealings with others in everyday situations. These zones are:

- 1) The intimate zone (0-18 inches) is usually adopted by people in close personal relationships.
- 2) Typically in private situations, the personal zone (1.5-4 feet) is the normal spacing that people maintain in day-to-day interaction.
- 3) The social zone (4-12 feet) is commonly used in public and is the distance of ordinary business and impersonal contacts between people.
- 4) The public zone (12.25 feet and beyond) is a distance usually reserved for high-status people and public and formal settings.

Edward Hall (1966), produced a crucial view to our interest in culture and environment. He hypothesised that different cultures use space as a

communication vehicle in rather distinctive ways. Some cultures have customs whereby people maintain close distances, even among strangers, other customs can provide important clues about a culture. Within different influences of privacy and personal space on people's behaviour according to their cultures, he described Middle Eastern and Mediterranean as highly sensory, with people interacting very closely –nose to nose, breathing on one another's face, and touching. He hypothesised that these cultures are more contact-oriented than other northern European and northern American cultures, at least in public settings and with strangers. Arab communications are very different when they are compared to northern European communication patterns. They represent stepped-up sensory inputs to a level which many Europeans find unbearably intense.

Hall added that privacy in a public place is foreign to Arabs. Business transactions in the bazaar, for example, are not just between buyer and seller but are participated in by everyone. Involvement and participation are expressed in different ways. The experience of privacy among Arabs might actually have a wholly contrasting set of assumptions among the public and private space. For the Arab, there is no such thing as an intrusion in public space. Public means public.

Privacy mainly were highly respected through the house. This was achieved by orienting the internal spaces towards courtyard and the use of mashrabiah for the external facades. Rapoport stresses the importance of the threshold in establishing and reflecting privacy norms and territorial behaviours. The point at which the occupant of a house is aroused by the approach of a stranger varies from culture to culture. In the traditional Islamic dwelling it occurs at the entrance from the street. In this case there is no semi-public or semi-private territory. The transition is from public to private. The open planning of the traditional American suburb stands in strong contrast to this.

The relationship between the Egyptians and the concept of personal space could be seen through two levels; internal space (home), and external or public space.

Firstly, the Egyptians as Arabs Muslims like to have lots of space in the home, even many of them cannot afford. Yet when he has space, it is very different from what one finds in other cultures. The form of the home is such as to hold the family together inside a single protective shell, because Egyptians are deeply involved with each other within the extended family. Court house could give an example in the past and in the contemporary rural areas. Although high and upper middle class are affected by western culture, they avoid partitions in their flats, because Egyptians do not like to be alone.

Secondly, although privacy is required, people in public spaces do not like to be separated. Their personalities are intermingled and take nourishment from each other like the roots and soil. If one is not with people and actively involved in some way, one is deprived of life. An old Arab saying reflects this value: "Paradise without people should not be entered" .

3.3.3.3 Territoriality

Territorial behaviour was related mainly to animals. The application of it to human beings is more recent, and it has different definitions. Leon Pastalan (1970) defined a territory as a delimited space that a person or a group uses and defends as an exclusive preserve. It involves psychological identification with a place, symbolised by attitude of possessiveness and arrangements of objects in the area. Altman's identification of territory as one mechanism for attaining privacy, comes through in his definition of territorial behaviour. For him territorial behaviour is a self-other boundary regulation mechanism that involves personalisation of or making a place or object and communication that it is owned by a person or group (I. Altman, 1984). These definitions suggest some

basic characteristics of territories:

- a) the ownership of or rights to a place
- b) the personalisation or marking of an area
- c) the right to defend against intrusion, and
- d) the serving of several functions ranging from the meeting of basic physiological needs to the satisfaction of cognitive and aesthetic needs.

The ability of the layout of the environment to afford privacy through territorial control is important because it allows the fulfilment of some basic human needs: the need for identity, the need for stimulation, and the need for security. Identity – which is associated with the needs for belonging, self-esteem, and self-actualisation identified by Maslow – is the need to know who one is, and what role one plays in society. Stimulation needs are those concerned with self-fulfilment and self-actualisation. Security needs take many forms: to be free from censure, to be free from outside attack and to possess self-confidence (figure 3.22).



Fig.(3.22) The relationship between territoriality and people's identity, Edinburgh

Ref. By the author

Systems and Hierarchies of Human Territories

Recent efforts to identify types of human territories are of interest to environmental designers, because they deal with people's desire to control and personalise space and behaviour. The most common pattern of territory

identification divides it into four levels: private, semi-private, semi-public or semi-private and public space. The first level indicates one's personal space, such as one's home, a student's room, a work station. The semi-private space consists of places or areas of privately owned space, that are under the surveillance of others. The semi- public is such as sidewalks in front of houses. Semi-private spaces tend to be owned in association, while semi-public are not owned by the users, who, nevertheless, still feel they have some possession over them. Public spaces are areas that may be used by individuals or group but are not possessed or personalised or claimed by the certain persons (figure 3.23).

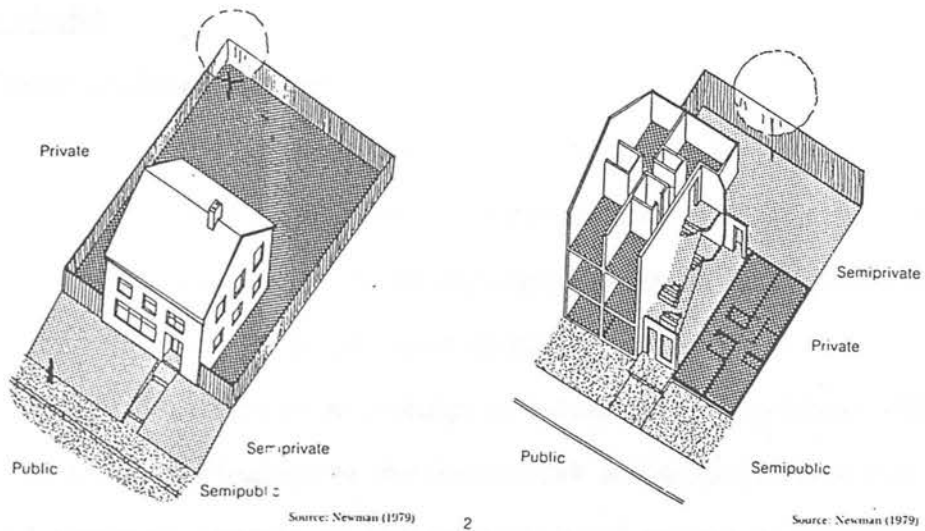


Fig.(3.23) Territorial hierarchies
Ref. John Lang, 1987

It is relatively easy to achieve a clear territorial hierarchy in a single-family house as indicated in (1). In multifamily housing a clear gradation of territories is more difficult to achieve (2). In both cases, whether or not a semi-public space would be perceived as such depends not only on the house-street relationship but also on the amount of traffic on the street(3). If there is heavy traffic, the claim over the exterior space is substantially reduced (O. Newman 1979).

Social behavioural mechanism has a direct effects on the security of societies. Therefore, it has become a central concern for different design approaches. among them, hierarchies of territories represents a particularly importance. In many areas of the United States, for instance, social mechanisms for deterring crime are not very effective. Oscar Newman has a number of hypotheses about how these mechanisms might be restored through enhancing the territorial control that individuals and groups have over their environments. These control mechanisms are bundled together into the concept of defensible space (further study for these approaches in articles 4.1.4.1 and 4.2.1).

Altman Model

The crucial idea of Altman's framework is that privacy is a central concept that provides a bridge between personal space, territory, and other realms of social behaviour. In this model privacy is an interpersonal boundary regulation process by which a person or group regulates interaction with others. Privacy regulation permits people to be open to others on some occasions and to be closed off from interaction as an attempt to regulate their openness/closeness to others. An important feature of the framework in figure (3.24) is that personal space and territory operate as behavioural mechanisms to facilitate privacy regulation.

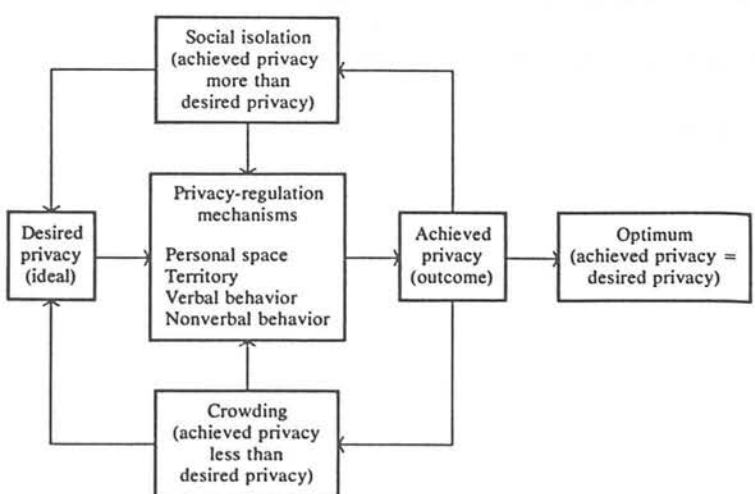


Fig. (3.24) Framework of privacy
Ref. Irwin Altman ,1980

Within this framework, people mentally establish a desired level of privacy – a level of interaction or openness they would like to have in a particular setting. Their desired level of privacy might involve being open and wanting to interact with another person, or it might be to avoid others and to be inaccessible to them. The framework states that people then set in motion a series of behavioural mechanisms to implement their momentary desired level of interaction. They might increase or decrease the physical distance between themselves and another person by backing away or moving quite close to that person (such behaviour exemplifies the use of personal space). Alternatively, they might close their door and/or not invite someone into a territory that they occupy and control (territorial behaviour). Conversely, they indicate that another person is welcome to visit them. Accessibility or inaccessibility might also be indicated by what people say or how they say it (verbal behaviour). Or a person might reflect openness or closeness through posture, turning toward or away, looking or not looking at another person, grimacing or smiling (non-verbal behaviour). Thus, people use a series of mechanisms at different times and in different patterns to implement a desired degree of contact with others (I. Altman, 1984).

3.3.3.4 Behaviour Setting (congruence of activity and built form)

The environment communicates the type of activity in particular location. Therefore, in order to plan meaningful environments, there is an obvious need for greater understanding of the interaction between urban form and activity, and of the role of this interaction in the transmission of meaning. The main point in this interaction is a general overall level of congruence between form and activity. Congruence is defined as consistency between the physical form characteristics of an environment and the attributes of its activities. Both qualitative and quantitative form-activity. Congruence is a relative and not an absolute relationship, and its specific validity is limited in context and time. For an individual, the context is his area of past experience, and the form-activity relationships that have been learned in one context are not necessarily

transferable to another.

Carl Steinitz (1988) declares the congruence variability between the perceptual meaning of the visual forms of the built environment and types of activities, which take place in different spaces. He cited that these types of congruences are:

- A) Type congruence – the consistency between the activity type of a place and its form type.
- B) Intensity congruence – the consistency between the business of the activity of a place and the spatial and informational intensity of its form.
- C) Significance congruence – the consistency between the importance of the activity of a place and the visual exposure of its form.

Three specific predictions are therefore derived from the general level of congruence : there will be a high degree of consistency between form types and activity types, the more intense activities will be those with the more intense forms, and the more important activities will be located in the more highly exposed forms (figure 3.25 & 3.26 & 3.27).

The meaning associated with a perceived form is highly dependent upon the congruence of the environment in which certain actions take place. Deceptive appearances can cause inefficient and ineffective behaviour. If a categorisation based on a visual impression does not stand up to the test of a closer look, or its activities are inconsistent with expectations, then the mental environmental model must be revised. The individual must re-order the category model by which he codes, stores, and uses perceptual clues. He must re-learn the deceptive parts of his environment, or his confidence in the prediction of meanings associated with other similar forms may be seriously undermined. At the extreme of complete incongruence, one would not be able to generalise at all from past experience. The process of learning about the environment would become extremely difficult since each place might be totally new, without familiar cues for categorisation.



Fig.(3.25) Social activities being encouraged within urban form with narrow streets, Cairo

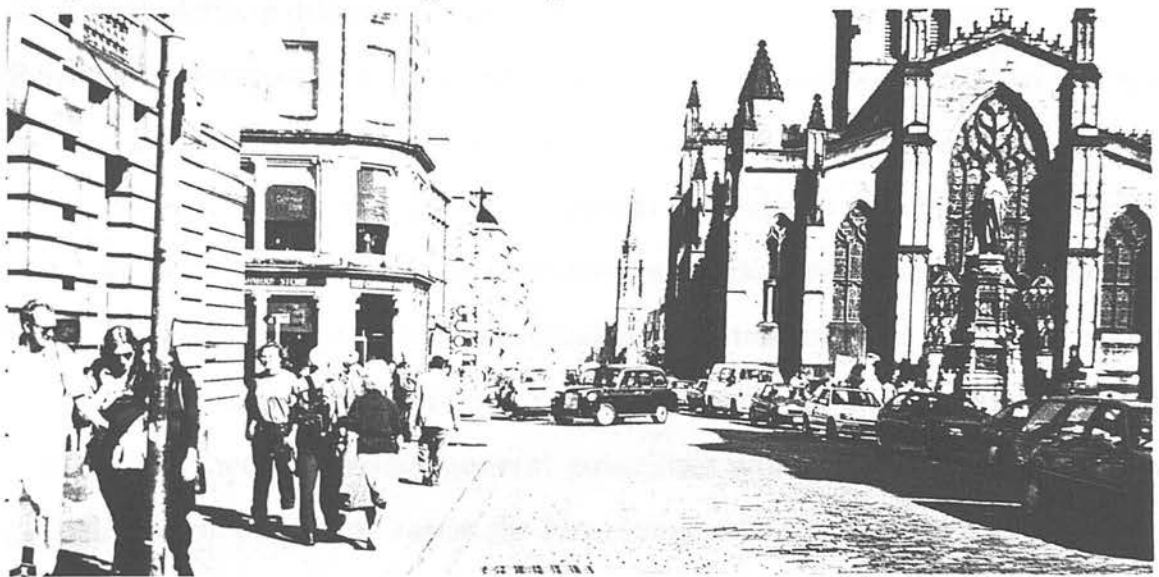


Fig.(3.26) High intensity of people attracted by visual quality of architectural forms, High Street, Edinburgh

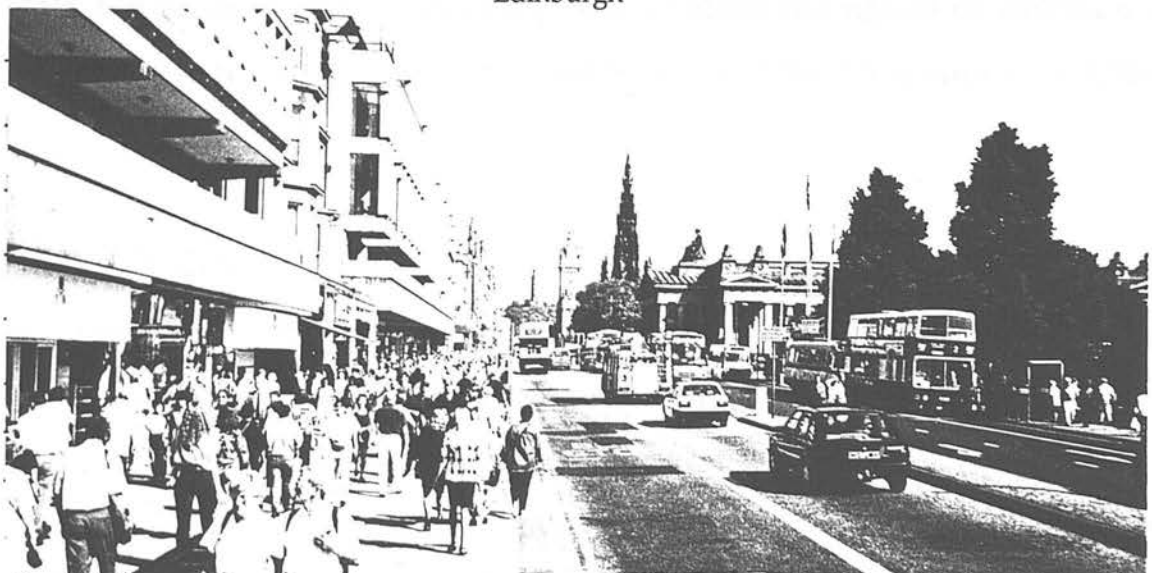


Fig.(3.27) Existence of activities created by intensity of information, Prince Street, Edinburgh

Ref. By the author

3.3.4 An Ecological Cultural Behaviour Model

In this chapter, some basic theoretical notions about ecology culture, psychological differentiation, behaviour pattern, and built form have been examined. The aim of this part is to outline a systemic model which accounts for these variables and structures the relationships among them. The importance of studying these variables could be seen as a root in creating the built environment, rather than the study of its branches or manifestations, i.e. building forms, space proportion,...etc.

Before such a model is presented, it will be useful to briefly examine the nature of models. Among different concepts known as theories, models and hypothesis, Perhaps the simplest and clearest statement about how these notions relate to each other is the one by Marx and Hillix (1963). Quoted from Faozi Ujam " Hypotheses, to them, are specific empirical predictions which may be derived from the theory and whose accuracy may be checked by empirical observation. While theories are based on empirical observation or as a result of rational analysis, models constitute a particular subclass of theory and so may also lead to hypothesis. Theory provides general guidelines while models provide specific guidelines for empirical research. However, models may be classified in a number of ways. One kind describes certain empirical relations, while another kind, the predictive, generates propositions about the nature or existence of empirical phenomena not yet examined or observed by the scientists" (F. Ujam, 1987).

Briefly, a theory is an abstracted formal statement to which one appended rules for manipulating these statements and definitions that relate them to empirical world. One way in which models are thought to differ from theories is in the degree of contact they have with the empirical world. Theory provides the interpretation and contributes explanation, while a model provides the structure and contributes presentation.

Models may be classified in a number of ways such as prescriptive or descriptive. Rapoport (1963) distinguishes between these two models. The descriptive model is an empirical description of extant relationships and is employed to gain insight into multiple relationships among sets of data. The predictive model, on the other hand employs some empirical description to predict other empirical relations and approximates the traditional use of the hypothesis .

The model presented here (figure 3.28) is both descriptive and predictive.

Firstly, as the built environment is the goal of any designer (the same goal for this research) , using the outcome of the previous chapter we can describe the basic factors that effect this built environment in a graphical model.

Secondly, by relating the previous variables in a correlated structure, the model predicts both "place" which achieves people's identity, and "placelessness" which drives people away from their environment.

Through this model, we can identify the difference between the society which respects the values that were derived from human culture, and the society which responds to the materialistic value, based on economy, physical, and utilitarian needs. I do believe that the built environment in our contemporary day, has to be the integration of both; the homogeneous media that deals with people through their humanity, rather than their physical requirements as machines.

Two main conditions have to be considered:

A) The main concept which should be considered in understanding this model is that the relationship between the different variables are probabilistic rather than deterministic. The model is strongly linked with the concept of cultural ecology which was already illustrated previously (see article 3.3.2). What has to be considered is that these variables have different weights and significance within their different contexts, i.e. cultural religious symbols could be highly affective in certain contexts such as traditional Islamic society, while the effect of natural environment could be crucial in others such as Eskimos.

B) This model is not represent to be a framework of the design process. Therefore, modelling per se should not be attacked or criticised in terms of the architectural solutions produced. Its purpose is to define factors that affect the built environment and their relations . It has thetefore to be seen and judged not as good or bad in itself, but it can be used either well or poorly.

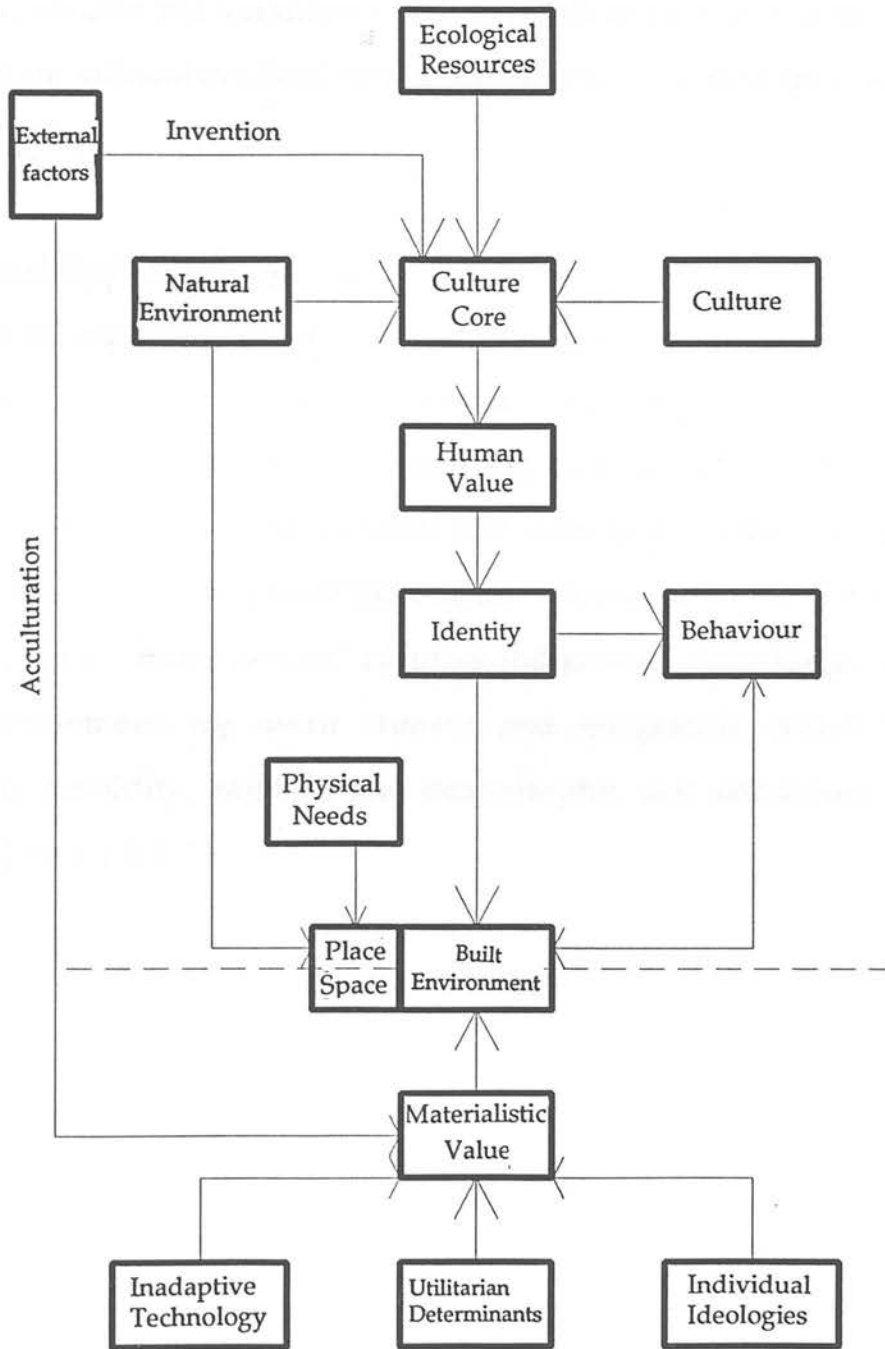


Fig.(3.28) An ecological cultural behavioural model

3.3.4.1 Model's Components

A) Culture Core

Culture core is the way of life stability which could sustain any community and maintain its identity. It could be argued that all life aspects can be compatible as much as they keep strong connections with the core of the culture. Culture core is formulated in general by three main components, which have various weights and significance with reference to particular context. These components are cultural symbols, natural environment and ecological resources (see article 3.1.1).

B) Natural Environment and Ecological Resources

While the ecological resources normally include natural environment, they have been used within this model as a separate components. It could be argued here that this separation is useful in considering more specific data for each. By ecological resources we indicate elements that relate to the human factors rather than the physical ones. Examples of these factors are base economy, demographic distribution , population density, adaptive indigenous technology,...etc. By natural environment we mean climate and geography which include temperature, humidity, rainfall, site demography, soil conditions , flora, fauna,...etc. (see 1.1 & 1.2).

C) Cultural Symbols

Cultural symbols are the result of people's cognitive process whereby an object acquires a connotation beyond its instrumental use. An object may be an environment or person as well as a material factor. The meanings of cultural symbols are derived from what an observer inputs to them. What is meaningful, consistent and appropriate is mainly influenced by people's cultural preferences. Cultural symbols are mainly based on religion and historical legacy. People's inherent values which could be seen as a genetic structure of their culture (see article 5.2.1 & 5.2.2).

D) Values and Identity

Values within this model are presented in two ways, cultural values and materialistic one. The former is based on the human culture factors, while the latter is based on the biological ones. Although the general meaning of identity could refer to a persistent sameness and unity which allows anything to be differentiated from another, it is a premise of this thesis towards the sharing of communal values. It is an expression of common agreement in making decision for any society consciously and unconsciously. Identity expresses itself in two ways: Firstly, by creating certain patterns of behaviour, and secondly, by imposing ideal image and distinctive typology for the built environment (see article 2.2 & 3.1).

E) Behaviour

Behaviour is an explicit aspects of culture which is readily observable in the pattern of doing things of the group. Different components could be given, but for example, privacy, personal space and territory. Although behaviour is normally seen as an explicit way of people's expression for their identity and sharing choices, it is also affected by the physical environment of any cultural context.

F) Individual Ideology and Experience

Experience of place is an integration of both self-conscious and unselfconscious. The former is done by the insiders and open-minded outsiders. It aims to achieve the significance of a space without being conditioned by narrow intellectual views of stylistic fashions. The latter is done by the insiders only. It tends to give rise to place that reflect the total physical, social, spiritual and other cultural needs. Placelessness is a result of space making on behalf of the majority of people by individual experience of elite professionals (see article 2.2.2).

G) Inadaptive Technology

There is a common agreement that new technology normally indicates the progress in any society, which is undoubtedly required. The problem related with new technology lies not in its applications within the built environment, but in its appropriateness with different culture and ecological resources among different contexts. Through the contributions of technology to human life, the negative consequences of inadaptive technology towards the built environment are very clear. Some crucial problems, related to social behaviour, have turned out to be by-products of technological progress.

Accordingly and based on this previous view, technology has been separated within this model under the term "inadaptive technology". This is to differentiate between this term and the "adaptive technology" which is included within the ecological resources.

H) Functional Needs

Maslow's human needs could be used here to explain various functions. His hierarchy, in descending order, is as follows: physiological needs, such as hunger and thirst; safety needs, such as security and protection from physical and psychological harm; belonging and love needs, which concern the relationship of responsive, or affectionate, and authoritative needs; esteem needs of an individual to be held in high esteem in his own eyes as well as those of others (see article 3.2.2).

I) External Factor

One way of seeing culture is as an organisation for perpetuating the human life of people and their survival. It is an open system adjusting to other cultures through different aspects; such as economically, politically and in other

ways. Adaptation towards external forces is achieved through the indigenous culture core. In this adaptive process elements within a culture are synthesised to form new traits - "invention", and incorporated elements made available from outside - "acculturation", (see article 3.1.3).

Summary

In its simplest definition culture is a group of people who live in a certain place, and have a set of shared values, norms, and beliefs . These shared elements lead to unified views towards the world and similar choices in all aspects of life. However the more precise meaning of culture cannot be identified, unless by people who live inside that context.

In the second way, culture is the deep structure, based on the elements of the culture core and represented through the culture manifestations. Therefore, it cannot be described in universal form, which all cultures follow. Each culture has its deep core which evolved over a long period of time. The culture core is the source of continuity and survival , reproducing the culture per se, and maintaining its stability, i.e. each culture consists of interacted systems, the significance of these systems varying from one environment to another due to the availability of resources. The stability of a culture relates to the stability of the interaction of these systems.

It is worth noting that the term stability here does not correspond to the meaning of "unchanged". Each culture changes following the natural change in the cultural core, which corresponds to the dynamic nature of life. The condition is that these changes should be within the ability of man's adaptation, his intellectual capacity to respond towards the external pressure.

On the other hand, other changes might actually lead to the destruction of other systems, e.g. some cultures have put too much emphasis on developing technology, but this technology has destroyed some other aspects of the whole system, within the relations between man and environment. There are a variety of ecological systems which have been affected by the dominance of these aspects of acculturation.

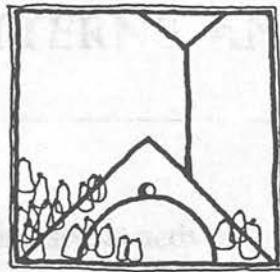
It is essential to differentiate between culture which comes from man's adaptation to the environment, where he is born and emerged, and the culture in which man adapts himself to different types of ideologies, economy, technology, and so on.

The role of the designer is to create a potential environment for human needs, reflecting what a person uses and appreciates is his effective environment. The basic point made is that environment, which surrounds the human, consists of geographical setting, social and cultural components. Therefore, the role of the designer has to be seen not only in terms of providing abstracted geometrical spaces. He has to define the core elements in its hierarchy of values, and relate them with the designed built environment within the corresponding hierarchy of human needs. The built environment in that way, can be seen as behaviour setting of man's behaviour, which respects the biological needs, cultural needs and man's ability to adapt to the environment.

The term adaptation refers to the changes in culture or behaviour which are associated with changes in an environmental setting. However, if we accept the proposition that culture or behaviour will change as a function of environmental change, we cannot accurately predict either the kind or the degree of change which will occur. These varieties of change may be termed as adjustment, reaction, and withdrawal. In the case of adjustment, behavioural changes are in a direction which reduces the conflict, that is, increases the congruence between the environment and the behaviour by bringing the behaviour into harmony with the environment. In general, this variety is one most often intended by the term adaptation and may indeed be the most common form of adaptation. In the case of reaction, behavioural changes are in a direction which retaliates to the environment. In the case of withdrawal, behaviour is in a direction which reduces the pressure from the environment. In a sense, it is a removal from the adaptive arena.

It is important to note that the third mode (withdrawal) is often not a real possibility, either from physical environmental pressure for those living at subsistence level, or from acculturation pressure for those being influenced by larger and more powerful cultural systems. And for the second mode (reaction) , in the absence of an advanced technology to change the physical environment, and in the absence of political power to divert acculturative pressures, many traditional societies cannot successfully engage in retaliatory responses. Thus, for most peoples, the adjustment mode of adaptation is the only realistic response.

SOCIAL PATTERN OF ACTIVITIES



CHAPTER FOUR

SOCIAL PATTERN OF ACTIVITIES

Chapter Four

SOCIAL PATTERNS AND ACTIVITIES

Introduction

Throughout the previous chapters, social activity has expressed its importance in different locations of this thesis. This could be seen as one of the main aspects of environmental behaviour which contributes to a place identity, and reflects historical forces inherent in the Egyptian society. Therefore, this chapter is oriented to studying the methods of sustaining these social activities within the built environment. Two main approaches have been considered:

Spatial Use

The way space is used has a strong effect on creating life between buildings. Ways and opportunities for doing different kinds of activities within residential areas are among the most important factors which can lead to people's satisfaction about their environment. Activities are dominated by the concept of assembly and dispersal of activities through both the planning and urban design levels. On the contrary, placelessness and deserted planning could be seen through a space which is overlooking different types of activities.

Spatial Structure

Once again the idea of buildings or spaces as having merely physical properties is challenged, but now from a different point of view. It is apparent that buildings and urban spaces are themselves the products of human intentions. Therefore in asking how an aspect of architecture (i.e. space) might influence behaviour we have to recognise that human behaviour is already part of the built environment. Moreover, one of the most important ways in which the built environment carries the imprint of society is in the way space is organised for human use. Space syntax , by Hillier and his colleagues, is a method for the representation, quantification and interpretation of spatial configurations in settlements and buildings.

4.1 Activity and Spatial Use

4.1.1 Types of Activities

Jan Gehl's studies can give an explanation as to how the physical environment affects people activities. In his opinion, outdoor activities in public spaces can be divided into three categories: necessary activities, optional activities and social activities (J. Gehl, 1980).

A) Necessary and Functional Activities

These include all activities in which those involved are to a greater or lesser degree required to participate, such as going to school or to work, shopping, waiting for transportation, i.e. buses, trains,... etc. Because the activities in this group are necessary, and will take place throughout the whole year, they will not be conditioned by the physical framework. They are more or less independent of the exterior environment, without any choices for people to participate.

B) Optional and Recreational Activities

These include those pursuits that are participated in, if there is a wish to do so and if time and place make it possible. These activities are controlled by environmental exterior conditions. The optimal conditions of weather and place can invite these kinds of activities. This relationship is particularly important in connection with physical planning because most of the recreational activities that are especially pleasant to pursue outdoors are found precisely in this category of activities.

C) Resultant and Social Activities

Social activities are all activities which depend on the presence of others in public space. They include both active and passive activities. The former like communal activities of various kinds, walking, talking, running and playing. The latter is simply seeing and hearing other people, to watch and be

watched. Jan Gehl describes this kind of activity as a resultant one, because in nearly all instances it evolves from activities linked to other two activity categories. They develop in connection with the other activities because people are in the same space, meet, pass by one another, or are merely within view.

Social activities occur spontaneously, as a direct consequence of people moving about and being in the same spaces. This implies that social activities are indirectly supported whenever necessary and optional activities are given better conditions in public space.

The response towards the quality of the physical environment varies from one activity to another. Necessary activities take place with limited differentiation through the same frequency. Optional activities have a wide range as they are based on an appropriate exterior condition of environment. In addition, as the social activities are the result of both, they represent a middle situation for their sequence (figure 4.1).

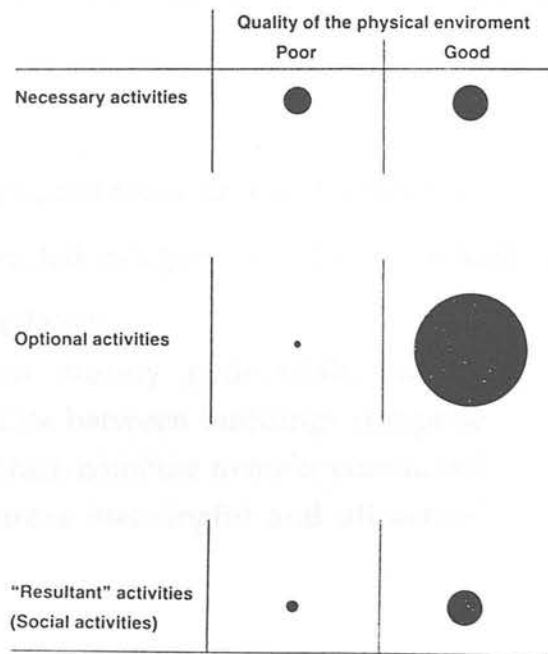


Fig.(4.1)The relationship between the quality of outdoor spaces, and rate of occurrence of outdoor activities.

Ref. Jan Gehl 1980

It has to be mentioned that if we look back at the street scene which was the starting point for the three categories of outdoor activities, we can see how necessary, optional, and social activities occur in a finely interwoven pattern. People walk, sit, and talk. Functional, recreational, and social activities intertwine in all conceivable combinations.

Due to the importance of activities within the built environment, different definitions and categories have been used. In the most common cases, social activities have been seen as the main theme of activities as these include other aspects. The character of social activities varies, depending on the context in which they occur. By context, it is meant the general (cultural) and the particular one (physical setting). For example, in residential streets, near schools and near places of work, where there are a limited number of people with common interests or backgrounds, social activities in public spaces can be quite comprehensive: greetings, conversations, discussions, and play arising from common interests. In city streets and city centres, a social activity will generally be more superficial, with the majority of contact being passive – seeing and hearing a great number of unknown people.

Although, special attention has been oriented towards social activities, due to their importance, there is no single, limited category of activities which can represent the whole system. Jan Gehl cited that:

"Life between buildings is not merely pedestrian, traffic, recreational or social activities. Life between buildings comprise the entire spectrum of activities, which combine to make communal spaces in cities and residential areas meaningful and attractive" (J. Gehl, 1980).

The Egyptian environmental exterior conditions are always appropriate for human activities; suitable temperature, scarcity of rainfall or snow, clear sunny days and a bright sky at night. Therefore, the physical environment encourages the resultant (social) activities to take place. This is stimulated by the Egyptian nature itself. In other words, these social activities have been encouraged throughout the Egyptian context by the effect of the social structure of the society. Need for neighbour contact, tendency to meeting and talk, and the desire for friendly passion between one another are a common features within Egyptian religion, traditions and customs (figure 4.2).



Fig.(4.2) Different activities within Egyptian society

Ref. By the author

4.1.2 Assembly and Dispersing of People Activities

The concept of segregation or integration has a great effect on human activities within the residential settlements. It is essential here to recognise that what needs to be assembled is people and events as well as buildings. Buildings in relation to relevant human dimensions is crucial , i.e. how much can be reached on foot from a given point, and how much it can be seen and experienced. A low-density building project with a great number of houses placed around an intricate path system does not represent a noteworthy concentration activity, even where building density is raised. Conversely, the village street with its two unbroken rows of houses oriented toward the street represents a clear and consistent assembly of activities. The placement of buildings and the orientation of the entrances in relation to the pedestrian routes and areas for outdoor stays are the determining factors in this connection. This argument is supported and matched with Hillier's idea about space which will be mentioned later . He observed that, in successful old traditional towns, convex spaces have always contained at least one door (see 4.2).

The issue of assembling or dispersing people and activities can be discussed under three main categories. Firstly, at the large scale, in city and regional planning. Secondly, at the medium scale, in site planning. Thirdly, at the small

scale in building design. There are, however, mutual correlation's between these scales, which affect each other. The battle for high quality in cities and building projects must be won at the very small scale, but preparations for successful work at this level must be made on all planning levels.

It is worth noting here that to overcome the study of assembling or dispersing of activities within residential areas , three main topics have to be identified : mixed use, buildings organisation and traffic pattern. Although in terms of this research , these topics will be discussed individually, in reality, no one can separate them as they are not independent entities.

4.1.3 Activities Within Planning Context

At the large scale, in city planning, there is effective dispersal of people and events when residences, public services, industries, and trade functions are placed separately on large individual tracts of land in a functionally segregated city structure that is dependent on the automobile as the means of transportation between units. In contrast, a city structure that assembles events and people in a clear pattern, in which the public spaces are the most important elements in the city plan, and where all other functions are effectively located alongside and facing the streets, can be seen to be more effective.

4.1.3.1 Single and Mixed Use

The quality of urban spaces, as illustrated before, is affected by the presence of people within these spaces. This supports the idea that uses and activities are more important than buildings for the life of towns and cities. This quality is directly related to the nature of the uses accommodated in the town or city and the degree to which they are mixed. Within this point of view, city design has two main approaches, simplistic single-purpose zoning and the mixed use concept.

The first approach, single use, has produced an unsuitable solution for the human being. We all experience discomfort or unease in certain urban situations. Whilst many people seek solitude in a rural environment, in an urban one the absence of people can, at best, make for a miserable or dull environment and, at worst, create threat, alarm or panic if the solitary wandered.

Jan Gehl (1980) argues that how deadly it is to walk through most downtown office areas of United States cities at night-time, or worse at weekends. Consider how uneasy it is to walk through most suburban housing areas during the day when the occupants are at work, or at night-time when the occupants are sleeping or watching television (Figure 4.3).

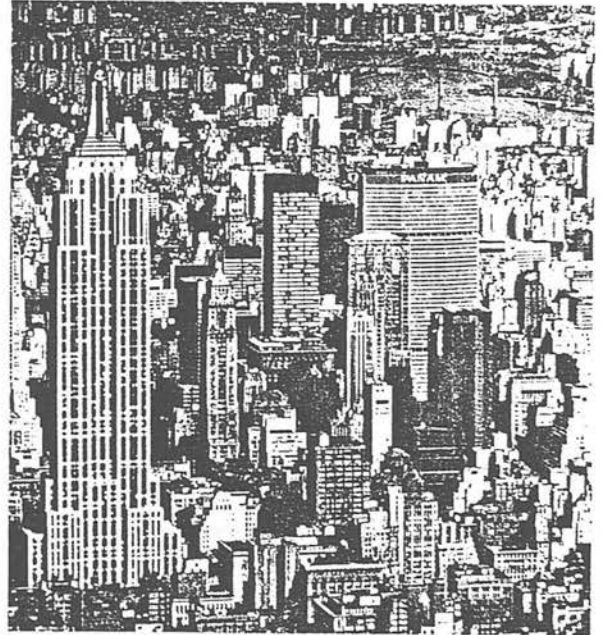


Fig. (4.3) The forest of Manhattan towers
Ref. Charles Knevitt, 1985

Today, the shopping centres have become a universal phenomenon of contemporary urban life and a major contributor to the sense of placelessness. They produce a complete commercial experience within covered and air conditioned spaces, which includes parking, shopping and entertainment. The shopping centres, now, have produced contemporary values in urban life that have many implications. The new megacommercial entertainment centres do express a need for cultural and social opportunities. People use them, not only for shopping but for other daily needs. Moreover, they use them as a way of fun and entertainment. Life becomes a series of isolated events, nodes and activity between home, shopping, recreation and work. The malls have become a series of unconnected events, islands of activity and life, separated by roads, parking lots and sprawl. Lacking are the pedestrian connections and the social contact that these connections bring. The hostile parking environment surrounding the

shopping complex serves to accentuate its isolation from the larger environment.

Furthermore, the seriousness of these centres is that for many people they provide pleasure and enjoyment. Even those who disapprove often find themselves drawn into the web of excitement that such a places includes. Although shopping centres in Egypt comparing with the western context are still limited in numbers, a full awarence towards the future is needed.

By contrast, the mixed use, there are places in which we feel entirely comfortable : places where we can wander around alone at ease and without fear of molestation. These places include the truly wild rural situation or the village where everybody knows each other and front doors are rarely locked. In towns and cities, security, contentment and even excitement come from the presence of lots of other people going about their business, enjoying their surroundings and presenting no threat. According to Abou Lughod (1973):

"The heritage from medieval Cairo is much more than the monuments and buildings, that only by themselves may be superficial elements, mere symptoms and sign that attract the eye. Underlying them is a pattern of social and physical organisation which influence the city".

The commercial activity was the main activity through these harat. It was affected by the social structure organisation, and mixed land use concept. The existence of commercial shops that stimulate continuous people movement within the residential area, increased the place security (figure 4.4)



Fig.(4.4) Traditional Egyptian harah

4.1.4 Activities Within Urban Design Context

People and activities are often too dispersed when buildings are placed at great distances from one another, with entrance areas and residences oriented away from each other. Conversely, people and activities can be assembled by placing the individual buildings and functions so that the system of public spaces is as compact as possible and so that the distances for pedestrian traffic and sensory experiences are as short as possible. The Physical environment has a great effect on creating different possibilities for activities within residential areas. In order to study this effect through the urban design context, two main points have to be covered, buildings organisation and the integration or segregation of traffic .

4.1.4.1 Buildings Organisation

The spectrum of possibilities can be illustrated through two extremes. Firstly, there is the city with multi-storey buildings , underground parking facilities, extensive automobile traffic and long distances between buildings and functions. In such cities, one sees buildings and cars but few people. Secondly, there is the city with reasonably low, closely spaced buildings, accommodation for foot traffic, and good spaces in direct relation to residences. Here, it is common to see people coming and going. The city, in the second example, is a living one where people and spaces are allowed to function together.

It is noted therefore, that the physical framework to a greater or lesser extent can influence the inhabitants' social activities. Thus, most architects believe that the more residents are outdoors, the more often they meet, and the more greetings and conversation are exchanged. Consequently, one of their main roles is to establish and maintain people contact.

Newman's concept about defensible space, which is largely accepted in modern architecture, illustrates how the physical framework affects human activities.

He cites that:

" Defensible space is a surrogate term for the range of mechanisms – real and symbolic barriers, strongly defined areas of influence, and improved opportunities for surveillance – that combine to bring an environment under the control of its residents. A defensible space is a living residential environment which can be employed by its inhabitants for the enhancement of their lives while providing security for their families, neighbours and friends" (Oscar Newman, 1972).

A defensible space is thus one whose users perceive it as affording easy recognition and control of the activities that take place within it. The assumption is that there is a predisposition, within the culture of the United States, at least for people to exert such a control over the environment. The layout of the built environment will not cause such a predisposition to exist but it may arouse latent predisposition that will come into play once the opportunity exists. Newman provides considerable statistical evidence to support the observation that some environmental structures express a social fabric better than others. From the study of the relationships between design characteristics and crime statistics, he concluded that some building patterns afford criminal activity more readily than others.

Newman identifies four characteristics of the layout of the environment that on their own or in conjunction with each other create defensible space. These are :

1. A clear hierarchical definition of territories, from public to semi-public, semi-private to private.
2. The positioning of doors and windows to provide natural surveillance opportunities over entrances and open areas.
3. The use of building forms and materials that are not associated peculiarly with vulnerable populations.
4. The location of residential developments in "functionally sympathetic" areas where residents are not threatened.

Newman's findings are valuable because achieving security in the residential community is one of the main factors to increase the inhabitants opportunities for creating activities. Among these previous characteristics, the first one has the most effective influence , therefore, further illustration is required.

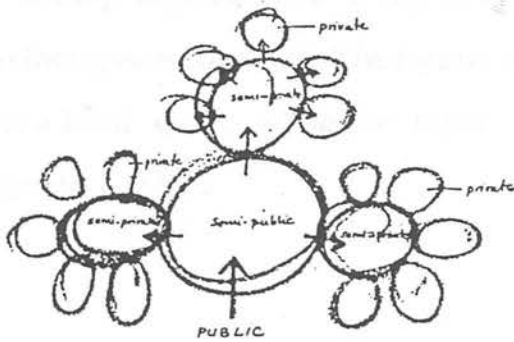


Fig.(4.5) Hierarchical organisation of housing area with private, semiprivatr, semipublic and public space

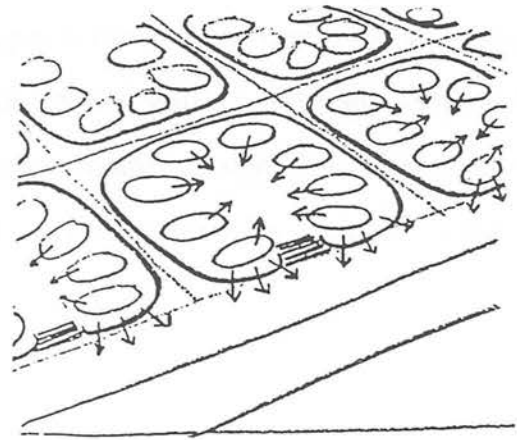


Fig.(4.6) Hierarchical organisation of residential area with clearly marked transitions between private and shared spaces

Ref. Oscar Newman, 1972

Communal spaces have different degrees from public to private. The establishment of a social structure and a corresponding physical structure requires communal spaces at various levels. It permits movement from small groups and spaces toward larger ones and from the more private to the gradually more public spaces, giving a greater feeling of security and stronger sense of belonging to the areas outside the private residence. The area that the individual perceives as belonging to the dwelling, the residential environment, can extend well beyond the actual dwelling. This in itself may result in greater use of public spaces -such as parents permitting young children to play outdoors at an earlier age than they otherwise might (figure 4.5 & 4.6).

Establishing residential areas where there is a graduation of outdoor spaces with semi-public, intimate, and familiar spaces nearest the residence makes it possible to know the people in the area better. The experience of outdoor spaces as

belonging to the residential area results in a greater degree of surveillance and collective responsibility for this public space and its residences. The public spaces become part of the residential habitat and are protected against vandalism and crime in the same way that the residents themselves are safeguarded (Gehl, 1987)

In addition to these previous advantages which are formulated by ways of building organisation, other advantages can be gained through ways which relate spaces together. The former approach - communal spaces - has to be seen as a local view, while the latter - space integration - is a global view (see article 4.2).

4.1.4.2 Integration and Segregation of Traffic Pattern

An ordinary residential traffic pattern always can be seen to be a mixed route, where traffic is eventually divided between pedestrian and other modes. The main character of this pattern is the spreading and separation of people and activities within the residential area. The hierarchy of integration level between the pedestrian and other movements can be seen in two ways.

The first principle could be seen in full or semi integration. Full integration like most of the old cities – Italian hill towns, Greek Island cities and Islamic towns. The greater proportions of the individual trips have always been on foot. The method of movement had low speed – mainly animals. Semi-integration which appears in few cases like Venice where transportation takes place on the canals while the pedestrian system functions along with the traffic network. In both cases, life and traffic exist side by side in the same space, which functions simultaneously as a space for outdoor stays and as a connecting link. In this context, traffic presents no security problem. Therefore, it has never been necessary to separate work, rest, play, entertainment,...etc.(figure 4.7 & 4.8).



Fig.(4.7) Old Egyptian town

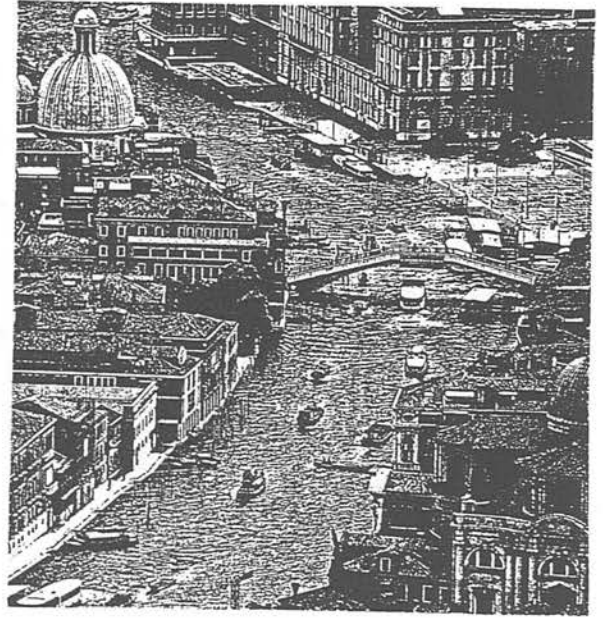


Fig.(4.8) Aerial view of Venice

The second principle of traffic patterns has emerged after the rapid increase of car use. Attention has oriented towards creating huge grid pattern of roads which correspond to the nature, speed and scale of motor vehicle movement. The domination of this movement has led to latent semi-separation, even if it is unintentional (figure 4.9).

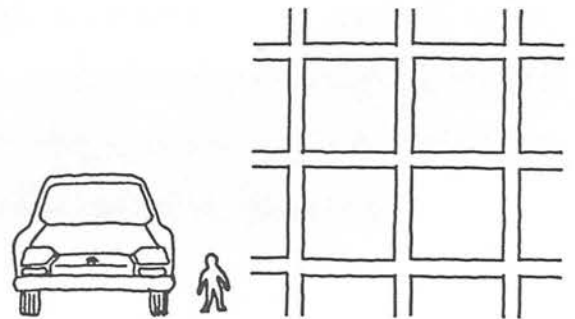


Fig.(4.9) Traffic integration on the terms of fast - moving traffic

To avoid the harmful side-effects of motor vehicles such as car accidents, full physical separation between vehicles and pedestrian movement has become the main goal in different planning schemes. A complete traffic separation pattern can be observed in Radburn, New Jersey. It produced a complicated, expensive system involving many parallel roads and paths and many costly underpasses. Surveys of residential districts show that this principle, which in theory appears to improve traffic safety, functions poorly in practice (figure 4.10).

Pedestrians follow shorter routes rather than the safe, lengthy routes. This is because when activities in transit are further dispersed through a differentiated road system, in which each type of traffic has its own route, the separation is complete. It therefore becomes duller to drive, duller to walk and duller to live along the roads and paths, i.e. a significant number of the people in transit are now segregated from city activities.

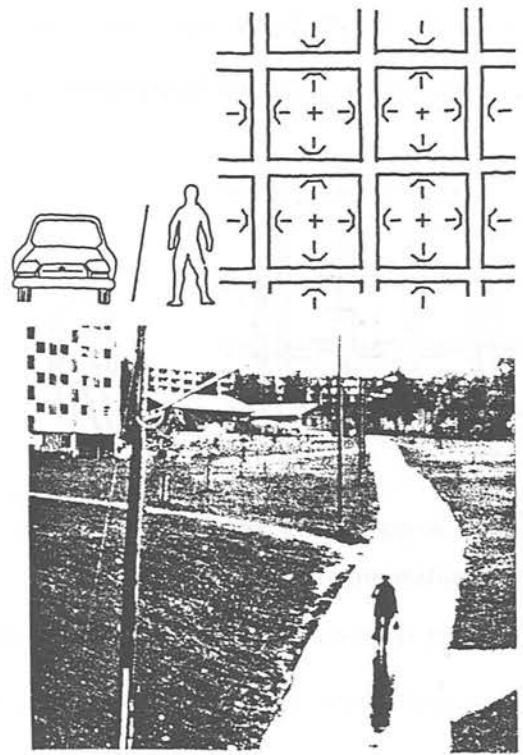


Fig.(4.10) Radburn concept of traffic segregation
Ref. Jan Gehl, 1980

The advantages of integration of local automobile traffic with pedestrians has produced more positive results, than those development that segregate traffic. Creating places related to people is more fundamental than designing isolated spaces. Due to the appreciation of this fact, nowadays, many designs are produced to achieve this goal. Two main concepts will be illustrated:

Firstly, there is the main transport concept as used in Venice, which is based on the transfer from fast to slow traffic at the city boundaries. This has become more common over the years in most places where the automobile has come into use. The principle of leaving cars at the city limits or at the edges of residential areas within the walking distances has become more common in new European residential areas (figure 4. 11).

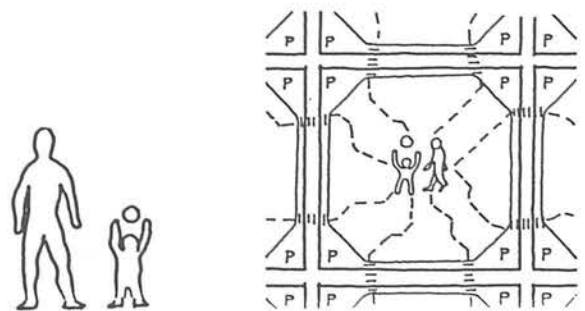


Fig.(4.11) Concept of transition
from fast to slow-moving traffic

Secondly, there is a concept where local areas have been designed or renovated for slow automobile traffic. Automobiles are permitted to drive right up to the front doors. In this case, the streets are clearly designed as pedestrian areas, in which cars forced to slow speeds between the established staying and play areas. Cars are guests in pedestrian domains (figure 4.12).

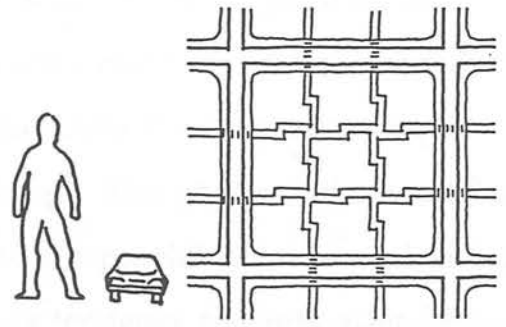


Fig. (4.12) Traffic integration on the terms of slow-moving traffic

Regardless of whether residential areas are built according to the first principle with a transfer from rapid to slow traffic at the city limit, or according to the second principle, with multifunctional street for slow automobile as well as bicycle and pedestrian traffic, the main issue here is the goal itself, creating mutual correlation between different levels of traffic to affect and stipulate activities related to outdoor public spaces.

Gehl ensures that meaning when he argues that, when traffic consists of pedestrians or of cars moving at slow speeds, the arguments for separation staying and play areas from the areas for traffic lose their validity. The fact that traffic to and from houses in nearly all instances is the most comprehensive of all outdoor activities in residential areas is a good reason for seeking to integrate as many other activities as possible with the traffic. For those in transit, for children at play, and for those involved with activities around the houses, a policy of traffic integration will enable different activities to support and stimulate one another. Many activities – play, outdoor stays, conversation – get started when one is actually involved with something or on the way somewhere. Outdoor stays and transit are not finite, sharply demarcated activities. Their limits are flexible, the same people are involved in both. Different categories of activities have a strong tendency to weave themselves together – if they are allowed to do so (J. Gehl, 1980).

4.1.4.3 Physical Elements and Details Level

The physical quality of space is the third level which affects activities within residential urban areas. At the small scale, in the design of the outdoor spaces and adjacent facades (physical built environment), it is necessary to work with detailed and careful planning of the elements that improve the quality, generate and support activities between buildings. This physical framework has to be done in congruence with peoples' needs, e.g. providing spaces with sitting places and desks is an expression of people's tendency towards meeting and talking. Supporting for this approach, Gehl cited that:

"A number of quality demands on the outdoor environment in more detail has to be considered: some are general demands and some are more specific demands that concern simple, basic activities such as walking, standing, and sitting as well as seeing, hearing and talking. These basic activities are used as a starting point because they are a part of nearly all other activities. If spaces make it attractive to walk, stand, sit, see, hear and talk, this is in itself an important quality, but it also means that a broad spectrum of other activities - play, sports, communities activities, and so on - will have good basis for development. This is the case partly because many qualities are common to all activities and partly because larger, more complex community activities can develop naturally from the many small daily activities. The big events evolve from the many small ones" (J. Gehl, 1980).

In this kind of approach, treatment of details, that correspond to the previous basic activities, is a crucial factor in the suitability of outdoor spaces. By detail, many elements can be mentioned such as location of pedestrian path or sitting areas, different materials for pavement or for street furniture, choosing of colours or landscape elements in terms of visual order.

It is worth noting here that although physical quality is now receiving more attention, among different architects, this has to be understood not as the expression of its value but rather as a failure of architects in establishing a global view towards encouraging human activities. This has not to be seen as a rejection

of the value of physical quality in spaces, but as a proper evaluation into the various factors in a global hierarchy. Creating activities could not be achieved by improving the physical quality only, but it has to be derived from cultural forces. For example, although seats could be considered as one of the physical components which are used to improve the quality of space, it could not attract people to be within that space (figure 4.13 & 4.14).



Fig.(4.13) Social activities without seats, Cairo

Ref. Abu Lughod, 1971



Fig.(4.14) Seats without activities, Edinburgh

Ref. By the author

4.2 Activities and Spatial Structure

Good urban design could be seen as designing spaces which will not only be used, but in which there is always the likelihood of encountering others. A very basic level, sensory contact between people is more important than is commonly assumed. Simply being aware of others reduces anxiety and gives a sense of security. It also leads to more positive feelings about a place. Finally it is a springboard for the development of neighbourhoods, and its absence can give rise to urban deserts and a sense of alienation .

In attempting to achieve these goals, and improve the liveliness of street life, there are different design approaches. On one hand, most authors believe that the liveliness of street life can be improved by design intervention at a local level.

This might be the removal of fumes and noise, the strategic placing of benches, the softening of the interface between public and private, the introduction of local facilities, the pedestrianisation of areas, and the re-design of particular space etc. The work of both Gordon Cullen and Jan Gehl can be referred to these approaches.

On the other hand, Hillier argues that while all these are important in context, a key factor in understanding urban form and its use is how a space relates to other spaces in a system. It is a global pattern which seems to affect how a town works and where people are likely to be encountered within it. The most significant contribution that architecture can make to social well-being is facilitating human contact through the organisation of spatial structure (or syntax). He argues that most architectural debate centres on 'local' perspectives of space, typically plans or sketches. Visual appreciation is of course important, but it is an appreciation from a local point of view. The understanding of the overall pattern of how space relates to other space in a system. It is these global properties of spatial organisation of space that acts as the means by which towns and urban areas may become a powerful mechanism to generate, sustain and control patterns of movement. The consequence of this is that it is not only local magnets like superstores, markets or stations which affect where people are in a town but also the spatial structure of the town itself.

4.2.1 Against Enclosure

Running parallel to these arguments is an awareness that something has gone wrong with urban space. No matter how architects try to do their best, they do not seem able to re-design the enforced informal liveliness that created the high quality of urban living in the old town. Although these old towns appear to take fairly random orders in their evolution of space, they have subtle properties which are vital to aspects of use and movement. Unfortunately, these properties are absent from many of our recent planned developments.

The problem is made more difficult by the fact that this global order in towns can often appear to the geometrically educated eye as a kind of disorder. But geometrical order and spatial order are not necessarily the same thing. The two may even be quite different in their local and global properties. For example, a regular orthogonal grid looks like an intelligible order when seen from above, where it can be grasped as a whole. However, it may not be an intelligible order when moving about within it, because each part seems too similar to every other part. As a result standardisation of local geometric relations means that there is a loss of global intelligibility. On the other hand, the kinds of irregular deformed grids that are so characteristic of traditional towns do not look like order when seen from above, but they do seem well-ordered when moving about in them because the local differences constantly give clues about the global pattern of the whole (B. Hillier, 1987).

In addition, during the recent past a common social value in housing design has been that of a small, relatively bounded community, forming an identifiable unit of a larger whole. Architecturally, this has been reflected in a preoccupation with linking groups of dwellings to identifiable and distinct external spaces in the hope that the "enclosure" or "cluster" created would help group identification and interaction. The idea is justified spatially by involving urban squares, courts and village greens, and socially through notions of group territory, the need for a hierarchy from public to private space, and the assumption that space can only be socially significant if a definite group of people are identified with it. In its extreme form enclosure becomes the basis for a methodology of layout design in which local enclosures are either repeated or subjected to simple geometrical transformation, then reproduced at a higher level to create an "enclosure of enclosure", or a similar hierarchical design. This method became at some stage of our recent past, it seems, a kind of international style of spatial design (B. Hillier, 1984).

Accordingly, it can be said that by the use of localised concept like enclosure, repetition and hierarchy of space, the urban problem has not been solved, but it represents the problem itself. Its indiscriminate use has been responsible for the creation of fragmentation and unintelligibility of spaces. It also shows evidence that such concept may increase vulnerability to certain types of crime (figure 4.15).

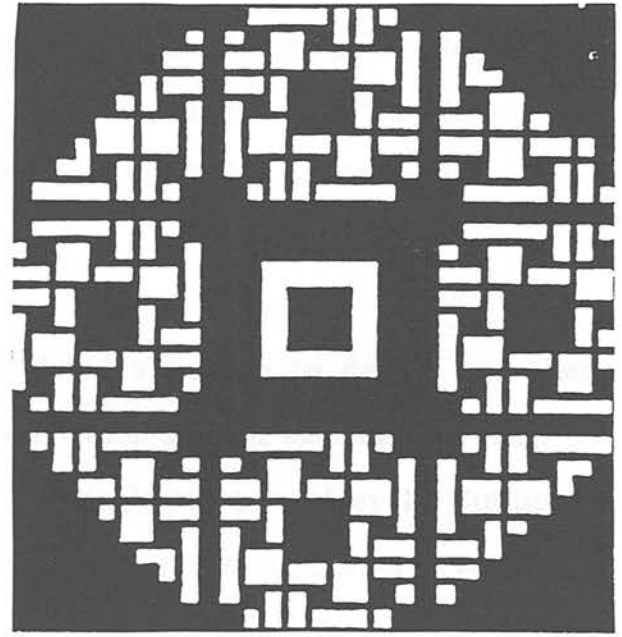


Fig. (4.15) Plan of an Algerian village
Ref. B. Hillier, 1987, a

Hillier argues that the architecture of urban space has been lost in the interregnum between architecture and planning. Piecemeal rules and regulations have taken over from conscious design. The main blame, according to those who support this argument lies either with the planners' insistence on zoning or with the traffic engineer and the impossibility of reconciling urban living with the motor vehicle. To some extent this is undeniable. But it cannot be the whole story. The problem, it must be admitted, is one of knowledge, architectural knowledge. There is a substantial gap in our knowledge of the social implications of strictly formal, hence architectural, decisions. There is no adequate description and explanation of why certain types of spatial patterning seem inevitably to lead to that curious feeling of a disembodied architecture, devoid of human contact and activity, any more than there is an understanding of why common or garden urban space of the past so easily provided a setting for the life that nowadays seems so often to be missing. Hillier believes that this lack of knowledge stems from a conceptual difficulty. Designers do not have concepts and techniques that allow them to describe and investigate the kinds of spatial order that are to be found in highly complex physical objects like towns

and cities. It is because designers today do not properly understand their spatial logic that they cannot develop a proper understanding of their social consequences (B. Hillier, 1983). The strength of Hillier's work therefore is that we now have an objective way of analysing and predicting for the urban areas.

4.2.2 What is Space Syntax

In establishing the method, a global approach to design has been considered. In urban space a visual presentation and the sketches can show us patterns properties that can be seen from a single point (local level). But urban space is something that must be understood from many points if we are to understand its social nature and consequences. This is a global organisation of space. Furthermore, global level of spatial organisation has a strong relation with the way of building organisation. However buildings are arranged around particular spaces is important, this form of spatial arrangement can never reproduce urbanity. How a space fits into an area is a more important determinant.

Accordingly, space syntax is a method to describe and analyse patterns of architectural space – both at building and urban level. The idea is that, with an objective and precise method of description, one can investigate how well environments work, rigorously relating social variables to architectural forms. One can thus simulate the performance of real and hypothetical schemes on a computer, so that it can be used as a suggestive and evaluative design tool.

Hillier has focused on three measures for describing space and four principle measures for space syntax. As our aim is to arrive at a measure of space which will predict the densities of use and movement of people, we will concentrate on only two descriptions - axial line and convex space, and one measure of space syntax- space integration.

But firstly, as this system is concerned with space and its relations, we must define what it is meant by spatial order. Hillier argues that here one comes up against a problem, namely that most ideas about spatial order are in general geometric, while many urban environments are not. Deformed grid is the deformation of the grid that brings about local differentiation – which distinguishes the parts from each other – and provides the means by which inhabitants can assemble the parts into a coherent whole.

Axiality and Convexity

The characteristics of deformed grid can be defined in two components. Firstly, compared to an orthogonal grid, the length of sight lines from particular spaces – their one-dimensional extension is sometimes restricted and sometimes extended. This one-dimensional extension is called axiality, and Secondly, the width of spaces, their two-dimensional extension – varies considerably. This is called convexity (figure 4.16).

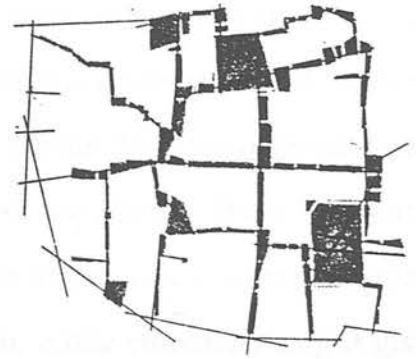


Fig.(4.16) Axial and convex spaces

An axial map (global level) will consist of the fewest and longest straight lines that cover the entire surface of a town taking account of how far you can see and how far you can walk. As a way of seeing and experiencing the town, an axial map offers the most globalising perspective. Since an axial line will extend as long as at least one point is visible and directly accessible from it (figure 4.17).



Fig.(4.17) The axial map (global level)

A convex map (local level) will be composed of the largest and fattest convex spaces that cover the entire area being analysed. A convex space is the most localised because its boundary is defined by every point that is directly accessible to every other point in that convex space (figure 4.18).



Fig.(4.18) The convex map (local level)

A convex space describes where you are in the system, whereas axial lines give information about where you might be going. Axiality adds relationships to those created locally, and inserts a space into the overall structure of spatial order of movement within a town . Axiality, therefore, seems associated with pattern of movement. Convexity, on the other hand, seems less associated with movements than with the co-presence of those who are already there . Axiality might then be expected to be particularly important to the presence of strangers, or relative strangers in different parts of the system, while convexity might give more advantage to inhabitants.

4.2.3 The Global Measure of Integration

If the fewest and longest straight lines covering a spatial system are connected it is possible, starting at any line and by placing each direct connection on a separate level, to see how many levels are required to join up all other lines. Fig (4.19) shows this for two starting lines in a simple spatial system. The figure shows that for line 7, four levels are needed to join up all the lines in the system. On the other hand, for line 4 only three levels are needed to connect up all lines. By multiplying the number of lines on a level by the level number, summing across levels and dividing by the number of levels in the system, the average mean depth of the system from the chosen starting line can be calculated.

The mean depth reflects the integration value for the line - the actual integration value is inversely related to mean depth and corrected to enable comparisons between spatial systems of different size. It is therefore possible that for every line in a spatial system, an integration value can be calculated. These integration values can be sorted and placed in order from the highest to the lowest. The location of the top 10% or 20 % of integration lines can then be identified on the map of the system.

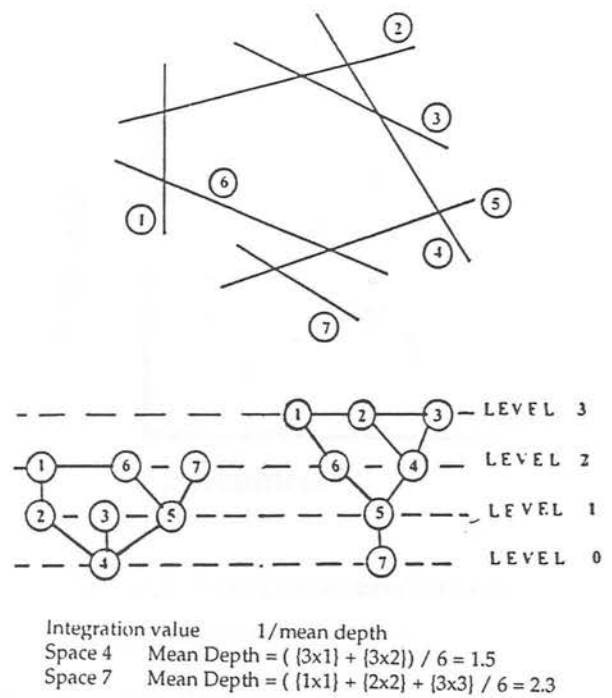


Fig.(4.19) The global measure of integration
Ref. P. Aspinall. 1987

By using the global level of the axial map, Hillier provides a method of measuring the integration of spaces that has a major effect on the movement with the urban area.

4.2.4 Properties of Good Towns

Space syntax has been applied by Hillier on over a more than 100 towns, in order to study the spatial organisation of the urban areas affects patterns of movement and use. According to well defined principles which relate to intelligibility of space – that is, how easily inhabitants can distinguish between the larger patterns of space and the local part, the continuity of occupation – that is, whether there are pockets of unused or underused space in an area, and the predictability of space – how well the potential patterns of encounter can be predicted from the spatial patterns. Through these principles, Hillier has determined three important properties of good urban areas.

Firstly the Predictability, there is a high correlation between the integration values of space and likely encounter with others as assessed from counts of

people on the streets. By taking the average correlation for all spaces, we have a figure which characterises the overall. This means spatial layout predicts usage. This is not the case in 'bad' urban areas where the correlation falls to levels where it is impossible to predict encounter rates from the spatial layout (figure 4.20).

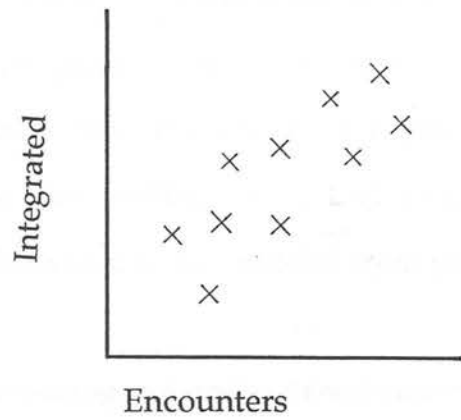


Fig.(4.20) Mutual correlation between encounters and integration

Secondly, if we examine the top integration lines we find in a good town that these tend to form a pattern which relates to all other areas. In other words wherever you are in a town, you are never far from a high integration line. The patterns vary but the principle holds.

On the other hand, many modern estates exhibit a quite different pattern. The top integration lines often border an estate without penetrating its centre. The centre is therefore several steps deep from the outside, and there is no high integration network available to all parts of the spatial system (figure 4.21).

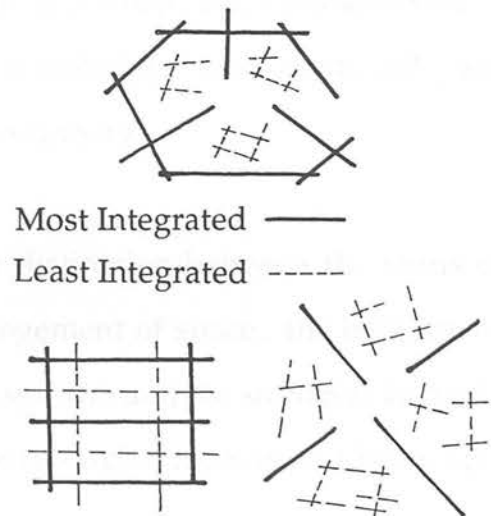


Fig.(4.21) Different examples of integration
Ref. P. Aspinall, 1987

Thirdly the Intelligibility, this system is defined as the correlation between global integration and local control. Intuitively this means that the large scale structure of a system is intelligible to the extent that the information they receive about the space they are in - the local connectivity and control - also allows them to comprehend the structure of the whole. This seems to capture the way people

can learn about large patterns from their experience of small parts, or fail to do so when the correlation is weak, i.e. it is the relation between the number of immediate connections a line has and its integration value. If locally well connected lines are also high integration lines, then the system will possess intelligibility – the whole can be read from the part. Intelligibility is high in good urban patterns, and low in poor ones where the whole is not readable from parts.

Finally, to achieve the common goal, that of ensuring, we encountered others on streets, and to dehumanise our urban environment, we must restrict the use of enclosure concepts to those places where it is genuinely applicable and re-establish the idea of open, outward facing layout, with intelligibility and integration given priority over exclusion and group territory. Furthermore, he states categorically, that densities of movement in urban space are determined in the main by the relation of spaces to the layout as a whole, and only secondarily by the local properties of space or the location of facilities. Spatial relationships are clearly primary and other local interventions secondary.

At this stage, it is useful to introduce a key distinction between the kinds of people who are affected by the physical arrangement of space : the inhabitants (who live beside or near a particular group of spaces), and the strangers (who do not belong to a particular set of spaces but pass through a route to another area).

Although the presence of strangers is generally accepted as being crucial in creating an awareness of others and liveliness in urban areas, they also play an important role in policing space. Unlike Oscar Newman's defensible space theory, which emphasises inhabitants policing space and excluding strangers. Hillier views seem to believe that the criminals seeking victims are part of the passing crowd, and that strangers are therefore in principle dangerous. The opposite appears to be the case. The natural presence of people may be the primary means by which space is policed naturally. The more you eliminate this ,

then the more you create danger once a potential criminal has appeared on the scene. It is true that people behave more territorially in segregated space. The more segregated, the more likely one is to question the presence of strangers. But this is associated with feeling more unsafe. No one feels the need to question strangers passing down a street. On the contrary, their natural presence increases the sense of security .

Summary

The main role for architect and urban designers lies in creating opportunities for assembly or diversity, integration or segregation. Integration implies that various activities and categories of people are permitted to function together or side by side. Segregation implies a separating of functions and groups that differ from one another. Integration of various activities and functions in and around public spaces allows the people involved to function together and to stimulate and inspire one another. In addition, the mixing of various functions and people makes it possible to interpret how the surrounding society is composed and how it operates.

Creating activities within the built environment could be achieved through two main approaches:

A) It is the actual integration of various events and people on the very small scale that determines whether the contact surface is monotonous or interesting. What is important is not whether factories, residences, service functions, and so on are placed together on the architect's drawings, but whether the people who work and live in the different buildings use the same public spaces and meet in connection with daily activities.

No one can deny that the physical framework does have a direct influence on the quality, content, and intensity of social contracts, which can reflect the possibilities for meeting, seeing and hearing people. The main issue here is, these possibilities have to be acquired and matched to the culture context, not as the aim in itself. It should be an expression of people doing activities that includes their life style.

Consequently, the advantages of identity in places could be obtained by the presence of people in spaces communicating their shared values which are motivated by their traditional ways of doing these activities. By traditional ways,

we mean their production of local hand craft, celebration of indigenous ceremony or festivals, doing or obtaining daily needs, expression of social pattern,...etc.

By contrast, the harmful impact of putting too much emphasis on the physical improvement of spaces is seen in the universality which led to a kind of similarity and uniformity. The differentiation between places could be diminished because of the same architectural abstract treatment which includes furnished elements, pavement materials,...etc.

It worth noting here that if people are attracted to a place not to doing activities with sharing values, but just because there are seats to sit on, crowding could occur, but people will act in passive ways. They will not communicate which is the main issue in active social activities. Therefore, differentiation between kinds of events created by local activities or stimulated by physical elements has to be considered. The former mainly will interact with the community's residents, while the later may attract strangers. When the presence of people in a city not a part of society culture, residents could feel the existence of others, particularly strangers, as intrusion. Consequently, they may be forced through loss of identity, to leave the place – if they have the affordability – searching for other places more suitable to their requirements.

In order for neighbour contacts and various forms of communal activities to develop beyond a superficial level, a meaningful common denominator must exist - common background, common interests, or common problems. Social interaction or lack of it is primarily conditioned by whether there exists an economic, political, or ideological sphere of interest in common among the residents. If these factors are not to be found, there is no basis for interrelating.

B) It is the integration of building and spaces within the city as a whole. Hillier's study, as a distinctive example, is concerned with the social being in terms of

physical properties of spaces. He does not believe in what sociologists have been telling architects for years: that space does not matter much because social relations are made by people, not by architecture, and they will do what they want regardless of design. On contrary, I agree with Hillier that the unforced presence of people (that is, they are not attracted by crude social magnets) that can be affected by spatial layout is sociologically important, but that sociology does not yet present us with concepts that allows this to be formulated easily. Therefore, the architects' desires and concerns to see that created urban spaces are fully occupied and well used is a worthwhile social objective. The very sensation of people around you is just as important to successful city life as is the personal relationships which occur because of particular juxtapositions and forms of public spaces and buildings.

To achieve the common goal, that of ensuring, we encountered others on streets, and to dehumanise our urban environment, we must restrict the use of enclosure concepts to those places where it is genuinely applicable and re-establish the idea of open, outward facing layout, with intelligibility and integration given priority over exclusion and group territory. Furthermore, he states categorically, that densities of movement in urban space are determined in the main by the relation of spaces to the layout as a whole, and only secondarily by the local properties of space or the location of facilities. Spatial relationship are clearly primary and other local interventions secondary.

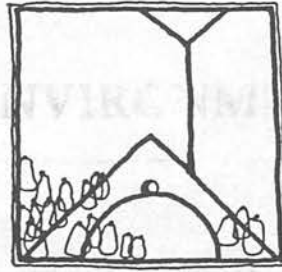
At this stage, it is useful to introduce a key distinction between the kinds of people who are affected by the physical arrangement of space : the inhabitants - who live beside or near a particular group of spaces, and the strangers - who do not belong to a particular set of spaces but pass through a route to another area.

Although the presence of strangers is generally accepted as being crucial in creating an awareness of others and liveliness in urban areas, they also play in an

important role in policing space. Unlike Oscar Newman's defensible space theory, which emphasises inhabitants policing space and excluding strangers. Hillier views seem to believe that the criminals seeking victims are part of the passing crowd, and that strangers are therefore in principle dangerous. The opposite appears to be the case. The natural presence of people may be the primary means by which space is policed naturally. The more you eliminate this, then the more you create danger once a potential criminal has appeared on the scene. It is true that people behave more territorially in segregated space. The more segregated, the more likely one is to question the presence of strangers. But this is associated with feeling more unsafe. No one feels the need to question strangers passing down a street. On the contrary, their natural presence increases the sense of security.

Having answered the three main questions which are raised previously in chapter three, as well as defining the components of social activities, one can argue that these connotations produce a proper understanding of man-environment relationship. Based on these findings, the next chapter will concern with the quality of environment. This quality which respects people's conscious and subconscious senses expressed their pattern of behaviour, long term of preferences and the way of doing activities.

SPACE AND THE ENVIRONMENTAL QUALITY



Introduction

CHAPTER FIVE

The environment for people is not just a photograph or a view. While the visual environment is perceived by all, it is not perceived in the same way by all cultural groups. This is what makes space and spatial quality so important and variable. Within the perceived environment, there is a complex and not so simple physical space which best designers can design, use, alter, and even improve the quality of space to influence people's perception. The design process is not a quality of defining the associated meaning of both space and spatial quality, only then can we discuss what is good or bad.

Designing of space can be seen as the process of space organization. There are four types of ordering of spaces can be perceived. The four ordering systems imply in a certain reflection of some ideas with the design of space. The four types of ordering are: (1) the traditional or objective ordering system. What has to be recognized here is that these orders are two classification systems for space types, rather they are indications of different meanings which could be mainly related to their order.

SPACE AND ENVIRONMENTAL QUALITY

Sacred Space

Sacred space is that of religious experience, like predominantly dual ordered space, which is not a sacred center but a sacred object. In the case of the temple, that ordered as a center by a symbolic manifestation of a sacred space is a wholly different order, something that does not belong to our world (Van der Ebbe, 1987).

SPACE AND THE ENVIRONMENTAL QUALITY

Introduction

The environment for people is not just visual information as in a photograph or slide. While its visual impact is very impressive for them, the environment is perceived with all senses and in different ways for individuals or cultural groups. This is what gives space and spatial quality their complexity and variability. Within the perceived environment, space is not the relatively simple physical space which most designers, nowadays, are interested in, to improve the quality of space to achieve people's satisfaction. The main problem is the difficulty in defining the associated meaning of both space and spatial quality, only then can we discuss what is good or bad.

Designing of space can be seen as the process of space organisation. There are many types of ordering of spaces can be produced. All such ordering seems to imply that space is a reflection of some ideal space; the designed space inevitably makes visible an image or schema used by the individual or collective designer. What has to be noticed here is that these orders are not classification systems for space types, rather they are indications of different meanings which could be mainly related to each order.

Sacred Space

Sacred space is that of religious experience, it is continuously differentiated and replete with symbolic, sacred centres and meaningful objects. Mircea Eliade believes that sacred experience involves the manifestation of something of a wholly different order, something that does not belong to our world (Mircea Eliade, 1987).

It provides orientation by reference to holy or sacred places. Sacred places are centres of the world, points at which the three cosmic planes of heaven, earth and hell are in contact, and where communication between them is possible. Such centres are in no way to be understood as geometric (figure 5.1).

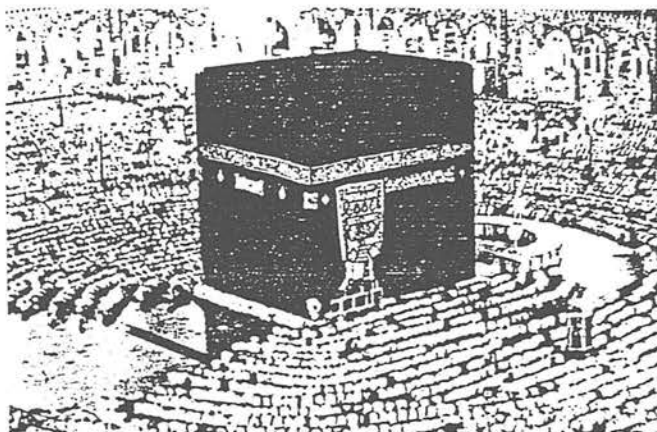


Fig.(5.1) Prayer around the Ka' bba, Makka

Abstracted Space:

In the American society, for example, the space can be seen as an abstract geometric space. In reality the endless, open-ended grid involves attitudes the future. Merely seeing the grid is not enough in order to understand it. Holistic framework reflecting the whole social and ideological context, need to be known (figure 5.2).



Fig. (5.2) Los Angeles from the west

Ref. K. Lynch, 1960

Behavioural Space

One can speak about behavioural space which is available as a behaviour setting of a given individual or group. For a racially segregated group the behavioural space of a city is very different from that shown on a map, or that experienced by the dominant group (figure 5.3).



Fig.(5.3) Different behaviour in the same place, Cairo. Ref. by the author.

The list seems endless, but these examples could be enough to show meaningful diversities in the perceived spatial environment. The important point here, is that conflicts can arise when conceptually very different types of space underlie apparently similar physical space, i.e. when there is disagreement or misunderstanding about the type of space in question. Frequently, for example, there is a major misunderstanding when the abstract geometric space typical of technological cultures is applied to traditional cultures, the significant space of which is sacred (as distinct from profane). This wrong interpretation often leads to major conflicts. Similarly, conflicts have arisen when cultures which interpret space in economic terms have met cultures which see space in sacred terms. Conflicts may also arise when the social space implicit in physical space is ignored, or misunderstood. Thus many conflicts in space are because people, in effect, inhabit 'different space', this of course, is directly related to the notion of schemata.

It could be argued that appropriate spatial quality is the main goal which has to be achieved by any architect. Therefore, the question that imposes itself here is how environmental quality should be studied? It would seem that an understanding of the richness of meaning of space and built environment requires methods ; otherwise a place identity is overlooked.

5.1 Environmental Quality and Cognitive Schemata

In terms of the environmental quality, main attention has to be oriented towards the study of cognitive structure as the leading element in the determination of this quality, its meaning, evaluation, and most importantly in the understanding of its clues and messages. Many ways of environmental cognition have been studied through different psychological theories, but there are two main information resources that can be used in perceiving the external world and consequently in constructing the cognitive schemata (F. Ujam 1987).

The first view based on the available sensory information gained directly from the object, we receive information through our sense from outside (environment) to inside (human brain). The visual aesthetic experience can only be gained through the act of perception. Before elements can be arranged in urban schemata, this must be perceived. Perception is thus the most fundamental mechanism linking people and environments. People experience environments through the senses and all data comes to us through perception – ours and someone else's. It goes beyond that, as this kind of perception is correlated to the interpretations that give meaning for what we see. Therefore, more emphasis is put on the visual stimuli from the environment as the main source of information.

The second view is based on the role of relevant past knowledge or currently experienced knowledge stored in the brain. It separates between perception, experience and cognition, as they are different ways of perceiving environment. It points out the differences between an environment as experienced and described, remembered or schematised. What is remembered and what is experienced differ profoundly. The aesthetic experience is not only the response to the objects perceived but the interpretation of it. Since the aesthetic experience is an evaluation process as much as an instinctive response, it not only depends upon the visual stimuli from the environment but also the cognition which could be related to values and symbols. Altman cited that:

" Environmental cognitions are truly psychological in that we interpret the environment and we are selective and incomplete in our portrayal of it. We receive information about the environment from our senses, we process and recognise it in ways that are meaningful to us and to our lives, and the results are represented in and carried about in our minds. What is meaningful, consistent, and appropriate is, of course, heavily influenced by our cultural experience " (I. Altman, 1981) .

Although there has been much controversy over the relative importance of these previous two approaches, there is no doubt that any attempt must blend these two approaches. What concerns us here is not the conflict between the two approaches about the process or the terms (perception and cognition), but the fact that any stimulus in the environment has an informative impact upon the human mind, and associational meanings or values as well. As this approach produces a main view within the scale of the urban design solution, it represents an essential criterion which has to be considered within the Egyptian context .

In the further study of this chapter, the term "cognitive structure" will be used as an appropriate term for the correct approach which is described above. Faozi Ujam (1987) in his study about culture, ecology and cognition explains that cognitive schemata exist and they vary among different groups. These schemata are based on experience and knowledge and on names and categories which reflect cognitive style. Physical and non-physical factors are involved – the nature of the environment, meaning, value, culture symbolism, preferences and activities. Within the context of urban design, cognitive structure can be seen as both non experiential and experiential. The former can be summarised as the things people inherit through their structure and can be common to all human beings, i.e. it represents the universality of peoples response to the basic colour, shape, ...etc., rather than expressing cultural diversities. The latter is based on the various experience of different cultures. Each culture has a distinctive structure of knowledge to help them in the interpretation of their values and symbols.

Quality of space is, accordingly, a result of these cognitive schemata. Aesthetics represents one of the main source of this quality. Therefore, further study will be oriented towards what we mean by this term, and how it affects peoples' satisfaction through the quality of the built environment.

5.2 Aesthetics and Built Environment

Due to the importance of aesthetics, many philosophers have tried to define what is meant by this term. There is a general or common meaning which is given by most English dictionaries as the theory of beauty, but this definition does not explain in a proper way the whole understanding of aesthetics.

Based on the previous study of peoples cognitive structure, it is clear now that this mental structure characterises peoples human experience which formulates their ways of interpretation. Within urban design context, this will include architectural patterns concerning the physical built environment. The way buildings are organised represents one of the main sources of human aesthetics. What matters most to people who live in towns, apart from fundamental functional needs, is the quality of buildings and the 'in-between' spaces they generate. Any urban form as a final design outcome can not be considered a successful one without producing a satisfying and vigorous environment.

Peter Smith cites that :

" Architecture's main aim is not just producing good fundamental performance, but it should be to give delight, aesthetic perception, the appreciation of beauty – is one of man's highest attributes, but like any other aspect of mental performance it has to be used to stay alive" (P. smith, 1979).

The period of the modern movement demands more attention due to its noticeable effect on aesthetics. Architecture has been influenced, within this period, by different theories, that raised the issue of function and technology rather than human value in his built environment. Architecture for most architects is a machine. In a world dominated by such these values, it is natural that the criteria which are applied to buildings should form a part of that attitude. Architecture has become accused of setting what has come to be known as 'aestheticism" which is regarded as the natural enemy of efficiency and human being. By concentrating only on function and utility as a main source of aesthetics, the effect of traditions and cultural symbols has been neglected. Peter

Smith illustrates the seriousness of this attitude. He argues that the new architecture is to be instrumental in creating a new society which is able to erase all memory of the past. In this new age, the individual is of no consequence, society is all that matters. It is a dangerous fallacy to believe that man can entirely reject the past.

"Psychological studies are showing increasingly how the past influences attitude and behaviour in the present. One of the great bonuses of human evolution is the capacity to derive profound pleasure from certain interactions of sound, light, line or space – a mental characteristic grossly oversimplified by the term "aesthetic response". This universal heritage from the past, which is a fundamental part of our psychological nature, has suffered from extreme environmental malnutrition, thanks to the generations of architects who embraced with such enthusiasm the inhuman propaganda of these New-Hegelians" (P. Smith, 1979).

Hassan Fathy stresses the role of perceiving the environment by the human mind and the feeling of beauty or satisfaction. Nature did not intend to create beauty, it is we who are psychologically affected by what we think is beautiful. We feel the creative power behind the form, and this affects us both emotionally and physiologically. He cites that:

" Human perception of space is one of the most important elements of architectural planning. All races have chosen the type of architectural forms which suit their emotions and give them satisfaction. They are just as distinctive as language, clothes, food and a national artistic style. Before the cultural barriers between nations were lowered at the end of the last century, the relationship between nature and culture was very strong. Architecture had distinctive forms because it was the free product of a marriage between man's imagination and the environmental situation" (Hassan Fathy, 1988).

Accordingly, the main aim of this part is to deal with aesthetics through the urban design area, the relationship between the architectural elements and man's cognitive schematic images. The importance of this aim is not because it is

necessarily the most important aspect of architecture, but because it is the most neglected one. No one can deny that aesthetic pleasure is one of the highest manifestations of mental performance, but aesthetic is not only an abstract art, there is value correlated with aesthetic experience. So, the main object here is to identify the main components that would establish a basis for aesthetic judgement in architecture.

What has to be mentioned here is that the intention of this part is not to destroy beauty by analysis, there is no way to have a specific formula, or description of beauty in architecture. The aim is to provide convincing psychological reasons why urban design should be liberated from the materialistic approach of contemporary planning and architectural philosophy which reduce the value of the human being and produce this kind of placelessness and artificial beauty.

Jon Lang cites that :

" The science of aesthetics is concerned with 1) Identifying and understanding the factors that contribute to the perception of an object or a process as a beautiful or , at least, a pleasurable experience, and 2) Understanding the nature of the human ability to create and to enjoy creating displays that are aesthetically pleasing" (Jon Lang 1987) .

Through his identification for the types of aesthetics, it is claimed that among sensory, formally and symbolic aesthetics is still a useful one. Sensory aesthetics is concerned with the pleasurable nature of the sensations received from the environment. It involves the arousal of one perceptual systems, and is resulted from the colours, odours, sounds, and textures of the environment. Formal aesthetics in architecture is concerned primarily with the appreciation of the shapes, rhythms, complexities and sequences of the visual world, although the concepts can be extended to the sonic, olfactory, and haptic worlds. The appreciation of the associational meanings of the environment that give people pleasure is the subject matter of symbolic aesthetics.

5.2.1 Sensory Aesthetics

Sensory values are those generated by pleasurable sensation. They are obtained from touches, smells, tastes, sounds and sights of the world. Its importance based on the idea that sensory pleasure may be an element of beauty at the same time as the ideas associated with it become elements of objects. The sensory experience of the lower senses (touch, smell, and taste), however, does not serve the purpose of intelligence in human beings as well as the experience of the higher senses (sight and hearing), thus they are not as important in the aesthetic appreciation of the environment (Jon Lang, 1987).

Referring to our classification of the environment, natural and man made, it is obvious that the natural environment is the main source for experiencing the sensory aesthetics. Many examples can be given: beautiful visual scenarios that varies from white snow mountains, yellow plain deserts, green trees, blue rivers,...etc., will stimulate pleasurness of seeing. Sound of water falls or sea weaves have a great effect on hearing sense. Subtle odours of different flowers have similar effect on smell sense (figure 5. 4).

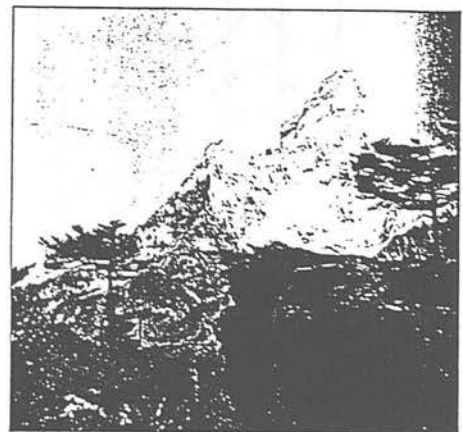
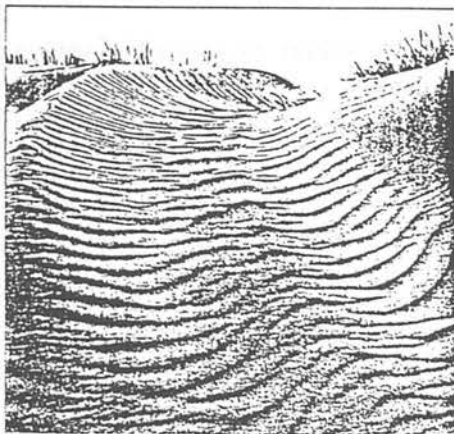


Fig.(5.4) Sensory aesthetics through natural environment

Designers have usually borrowed these effects of natural environment to enhance the quality of their work , man made environment. This can be done by using water fountain, placing bird cottage , planting trees and flowers, ...etc.

5.2.2 Formal Aesthetics

Formal aesthetics has been a central concern for different designers. The focus of this attitude is on the visual aspects and it deals with the appreciation of shapes of the environment. This does not deny the role of sonic, tactile and olfactory experience in a person's appreciation of the environment. Formal values deal with the pleasureableness of the structure, pattern or order of the artefact and the system of relationships that exists in these patterns.

Peter Smith (1977) cited that: "The entire business of aesthetics is dependent on the principle of relationship. A single colour will possibly generate an emotional response for reasons previously stated, but this must not be confused with the aesthetic response. The circumstances for such a reaction only begin to occur when two or more colours are placed in close relationship. A single line has no aesthetic potential, but when two lines of different length are placed at right angles to each other, a dialogue is established which may well have psychological significance... As the gestalt psychologists pointed out, relationship changes things. Two colours juxtaposed each other appear to change their hue. It is not that their light wavelength alters, but that the brain is affected in its perception. Similarly different relationships between lines can create gross perceptual distortions. One of the most dramatic occurs when parallel lines are crossed alternately by left and right inclined lines " (figure 5.5).

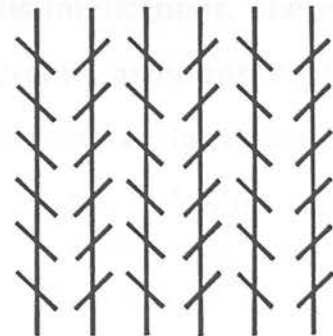


Fig.(5.5) Relationships between different lines
Ref. Peter Smith, 1977

The main concepts that are based on formal aesthetics can be seen through two main approaches. First one which deals with two dimensional proportions. It is claimed that any volume can be referred to the basic elements of design, which is said to be a dot. Dots can be accumulated together to form texture or lines. Lines can be grouped together to form plans, and plans can be structured into volumes.

The environment can be decomposed into these elements and when a designer represents the visual appearance of a building on the drawing board, these are indeed the elements that are used. Second one which concerns with the serial visions of the city in the three dimensions. The main issue of people experience is how they perceive the visual relationships of spaces pattern and buildings organisation (J. Lang 1987). This part will be concerned with the latter one as it includes the former one within.

5.2.2.1 Three Dimensional Perspective

The analysis at the level of the visual array, of the picture plane itself, is important to the viewer but at the same time is limited. Landscapes are three-dimensional configurations, and it was in that third dimension that our ancestors functioned or failed to function, survived or perished. It is hardly surprising that people automatically interpret photographs or the environment in terms of the third dimension as well.

As we might expect, given the evolutionary importance of space, humans are highly effective at perceiving depth. Perhaps the most central issue in analysing a scene involves the three-dimensional space and its implications. The study of Gordon Cullen gives a clear example for this approach, as he ensures that the original aim for this method is to manipulate the elements of the town so that an impact on the emotions is achieved. This is based on the following argument:

" There are advantages to be gained from the gathering together of people to form a town , but a city is more than the sum of its inhabitants. It is an integration between people and their buildings. City has the power to generate a surplus of amenity, which is one reason why people like to live in communities rather than in isolation, e.g. bring people together and they create a collective surplus of enjoyment, bring building together and they can give visual pleasure which none can give separately" (Gordon Cullen, 1961).

This argument ensures the fact that people perceive a city not as separate buildings - a work of architecture, but as groups of buildings which formulate serial visions of spaces interrelated perceptively. Thus, pattern of visual relationships between buildings within spaces is the main source of formal aesthetics. This is without denying other qualities of building such as size, scale, colour, ..etc., which represent the second importance (figure 5.6).

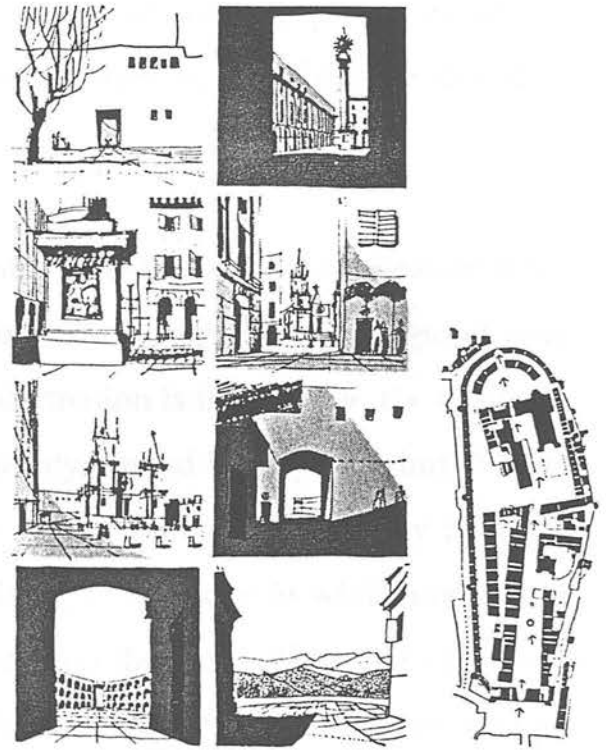


Fig. (5.6) Serial Vision
Ref. Gordon Cullen, 1961

Three dimensional perspective are affected by different elements. Within this thesis, it is argued that mystery and Legibility are the most effective. Mystery is one of the major striking aspects of people's reaction to landscapes that suggests a three-dimensional interpretation is their preference for scenes where it appears as though one could see more if one were to "walk into" the scene. Strong as this involvement component of the spatial interpretation is, it has been difficult to name. We have decided on mystery, a term long ago used in the context of landscape architecture to refer to an essentially similar idea .

Some investigators in this area have assumed that we were referring to surprise or novelty. But novelty implies that one is perceiving something new, and a scene high in mystery may have nothing new present (and, conversely, a novel object present in the scene in no way ensures mystery). Likewise, surprise implies the presence of something unexpected. Mystery involves not the presence of new information, but its promise. Mystery embodies the attraction of the bend in the road, the view partially obscured by foliage, the temptation to

follow the path "just a little farther." While the "promise of more information" captures the essential flavour of this concept, there is actually more to it than that.

Mystery is characterised by continuity which there is a connection between what is seen and what is anticipated. While there is indeed the suggestion of new information, the character of that new information is implied by the available information. Not only is the degree of novelty limited in this way; but there is also a sense of control, a sense that the rate of exposure to novelty is at the discretion of the viewer. A scene high in mystery is one in which one could; learn more if one were to proceed farther into the scene. Thus one's rate and direction of travel would serve to limit the rate at which new information must be dealt with. For a creature readily bored with the familiar and yet fearful of the strange, such an arrangement must be close to ideal.

Another area of potential confusion should perhaps be mentioned. The word mystery to some people conveys the ambiguous, even the incoherent or impossible to understand. Although it is in some way true that anything that makes no sense is mysterious, the term is intended in a far more limited sense. Admittedly, it implies uncertainty. But here the uncertainty is thoroughly constrained and bounded. It is of a limited degree, and its rate of introduction is under control. It is by no means beyond comprehension; rather, it is possible to anticipate to a reasonable degree. Mystery arouses curiosity. What it evokes is not a blank state of mind but a mind focused on a variety of possibilities, of hypotheses of what might be coming next. It may be the very opportunity to anticipate several possible alternatives that makes mystery so fascinating and mind filling. The human capacity to respond to suggestion is profound.

Legibility is the other aspect of landscape stressed by Appleton (1975a) concerns safety in the context of space. While he terms this component "refuge,"

emphasising being able to see without being seen, from an informational perspective, safety encompasses considerably more than this. This broad conception of safety closely parallels the making-sense side of our framework; we have chosen the term legibility to refer to the possibility of making sense within a three-dimensional space. Like mystery, legibility entails a promise, a prediction, but in this case not of the opportunity to learn, but to function. It is concerned with interpreting the space, with finding one's way, and, not trivially, with finding one's way back. Hence it deals with the structuring of space, with its differentiation, with its readability. It is like coherence, but instead of dealing with the organisation of the picture plane, it deals with the organisation of the ground plane - the space that extends from the foreground to the horizon.

A highly legible scene is one that is easy to oversee and to form a cognitive map of. Hence legibility is greater when there is considerable apparent depth and a well-defined space. Smooth textures aid in this. So, too, do distinctive elements well distributed throughout the space that can serve as landmarks. Another aspect of legibility involves the ease with which one can perceive the space as divided in sub areas, or sub regions. There is a strong parallel here to what makes a scene coherent, but coherence differs in referring to the organisation of the visual array rather than to that of the three-dimensional space. Coherence concerns the conditions for perceiving, whereas eligibility concerns the conditions for moving within space.

It must be emphasised that the interpretation of a scene in three dimensions is, like the analysis of the visual array, or picture plane, an automatic and generally non conscious process. People tend not to know that they are doing this. It characteristically happens very rapidly and effortlessly. Although the basis for hypothesising such a process comes from data on preference, this is precisely the sort of processing of affordances, of what the environment offers, that one would expect of a far-ranging, spatially oriented species.

5.2.2.2 Imageability and Mental Map

The processes of how people orient to environmental attributes and locations, have been described. The next part is oriented towards exploring this process in terms of particular dimensions of place. Kevin Lynch's theory about imageability and mental mapping is commonly used in a different context. Therefore, special attention has to be given towards this theory in particular, but here an introduction for the process of environmental perception could be useful.

The process of environmental perception and cognition – or mental mapping – is defined as "A process composed of a series of psychological transformations by which an individual acquires, codes, stores, recalls, and decodes information about the relative locations and attributes of phenomena in his every day spatial environment" (David and Stea, 1973).

Obtaining information	Internal processing of information	Functions
Acquisition and sensing	Coding, storing recalling and decoding	Locations and attributes of environments

Figure (5.7) The elements of environmental cognition and perception.

Ref. Irwin Altman, 1984

Following figure (5.7) three main questions need to be answered:

Firstly, how do people acquire and process information about their environment? Obviously, this happens through the various sensory modalities – vision, hearing, smell, touch , taste and Kinesthesia (the sense of position and movement of body parts) we acquire information about a place by looking around – at the paths, landmarks, boundaries and other features of environment. We try to see how things are related to one another, we try to learn about the distances

between places, whether and how we can go from place A to place B. We listen to things, the sounds of animals, the ocean, the wind rustling through the trees, desert sand blowing, the approach and departure of various noise, traffic sound, people coming and going. We smell things, such as flowers and greenery, animal life, cooking from homes and public places, all of which tell us something about the location of things and the attributes of the environment. We touch and feel objects to help build a picture of the environment in our minds. All our senses receive firsthand information about various properties of the environment. These sensory inputs become part of our understanding of the environment, and they are experiences that we call on as registered information. All these psychological information and processing activity permit us to piece together images, mental maps, or cognitions of various features of the environment.

The second function of sensing, storing and coding processes is to inform us of environmental attributes, or properties. Knowledge of the attributes of a place supplements our knowledge of locations. Downs and Stea (1973) suggest that attributional phenomena can be of a descriptive or an evaluative type. Descriptions are neutral: as the house at the end of the street; the mountain 25 miles away. Evaluations involve an affective judgmental quality as the dangerous mountains, the excellent movie, the filthy home. Given that we need information about the location and attributes of things and places in the environment, the question arises of how we develop skills to build such cognitive representation.

The third element of this figure – function, indicates two basic types of information that we need about the environment; firstly, the locations of places and objects; secondly, the attributes, or characteristics, of the environment. Location deals with where things are in terms of distance and direction. Distance has to do with how far away a place is, often measured in linear units, such as

inches, feet or miles. But even such an apparently straightforward feature of the environment as distance is cognitively very rich. For example, it is customary in the different areas to refer to distance in terms of travel time. This is perhaps because the mileage is less important than travel time. The other dimension of location, direction, is similarly variable.

Based on previous arrangement, what can be summarised is no more than that the large and complex real world must be handled by people with limited capacity for information storage, manipulation, and retrieval. This could ensure the mutual interaction between man and his environment. On the other hand, when people can not conceptualise these large and complex spaces and do not correspond with objective maps, certain simplifications and distortion takes place.

We also differentiate between static and dynamic maps. The former which needs only a person himself within a space, either standing or moving, and describes its points, either in the form of free or directed recall, or by sketching a map from memory. The dynamic map differs from the static in that not only are the points of the map important, but the individual's interaction with these points - how he is moving among them.

Wayfinding and Intelligibility

Lynch produces his theory about how people perceive the city through its visual properties. He believes that moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts. We are not simply observers of this spectacle, but are ourselves a part of it, on the stage with the other participation. Most often, our perception of the city is not sustained, but rather partial, fragmentary, mixed with other concerns. Nearly every sense is in operation, and the image is the composite of them all (Kevin Lynch, 1960).

According to the importance of visual quality, more emphasis has been considered by Lynch to study the components of the environmental image. Consequently, it was analysed into three components : identity, structure, and meaning. As these three terms have been used by many designers and architects in different ways, it is useful to determine what they meant for Lynch:

"A workable image requires first the identification of an object, which implies its distinction from other things, its recognition as a separable entity. This is called identity, not in the sense of equality with something else, but with the meaning of individuality or oneness. Second , the image must include the spatial or pattern relation of the object to the observer and to other object. Finally, this object must have some meaning for the observer, whether practical or emotional. Meaning is also a relation, but quite a different one from spatial or pattern relation (K. Lynch, 1960).

Legibility

Following the method mentioned above, on perception and cognitive mapping, and due to the important role of image in this theory, physical qualities which relate to the attribute of identity and structure in the mental image has led to definition of what is called intelligibility, it might also be called imageability or visibility. The intelligibility of a city indicates that its parts have to be easily recognised, and can be organised into a coherent pattern. A legible city would be one whose districts or landmarks or pathways are easily identifiable and are easily grouped into an over- all pattern. Furthermore, it indicates that quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is that shape , colour, or arrangement which facilitates the making of vividly identified, powerfully structured, highly useful mental images of the environment (K. Lynch, 1960)

Legibility has become the main core for Lynch's theory. This is not only as one of the important properties of a beautiful city, but also for its role on people perceptions which include their wayfinding, social intimacy with the city, and their feeling of security. He argues that a clear image enables one to move about

easily and quickly: to find a friend's house or a policeman or a button store, but an ordered environment can do more than this, it may serve as a broad frame of reference as an organiser of activity or belief or knowledge. A vivid and integrated physical setting, capable of producing a sharp image, plays a social role as well. It can furnish the raw material for the symbols and collective memories of group communication. A good environmental image gives its possessor an important sense of emotional security. He can establish an harmonious relationship between himself and the outside world. This is the obverse of the fear that comes with disorientation, it means that the sweet sense of home is stronger when home is not only familiar but distinctive as well" (Kevin Lynch, 1960)

Mental Image Components

Kevin Lynch (1960) concluded that people use five key dimensions to construct a mental image of the city. These dimensions are paths, edges, districts nodes and landmarks, which can defined as follows :

1) Paths are channels along which the observer customarily, occasionally, or potentially moves. They may be streets, walkways, transit lines, canals, railroads....people observed the city while moving through it, and along these paths the other environmental elements are arranged and related.

2) Edges are the linear elements not used or considered as paths by the observer. They are the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development . They are lateral references rather than co-ordinate axes.

3) Districts are the medium- to - large sections of the city, conceived of as having two - dimensional extent, which the observer mentally enters "inside of", and which are recognisable as having some common, identifying character. Always identifiable from the inside, they are also used for exterior reference if visible from the outside.

4) Nodes are points, the strategic spots in a city into which an observer can

enter, and which are the intensive foci to and from which he is travelling. They may be primarily junctions, places of a break in transportation, a crossing or convergence of paths, moments of shift from one structure to another.

5) Landmarks are another type of point - reference , but in this case the observer does not enter within them, they are external. They are usually a rather simply defined physical object: building, sign, store, or mountain. Their use involves the singling out of one element from a host of possibilities.

According to Lynch, these five elements contribute to the "images" that people have of cities. Although the elements are described one at a time, he says that they should be treated as a set of interrelated features that affect our cognition of places. They are integrated into a profile and taken together, lend a sense of coherence to place. They also permit us to locate distances and directions and to understand the various attributes of places – whether the places be large – or small-scale. Thus, we move about and identify distances and directions in terms of paths, edges, nodes, districts and landmarks.

Lynch Theory Under Criticism

The main contribution of Lynch's theory to the architectural realm is to provide a methodological way of forming our new city world into an imageable landscape: visible, coherent and clear. This has to be done through the city as multi - purpose functions. These functions of which the city forms may be expressive are, according to Lynch, circulation, major land- uses, and key focal points. This methodological method includes two principals: the interview of a small sample of citizens with regard to their image of the environment, and a systematic examination of the environmental image evoked in trained observers in the field. Different architectural design guidelines have been pointed out in order to heighten the imageability of the urban environment through a physical structure. The elements , mentioned above, are the building blocks in the process of making firm, differentiated structure at urban scale.

According to the importance of the visual scenery of the city, planners and architects stress visual form in their work as Lynch's theory is concerned with the visual experience, it has become one of their main focuses of intention. Here, and because the basic assumption of this method is sound especial within the Egyptian context , it is important that the subject has to be criticised more deeply. There are two main contradicted points which include both the theoretical idea and practical method.

A) From the theoretical point of view, the theory is criticised in three main points:

Firstly, although Lynch ensures the mutual correlation between observer and observed, man and environment , overt behaviour has little explanation. John Gulick (1963) ensures that Lynch's concepts of path, edge, district, landmark and node are to a considerable degree redundant. One reason for this is that Lynch treats them as purely visual concepts, where in fact some of their fundamental criteria are social and behavioural .

Secondly, Lynch's framework may provide an initial basis for people's cognitive representation of their environment, since cities around the world appear to be described in terms of edges, paths, landmarks, districts and nodes to one degree or another. Furthermore, the way in which people used individual elements and combinations of elements yielded intuitively valid portrayals of different cities in terms of Lynch's five elements. What has to be noticed here is that there are limitations to the idea that Lynch's elements might be culturally pervasive. They have been applied only to Western societies and on urban setting, they may not apply to other cultures or to non urban setting. One must be careful not to impose one's own way of viewing the world on another culture and describe that culture solely from such a perspective. Rather, one must also understand a culture in its own terms according to its value system and its approach to organise the world. Lynch's five elements derive from a western urban

perspective on the world and these dimensions may ignore other cultures values and mental organisation of their environments.

Thirdly, with mutual correlation to the previous argument , which seems a continuity for it, Lynch separates between identity and sharing meaning of the society. This concept , which can be described as style or character, is totally rejected within this thesis. On the contrary, identity, as mentioned before (see chapter two) , is some thing beyond the physical character or building style, it is an integration of meaning and symbolic culture, social pattern of activities and natural landscape. The seriousness of neglecting identity in its real meaning with the built environment has been also ensured before. Its major effect on the existing of any culture as a whole has become beyond investigation.

B) From a practical point of view, it is necessary to mention that a mental map may be a distorted or only a partial version of the physical map and will be easier to form in some environments than others. This is also the case within the individual level. Psychologically body image relates to the awareness individuals have of their body boundary.

This boundary is unstable changing with mood and physiological state. According to Peter Aspinall (1993), Fisher has suggested that the strength of the primary boundary in penetration or barrier characteristics relates to capacities for environmental experience - strong barrier persons being more individuated and capable of greater strength and range of experience (figure 5.8) .

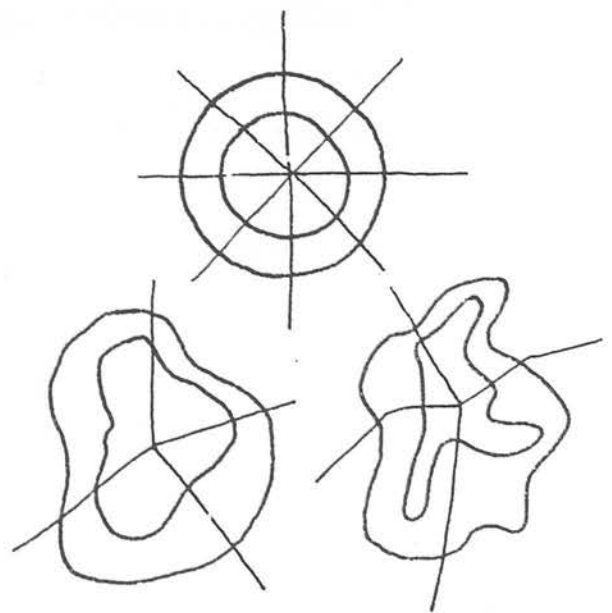


Fig. (5.8) Different mental maps for the same place

As an example, education may affect people's processes of imagery, a person who went to college for four years is more likely to be able to draw reasonably good maps than a person who did not finish elementary school. Consequently, we cannot expect to get the same accuracy of response from both. This certainly affects the samples which have to be chosen to represent the different groups or categories of the society.

5.2.3 Cultural Aesthetics

The third component of aesthetics is the cultural factor, which is the most controversial one between two opinions. Within the first group - Bourassa (1987), has suggested that "beauty" will not play a significant part in the cultural aesthetics. But if the idea of beauty does not afford any explanatory power, what does? The answer to this question is provided by the opinion of the second group. John Costonis examines two hypothesis which could provide a basis for aesthetic development controls. One is the "visual beauty" hypothesis, which refers to a desire to preserve or create a visually beautiful environment. On the other hand, Costonis rejects this hypothesis in favour of the "cultural stability-identity" hypothesis, which finds a basis for aesthetic controls in the desires of groups to protect their identity and cultural stability by exercising control over their environments. Costonis argues that :

" It is true, of course, that viewers respond affirmatively to particular visual configurations in the environment. Their responses, in fact, are often sufficiently patterned to refute the objection that aesthetics is too subjective to warrant legal protection. But these configurations are compelling because they signify values that stabilise cultural, group, or individual identity, not because their visual qualities conform to the canons of one or another school of aesthetic formalism" (John Costonis, 1982).

In arguing against aesthetic formalism, Costonis states that aesthetic response is comprised of reactions to symbolic, non sensory aspects of an object as well as to

the object's sensory attributes. These symbolic features of an object include the meanings ascribed to it by virtue of our individual histories, and our experiences as members of political, economic, religious, and other societal groups. Furthermore, he asserts that non sensory factors are more important than sensory one in aesthetic response. In regard to the formalists' assertions that beauty can be defined in terms of the formal characteristics of objects, Costonis points out that, even if this were the case, no one has found any satisfactory rules of identifying beauty. In any case, the circumstances of actual aesthetic controversies suggest that the semiotic aspects of the visual environment are essential than any canons of visual beauty.

What is quite clear now is the importance of cultural factors on people's preconceptions of aesthetics in general and within the built environment in particular. Symbolism as one of the main cultural aesthetics has to have more illustration, especially through the built environment.

5.2.3.1 Symbolism in the Built Environment

Symbols are not easy to be defined. The direct meaning of symbols in English Dictionaries is seen as 'something that stands for, represents, or denotes something else'. In terms of architect's role, it is essential to have more significant information of symbolism in the built environment. Peter Smith cites that:

" A true symbol (as opposed to a sign) performs a function similar to a catalyst in a chemical reaction which enables two chemicals to interact without itself undergoing any change. Without the catalyst, the reaction would be impossible. Similarly, a symbol may bring the conscious mind into contact with a hidden object or idea, sometimes liberating emotion... Thus symbols are intermediary objects which have an attributed meaning. A symbol may be defined as an object (sound, smell or texture) which imparts meaning to the brain, yet which does not necessarily bear a relationship to its phenomenology. It operates as a pointer to a level of meaning beyond itself" (Peter Smith, 1974).

The term image, symbol, and sign are often used interchangeably. An image, which will be assumed here, is an imitation or a production or a similitude of something. A symbol is something that stands for something else. It may do this as the result of an association, a convention, or even an accident. A symbol is the result of a cognitive process whereby an object acquires a connotation beyond its instrumental use. An object may be an environment or a person as well as a material artefact. Its meanings are derived from what an observer inputs to them. A sign in contrast, is a conventional figure or device that stands for something else in a literal rather than an abstract sense (J. Lang, 1988).

Symbols can be considered as one of the most important ways of changing the world of signals into a world of meanings and values. Symbols therefore help man to understand the world and to form it into a meaningful cultural pattern which is given physical embodiment through built form as well as being expressed through written records, graphic symbols, songs, myths, and many other symbol structures. The symbolic meaning of furniture, building layouts, and style and landscape designs is a non - verbal mechanism that people use to communicate messages about themselves, their backgrounds, social status, and world views. Other material artefacts, such as automobiles and clothing and even such things as household pets, also carry symbolic meaning.

It seems that it is this insight into the essentially symbolic nature of all building, the building as the concrete expression of a culture and world view. The symbolic function of built form is to place man in contact with an ideal universe, an ideal environment – the idea of a "good place". This can be achieved under condition that there must be some congruence between the logical structures of symbol and object symbolised.

Using material artefacts in this way is more important for some people than for others. A tentative explanation for this can be derived from an interpretation of

Maslow's model of human motivations (1954). When one is struggling for survival, the symbolic aesthetics of the environment will not be the focus of one's attention. The physical environment will still communicate messages about the status of the people concerned and they may be very aware of this, but they will have less energy and, therefore, less inclination to act purposively to change the environment and thus its meanings. For people whose prime concern is with security, architectural variables – particularly those associated with symbolic barriers representing territorial demarcations – become more important, but it is in fulfilling people's affective needs and their needs for a sense of belonging and esteem that the symbolism of the built environment is particularly important.

A symbol in the built environment consists of a structure of surfaces of various materials, a list of variables that have symbolic meaning can be developed seen through building configuration, spatial configurations, materials,...etc. What has to be noted is that the symbolic meanings of specific environments are not dependent only on their architectural qualities. Some places are peculiarly associated with certain people or events. A particular setting has symbolic meaning not because of its physical attributes, but because of the events that took place here.

The built environment conveys symbolic meaning in subtle ways. The correspondence between a building pattern or set of patterns and what is signified has to be learned. Sometimes this is done consciously, but often it is unconsciously. Architects, among others, often attempt to establish new symbolic systems. To get them accepted, they have to educate others about the set of associations between the new pattern – the symbol – and the signified. This may involve advertising polemic writing, or direct teaching. Within any field, elite groups are likely to control some of this process, but other meanings are largely unconsciously developed. If one accepts that symbolic meanings are primarily socio - culturally determined, then people who do not understand the 'language' being used to convey meaning cannot appreciate the environment in a

manner that an architect might intend.

It is clear that most designed vernacular environments have major symbolic content. Which applies to dwellings as far back as we could trace them, villages, towns and whole landscapes. Numerous examples can be given of the very explicit symbolism of house forms, layout of buildings and spaces, furniture arrangements,...etc. Due to the materialistic values dominating modern architecture, many modern forms of dwellings and other buildings and settlements can be understood through the symbolism approach. The Modern Movement far from being "rational" and "functional" is based on symbolism of the machine. Symbolism had not played a major role in the environmental design fields relating to the human cultural values. When symbols have been considered at all, it was only in one of two ways: religious and historical buildings.

Nowadays and due to the appreciation of the role of symbolism, new attentions have been oriented towards its importance. These approaches could be categorised in three levels:

The first approach , the most shallow one, based on the use of artificial architectural elements to create a new language which mainly expresses individuality rather communal values of a society. The second approach is based on the use of abstracted architectural elements from the past. It is an attempt to reuse distinctive architectural elements, which could remind people with their historical continuity. Finally, the third one is based on maintaining the cultural symbols and historical buildings as reference points. This is the way which could keep people's preferences and evoke their cultural identity (figures 5.9 - 5.20).

Summary

It could be argued that the main goal for any architect is to achieve the appropriate environmental quality. Human cognition seems to be the main theme within this goal. People perceive the object and associate it with various interpretations, which gives the world its complexity. Aesthetics represents one of the main topics related to people's satisfaction towards the environmental quality.

It is worth noting here that formal aesthetics has to be considered as one of various components as a whole. It is wrong to deny the other components, and deal with the urban space quality from a separate point of view. A supporting group for this wrong approach argues that sooner or later a designer has to make decisions regarding the geometrical structure of the environment. Sometimes the geometric quality of the environment is the sole issue of concern. The shapes, proportions, rhythms, scale, degree of complexity, colour, illumination, and shadowing effects of the built and natural worlds are the subject matter of formal aesthetics. The concern is with the pleasure afforded people by the different patterns of the world for their own sake rather than for any instrumental purpose they serve or associated meaning they provide.

In brief, we can conclude that the nature of the formal aesthetics of the built environment has been a subject of study for many architects and thinkers. It is often related to the classical method of design which is based mainly on visual organisation. Usually when designers think of architectural issues such as complexity and simplicity as a way of achieving the formal aesthetics of buildings, they are thinking of treatments of facades. Most studies have focused on the perception of two-dimensional patterns. Much of our understanding of formal aesthetics relies on the concept that people's satisfaction within their built environment is affected by the beauty and pleasure created by formal aesthetics. But formal aesthetics itself is varied according to cultural diversity.

The main criticism for formal approach can be seen in two ways: The practical advantage of the classical system of design was that it justified a way of designing architecture which had evolved slowly and had been worked upon by many minds over a long period. It was the result of matured artistic experience. On the other hand, it was subtly modified to the taste of emerging nations, so producing recognisable differentiation, without any deep differences of aesthetic principles, in societies with a common culture and the seeds of disastrous dispute.

I believe that, while design professionals place their emphasis on formal aesthetic issues, most people appreciate the environment mainly in terms of its symbols and its affordances for activities. Some aestheticians wonder if there even is such a thing as formal aesthetics. May be we designers simply have developed arbitrary languages which only other designers and selected groups of individuals can understand.

Accordingly, it is clear that on one hand, symbolic aspects, which reflect cultural values, are the most important in achieving the human need for aesthetics. On the other hand, attempts to segregate formal values from symbolic ones are difficult in the analysis of real built environment. Many of the issues that traditionally were regarded as formal aesthetic ones may more appropriately be regarded as symbolic aesthetic ones. Nowadays, the theoretical basis of classical aesthetics is no longer acceptable as true. Perceived Beauty is clearly the result of an interaction between observer and object. It is not itself inherent in objects.

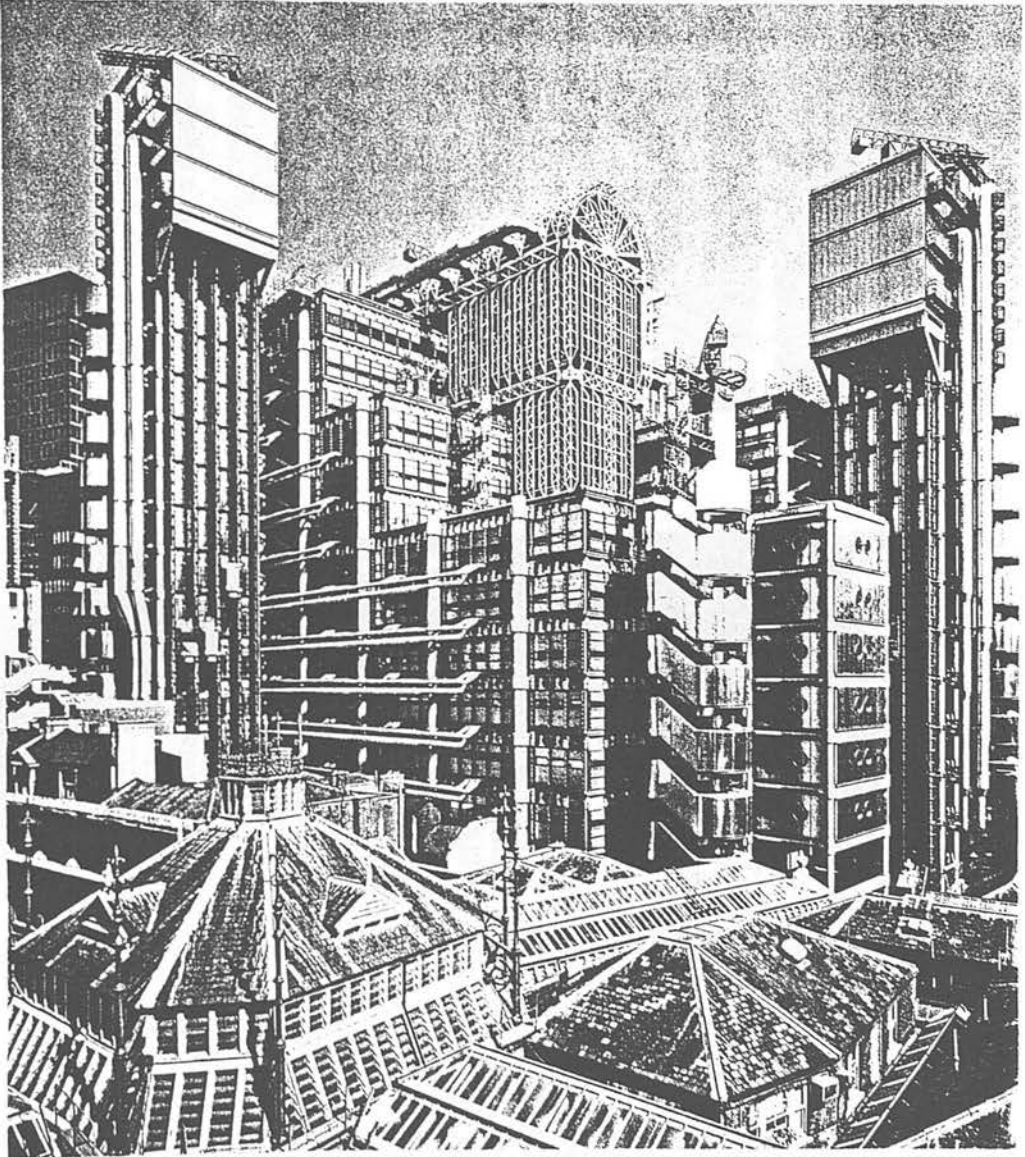


Fig.(5.9) High-tech architecture is not successful solution without economical and environmental basis, Lloyd's building, London.

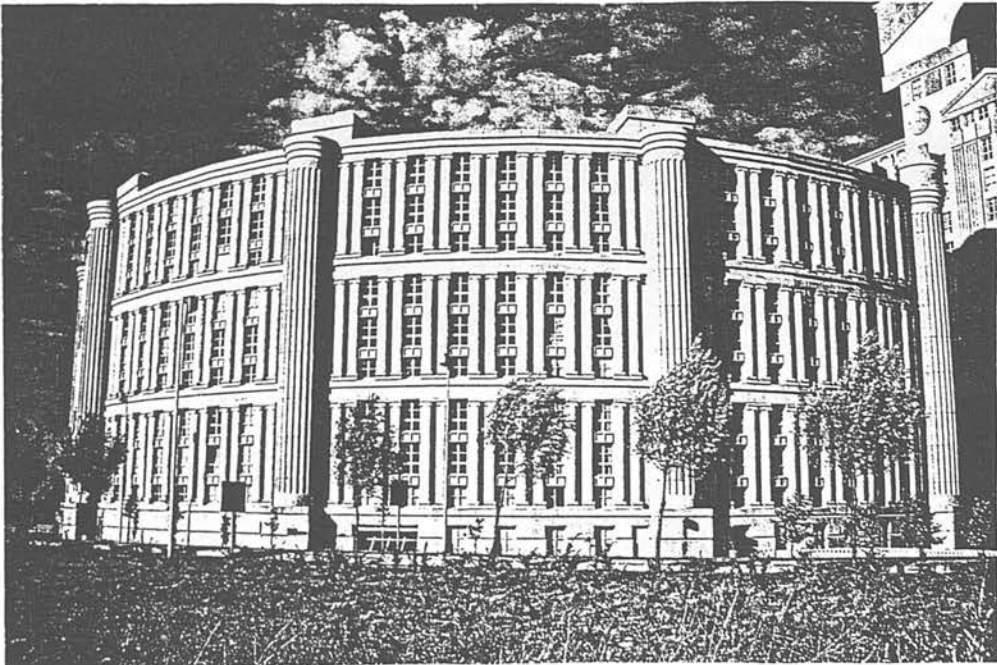
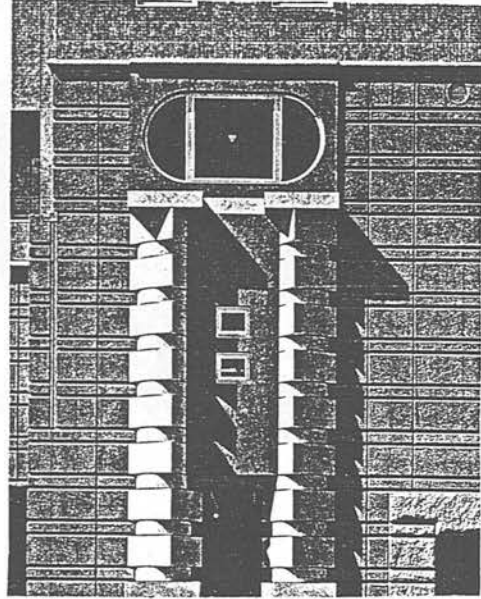
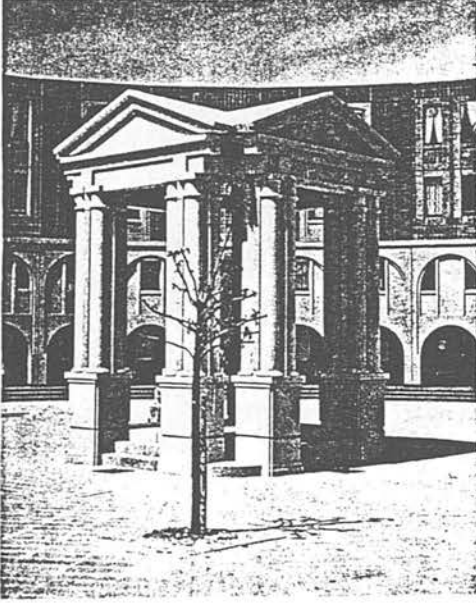


Fig. (5.10) Old vocabulary in a new architectural form, France

Ref. Charles Jenkes

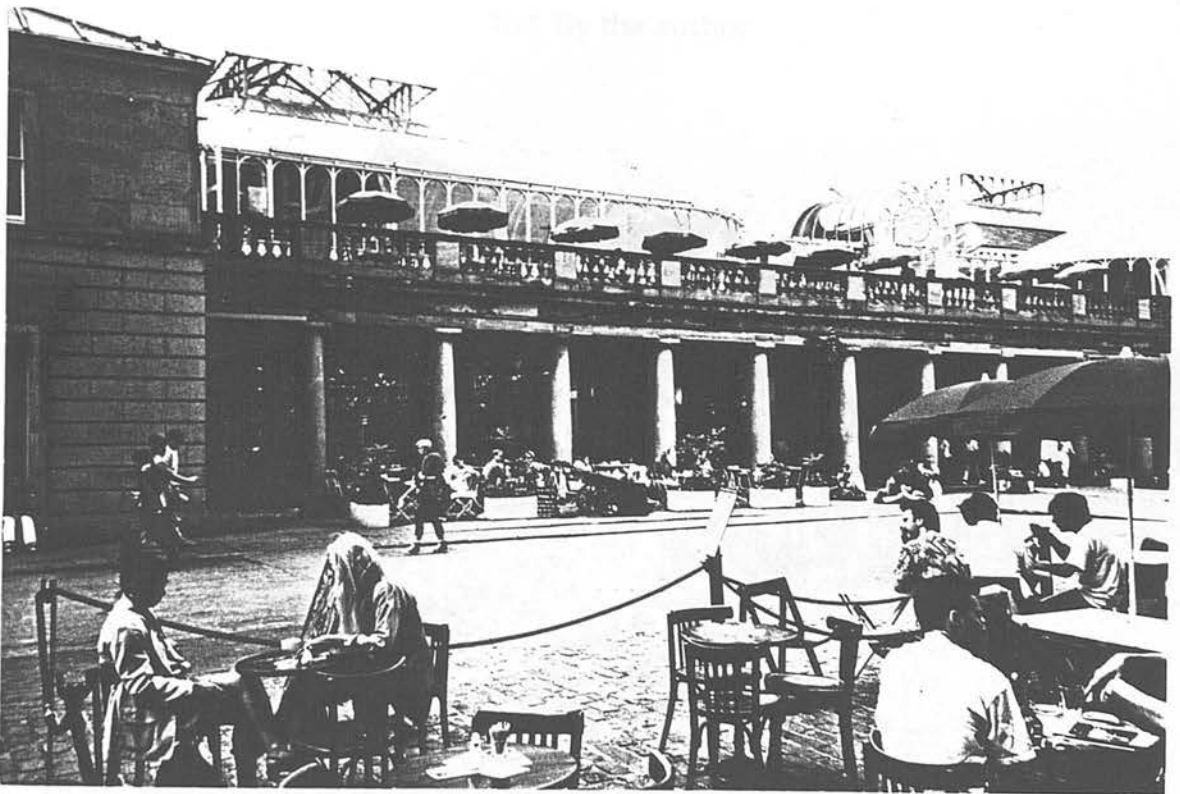
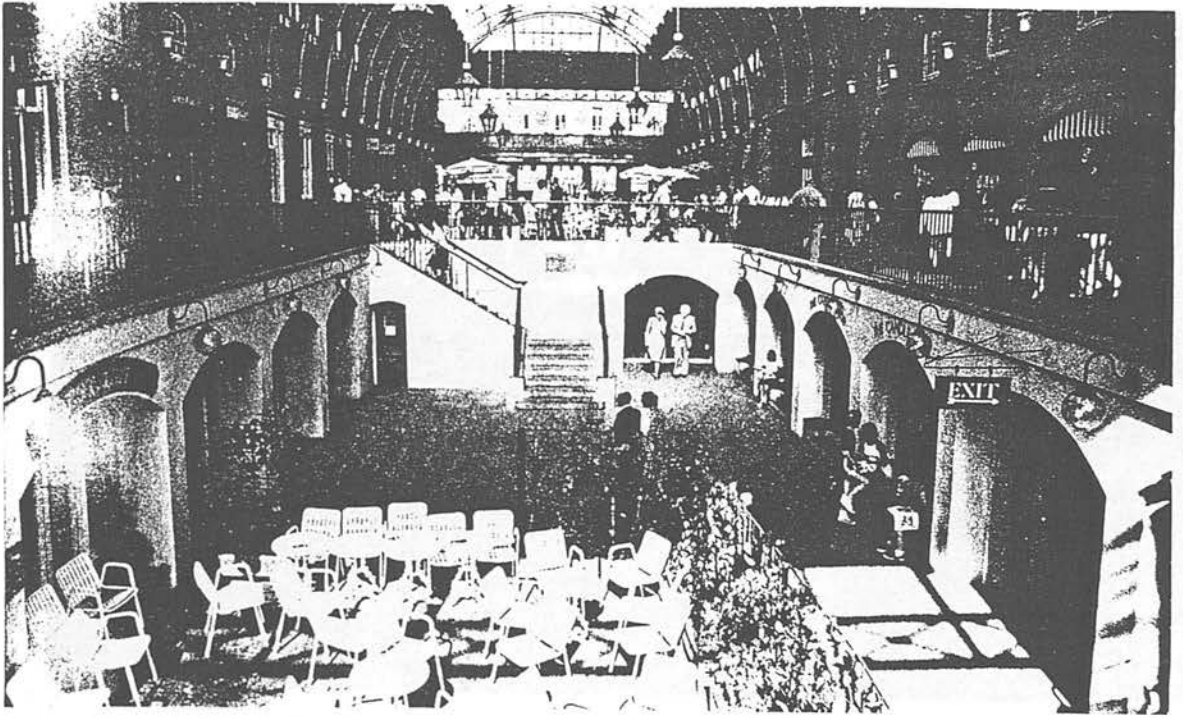


Fig.(5.11) The former vegetable market in Covent Garden, represents an example of keeping a historical reference through a new use as a shopping centre.

Ref. By the author



Fig. (5.12) Old Albert Dock is converted to cultural commercial centre. It has become the most lively place in Liverpool keeping its cultural continuity.

Ref. By the author



Fig.(5.13) Keeping historical references is important in producing related cultural aesthetics as well as sources of economy and social activities for the society.
Shakespeare house , Stratford

Ref. By the author

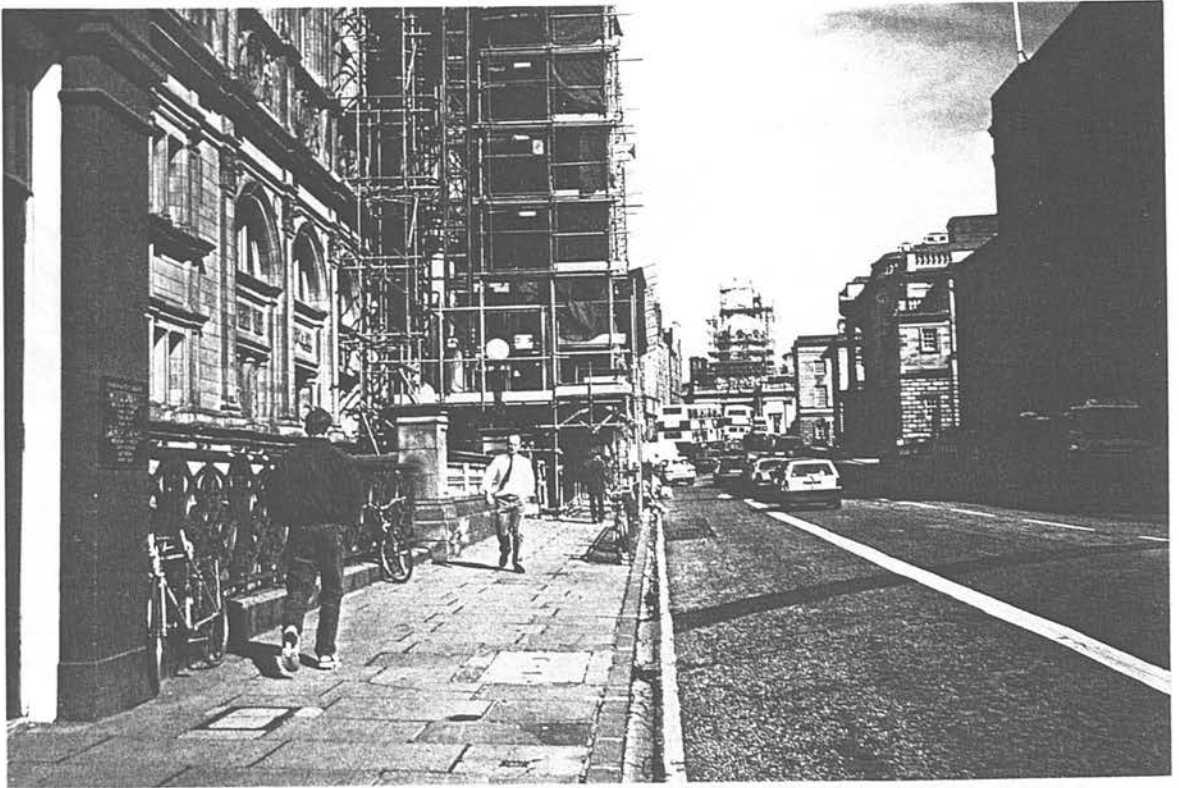
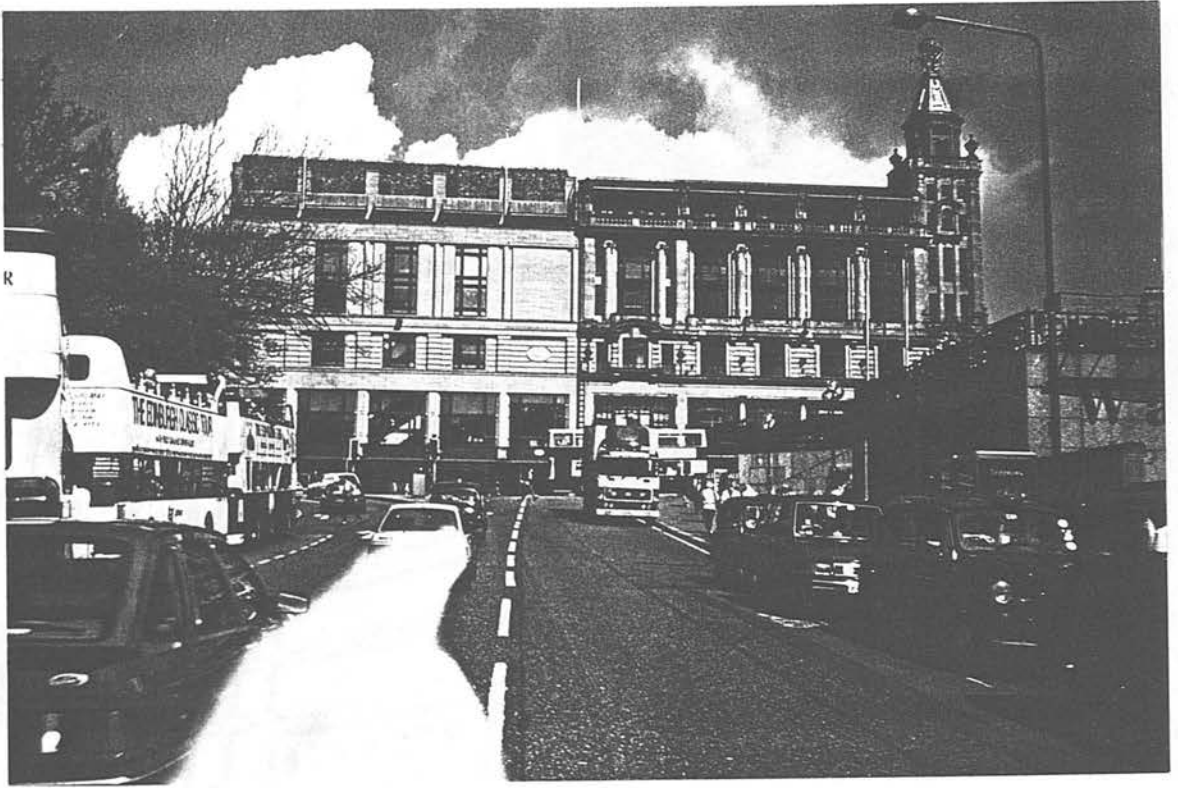


Fig. (5.14) Maintenance is not only for keeping the economic value of the building, but also for sustaining the mental preferences of cultural identity, Edinburgh
Ref. by the author

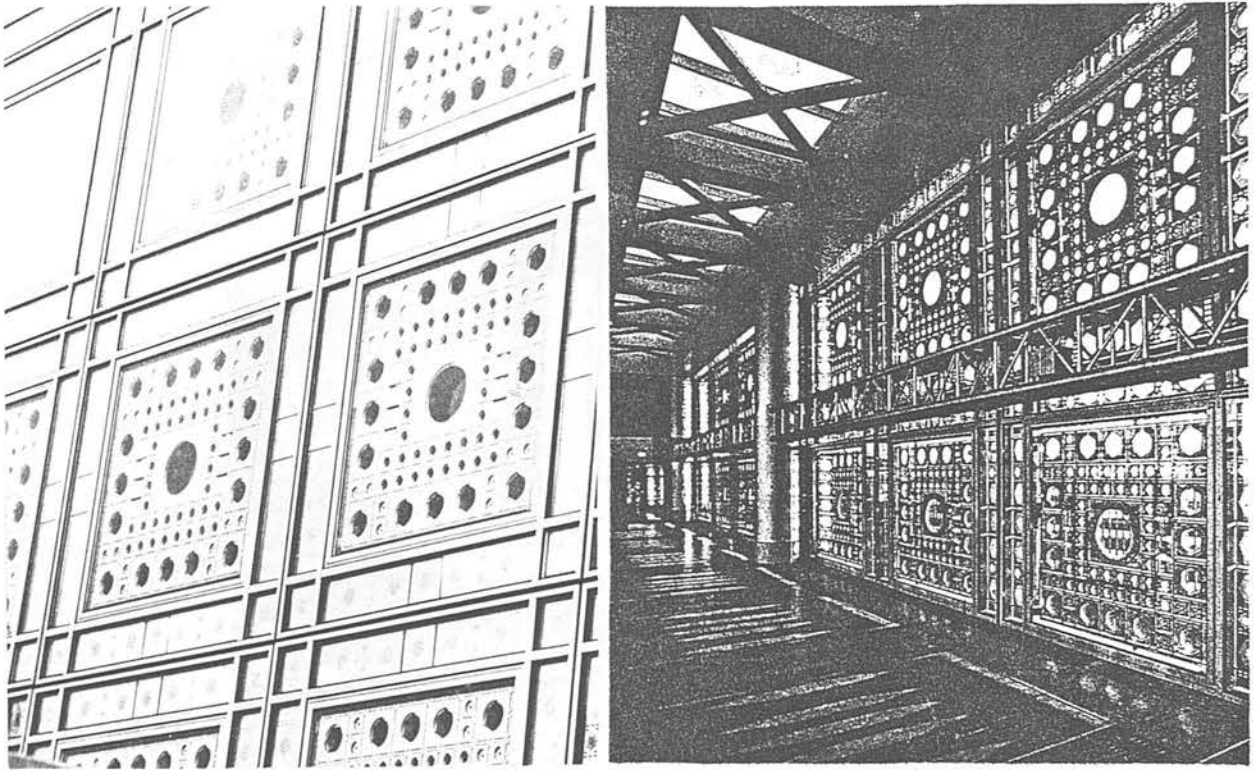


Fig. (5.15) The diaphragms in the south facade of the Arab World Institute designed to open and close with the changing outdoor light

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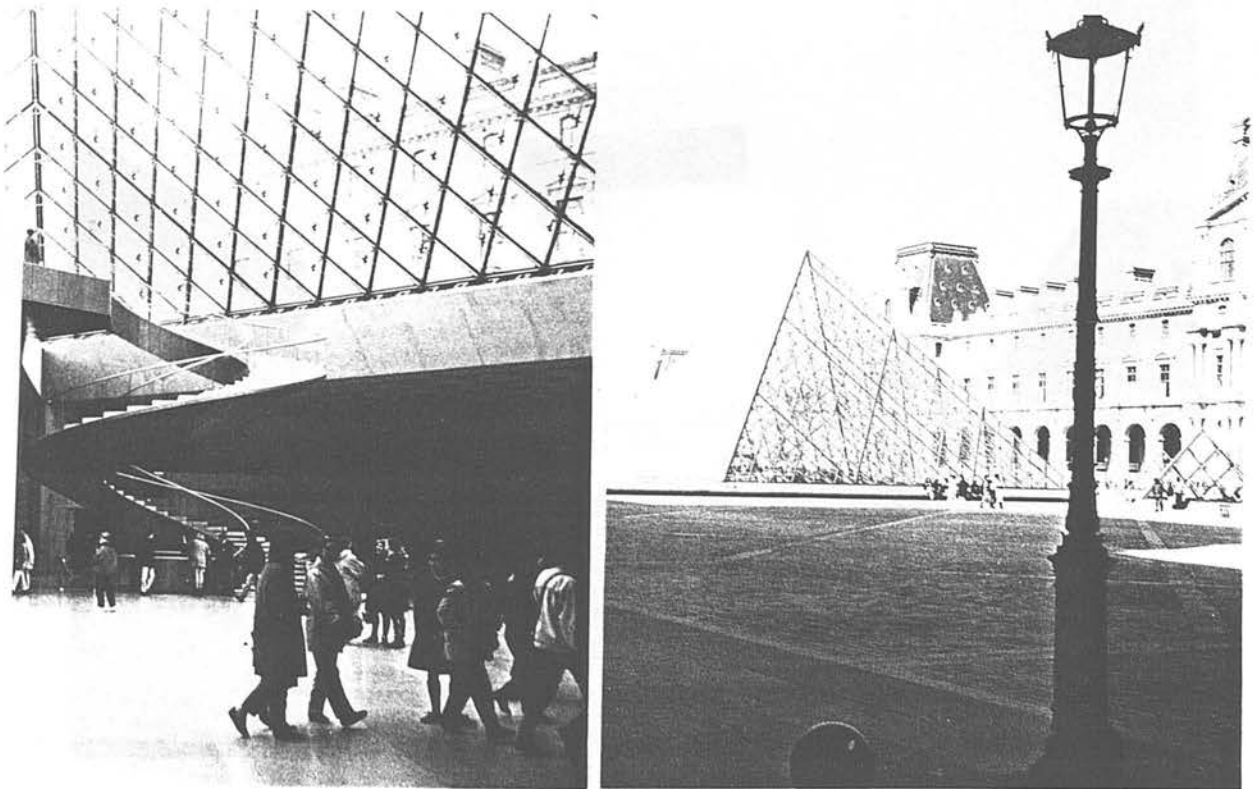


Fig. (5.16) The Louver was described as theatre without stage. The new pyramid was the solution for the serious need for new space for the public

Ref. By the author

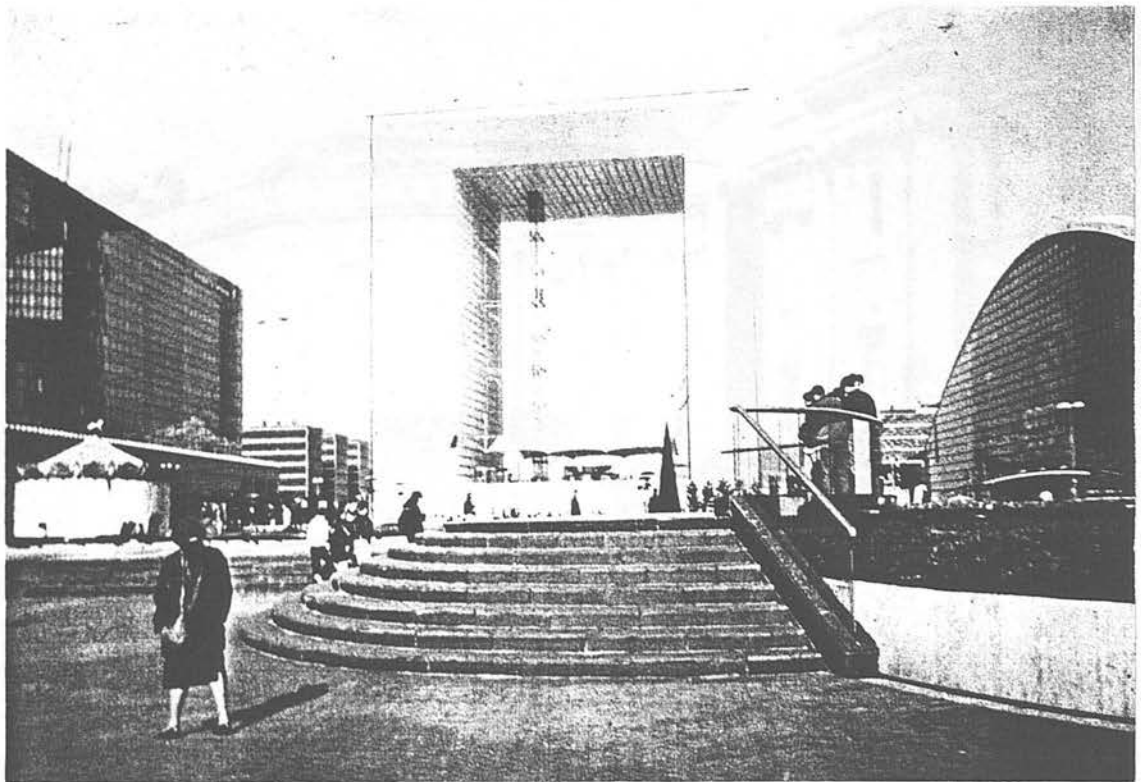


Fig. (5.17) The historic axis leading from the Louver to the Concorde and up the Champs - Elysees completed with a gigantic arch situated in the new Defence area of Paris

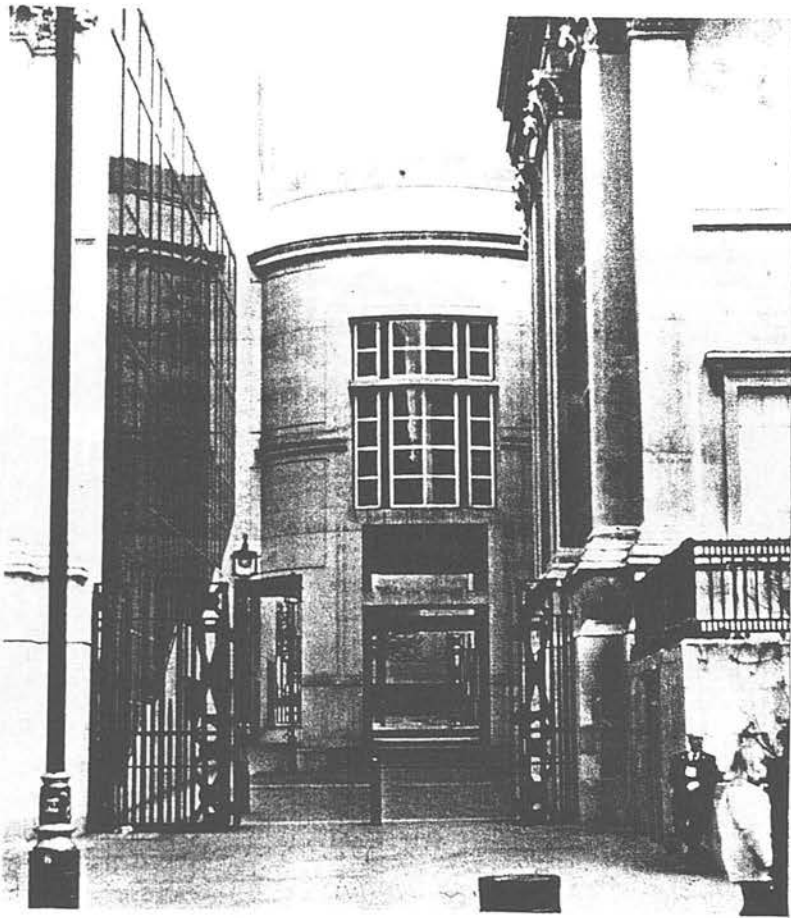


Fig. (5.18) The continuity between a historical building and a contemporary one is a main theme of the Sainsbury Wing in relation to the national gallery, London

Ref. By the author

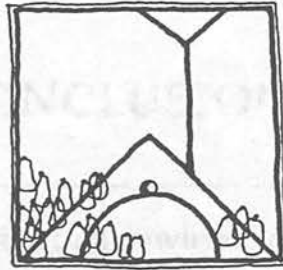


Fig. (5.19) New building, with new technology, does not mean it has to intrude the existing context in building form, architectural details, materials or even in colour scheme, Edinburgh Ref. By the author



Fig.(5. 20) Architectural design is an expression of people needs as well as the impact of environment in terms of available technology, Edinburgh

Ref. By the author



CHAPTER SIX

CONCLUSION

CONCLUSION

The problem of the Egyptian built environment has been defined as loss of identity which led to lack of communication on the various rules and ways of buildings. The thesis aimed to explore and develop support for the value of identity within the society as a whole, and to search for new means and language to express the Egyptian culture. In order to achieve this goal, the thesis has made reference to many views and theories within Man-Environment area. Many of these theories were critically analysed and tested to conform to the objectives and requirements of the Egyptian context. The study has suggested that to produce appropriate design solutions it is crucial to consider their context seen as an amalgamation of multiple physical factors and deep structure of values of human being interacting within an inseparable whole.

This chapter therefore is an attempt to synthesize the various notions emerged in the thesis as a holistic knowledge, and consequently examined them in a series of case studies.

A) Towards a Synthesis

This part will address two main issues as follows:

The amalgamation of the various physical and socio-cultural dimensions has come out with strong correlation between identity and sustainability. This is to mean that when sustainability is achieved, the resultant status of stability will lead to the formation of identity. On the other hand, the thesis has put a particular emphasis on the important role of architects which extends beyond the mere production of building to creating attachment to the indigenous cultural context.

B) Application (case studies)

In this section I will try to convey key messages that this thesis has brought about. This will be achieved by introducing six architectural schemes and urban developments accomplished in Egypt and few other Islamic/Arabic countries. These schemes are price winning projects selected from Aga Khan publications which were seen as responding to the key notions of the thesis. The aim is to both provide ground for these notions as well as demonstrating ways of evaluating designs according to this synthesis of aspects and cultural criteria.

Toward a Synthesis

6.1 Sustainability and Built Environment

The concept of sustainability is of such special nature that it demands to be taught holistically. Its individuality does not imply that it should be studied as merely architectural science or construction. Other branches of knowledge sustain our understanding and our realisation of it; technology, economics, architectural history and professional ethics are few of such participants. In so far, some tended to misinterpret "sustaining" of human social structures and regrettably to the mercy of time whereby it fades and decays with the passage of time. On the contrary, "sustaining" a certain form of human achievement has to pertain to the shifts and fluctuations in our turbulent world and as such have to adapt so as not become too alienated and intrinsically unfitted for its purposes.

A clear view of the roots and meanings of the term "sustainability" is needed to enable us to understand what constitutes it without the misconceptions that sometimes surround it. Sustainability does not manifest itself in the production and maintenance of the built environment but rather in the way of life that environment was built to serve. From this view, one may establish that sustainability is of two dimensions; the ecological and the cultural ones which in turn could be recognised as local and global. The former, for some groups, is extremely common to an extent that it is considered as the only factor of sustainability. The latter, within this thesis, is more important which includes the former one within itself.

6.1.1 Ecological Dimension:

Ecology deals with societies at three levels; population, ecological resources, and on the flux of energy. The central issue related to sustainability based on ecological factor is 'equilibrium of eco-systems'. The pre-industrial

settlements could represent the best examples of sustainability where the population density was correlated to the ecological resources. It worth noting here that meaning of both terms have to be defined.

The pervious notion raises the concept of equilibrium as a central issue of ecological discipline. Wagner(1974) noted that:

" All animals and plants, whatever their habitat or form, follow one inexorable rule: their populations grows, slowly or rapidly, to some point of equilibrium, then level off in a change from a steady growth to steady state. This point of equilibrium, known as a carrying capacity of environment, may be determined by food, moisture, nesting sites, competition or various combination of these, but it is inevitably reached".

The carrying capacity of population could be defined as the maximum number of organisms that a habitat can support and sustain without degrading each organism's environment. This ecological role of balance also applies to human. From an ecological perspective, our relationship with our environment is seen as having passed through successive stage.

" In the beginning, man was shaped by environment which acted as selecting agent and controlled the evolution of his present feature. Throughout this period, man, like other animals, remained in equilibrium with his environment. But then man developed culture and thereby shattered this equilibrium. For that time on man has exerted an over-increasing influence on his environment... Finally, man's rampant technology has placed him, once again, under the direct selective influence of an environment of his own making: the city"(Wagner, 1974).

Most of the environmental problems we face today result directly from increasing population. Man demands more products that pollute more water and more air, makes more waste than can be disposed of, takes up more and more suburban space, and puts impossible demands on over expanded cities. Environmental scale is a global view, which is required towards a proper

understanding towards a broader nature of what we mean by scale. It extends beyond the domain of single buildings and certainly involves the totality of environmental phenomena. Scale has to be understood as the physical size ranges within which all visible objects - buildings, landscapes, spaces, articulations and textures of materials, extent and intensity of human activity structure in an environment - are perceived .

Density, number of people per area, is usually used as a scale for measuring both over and under population of any society. Although there is a common thought that density normally indicates level of quality for any built environment, a mutual correlation with resources has to be considered. Shortage of different types of resources such as fertile soils, water,...etc., may make it difficult to supply any society in a given area with the necessities of existence. Accordingly, quality of built environment in relation to density has two main approaches: Firstly, over population encourages the social relationship, and more contact between people. The existing of people within urban spaces is a direct way to avoid placelessness phenomenon and deserted planning. On the other hand, human over population decreases the environmental quality by the disruption of nature ecosystem and the depletion of resources.

It is clear that population density is the key element in the man- resources - environment balance, and consequently as scale of the quality of built environment. Thus the concept of the optimum population which achieve the required quality is based on the balance between population size, available resources and prevailing social structure of certain society.

The main factor obstacles with the concept of equilibrium is the development of the society. Ivan Illich (1990) observed that "sustainable" is the language of balance and limits whereas "development's" is the language of the expectation of more. He has rejected the pursuit of " sustainable" development which he sees as

a delusion:

" Development is one of those modern terms which express rebellion against the 'necessity' that ruled all societies up to the eighteenth century. The notion of 'development' promises an escape from the realm of necessity by transforming the "commons" into "resources" for use in satisfying the boundless 'wants' of the possessive individual... 'Development' (is based on) a faith that technology will free us from the constraints which bound all past civilisation"

The question that poses itself today has to do with the nature of development that is expected if one is to assume that development is an expression of the future. A balance has to be found in order to harmonise between sustainability as a language of limits and development as a language of expectations. One has also to take into account the possibility of resources are subject to depletion so that development cannot be increased for ever. So, realistically, sustainable development must lead through a period of increasing rates of use of a resource to a range of levels that is not exceeded. This thesis incorporates both "sustainability" and "development" not as contradictories but as two notions that complement each other. Of course one may encounter a problem if development was based on external resources or if it was in wrong relation with population both negatively and positively.

6.1.2 Cultural Dimension

Culture can be described as a group of people who live within a certain place, distinctive for its specific ecological resources, and have a set of shared values, beliefs and norms - "culture identity". Those members of a certain culture pass on what they have learned and acquired consciously and unconsciously to other generations and societies thus helping to preserve that particular cultural identity. Cultural changes are slow and evolutionary, partly because so much of a culture is implicit, taken for granted and difficult to label. The system of sharing resources and values (cultural identity) leads to similar or unified

choices for the most common requirements of society. Such unity takes two forms: a pattern of behaviour that acts as a basis for harmony with the utopian or ideal typology that ensures the continuation of that cultural identity.

Many cultures through history have disappeared for various reasons, one of these is that they took a wrong choice. The seriousness of this problem is more than what is concern with the individual level and the wrong choice of people through their environment, which led to an incompatibility with their physical setting. The problem is related to the response towards changing their behaviour and life style, which represents itself in the loss of differentiation and disappearance of culture (A. Rapoport, 1977).

It is not enough to perceive identity only from the architectural point of view, one has also to take into account various domestic determinants. Also it is wrong to attribute our concern with identity to nostalgia. Identity gains a much richer dimension when we regard it as the basis for the survival of any group and their culture.

Each culture may be said to have a core of elements that constitute its main features and the preserving of such core entails the continuation and preserving of the cultural identity. While the culture core is the source of continuity and reproduction for the culture, the significance of these components varies from one environment to another due to the availability of resources. This core is not easily given up. But sometime incidents and sudden occurrences can disturb such a core and lead to the disruption and finally disappearance of the culture.

Yet, defining the elements of both cultural core and cultural manifestations are still under investigation. What has to be excluded or included is controversial. One way of seeing culture could include different components within its culture core such as behaviour patterns, social activities, way of dressing or eating,...etc.,

Within this thesis such elements are not included, as they represent products or manifestations of culture. Cultural core elements in the general case are natural environment, ecological resources, historical legacy and cultural symbols

It is worth noting here that to maintain the culture core does not mean it should remain fixed or unchangeable, but that it is evolving correspondingly with the dynamic nature of life. The main issue here is that these changes must be natural and correlate with the gradual changes of human affairs, not forced in such a way that can undermine man's ability of adaptation .

Culture has the ability to adapt to external factors and at the same time retain its essence. Cultures are organisations for doing something, for perpetuating the human life of people and their survival. In the process of adaptation, new elements are brought in and are adjusted and synthesised according to the indigenous core. It worth noting here that one should distinguish between the culture which arises from the man's adaptation to the environment and that in which man adopts himself to different types of ideologies, economy, technology and so on.

Stabilisation is a reflection of the nature of culture and thus adaptation is important in that it is an important source of stability. It is an indication of the culture's effort and struggle to maintain its basic structure in the face of external factors. Sometimes the culture may have undergo many interrupted events that may leave their traces in the form of cultural gaps. But if the culture is capable of maintaining its basic core unchanged in the face of those external factors then it will be able to adapt and regain its equilibrium situation.

6.2 The Role of the Architects

Sustainability is not an extra part which can be added on to a design at any time during the design process. Instead, it is a fundamental mind set which needs to inform design from the initial conception onwards. All design decisions have " direct and indirect" impact on sustainability. Designers need to work out what degree of "local and/or global" sustainability they want to see implemented and then try to ensure that their own decisions do not undermine these aspirations. This may have as much to do with questions of cultural dimension of the society as with the use of the ecological one.

What has to be considered here is the mutual correlation that a society maintains between the spiritual values derived through its cultural symbols, and the materialistic values created by technological progress. One can argue that cultural society could be figured as that which keeps a balanced situation between these two types of values. On the other hand, a materialistic values have been highly considered by the societies who are separated from these deep cultural roots . Therefore, a proper role for any Egyptian architect has to be seen as producing the built environment (culture manifestation) which could support both homogeneity and stability of the society.

Quality of Built Environment

Architects in their search for the quality of built environment, use different terms with the same meaning like 'better', 'improved', or ' suitable'. Yet, it is not clearly determined what environmental quality for a particular group is, and hence, what changes could be done by designers to create appropriate built environment. There are two major meanings and interpretations of this concept of quality:

- 1) The simpler is related to things such as air and water quality, noise consequences of overpopulation, depletion of resources and the like.
- 2) The more complex interpretation is that related to the qualities of the natural and built environment which give satisfaction to people and which they choose. This second meaning of environmental quality refers to the psychological and social - cultural qualities of the environment.

Within this research , we have been concerned with the second one which seems to be more related to the notion of place identity.

In terms of the environmental quality, cognitive structure is the leading element in the determination of this quality, its meaning, evaluation, and most importantly in the understanding of its clues and messages. We receive Information about the environment by our senses, but through the process of our cognition we recognise it in a ways that are meaningful to us and to our lives. Although this process is varied according to the differentiation of person's views, it is heavily influenced by our cultural experience.

There is a general agreement that all designers are aiming to make a better environment. In that sense, most of them , nowadays, are dealing with aspects of product characteristics rather than process, although a main part of having good product is the process per se, and the mutual correlation between the different aspects of the product itself (see article 3.3.2). Place identity cannot be created through the physical attributes only, but because of the activities that took place there, related to the cultural values of the societies . Therefore, it is incomplete view to limit the built environment to its geometric properties. A built environment could not be a goal in itself. It is a part of a system which includes other factors. They function as a unity that one cannot easily determine which factors caused certain outcomes . What should be known is the relations among variables which all come together in coherent pattern that permits people to understanding and live in the world about them (figure 6. 1).



Fig. (6. 1) The similarity between the Muslims' harah and Coptic one in medieval Cairo

Although the notion of environmental determinism - within this thesis - is not valid , environments are of importance and are best conceptualised as either supportive or inhibiting. Rapoport argues that while all inhibiting environments have undesirable effects, in cases of high criticality these may become so inhibiting as to become destructive. Under conditions of physically, psychologically or culturally reduced competence, inappropriate environments have increased negative effects. This situation could be occurred particularly if compounded by lack of choices, , excessively rapid change rather than gradually, and loss of central cultural values and traditions. Accordingly, appropriate quality which respects the congruence between man and environment has to be respected in order to reduce the stress and help towards coping and adaptation (Rapoport , 1989) .

The Nubians, south of Egypt, give us an example of the congruence required between a group and their place . They used to decorate their homes in a way that express their identity. Due to Aswan Dam project, all the Nubians villages were flooded by the Nile. When they were moved into uniform, highly unsuitable houses , one of the first things they did was to begin to decorate these houses . They used the same architectural language, with bright colour full of meaning as an expression of their personality (figure 6.2) .

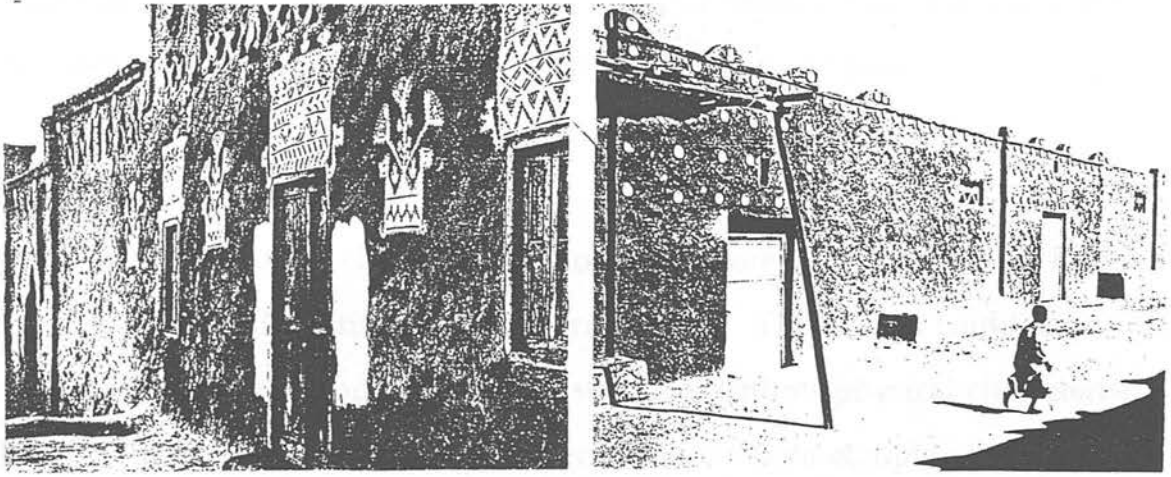


Fig. (6.2) Decorated Nubians' houses

The crucial point which has to be considered and related to the built environment is that people not only respond to the objects perceived, but to their interpretation of it. Since the aesthetic experience is an evaluation process as much as instinctive response, it not only depends upon the visual stimuli from the environment but also the cognition which is related to people's values and symbols. What is meaningful, consistent, and appropriate is , of course, heavily influenced by their cultural experience.

An example can be given by comparing the similar architectural object within the Egyptian context and the western one. A high rise building in a city like Edinburgh is seen as a building which could suit low income class group (figure 6.3). Most of these buildings are abandoned even by that group. On the other hand, high rise building with similar physical features in the Egyptian context is related to high class group (fig 6.4).



Fig.(6.3) Low income housing - Edinburgh



Fig. (6.4) High income housing - Cairo

Fig.(6.3) Low income housing - Edinburgh

Based on the previous understanding of what the quality of built environment is, the architect's role could be seen through the following notions.

6.2.1 Continuity of Cultural Values

In the context of change, tension occurs. There is obvious tension between continuity and discontinuity of cultural values. This which could be seen as a conflict between the traditional urban structure with its physical characteristics and the needs of serving with modern tools. More complex is the tension between a city trying to retain its heritage while providing facilities and amenities (figures 6.5 & 6.6 & 6.7 & 6.8 & 6.9). The question raised here is how and to what extent could contemporary architecture continue keeping the cultural values of the modern society?

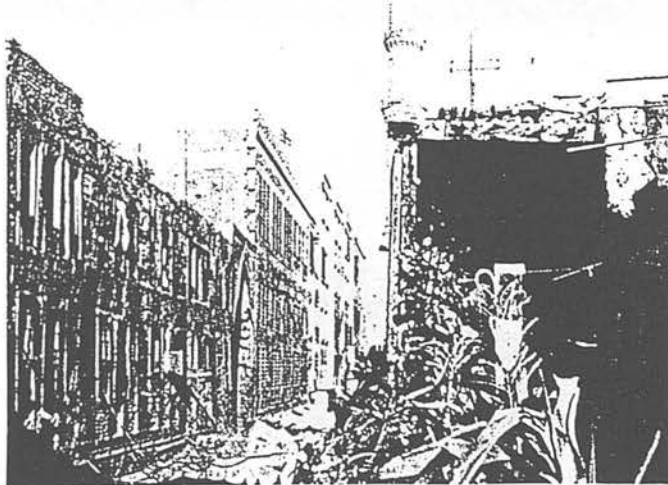


Fig.(6.5) Deteriorated condition for the most of Islamic historical buildings in the heart of medieval town, Al-Darb Al-Ahmar street, Cairo. Ref. Abu Lughod, 1971



Fig. (6.6) The view of St. Paul has missed its domination on the city of London by skyscrapers and fragmented pattern of the skyline Ref. By the author



Fig. (6.7) To achieve long term sustainable improvements in the old town of Edinburgh, historical buildings are kept with balance to contemporary needs.

Ref. By the author

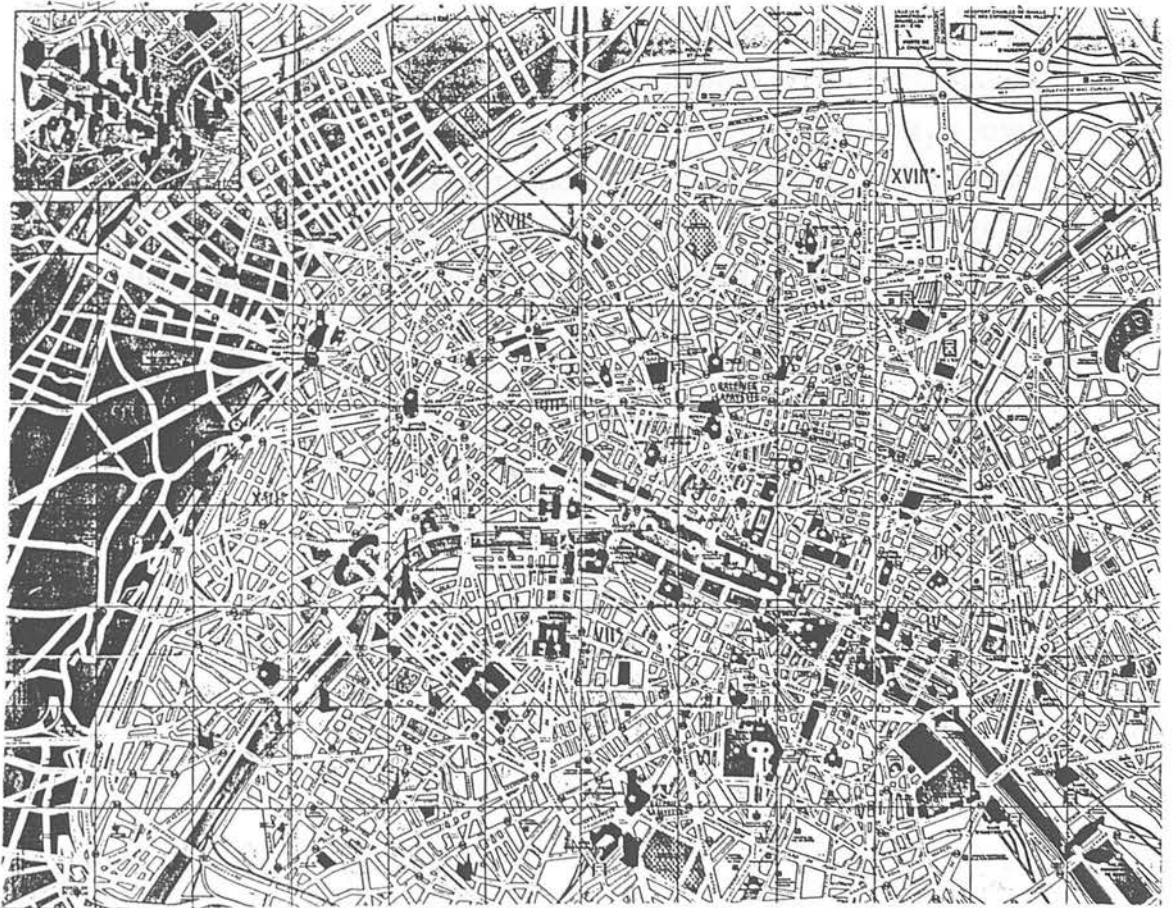
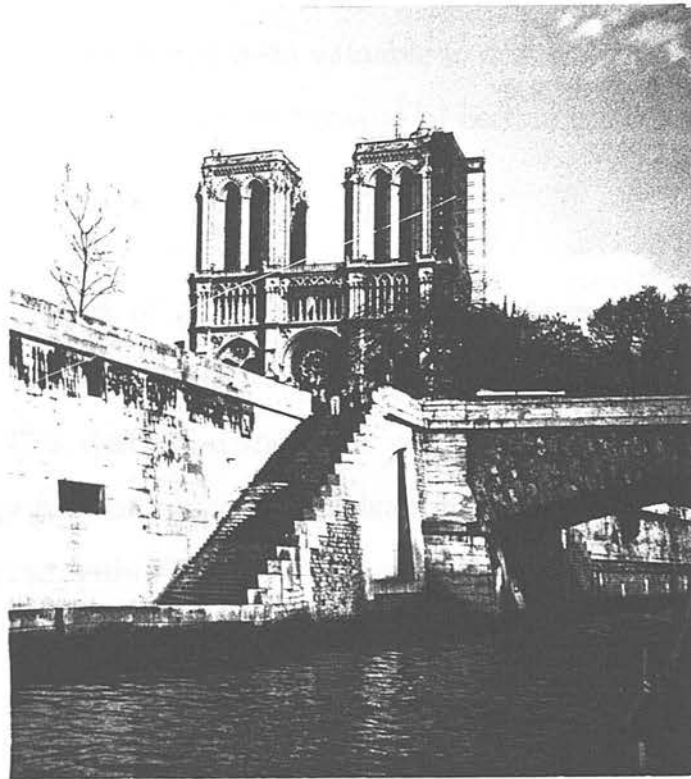


Fig. (6. 8) Paris tried to solve the tension between old and new by moving the pressure for newdevelopment ' La defence', on the continuation of the grand axis.

Accordingly, meanings and functions of a term 'contemporaneity' and its impact on architecture is required. It has been valuable to define what is meant by this term within the architectural context because of certain misconceptions about what is contemporaneity.

There are different ways of using the word contemporaneity. The English dictionary defines it as an adjective meaning "existing, living, occurring at the same time as...". This definition indicates comparison between at least two things, without any hint of approval or disapproval. This literally definition could not be accepted within the architectural context. By the proper view, it does carry a value - judgement and it means relevant to its time. Hassan Fathy writes that:

" Settlements each have their own time - scale, and that they develop by stages. In just the same way human knowledge advances in time by successive stages of maturity, and no stage can be omitted nor attained before its due... contemporaneity in planning means consonance with the current stage of change in knowledge and science. Consonance, that is, with humanity's total knowledge of science, which includes our knowledge of the current psychological state of the mass of humanity, and our knowledge of the discipline relevant to planning - both those the planner should be familiar to the political authority responsible for the plan. Thus contemporaneity is intimately linked with the notion of change. Obviously to be contemporary now means to be wholly relevant to the present. But the "present" is an instant, always changing, and always with us" (Hassan Fathy, 1992).

Now, contemporary architecture could be defined as a work which relevant to its time. It should respect the flow of everyday life, relate harmoniously to the rhythm of the universe, and be consonant with man's current stage of knowledge of change. Accordingly, one could refer the discontinuity of modern architecture to the conflict of various contradictory and individual interpretations about how the architecture expression should be. A natural evolutionary continuity was cut by this new architectural vocabulary. Furthermore, the tendency for the new

urban development to destroy the old in the interests of economics is one of the major reasons for placelessness . There is no longer any historical reference points by which one understands where one has come from in the process of building the new.

It is mentioned before that a proper role for any Egyptian architect has to be seen as producing the built environment (culture manifestation) which could support both homogeneity and stability of the society. The goal has to be seen in achieving the congruence between traditional lifestyle and new settings. When the incongruence is very great, a number of intermediate steps may be needed to modulate change . Within this procedure, historical point can be kept as reference points which enable us to observe and trace any transformations in concepts of environmental quality, and also to understand regularities and consistencies . They provide a safe and familiar base which may speed adaptation and modernisation. Such setting also avoid the need totally to restructure all cognition schemata, a most difficult task (see article 5.1).

Francis Tibbalds writes that the achievement of an early sense of maturity is a design theme which inevitably stretches the imagination, inventiveness and ingenuity of urban designers. Design at both the conceptual and detail levels must aim to shorten the period of newness and barrenness of appearance, so that new development appears to have evolved naturally and organically. Where possible, designers should be dissuaded from inventing new and different solutions to essentially similar problems. instead prototypical design and details should be adopted suitable to the particular context, using an appropriate common vocabulary (F. Tibbalds, 1992).

In achieving the previous goal, three approaches could be mentioned: the lowest one is copying while the highest is the innovation , between them , imitation represents the medium level. Although there is a common agreement for a

rejection of copying rather than imitation, both of them, due to the findings of this research, could not be the way towards an indigenous contemporary architecture. The main criticism for these approaches lies in the way of interpretation of both culture core and culture manifestation. Traditional buildings or spaces, for this group, represents the heart of culture, and hence, culture can be kept by keeping these traditional elements. In contrast, this research ensures that traditional elements are the product of culture core, and what needed to be kept is this core per se.

6.2.2 Compatibility with Natural Environment

It is known that for one thing, even in a given country, region or city groups will differ in life style, activity pattern and social structure, depending on place of origin, religion or degree of urbanisation. There will also be local topographic and climate differences, i.e., criteria need to be classified whereby group can be distinguished. By applying these notions on the Egyptian context, it could be argued that by excluding the peripheral boundaries of Egypt, one can describe the rest of urban areas, which are our concern, as merely homogeneous groups. Throughout the previous study of the evolution of the Egyptian urban spaces, compact cities have been built with respect to the physical environment as well as social and cultural one.

In terms of physical environment, urban experience in the arid zones shows that compact forms are effectively adjusted to climatic stress. The necessity of human adaptation to arid zones brought about the development of these compact urban forms, which have more a moderate micro climate. The Egyptian built environments were built through a full awareness of previous understanding. What has to be noted is that urban form and configuration cannot entirely change the regional climate, but can moderate the city's micro climate. The basic urban form provided maximum shade and allowed minimum radiation in

streets, alleys, open spaces, or any other public spaces, as well as within houses during most of the day in all seasons. It also minimised indirect solar radiation, especially reflection from the ground and walls, to avoid heating the air. The form moderated the effects of winds, which are hot during the day and cold at night. Besides these environmental impact of compact form, it reduced the length of utility networks, the maintenance they required, and the expenditure of energy and thereby prove economical.

The contemporary dilemma for designing the new evolving built environment could be seen within two contradicted views:

The first group argues that climatic determinism has been accepted in architecture as well as culture and geography. There is no one denying the importance of climate as it has great effect on the urban built environment and its architectural elements. This was quite clear under conditions of weak technology and limited environmental control systems when man cannot dominate nature but must adapt to it. The situation was changed by the progress of technology which effected the control of climate. The determinants that shaped, with other factors, the pre industrial settlements that gave rise to the physical forms which we admire are now no longer those of environmental limitation but of choice. The need to protect from nature has never been so urgent.

On the other hand, the second group, which is supported within this thesis, ensures the need for continued respect to the environmental factors. The connections between regional identity and the sustainability of the land are essential and fundamental. A valid design philosophy, therefore, is tied to ecological values and principles, to the notions of environmental and social health, to the essential bond of people to nature, and to the biological sustainability of life itself. This is new necessity that will counter balance and bring some sanity to a world whose goals are focused on helping us " live in a

society of abundance and leisure". Yet values that espouse a truly sustainable future will only emerge when it is perceived that there are no alternatives. It is possible that over time, the fragility of earth's life systems will create an imperative for survival on which a new ethic can flourish.

Accordingly, and with respect to natural climatic factor, there is no doubt that the main goal for urban designer is, still, to control the thermal elements (temperature, humidity, wind, rainfall) through the designing of physical environmental elements. Although the urban form and configuration cannot entirely change the regional climate, it can moderate the city's micro climate, and represents a direct approach to create regional identity.

6.2.3 Patterns of Activities

The role of the designer is to create a potential environment for human needs, what a person uses and appreciates is his effective environment. The basic point made is that environment, which surrounds the human, consists of geographical setting, social and cultural components. Therefore, the role of the designer has to be seen not only in terms of providing abstracted geometrical spaces. He has to define the core elements in its hierarchy of values, and relate them with the designed built environment within the corresponding hierarchy of human needs. The built environment in that way, can be seen as behaviour setting of man's behaviour, which respects the biological needs, cultural needs and man's ability to adapt to the environment.

The segregation between indoor and outdoor domain of settlement, and also between external spaces with each other, is mostly correlated to the modern theories of architecture and planning. It has great impact on the social pattern of the contemporary society.

The historical precedents of the Egyptian towns suggest that the environmental unity derives from buildings themselves as well as the arrangement of buildings and land use. Unity in buildings is related to simpler principles of consistency in materials, details and facade design. On the other hand unity of the layout , which derives from spaces between buildings, is obviously derived from the development of the urban area as a series of linked but different places, from the coherence mixture of scales and uses and from the diversity in hierarchies and referencing systems which relate one part of the city to another. The urban form was distinguished as a whole of integrated and coherent parts. The layout was one solid body which gave an evidences of community , and produced a great opportunities for contact between people.

The contemporary situation could be seen within the following . Attention is often given separately to each individual building with almost no consideration to its surroundings. Movement pattern dominated by cars is the main factor in shaping the built environment and its unity. Incongruence between pedestrian human scale and car road scale as well as a conflict between human activities and cars movement are the main problem attached to that pattern. Accordingly, the Egyptian built environment , nowadays, is conceived as a non integrated entity which includes both buildings and spaces. It gives priority for single houses than a coherent structure, i.e., individuality rather community.

Therefore, new ways need to be found to encourage the richness of the concept of unity, so that every one benefits - individuals in the form of building owners, occupants and citizen in the form of users and passers-by. It will need new attitudes by both designers as well as a willingness for these two groups to abandon confrontational attitudes in favour of closer and more positive collaboration. Two main functions have to be mentioned:

Single and Mixed Land use

Activities within the concept of single use has proved an unsuccessful solution for residential settlements. The meaning of activities implies that recreation, for example, does not just happen in parks. It may happen in streets, shops, in apparently waste space, or in dwellings. On the other hand, shopping may involve streets or the ground level of house attached to the outdoor spaces. Shopping centres may have a high quality of finishing materials and opportunities for entertainment, but its consequences as zoned separation of uses literally kills urban areas. Thus, single use building on large blocks need to be avoided.

Mixed use development should be encouraged, with particular attention to seizing opportunities to incorporate residential accommodation. In social and functional terms, most uses and activities can exist side by side or one above another. The exception could be seen in large-scale uses which attract very large numbers of people and vehicles, such as a sports stadium, and uses like heavy manufacturing which create noise.

The most integrated places offer a variety of activities and experience. Living, working, trading, shopping and playing all gain from being linked. Mixed uses make for lively, safe environments – whether in whole streets or individual buildings. The public realm is safe and enjoyable because it attracts different people at different times for different purposes. This not only makes for lively environments, but it also provides informal surveillance of the public realm. Social activities and people's interaction are conditioned by the exist of common values among the residents. People could be attracted by the use of high quality of physical elements, but they will interact in passive way. People could communicate in active way when they are motivated by their traditional way of doing activities. By traditional ways, we mean their production for local hand craft, celebrating indigenous ceremony, doing or obtaining daily needs,...etc.

Segregation of Traffic Pattern

Cars have become a part of peoples' lifestyle , and one of their main activities. It is very important to keep people and activities at street level. Bridges, decks and subways are universally unpopular and are now being demolished in many cities. The complete exclusion of traffic, however, is not always a good thing – some traffic can give life and vitality to a city. But reducing the hazards and intrusion of motorised vehicles has to be achieved mainly through properly designed schemes which prevents a pass - by movement within the residential area (see article 4.1.4.2) .

Accordingly, unity within the built environment has been badly affected by the concepts of single use and traffic segregation. Re-establishment of the importance of both mixed use and the street as key components in the urban fabrics are required. The first priority is to agree what sort of public realm is appropriate in any particular area and then to agree the building, development and circulation system which support it. One has not to view the organisation or reorganisation of towns and cities purely from the exclusive points view of the motorist or the developer. Politicians, traffic engineers and planners must stop giving permanent priority to the motor car and thereby assisting the destruction of the environment. However, reducing vehicular traffic has also be considered, but not to extent which may lead to complete pedestrianisation. Pedestrian areas should not be the aim in any case. It is the way of creating life through the residential areas, life which emerges from the people's way of doing activities formulated by their cultural identity. It is of greater importance to consider the needs and aspirations of people as a whole - with priority being given to pedestrians, children and old people.

Application (case studies)

DAR LAMANE HOUSING COMMUNITY

Casablanca, Morocco

Architect: Abderrahim Charai and Abdelaziz Lazrak

Community, Behaviour and Social Activities

I have chosen this scheme because of its significance in addressing the issue of environmental behaviour and processes such as privacy, territory and personal space. This mechanism which is seen within the thesis as a tool for obtaining self-identity and a sense of self-worth involves the ability to control one's boundaries in relation to others. It is a positive quality which stimulates a sense of freedom in a place of particular culture. People's activities are motivated by their feeling of belonging towards certain places in which they live (article 3.3).

A) Object and Location

The housing complex was built in Casablanca near the city centre. It aims to construct a residential community of over 4000 units with facilities for low-income housing group. It was completed in 1983 (figure 6.9).

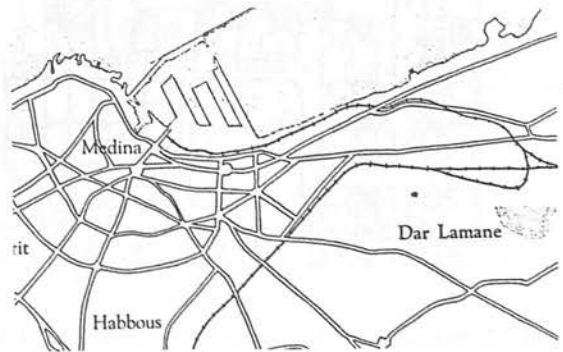


Fig. (6.9) Location of Dar Lamane project

B) Description

The design of the project can be seen through three main components.

1) General Layout

The residential complex consists of six housing clusters surround a large square on three sides, which includes the Mosque, festival hall and main market. These clusters are separated by five gateways with arcaded pavement link the central space to the rest of the community (figure 6.10).

2) Cluster Unit

The housing clusters are arrangement of rows of attached apartment buildings separated by pedestrian streets. Along these routes, all buildings have access and entrances facing each other. Each cluster is organised in rectangular shape around a service yard which is accessible by cars. A nursery school, daily needs and some shops are located within this yard (figure 6.10).

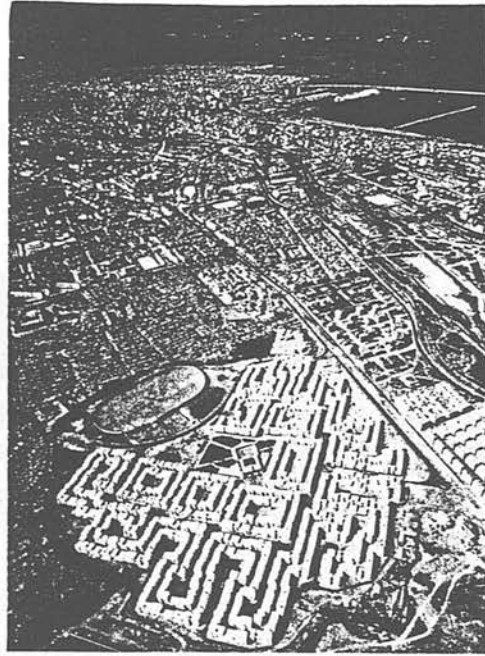


Fig.(6.10) Aerial view of the general layout

3) Housing Unit

Simplicity and flexibility are the main concept for designing the housing units. Mainly they have three or four rooms but in different design options to respond to various requirements of the layout (figure 6.11).

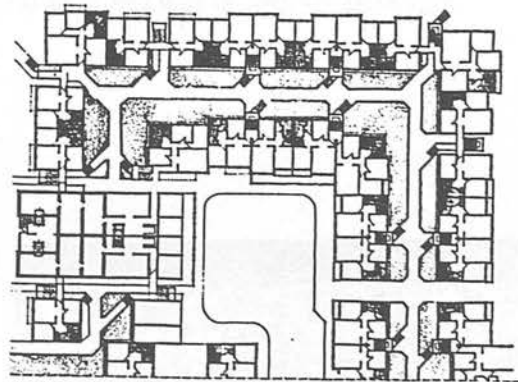


Fig.(6.11) Cluster plan shows different housing units

C) Evaluation

Although the project has many advantages in terms of economical, climatic and cultural aspects, I will emphasise the most important one from my point of view. It represents a successful solution for low-income housing that ensures the important role of urban public space. It produces an example of authentic place which was not based on fragmented left-over spaces. These spaces have been considered and dealt with as an extension of living space. The tremendous manipulation of public, semi public and private spaces gives the

whole project a distinctive territory which ensures people's aspiration and cultural identity. The spaces have become integrated places within cultural context. They invited people to experience their social habit, customs and traditional events such as their weddings and religious or social festivals (figure 6.12).



Fig.(6.12) Different types of cultural activities within pedestrian streets

By analysing the three main components of this project, one can identify its points of strength.

A concept of arrangement of clusters around the centre of the community, indicates at once the importance of this centre in a city and its role towards the residents. The domination of the Mosque in the central space is very successful in terms of Islamic cultural values. The same meaning is also ensured through the relation between the Mosque's minaret and the height of other buildings (figure 6.13).



Fig. (6.13) Domination of the Mosque on the urban form

In addition, this relationship plays a successful role in terms of visual intelligibility and in how people orient themselves within the whole residential scheme. Within the six clusters of this scheme, there are no two clusters which are identical. This is due to the use of a great variety of options in the arrangement of the housing units. Although all clusters have the same design concept, there is a high sense of intelligibility attributed to a sense of diversity within unity (article 4.2).

According to the main attention which has been paid to the problem of safety and security, a successful concept of adequate segregation between traffic movement and pedestrian one has been followed. Residential schemes need to be compatible with pedestrian patterns rather than be dominated by traffic pattern requirements. This is the case especially within low-income housing groups where people have a low rate of car ownership. The overall organisation of the layout of housing clusters recalls the traditional pattern of "Harah", which ensures a continuous existence of pedestrians between buildings. This is encouraged by the use of long walls of housing units as well as the use of arcades on the ground level (figure 6.14).

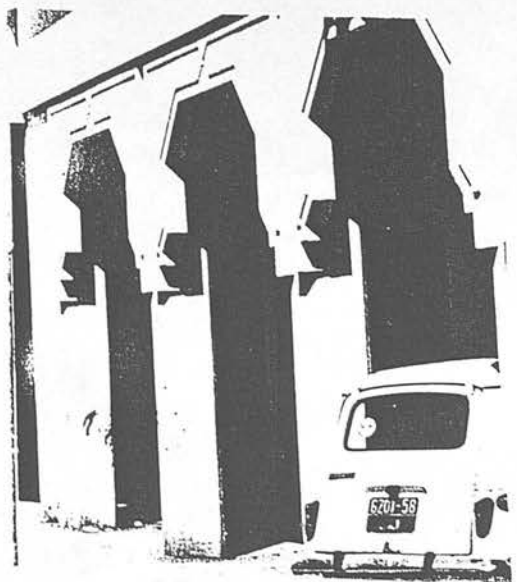
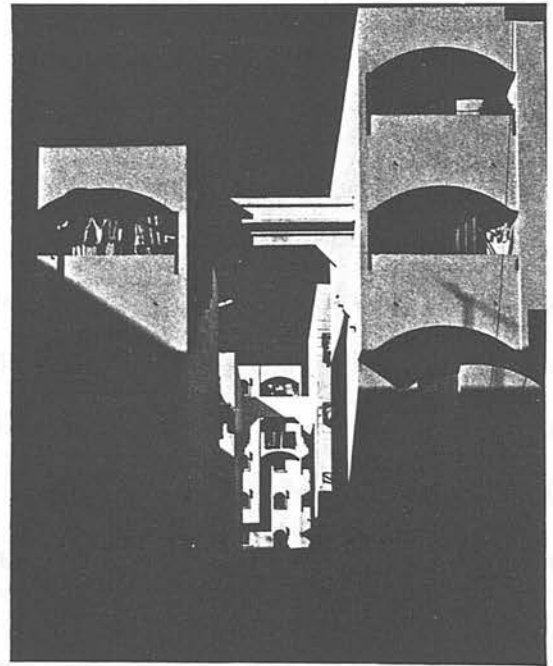


Fig.(6.14) Existence of people encouraged by narrow streets and shaded arcades

When the building organisation achieves a distinctive territory, people identify themselves with their places. This is clear in a situation of the Dar Lamane residents, where people are actively engaged in maintaining their community. Private space and garden rather than communal space stimulate people's participation in improving the quality of their built environment (figure 6.15).



Fig.(6.15) Private spaces between buildings well planted and maintained

The use of a gateway which links the paralleled buildings not only defines a sense of place, but also expresses cultural symbols within the built environment as a whole. It is a proper choice of an architectural element that provides a sense of territoriality which is fundamental to the success of the housing project. It embodies many layers of meanings and functions that are related to the Moroccan society (figure 6.16).

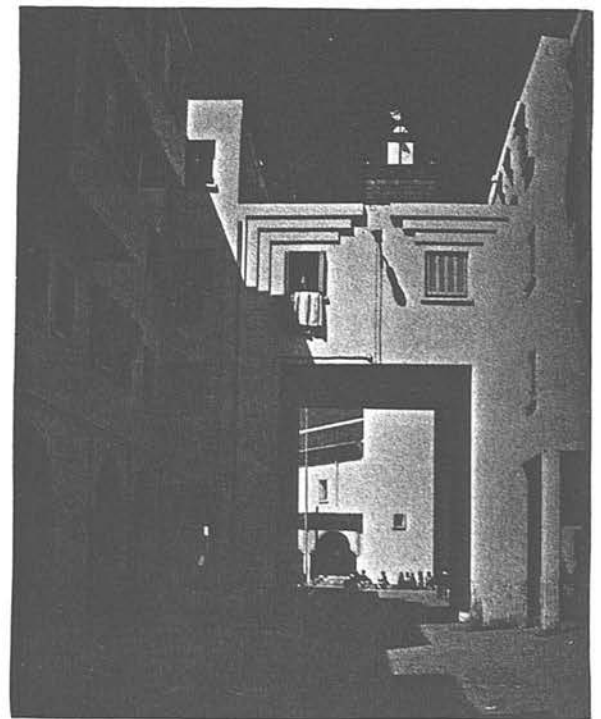


Fig. (6.16) A sense of place and cultural values through a massive gateway

In summary, although people's behaviour could not be shaped only by the direct effects of the physical environment, buildings arrangements have a main contribution to people's activities and their experience. Evidences through the Dar Lamane project suggest that feelings of community were successfully created by respecting people's territory, privacy and personal space in terms of their cultural context. Buildings more than any other cultural products can combine people with their indigenous identity and relate man to his environment.

SHUSHTAR NEW TOWN

Shushtar, Iran

Architects: D. A. Z Architects, Planners and Engineers

Aesthetics and the Quality of the Built Environment

The housing project of Shushtar New Town has been chosen as it produces a successful example for a proper quality within the built environment. Aesthetics within the thesis has been considered as one of the main components contributing to this quality which has been defined through formal and cultural dimensions. People's satisfaction about any urban form (buildings and spaces in between) has been seen as a result of their conscious and unconscious experience and cognition. Therefore both physical and non-physical factors have to be considered. Although our evaluation for the housing project of Shushtar will be done in relation to formal and cultural aesthetics consequently, both however are fused and perceived in a holistic way (article 5.1 & 5.2).

A) Object and Location

Shushtar New Town was built on the Khuzestan Province in Southwest Iran, where most of the land is desert. The site is situated across the river from the existing old city (figure 6.17).

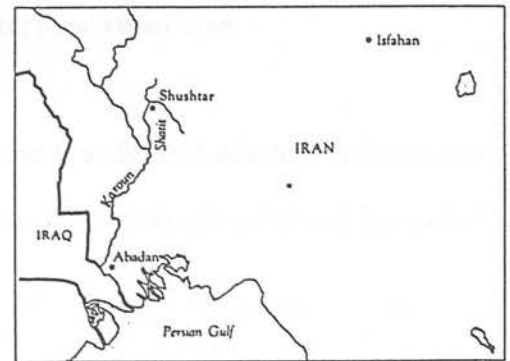


Fig.(6.17) The location of Shushtar New Town

The project was constructed to be a satellite town to house employees of a sugarcane processing factory . In the following part we will be concerned with phase (I) which was completed in 1977 to accommodate about 4000 inhabitants.

B) Description

The design concept of phase (I) can be described through three main components.

1) General Layout

The main concept of the layout is based on creating two main spines which represent two types of movement for both traffic and pedestrian use. Both movements are separated by the shopping centre in the point of intersection. Accordingly, automobile traffic is prohibited to generate cross circulation within the residential area, and all housing units are within an adequate distance to the traffic spine. To achieve a more lively pedestrian spine, the public buildings are grouped along this boulevard. This is without denying that due to the huge scale of this route, there is a lack of adequate shaded areas required for pedestrians (figure 6.18).

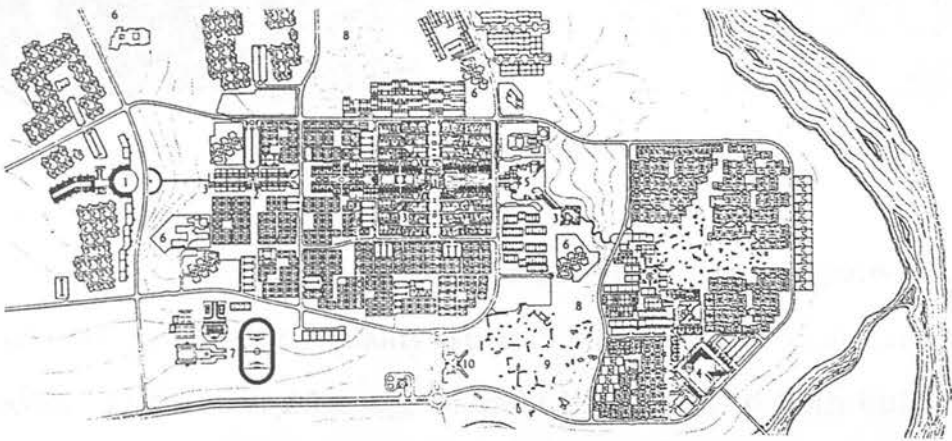


Fig.(6.18) General layout, Shushtar New Town, Iran

2) Building Organisation

The system of buildings organisation of the residential scheme follows the pattern of traditional Iranian architecture. It is based on the use of court houses in a compact order with narrow "harat" which are corresponding to climatic, technological and cultural aspects. The massing of the buildings is a parallel arrangement of mostly one or two story houses that are clustered along the rectangular and broken grid pattern (figure 6.19).

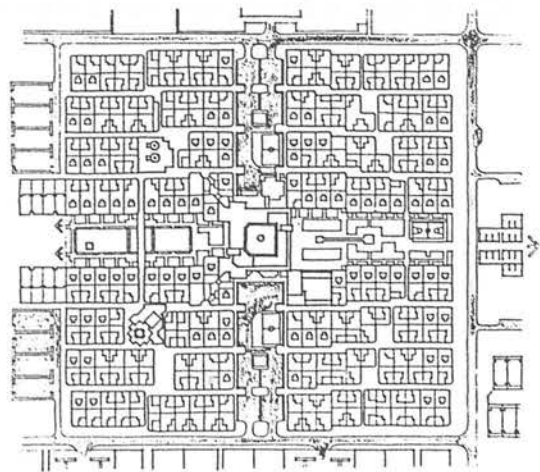


Fig.(6.19) Site plan (phase I)

3) Housing Units

In the residential cluster, the concept of housing units is based on the traditional organisation with multifunctional rooms arranged around a courtyard. Most of these units include two or four rooms with flat roofs that are used for sleeping (figure 6.20).

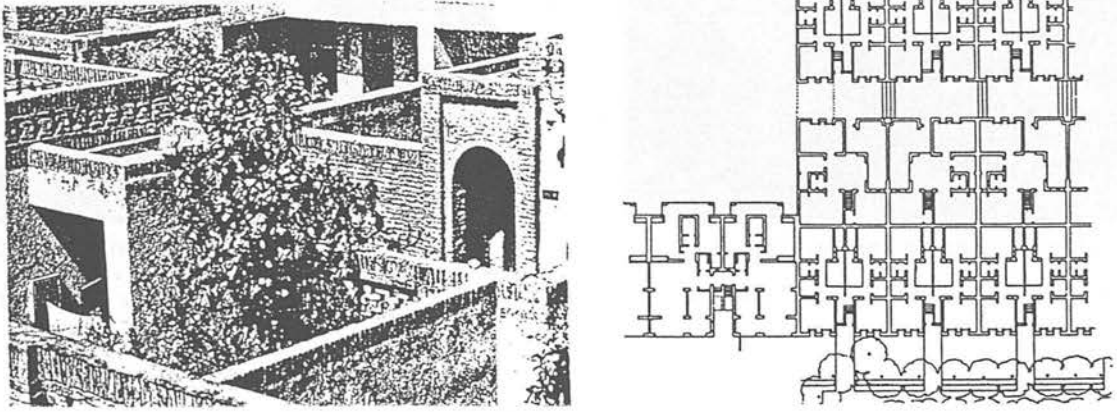


Fig.(6.20) The typical housing unit

C) Evaluation

Although the project can be criticised through different aspects, we will be concerned with its aesthetical quality especially in relation to formal and cultural dimensions. The tremendous use of local brickwork in both building and decorative elements for facades has to be considered for special attention.

1) Formal Dimension

The successful manipulation of the physical characteristics of the site as well as the proper use of traditional materials have produced a high quality of formal aesthetics. Accordingly, a subtle setting in harmony with the environment has been achieved. A mastery of scale massing that is found throughout the project has been created through two main ways: Firstly through the interesting variety of spaces which are produced by the contrast between the vast public spaces and the dense fabric of the pedestrian streets, and by the use of broken paths. Secondly by the perfect articulation of spaces and the dynamic scenes which are formulated by the proper integration with slight slope of topography (article 5.2.2) (figure6.21 & 6.22).

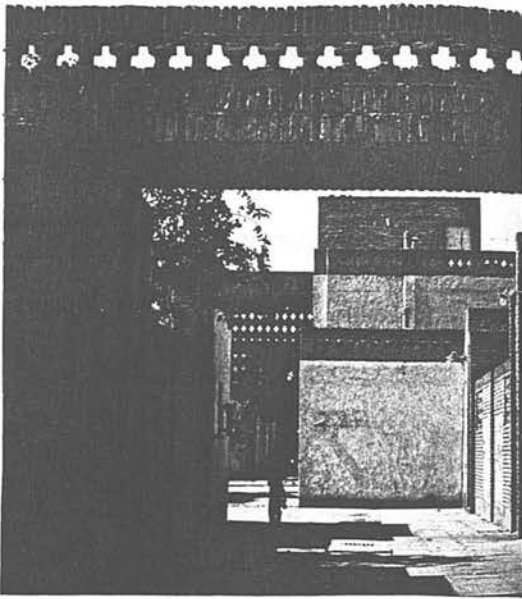


Fig.(6.21) The mystery in broken route enriches the visual perspectives

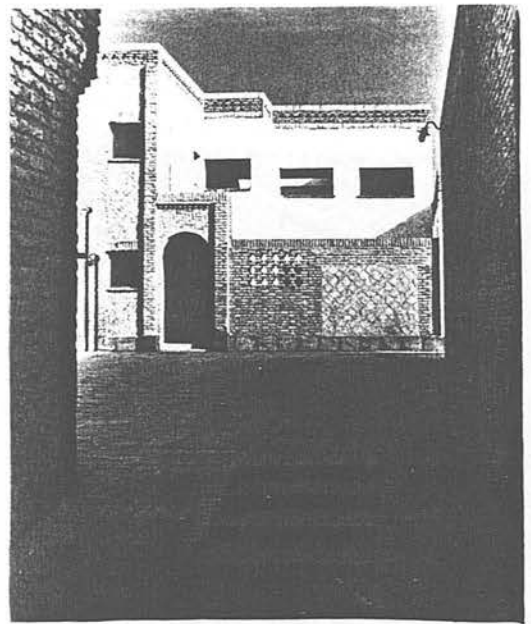


Fig. (6.22) Variation of walls' heights in relation to the ground level changes

The successful use of brickwork as a local material, which can be achieved within the available technology, gives the project one of the main features of its distinctive character. The elegant handling of brick contributes to the quality of formal aesthetics by giving harmony, unity, and totality rather than fragmented partiality for the visual aspects. Decorative brickwork has been efficiently used in different functional purposes such as to give privacy for spaces as well as cross ventilation, to integrate building ends with the sky through the roof parapets and to mark the entries for both houses and paths (figure 6.23).

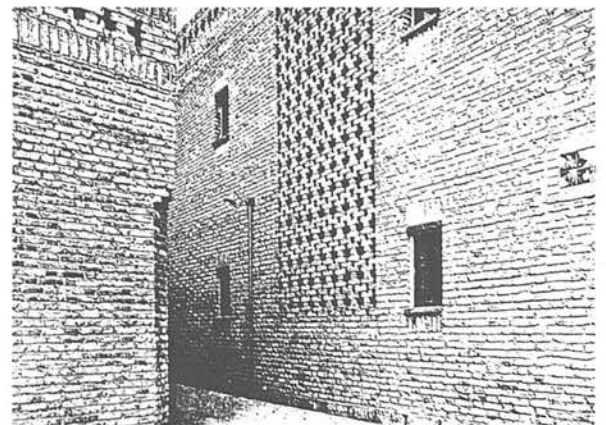
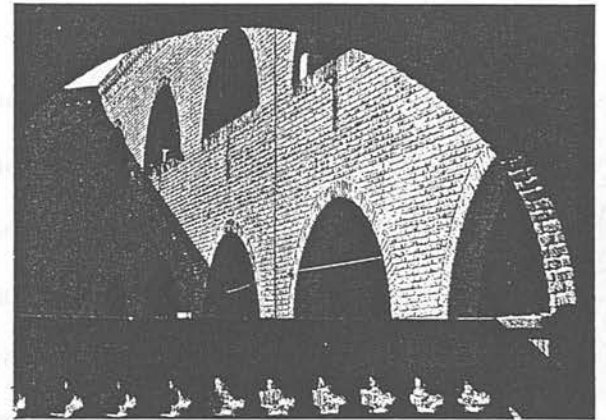


Fig.(6.23) Brickwork used as decorative elements to achieve functional purposes

2) Cultural Dimension

Although the high quality of formal aesthetics - which has been mentioned above- is appreciated by human beings in general, in this case it is also seen as a special cultural aesthetic for the Iranian society. It can be argued that within the Islamic context, Iran represents a unique situation due to their rich decorative and colourful architecture. Ideas and forms originating in pre-Islamic Iran were transformed and embellished during the Islamic period to become some of the greatest forms of expression of the Islamic world and inspiration to the whole eastern part of that world. The main theme for their buildings were based on the harmony between form and surface, i.e. between architecture and decoration (figure 6.24).

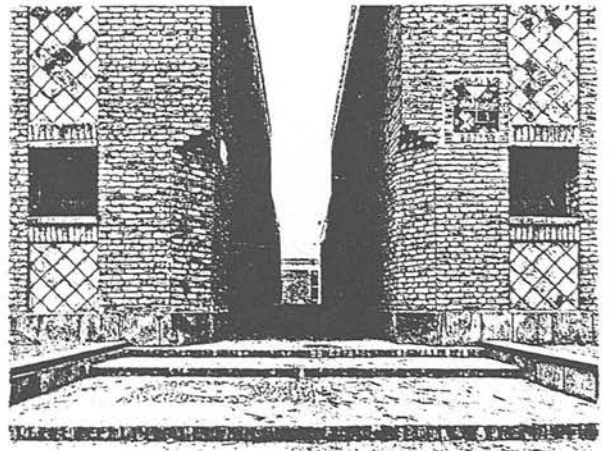
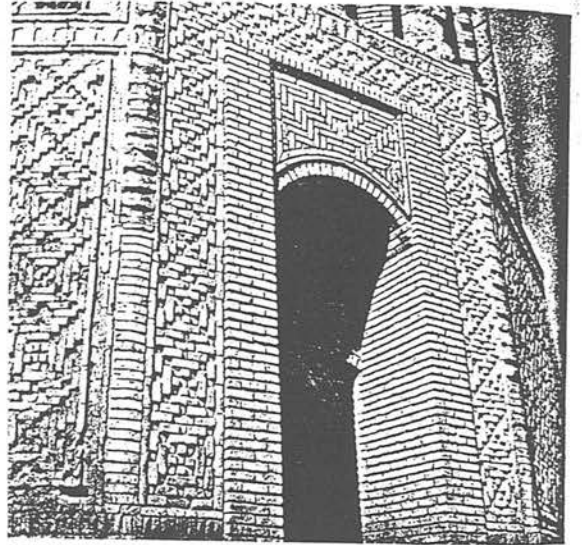


Fig.(6.24) An aesthetical continuation between the old (top) and new towns (above)

The urban form is related to the way in which people perceive the quality of their spaces including aesthetical components within. The human scale which includes spaces proportions, buildings dimensions and the properties of building material encourages people's social interaction (figure 6.25).

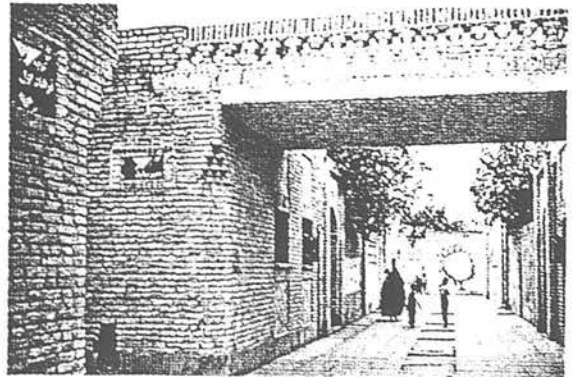


Fig.(6.25) The human scale and peaceful pedestrian routes encourage people's interaction

In summary, Shushtar New Town has produced a unique example which shows how a contemporary housing project could be successful in terms of both formal and cultural aesthetics. Although it represents a high standard of visual quality, it is relevant to the cultural values of Iran and the Iranians. This quality was a prosperous attempt to satisfy the Iranians in their indigenous life style as well as their contemporary needs.

HALAWA HOUSE

Alexandria, Egypt

Architect: Abdel Wahed el-Wakil

Natural Environment, Local Resources and Energy

The project of Halawa House has been selected due to its significant message of how a building can be compatible with the natural environment. It produces an elegant example for maintaining natural resources of energy and natural eco-systems without the need for mechanical means. This achieved by developing specific building design and technique of construction. Responding to the natural forces is an important factor to achieve regional character and sustainable life for any place (article 3.1.2 & 6.1.1).

A) Object and Location

The project is located in Agamy, a seaside town in Egypt, near Alexandria. The design concept aimed to fulfil the client's desire for a resort house. Besides, the architect was interested in creating contemporary architecture based on traditional form and local materials (figure 6.26).

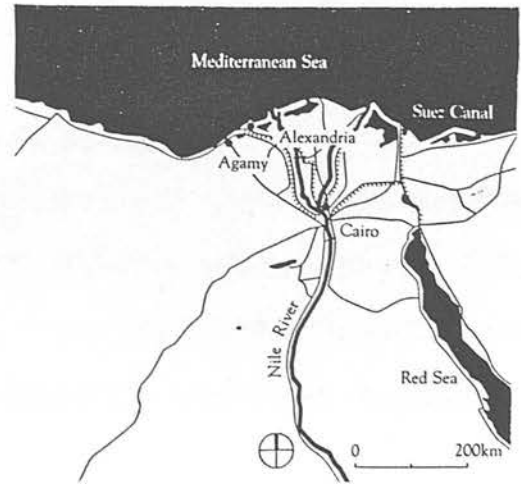


Fig.(6.26) Location of Halawa House

B) Description

Halawa House was built in two stories around the three sides (south, north and east) of an open courtyard. The ground level is consisted of three main parts. On the north there are main entrance leading to the living area, a vaulted loggia and a guest bedroom. On the east side of the house, there are the workyard, kitchen and servant's quarters. On the south, there are double garages and a storage area (figure 6.27).

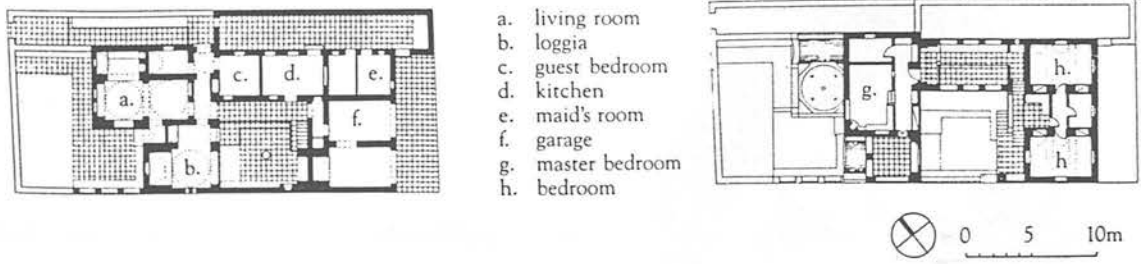


Fig. (6.27) Plans of Halawa house

Open stairs lead up from the courtyard to the first level where there are double bedrooms in the south overlooking towards the courtyard at the north facade. The master bedroom is located on the north at the second level and linked to other bedrooms through a belvedere overlooking the beach and the courtyard at the west facade (figure 6.28).

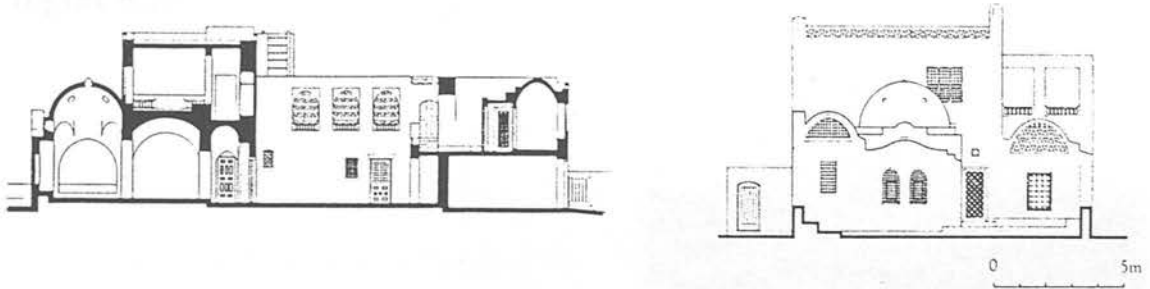


Fig.(6.28) Main elevation and section

Halawa House was constructed by the use of traditional ways of using masonry which was made of undressed limestone, burnt red brick and mud mortar. Both external and internal renderings of the masonry consisted of three coats of white coloured sand-lime plaster which is considered as traditional Alexandrine plaster.

C) Evaluation

Like other ecological factors, climate is looked at through the ability of man to utilise its various components to his interest, i.e. to achieve a thermal comfort for man. Different successful traditional solutions have been re-interpreted to achieve the goal mentioned above. This includes building form, construction materials and architectural elements.

By orienting all the rooms towards an open courtyard, both social and physical purposes have been achieved. It serves as a centre of activities within privacy for the whole family. Besides, it is particularly comfortable because it lies in partial shade and draws fresh air down through the wind catcher. It allows the cooler air to flow into the rooms around the courtyard, while heated air from the rooms rises up (figure 6.29).



Fig. (6.29) The courtyard as a centre of activities

The circulation of air enhanced by the use of wind catchers, courtyard and the clusters on the upper part of building walls. On the other hand natural lighting has been improved by filtering of light of varying intensities within the internal rooms. Small and narrow lattice wooden windows (mashrabiyya) have been used for the external walls. In contrast, large windows, shaded loggia and belvedere were successfully used within the internal court (figure 6.30).

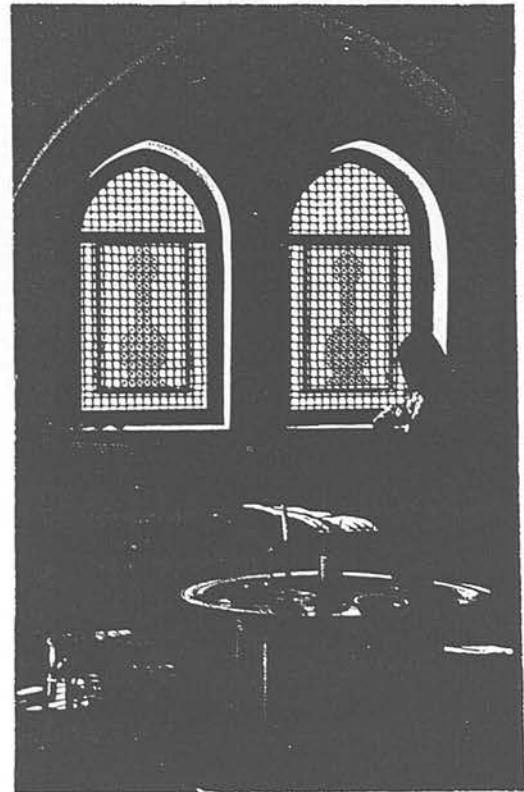


Fig.(6.30)Thermal comfort for the external spaces

The traditional materials and way of construction are similarly appropriate for achieving the thermal comfort. As walls and roofs are exposed to maximum solar radiation, special attention has been paid for their architectural treatment. The external walls were made from solid thick stones with small voids (windows). The closely set bearing walls are opened with arches and spanned with parallel vaults and domes. All materials were successfully selected due to their thermal properties which included limestone for external walls, Muqattam sandstone for courtyard pavement and marble for living floors (figure 6.31).

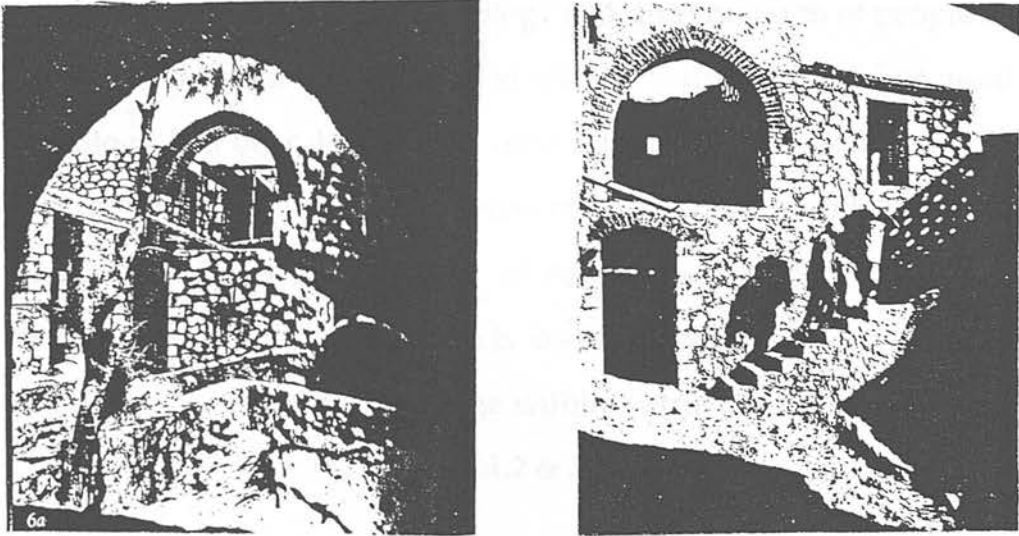


Fig.(6.31) Masonry construction as a successful system for bearing walls with vaults and domes

Having studied Halawa House, the main message is that achieving the human thermal comfort must not be overlaid by the worship of progress. An architecture based on technology to achieve this goal will fail to convey this message unless it employs a language that is appropriate to the context of a specific culture i.e. Although these architectural vocabularies have been used mostly in the rural areas and private houses, it would be necessary to be carefully adapted for the use of urban areas. The architect can benefit from the main concept, but he has to be aware about the tools which he will use.

ANDALOUS RESIDENCE

Sousse, Tunisia

Architect: Serge Santelli

Building Typology

It has been mentioned that one of the main dilemmas in contemporary architecture is the conflict between the traditional architectural forms and the new modernised ones. Building typology was an expression of people's identity that connected their cultural values and social practice to the architectural forms. This typology has been lost by the individualistic theories and ideologies of different architectural schools or movements. This brief introduction is required to explain why I chose the project of Andalous Residence. It represents a successful example of how architects could respond to new changes, and produce a new architectural language within a structural principles underlying the indigenous culture core (article 0.1.2 & 3.1).

A) Object and Location

The Andalous Residence is an apartment hotel which was built in the Dar el-Andalous resort complex near Sousse, Tunisia. It was completed in 1980 (figure, 6.32).

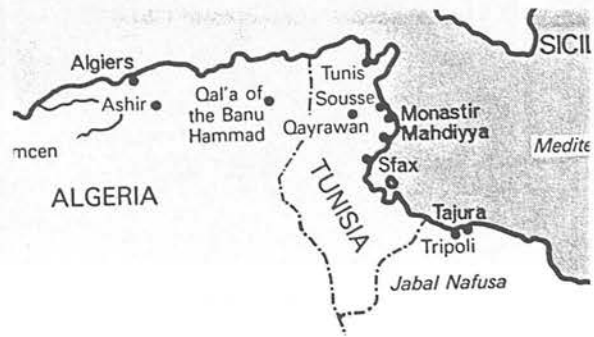


Fig.(6.32) Location of Andalous Residence

B) Description

The Andalous Residence can be described through two main elements; the plan concept in general and the manipulation of its internal components (especially the apartments in this project). Both are manipulated with the facades treatment and architectural details to constitute the architectural concept which has both meaning and message.

Plan Concept

The hotel consists of three-story building which is arranged around a series of courtyards. The inner ones are used as entrance areas for the apartments which are linked together through the outer courtyard as public area. All the courtyards are connected along a main longitudinal axis with small stream decorated by ceramic tiles as the traditional Arabic-Islamic palaces. The concept of Islamic gardens has been achieved by the use of such features as pools, fountains and pergolas in addition to plants and trees (figure 6.33).

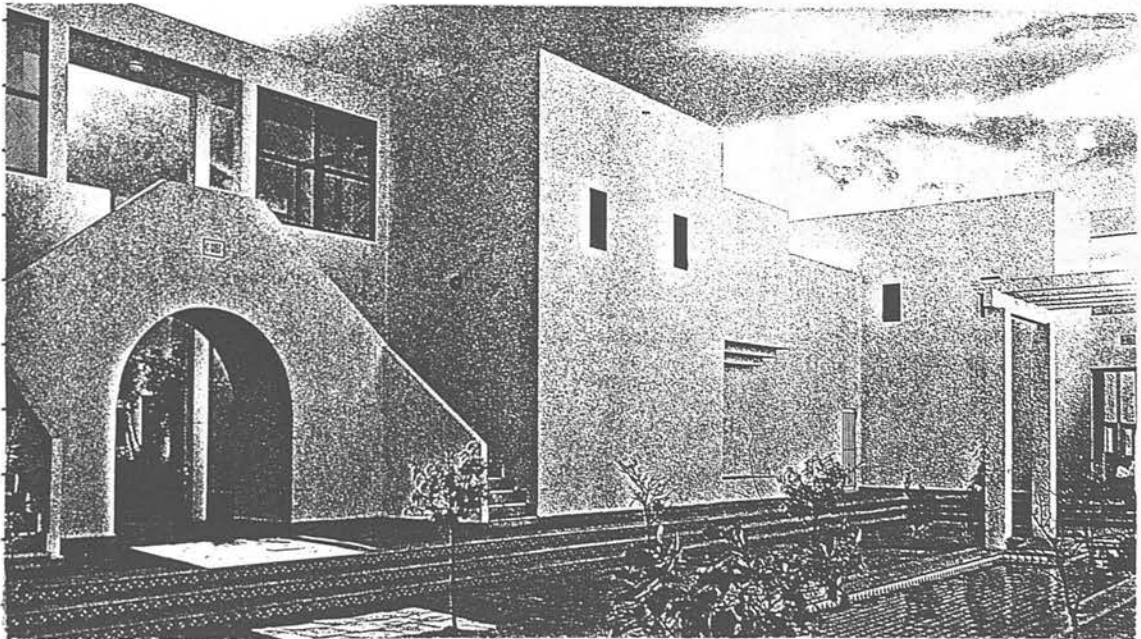
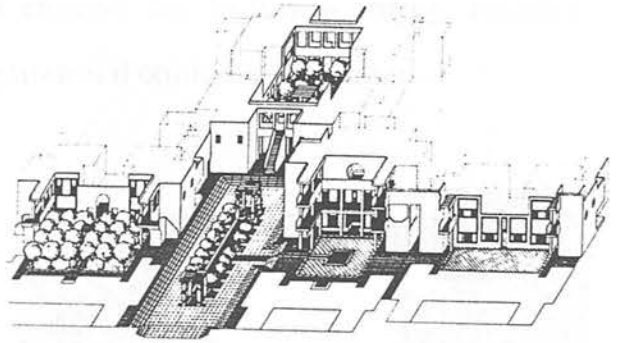


Fig.(6.33) Inner and outer courtyards

Apartments

Most of the Andalous Residence apartments consists of one or two rooms. Each one at the ground-level floor has a private garden, while in the case of the upper level, a room has a private terrace protected by a high wall. Different personal needs such as eating, drinking or even having a sunbathe could be achieved comfortably in the open air without being observed.

C) Evaluation

The main positive aspects of the Andalous Residence project are its simplicity and functional elegance of the design. It respects the Tunisian identity and their regional architecture by responding to the components of their indigenous culture. Referring to the description which has been mentioned above, different successful traditional choices for building forms, facades elements, decorative details and building material could be identified .

The building form is formulated by the use of different masses which could create a sense of the human scale, as well as different opportunities of having shade and shadow. The external facades are mostly solid with small windows while large ones have been used in the internal court. Traditional architectural elements have been used in a new language which includes regular arcades , wooden mashrabiyya and colourful tiles (figure 6.34 & 6.35).

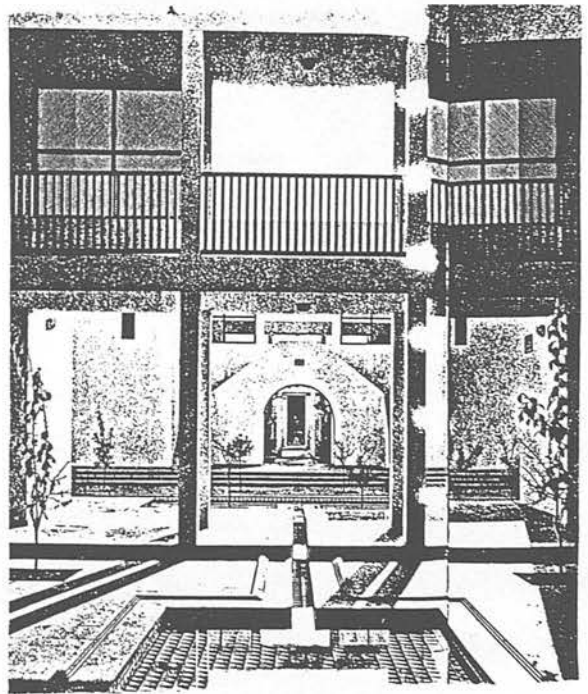


Fig.(6.34) New architectural elements were used in modern abstract within the courtyard

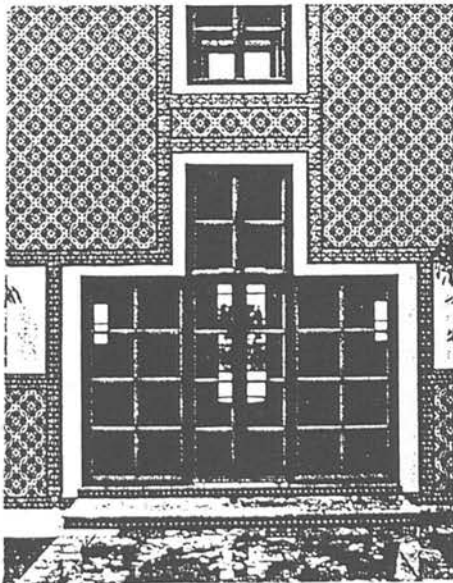
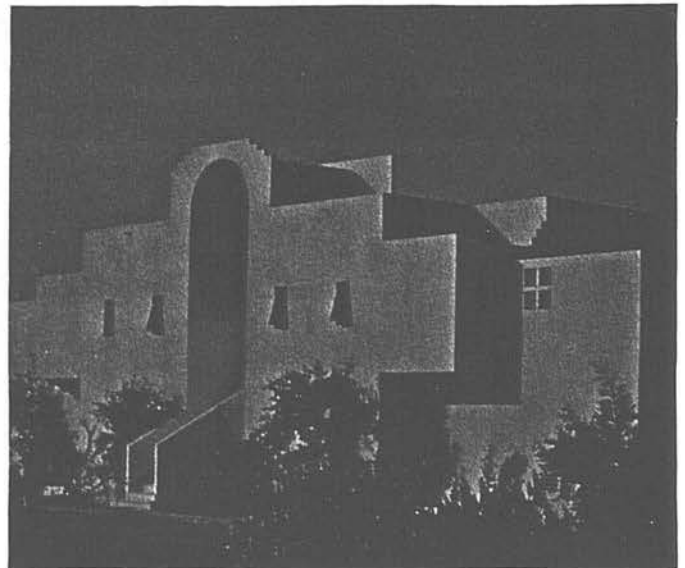


Fig.(6.35) External and internal facades



What has to be noted here is that the use of traditional elements was not an attempt of copying their features or proportion, but it was due to their appropriateness within the context. The effect of the contemporary need for changes could be seen through simplicity of architectural mass, the regular arcades and in the rejection of the over use of arabesque works (figure 6.36).

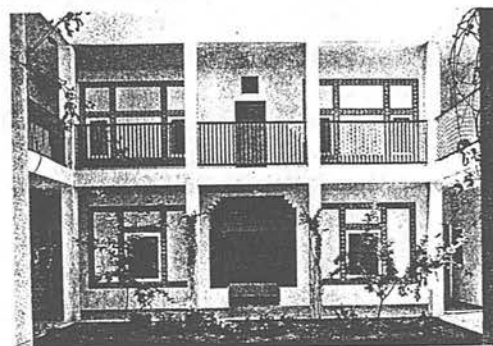


Fig. (6.36) The traditional courtyard (top) is reinterpreted in new form in Andalous Residence

The main message of the Andalous Residence is that architects should not have a role in creating new building types which are far removed from what people have in their mind. However, their main task is to adapt building types to specific sites according to the program requirements. Architects can improve the quality of each type without losing the original architectural language by the manipulation of proportion, relation with structure, composition of internal spaces,...etc. Architectural typology therefore should be seen as an expression of certain place which respect time, not as a reflection of certain time spread in all places .

HAJJ TERMINAL

Jidda, Saudi Arabia

Architect: Skidmore, Owings and Merrill

Technology and Symbols

The study of Hajj Terminal may be useful due to its success in using technology to express cultural symbolism. Symbols have a distinctive priority for many society to the extent that they could be seen as the culture per se. Therefore symbol has become a special source generating design ideas in many architectural works. It has been mentioned that the process of creating place could be achieved by respecting the natural environment, ecological resources and people's social patterns. These however are usually abstracted in the form of certain features which create the symbol itself. The growing obsession in the use of technology in architecture has suppressed these symbols and has lead to a well known conflict in the contemporary discourse on architecture. The Hajj Terminal is a good example responding to this important issue (article 5.2.3 & 6.1.2).

A) Object and Location

Due to the occasionally heavy air traffic which occurs during the period of "Hajj", the Terminal was constructed in the King Abdel Aziz International airport. It was located between Mecca and Jidda, and was completed in 1982 (figure 6.37).

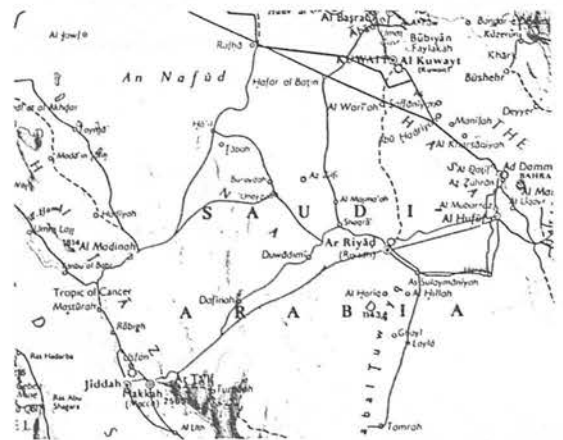


Fig.(6.37) Location of Hajj Terminal

B) Description

The plan of Hajj Terminal is a regular geometric shape which consists of two separated and huge identical tent-roof pavilions 320 by 686 metres. Each pavilion has five equal modules which in turn has two zones: closed air-conditioned buildings and open waiting areas which are not air-conditioned. Each module consists of twenty-one identical lightweight tent units. Each tent unit consists of a double-curvature tensile surface that rises conically to a tension ring. The fabric surface is supported by steel radial cables that span between the upper ring and lower catenary (figure 6.38).

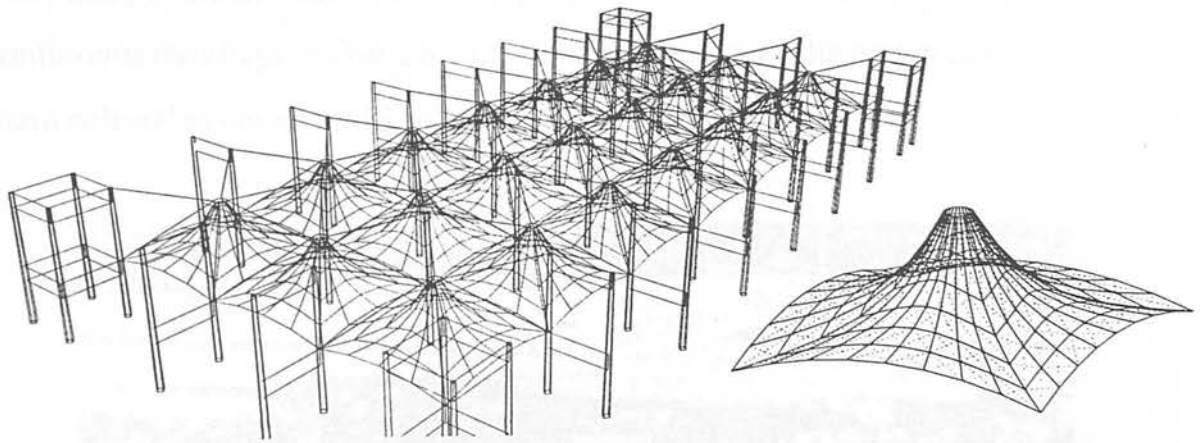


Fig.(6.38) The tents unit

Different characteristics have been considered for the materials of the double-curved skin of each unit, especially in terms of climate and maintenance. The white heavy-weight fibreglass fabric reflects 75 percent solar radiation which keeps the temperature down. Furthermore, the thin translucent quality of the fabric allows it to transmit some 7 percent of sunlight into the structure, eliminating the need for artificial day-time lighting (figure 6.39).

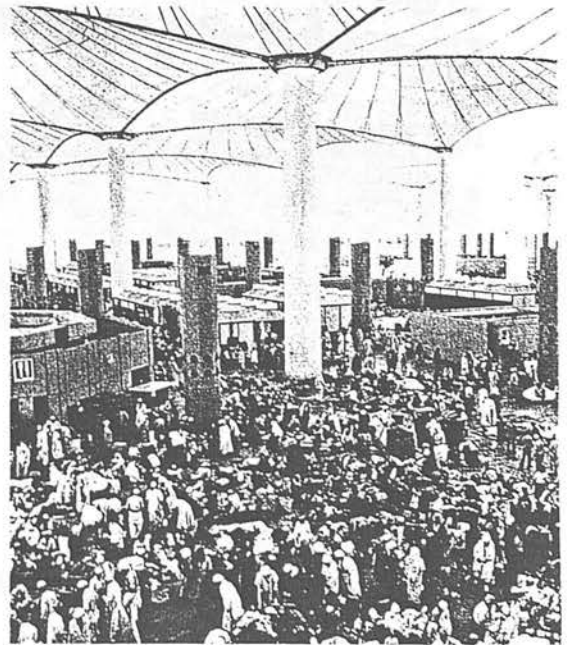


Fig.(6.39) Public waiting area

C) Evaluation

The "Hajj", the yearly pilgrimage to the holy city of Mecca in Saudi Arabia, is required of all Muslims who have means and ability to undertake the journey. The "Hajj" is one of the five main components of Islam which represents a unique religious practice for all Muslims.

Tents were and still are the best solution for temporary accommodation for such these increasing numbers of pilgrims who are estimated at about 950000 in 1985 (figure 6.40). On the other hand, the tent has produced the traditional house of Bedouins. It always indicates an appropriateness to Bedouin's life style for his continuous moving searching for new places. However the tent is also one of the main cultural symbols for Muslims in Saudi Arabia.

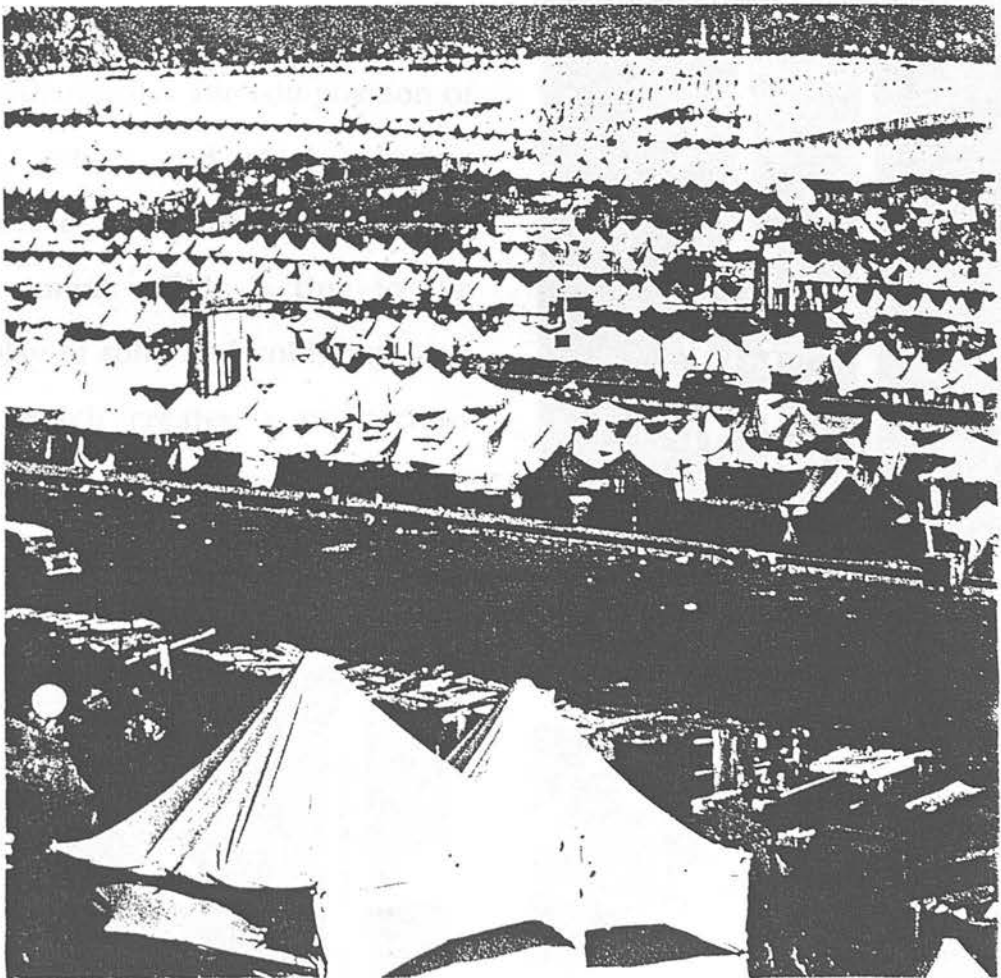


Fig.(6.40) Tents near Mecca for hajj pilgrims

It can be seen that the tent structure of Hajj Terminal is a new contribution to contemporary architecture for the Islamic world. Although the tent is a typical traditional Saudian house, the architectural form of the Hajj Terminal does not just copy the past. It represents an innovative design of roofing system which suits the covering of the vast space with elegant structure (figure 6.41).



Fig. (6.41) The main elevation

The project has produced not only a successful example functionally, but also aesthetically. The composition of fabric, cables and steel columns formulate a stimulated visual environment. This is due to the interplay of solid and void, dark and light which creates a mysterious contrast that reduces the monotony of the repetition of the regular similar tent units (figure 6.42).

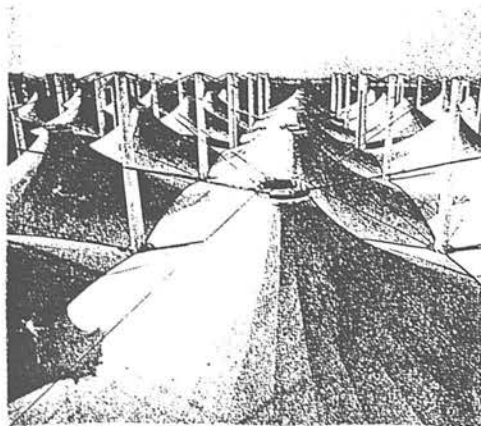
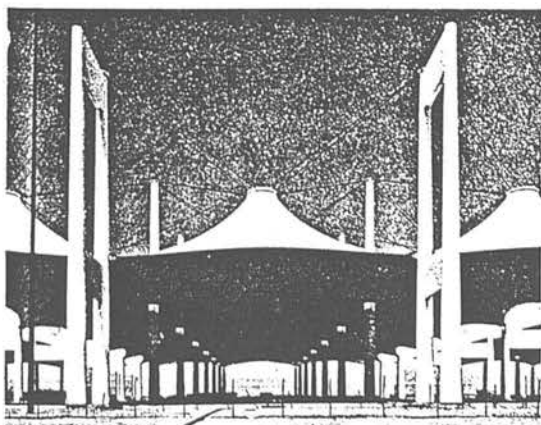
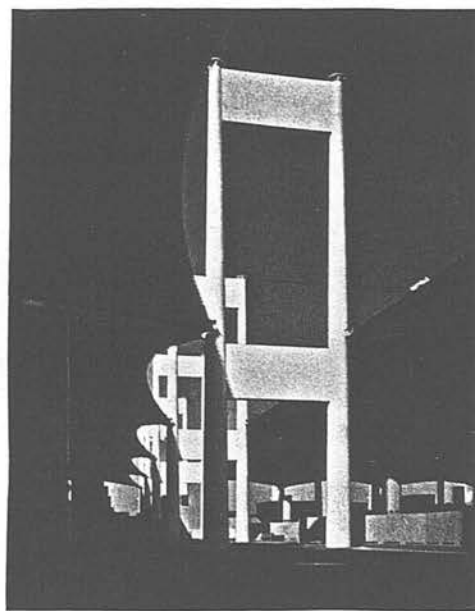


Fig (6.42) New architectural forms with high visual quality

Having said that, one can conclude that to sustain any society, cultural symbols should be maintained. The Hajj Terminal has produced an example for architects in how this could be done in contemporary architecture, even within a high tech context. What has to be mentioned here is that people could accept the symbolic meaning – which is intended by a designer – when they can understand the architectural language in relation to their socio-cultural aspects.

CULTURAL PARK FOR CHILDREN

Cairo, Egypt

Architect: Abdelhalim Ibrahim Abdelhalim

Continuity Between Physical Setting and History

It has been suggested before that it is a wrong to separate building and society for reasons of economic necessity, efficiency or rationality. Therefore the integration between culture and its productions, i.e. society and built environment is inevitably required. Within this understanding the children's park has been chosen to give an example of the integration between man and his environment which includes the physical setting and the continuity of history (article 4.1.4 & 6.1).

A) Object and Location

The project was located in al-Sayyida Zayneb District, one of the oldest quarter in Cairo. The main objective was to create a cultural park for children which includes among its facilities a museum, a library, an open-air theatre, playgrounds and gardens. (figure 6.43).

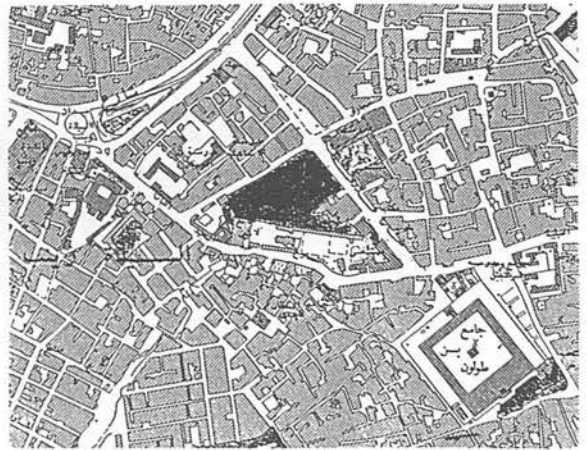


Fig.(6.43) Location of the Cultural Park

B) Description

The park consists of three main areas which are resulted from two concentric circles articulated to the main axis of palm tree promenade on the site. The centre of the first circle (a large fountain) is a point at the intersection of the promenade axis with the main street. It includes a small cafe, playgrounds, playing fields, and platforms for observing these activities. The centre of the second circle was a large tree at the end of the promenade axis. It includes a

cascade of spiral walls and terraces suggested the setting of the children's museum. The third area is created by the intersection of the two areas where the theatre was placed as well as a variety of activities.

The border between the geometrical order of the park and the surrounding streets and alleys provided a setting for a cafe at the corner, an outdoor fountain and ablution place, a small 'zawiya' and an outdoor prayer area, several shops, workshops, and a very large outdoor community space made by including the alley within the walls (figure 6.44).

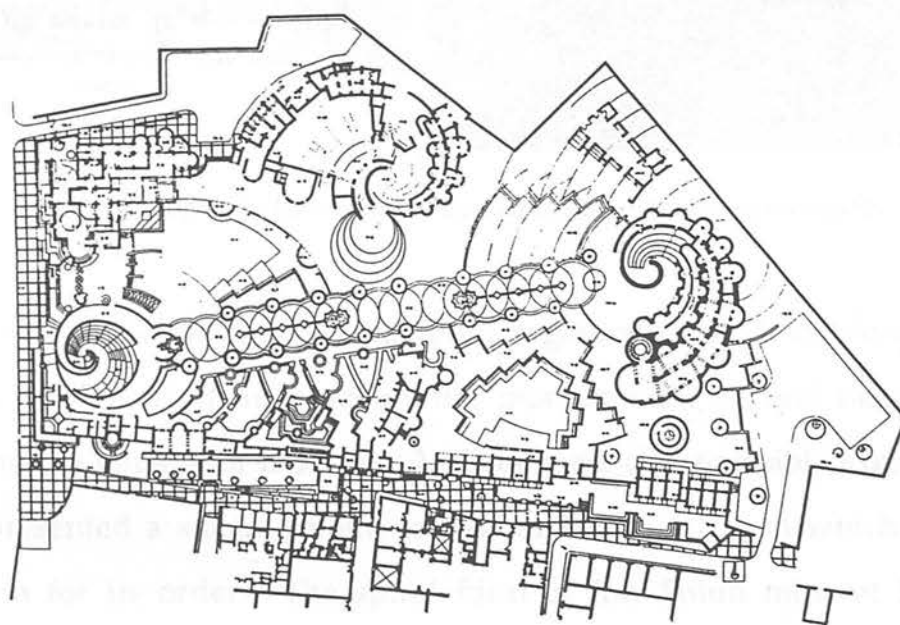


Fig.(6.44) General layout

C) Evaluation

The park has generated a renewed sense of community by extending its presence into the surrounding environment. It was not just an attempt to create a park in conventional way as a green space visually attractive, but an integrated centre of activities. Although recreational activities are essential in parks especially for children, different other educational and cultural ones are achieved. These activities not occurred only inside the park as isolated island of events, but they spanned to be happened along the surrounding boundaries (figure 6.45).

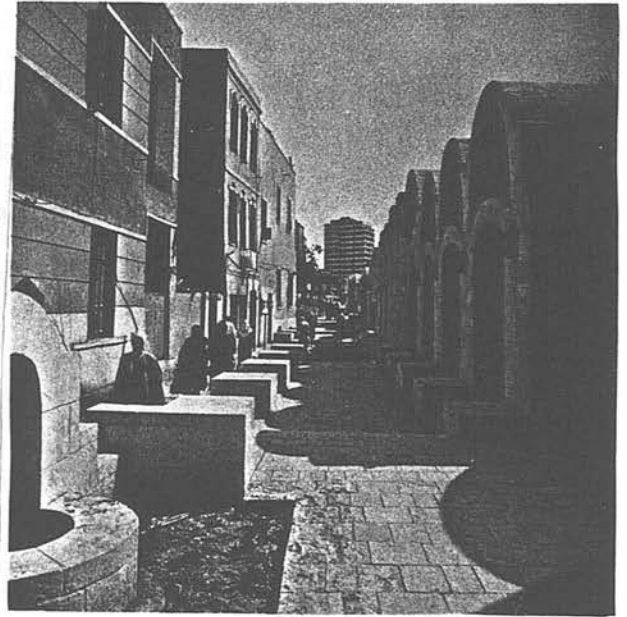
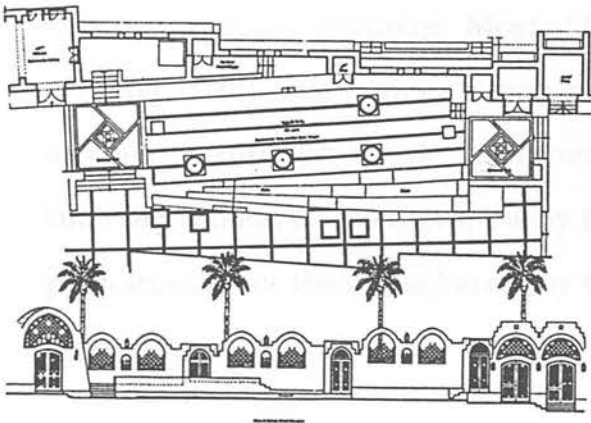


Fig (6.45) Integration between the boundaries and external surroundings

The project has also ensured a concept of integration through its physical form which is derived from the surrounding monuments. Several mausoleum's domes and the minaret of Ibn Tulun Mosque were clearly visible from the site. They represented a starting point for the architectural form which gave an inspiration for its order. The spiral form of Ibn Tulun minaret has been successfully reconstructed in a series of geometric operations organised in terms of the project's requirements (figure 6.46).

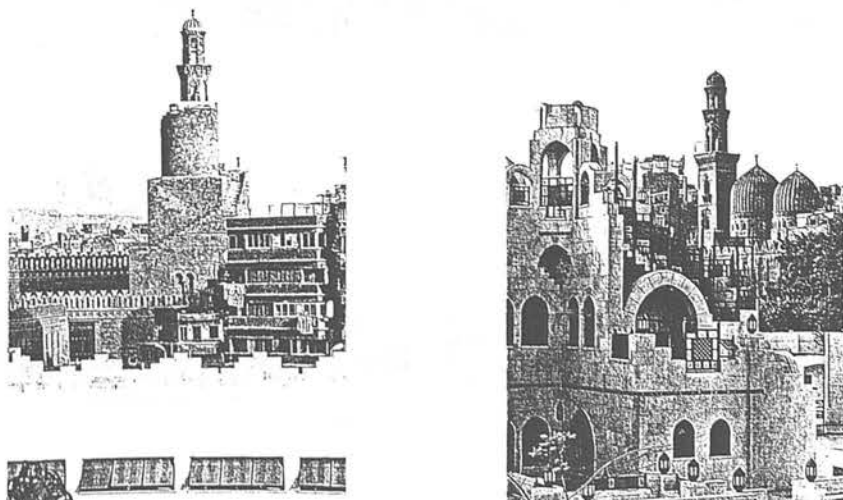


Fig.(6.46) The minaret of Ibn Tulun Mosque and other monuments of Mamluk and Ottman periods

The concept of sustainability not only seen through the integration with the historical buildings as a source of cultural values, but also by keeping the natural ecological resources. Most of the existing plants were maintained and articulated through the design scheme such as the main circulation spine by the palm tree axis or the shaded areas by the trees (figure 6.47).

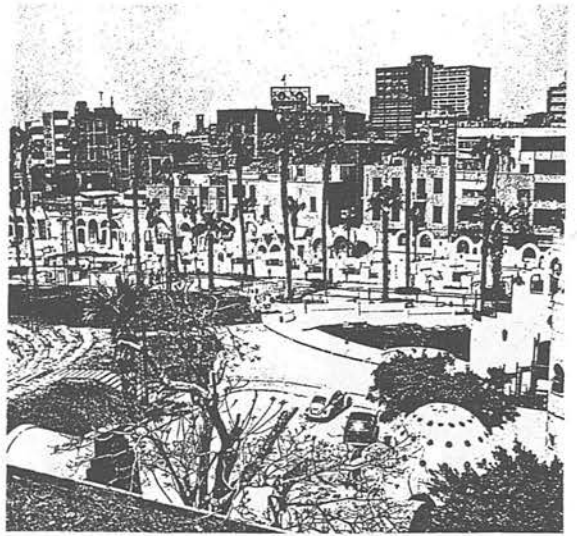


Fig.(6.47) The palm tree axis

The distinctive geometric features of the project have played a successful role in symbolising the historical buildings to ensure the cultural continuity. On one hand, it develops the children's skills as one of the main objects of the project. The geometric forms have produced various elegant architectural vocabularies to be used in developing the architectural education of the children. Appreciation of the "Beauty" has to be taught through high quality of visual aesthetics (figure 6.48).

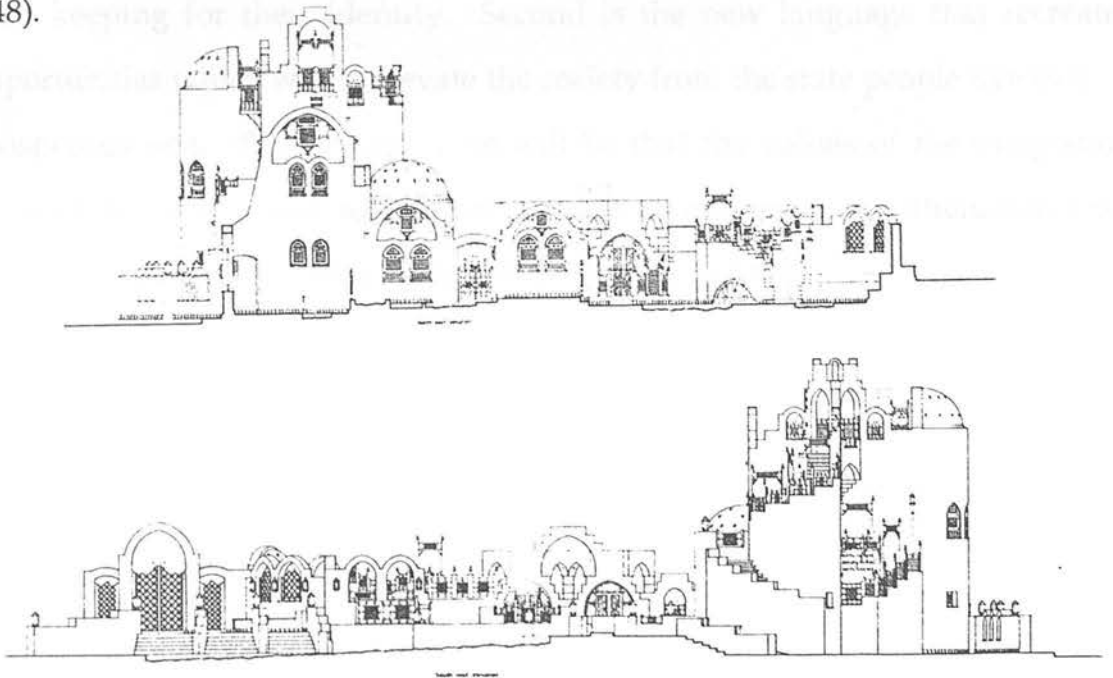


Fig.(6.48) Geometric vocabularies of the Cultural Park

On the other hand, the use of stone for construction was successfully selected in terms of the message of the project; cultural continuity. It represented a meeting point with all historical buildings around which were built in stone as well. Functionally, stone is extremely appropriate for the wall-bearing construction that efficiently served the low buildings and utilised arches, vaults and domes (figure 6.49).

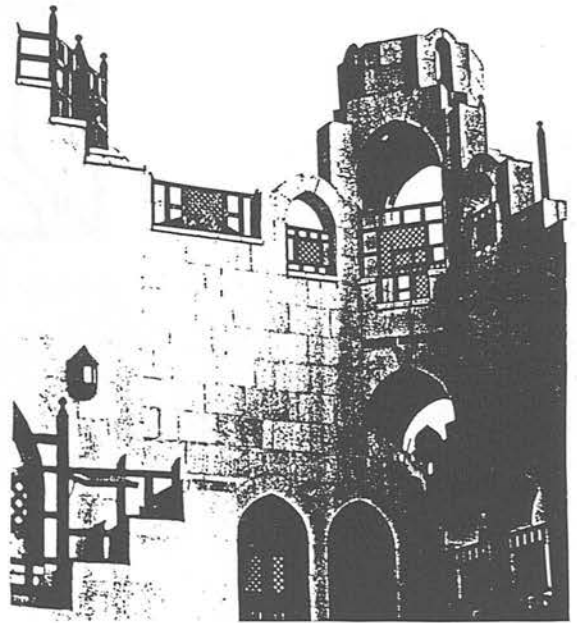
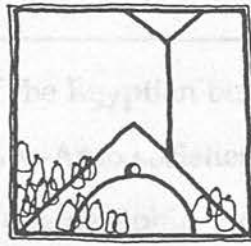


Fig.(6.49)The elegant use of masonry construction

Having said this, the appreciation of the cultural park for children is highlighted with two main points. First is the full awareness of the designer through his responsibility to understanding the cultural values which learn lessons from the past. Architect has a major role in the adaptation of the society as a whole in their keeping for their identity. Second is the new language that recreates opportunities which would elevate the society from the state people live in to a prosperous one. The premise here will be that the values of the integration between buildings and society are needed to overcome the alienation now prevalent in Cairo as well as in most of the Egyptian cities.

POSTSCRIPT



The main problem of the Egyptian built environment is the lack of identity, dignity, as well as other Islamic values. The solution is a strategy in the building design process which includes the social, economic, cultural, political and ideological components of the transition process. Nowadays, these societies are struggling to create built environments that give them with a sense of self-identity and which are sensitive in response to the regional conditions. The question now is how the architect can create places which express the Egyptian culture? In response to this major change in attitude, we have to emphasize our efforts to recover the architectural system. This will ultimately support the architectural process and the individual skills. By architectural system I include both the society in general and the architectural designers in particular.

The duality in architecture, which can be seen as a conflict between international and individual conditions, is an important issue to be tackled in education. Architectural students have to learn how to use the vast spectrum of local sources from which they can and should draw inspiration for the society. In addition, they should learn how to be aware of the impact their work will have on the future of their own society. The aim of any built environment is a response to human needs and motivations. Accordingly, detailed studies of the Egyptian architectural heritage are required in order to achieve the quality of the built environment which is needed. Therefore, various disciplines such as sociology, psychology and general stable and human problems have to be considered.

POSTSCRIPT

This postscript could not be done only through the efforts of the architects' own effort, but also through the participation of the architectural education. The main aspects of a cross-cultural studies could be seen in terms of creating an

POSTSCRIPT

The main problem of the Egyptian built environment is a loss of identity. Egypt, as well as other Islamic-Arab societies, is a society in transition. Different components which include demographic, technical, economic, cultural, political and ideological are the components of this transition process. Nowadays, these societies are struggling to create built environments that provide them with a sense of self-identity and which are sensitively in response to the regional conditions. The question now is how the architect can create places which express the Egyptian culture? In bringing about this major change in attitude, we have to emphasize our needs to reconstruct the educational system. This will ultimately support the architectural practice and the individual skills. By educational system I include both the society in general and the architectural designers in particular.

The duality in architecture, which could be seen as a conflict between international and indigenous solutions, is an important issue to be tackled in education. Architectural students have to learn how to use the vast spectrum of local sources from which they can and should draw inspiration for the society. In addition, they should know how to be aware of the impact their work will have on the future of their own society. The aim of any built environment is to respond to human needs and motivations. Accordingly, detailed studies of the Egyptian socio-cultural characteristics are required in order to achieve the quality of the built environment which is needed. Therefore, varying attitudes such as sociology, psychology and people's stable and deeper preferences have to be considered.

This procedure could not be done only through the study of the architects' own culture, but also through the possession of tools to understand other cultures. Various aspects of cross cultural studies could be useful in terms of providing an

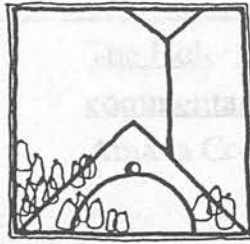
architect with a vision that enables him to discriminate between what is an external influences on the culture and what is indigenous internal factors. The architects' role is to respond to the need for a new architectural language which is well understood and well handled, so that we stand a chance of modulating universal principles into regional ones.

The essential question raised here is how and where can such an education, which respects authentic architecture, take place? Although we can influence the role of architectural institutions themselves, architectural education is not solely a function of schools of architecture. I believe that producing authentic indigenous architectural solutions is the way to awaken the appreciation of the cultural identity of place. Exercising different indigenous solutions will represent a learning process for the whole society. It is worth noting here that although this could be the role of the architectural designer, different attempts from other professions have to be placed in harmony with the same goal. Respecting place identity would not be successful unless society experiences a sense of cultural authenticity. Therefore a wide variety of disciplines, such as social, economic and educational ones, have to interact in order to ensure that the efforts of architects are not left in isolation .

Because of the importance of authenticity within the architectural context, various thinkers suggested different definitions. There are several views on environmental designs, which adopt the term authenticity or use some corollary for it. What they all appear to explore in common is the relationship between the preferences of the people and the accommodation of this by the architecture professions. If this was achieved, then authenticity indicates that both doing and knowing are somehow in correct correspondence. What we know about environment, including how we feel about it, is confirmed both in the immediate and long term consequences of the actions based on this knowledge. The scale at which person - environment transactions must operate to achieve authenticity

represents one of most significant points in ensuring the correspondence. This must be adequate to allow for significant communication, and for the participants to be able to observe the consequences of their actions on the character of the setting.

However, the main contribution of this thesis could be seen in providing the researcher himself with the proper approach in his academic career and practical profession as well as for others who have the same interest. The line of thought implied in this thesis offers a critical examination to the dominant physical views of the world and the associated philosophies influenced by dualism. These are seen as responsible for growing fragmentation in the Egyptian built environment. Hence, this thesis is an attempt to introduce the concept of the environmental design within the Egyptian context in order to re-establish the link between man and environment. This understanding is necessary to accommodate the problem of the Egyptian built environment to its authentic structure. Although the role of any architect could be seen, artificially, in producing the physical elements, the most important role is to evoke the deep human values with which man identifies himself with both environment and particular settings. Buildings and spaces within built environment are not the only expression of three dimensional design. They also form a contribution to places which respect the historical legacy, the elements of natural environment and the ecological resources. Ultimately, places in harmony with people's cognitive schemata provide the best settings for the behaviour of people and their activities.



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