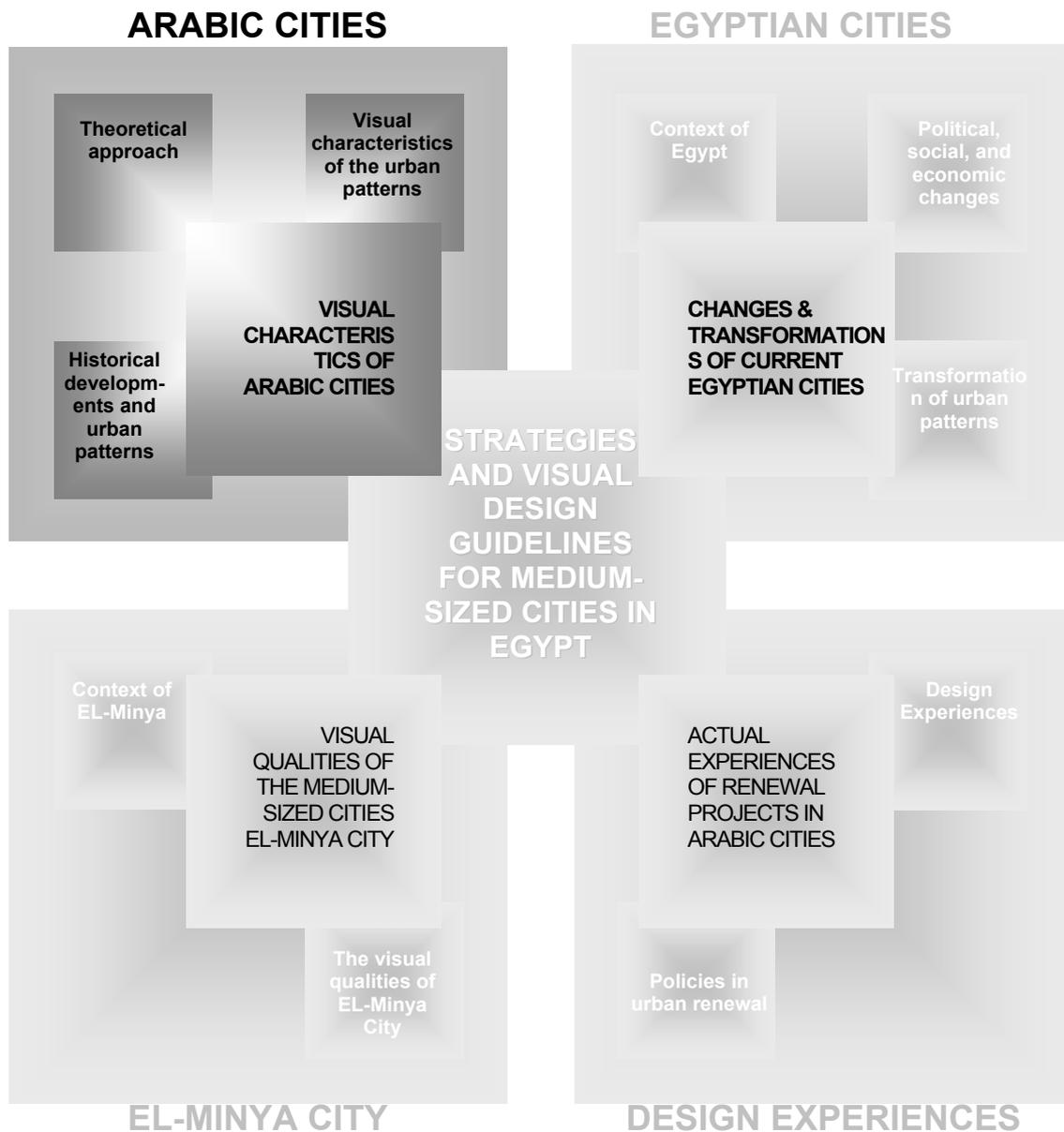


CHAPTER ONE

VISUAL CHARACTERISTICS OF ARABIC CITIES

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CHAPTER ONE

1. VISUAL CHARACTERISTICS OF ARABIC CITIES

1.1 INTRODUCTION

Arabic cities have been developed over time and different changes have been occurred in their historical formation and characteristics. In this chapter, the visual characteristics of Arabic cities will be examined in order to define their key features. The chapter includes three main sections. Section one argues the historical development of Arabic cities in order to explore the urban patterns which shaped the contemporary cities. In section two, a theoretical approach is formulated, which relates to the research objectives and explores possible design criteria. In section three, the research moves towards the explanation of the visual characteristics of the urban patterns.

1.2 HISTORICAL DEVELOPMENTS AND URBAN PATTERNS

1.2.1 ISLAMIC PERIOD AND TRADITIONAL CITIES

As Islam spread from central Arabia to Morocco and Spain in the west, and India and Indonesia in the east, the buildings adopted many features of the local architecture, but blended them into the basic form and space with an emphasis on symmetry and continuity of space in all directions. A sense of unity, equilibrium, and peace emerged. The community characteristics from the beginning of the seventh century to the end of the eighteenth century are founded, on the willingness to adapt to local materials and the local image, to respond to local climate and, at the same time, to hold onto the basic principles of Islam. Teachings of the Koran and Sharia, which affect the concept of overall Muslim life, ultimately shaped the Islamic environment (Khan, 1978).

“The Muslim is reminded over and over again that while he is allowed to enjoy the normal and serene pleasures of life, excess and grandeur in any form is contrary to the will of Allah. In the pursuit of one’s activities through life, it was therefore important to search for simplicity and humility and to avoid waste through the frivolous use of resources.” (Khan, 1978, P. 32)

It is in this spirit that the first true Islamic architecture took its shape in the first mosques ever to be built. In 635 AD in Basra, a mosque was built by simply defining the boundary of a lot of approximate squares and enclosing them with a fence of reeds¹. Houses and clusters of houses are the determining component of the traditional urban fabric in Muslim cities because of the particular attitude of Islam towards formal civic institutions and its relatively low emphasis on monumental public buildings. One of the important forces in the formation of these urban fabric was the concept of family privacy and the role of women in the family and in the society. Thus, there evolved a very special juxtaposition of the public, semi-private and private spaces. Men and women did not socialize together outside the immediate family environment. Buildings utilized outer courts dedicated to various levels of social interaction among men. Separate and distinct from these were other inner environments dedicated to women only or to the entire inner family. The inward-looking courts of such buildings were invariably designed to create a sense of peace and beauty with delicate play of water flowing through the court, evoking paradise. These courts not only provided the intimacy of space in these building complexes, but also a temperature regulator. Thus, the inner court took different shapes and characters in more temperate or tropical climates (Khan, 1978).

The significance of Islamic architecture has never been in quantitative proportions, but in the overall inherent quality of spaces. Therefore, what is a right proportion in one building can seldom be taken directly and used in another building in another setting. The individuality of Islamic architecture expresses itself in mosque and house designs, in that both semi-private and private inward-looking courts in the same building are seldom similar. Reflecting different use and function, the spaces differ from one another; each assumes its own identity and functional justification.

Islamic city reflected unity directly. Since there is no distinction in Islam between the sacred and profane, unity pervaded the architecture of the city, which related the architecture of the home or even the palace and other municipal buildings to that of the mosque. This unity made the space within the Muslim home an extension of the space of the mosque from a ritual as well as an artistic point of view. The all-embracing nature of the Sharia, which includes worship as well as transactions, made possible the integration of all forms of activity. In the heart of the Islamic city, spaces designed for worship became interconnected with those designed for education, the making of things and business transactions, as well as for private living and cultural activity (Nasr, 1978).

¹ In Kufa in 638 AD, the mosque had only an unclosed covered colonnade. Frequently, materials for columns and beams were taken from other edifices of previous cultures; but the simplicity of the mosque form, generally a square overall plan with covered colonnades along the Qibla wall, has remained the primary mosque.

1.2.2 EUROPEAN COLONIALISM AND COLONIAL CITIES

The Middle Ages represented by kings and the noble on the one hand, and the Pope and the church on the other hand, were kept in a state of fragile balance. The duality of material and spiritual realms was inherent in the Christian religion from the beginning, in contrast to the Islamic way of thinking which always stressed the integration and interaction of both levels within a complete social order. The precarious union of opposites broke apart with the rise of the Renaissance, when political leadership became emancipated from spiritual objectives and constraints, as did arts and science, while the Church gradually retrogressed to separate religious institutions administering the believers' welfare but exerting less and less real influence on social and cultural matters².

Because of these events, the human intellect was converted into a rational instrument for increasing man's control over the earth. Engineering and the natural sciences started playing a dominant role and the rationalized intellect eventually became a tool for creating an independent man-made world, using the elements of the divine creation as raw material for its own limited objectives. The subsequent industrialization process, based on the discovery of new energy resources, the practical application of electricity, and the invention of new modes of transportation (such as railways, motor cars, airplanes), eventually resulted in a radical transformation of European civilization. The resulting capitalist economy privileged the newly established bourgeoisie, which in a sense occupied the vacuum left by the former nobles, while a new working class, mainly uprooted rural immigrants flocking to the booming urban centres, served as a convenient human resource for sustaining industrialization. In this major socio-economic transformation process, century-old patterns of local identity and human solidarity were loosened and destroyed. The social cleavage between the bourgeoisie and the proletariat was expressed in distinct land-use patterns³ (Bianca, 2000).

The transformation of Paris by Baron Haussmann between 1853-69 was probably the best example of this process: the concept of the boulevard, which was to become the major feature of European town planning in the second half of the 19th century, was inspired by the

² The basis for the ultimate explosion was the French Revolution in 1789 by now devoid of its original function and legitimization, were swept away together with the authority of the Church, which had lost credibility in its perverted form of a privileged religious bureaucracy. This final stroke of secularization was the ground on which all the major intellectual, social, political, economic, scientific and technological changes of the following century took place, giving birth to modern Western civilization and the related physical and non-physical structures.

³ The lower classes and rural immigrants occupied the declining quarters of the medieval city centres or settled in the industrial suburbs, where factories, industries, and poor housing facilities mingled in a haphazard and disorganized way. Meanwhile, the upper classes started major urban redevelopment projects, appropriating and adapting the prestigious architectural language for their privileged areas.

axial layouts used in the earlier palaces, gardens and residential cities of absolutist monarchs, and clearly exploited their architectural symbolism for representational purposes and affirmation of class status⁴. At the end of the 19th century, most of the important European cities had put in place this new urban framework based on boulevards, representative public buildings and a series of focal squares, celebrating the intersection of major boulevards. This system of public spaces became the pride of the new bourgeoisie.

During the Ottoman period, between the 16th and the 19th centuries, the Arab cities manifested an important phase in which they preserved the formerly developed principles of their physical form. However, the Ottoman Empire, during the late-Ottoman period, acted as a filter and transmitter of Western influences, which penetrated into Muslim countries via Istanbul, after the conquest of Constantinople, and resulted in the innovative assimilation of Byzantine elements into the new Ottoman architecture. Decorative features borrowed from Classical and Rococo architecture were indeed abundant during this period in Istanbul, and Western-type apartment houses started lining the street fronts of new districts. French and Italian architects were commissioned to do important architectural and urban projects. This trend also influenced provincial capitals such as Aleppo, Damascus, or Baghdad, where the Ottoman administration established new western-type municipalities around 1870 to supervise urban development⁵.

The second stage followed the disintegration of the Ottoman Empire in World War I and its reduction to a national state, the physical development of most Arab traditional cities was predicated on the approach chosen by the colonial powers in setting out their "new towns". The decisions varied according to topographic preconditions, the geopolitical importance of the site and the cultural choices of the administrators responsible, and their architects. The possible range of urban interventions was defined by two extremes. One consisted in superimposing the new city on the old historic fabric by cutting out large new roads and sites for major public buildings - an approach which entailed the progressive demolition of historic buildings by the expanding new facilities. The other one consisted in setting up completely new colonial cities on virgin land, without seeking any interface with pre-existing urban structures. A median solution pursued by the French colonial administration during the protectorate period in Morocco, Tunisia, and Syria was to create twin or parallel cities, allowing them to co-exist at a little distance or side-by-side (Bianca, 2000).

⁴ In many European cities, the new boulevards filled the now useless moats of the medieval city, but often they were cut into the historic fabric, thus generating a polarization between the new upper class street fronts and the districts to the rear. These were left to themselves and gradually turned into slums.

⁵ The new Rasheed Street in Baghdad, a shopping street with lateral arcades of Mediterranean character constructed before the First World War, is reminiscent of European colonial architecture. So is the small boulevard north of the walled city of Aleppo, built around 1900 after filling in the former moat.

Poor accessibility, coupled with other factors, such as lacking services, badly maintained facilities and the old town's backward image, was the reason, which provoked the progressive exodus of the local bourgeoisie from the old city into the residential suburbs of the new town. Poor economic conditions, inappropriate industrial activities, lack of commitment and maintenance of buildings then lead to a rapid dilapidation of the traditional housing stock.

Throughout the European colonialism, all Arabic countries were influenced by general attitudes came from several dominant design considerations. There was a preoccupation with: (i) symmetry of design elements to make a balanced composition around one or more axial lines; (ii) the closing of vistas by careful placing of monumental buildings, suitably imposing statues, at the ends of long, straight streets; and (iii) individual buildings integrated into a single, coherent, architectural ensemble, frequently through the repetition of a basic elevation design.

1.2.3 MODERN CITIES AFTER INDEPENDENCE

The third phase of westernization started after World War II, when European nations, weakened by their internal struggles, had to abandon all imperial aspirations and yield their position to the newly emerged Western superpower, the United States of America, which had then entered the theatre of world politics. The turning point in European history coincided with massive political struggles for independence everywhere in the Third World. Around the 1950's, most countries of the Arab world managed to establish their political autonomies. The previous conditioning of Muslim societies by Western models during the colonial period: governance structures and procedures were already as much in place as the artificially created national borders. The new independent nations were forced to continue their pre-established economic patterns, which had become dependent on international trade structures and were geared to the application of modern Western technology.

Modern Western economies are based on the capital-intensive industrial production that emerged in the middle of the 19th century, when a new technological civilization began disrupting age-old bonds between man, earth, and cosmos. The transformation of all goods and resources into mere objects allowed for full convertibility into abstract monetary values and thus provided the basis for the rising importance of capital as the main driving force of modern development (Bianca, 2000).

Housing is the domain where the loss of traditional skill and the disappearance of self-sufficient local modes of production are most dramatically felt. Expensive imported building material and industrial construction techniques tended to replace traditional processes and thus no longer engaged the capabilities of local communities in providing their shelter by their

own efforts and with easily available local building material. Both a speculative construction market and a rigid administration, keen to maintain full control over the housing sector, stifled peoples' capacities to cater for their own needs, without ever solving the housing problem of the masses.

“The colonial powers pursued the integration of Third World countries into their own economic order. It is only fair to say that they invested important funds in providing the colonies with modern infrastructures, such as roads, communication networks and factories, but these were from the beginning geared to the prerogatives of modern Western societies rather than to local needs. The colonial powers' declared intention of raising the living standards of their subjects was a pretext for imposing their own patterns of production and consumption, which would make traditional societies more and more dependent on the industrial economy and its corollary structure, while keeping them on the lowest echelons of the income ladder.” (Bianca, 2000, P 194)

As population increases in many Arab countries, the choice of building height becomes not only a building design choice but an urban design choice as well. The turn of the century saw the beginnings of industrialization and the development of new materials and many mechanical and electrical inventions, such as high-stressed steel and the elevator. With these two innovative developments, the role of the multi-storey building changed its impact from single isolated buildings of monumentality to providing a feasible environment for people to live and work in.

The rapid transformation of the city centres; increased commercial and trading activities, is increased demand for buildings to accommodate these businesses. This started modest and office buildings to grow. The multi-storey buildings that punctuate the skyline of the major urban centres of Arab countries are far from local cultural, historical, and climatic context. These tall buildings are becoming one of the major reasons of the changing life-styles of the people (Ackerknecht, 1986).

Amongst the well-documented failings of the modern cities are the growing congestion on the roads, environmental pollution, and isolation in the suburbs, an underclass of poor and disenfranchised people, a dying city centre, and an ageing city infrastructure. In the Saudi Arabian context, AL-Hathloul argued, "the traditional process of reciprocal interaction between the socio-religious structure and the physical environment within the city has been replaced by another process which holds to more prescriptive conventions of form. These conventions are alien to the environment and often work to defy accepted social norms and conventions". AL-Hathloul traced the process of change in Saudi Arabian cities by looking at the development of the orthogonal grid as a street pattern and the villa as a housing type. In his dissertation, he showed how they were introduced into the country and subsequently institutionalized and then looked at the introduction and development of contemporary zoning regulations, which insured the continuation of and, in some instances, enforced the development of this new physical environment. He concluded that several factors are believed to have worked in

favour of the shift from the traditional process to the contemporary one in the Arab-Muslim city. Important among these are the existence of certain implied ideologies; changes in the scale of development, power and technology; and problems within the field of architecture and urbanism and their relationship to the Arab-Muslim context. He explored that only by being aware of these processes and factors can we conceive of an appropriate approach to re-establish a sense of continuity with the past that stems from the needs of the present and aspirations for the future." (AL-Hathloul,1981)

1.3 THEORETICAL APPROACH AND DESIGN CONCEPTS

The visual design of urban environment concerns with the qualities of the buildings, the spaces they create, their relationship with natural features and how these can be manipulated to best aesthetic effect. Many architects, planners and other concerned authors have written about the design of urban areas. They have aimed to interpret, explain, evaluate, and offer prescriptive methods and solutions for the problems of designing urban areas in modern circumstances to meet modern needs. By examining these theories and ideas, it is possible to formulate theoretical approach and make some statements about the methods and processes of design appropriate for visual quality analysis.

1.3.1 ANTHONY TUGNUTT

In *Making Townscape* (1987), Anthony Tugnutt and Mark Robertson have explained and promoted a contextualist approach to the design of buildings in existing urban environments. This approach deals with creating a satisfying relationship between the building and its context. It providing and supporting a framework for the current interest in an architectural tradition earlier than Modernism, and demonstrating the importance of re-establishing a living building tradition.

"Good townscape can only result when the requirements of the brief and the site can be satisfactorily resolved. The act of weaving together should stem naturally from knowledge of the site, its immediate surroundings, and the wider setting. By responding to these, the designer should find a source of inspiration which transcends any preconceived ideas." (Tugnutt & Robertson, 1987, P. 173)

In attempting to set out the framework of a contextual approach and method of design, they make an important point about the need. They considered both the wider context (the town in its setting, its historic pattern and current structure) and the local context (street scene and adjacent spaces) when assessing development. These suggest that policies need to respect topography, protect key views and vistas, important skylines, morphology and relationship to the street scene.

The contextualist approach takes into account the townscape role of the existing buildings and identifies what should be expected of new buildings in relating to adjoining ones. The cues, which were found when analysing the building in contexture (the act of weaving together), were four kinds: relationship of architectural elements, integrity of individual buildings, building profiles and materials selection.

1.3.2 IAN BENTLEY

Bentley (1985) and colleagues aim to achieve the responsive environment. They establish seven different components of design that should be considered: permeability, variety, legibility, robustness, visual appropriateness, richness, and personalization⁶.

The first requirement of places, according to Bentley et al. that they should be accessible, because the greater accessibility around the environment the more choices of movement are available to people. They argued to be able to find number of ways through a residential area to reach other dwellings in that area. It becomes more important and meaningful if there are other uses to which routes are available; hence, variety is important.

In their analysis of urban legibility, the authors draw heavily upon the work and approach of Lynch in referring to the importance of being able to identify paths, nodes, landmarks, edges, and districts. Under the concept of robustness, he defined that a desirable state to be achieved is one in which individual buildings or places may be put to more than one use. This flexibility is curiously referred to as “robustness”. At the level of the visual appropriateness⁷, the interpretation of a building or area's function and importance will be triggered by a series of visual cues, or clues, given by the physical appearance of the place: vertical and horizontal rhythms; skylines, building height and scale; wall detailing (materials, colour, and texture); windows, doors and ground level details.

⁶ It was particularly interesting to see the visual tradition simplified to concepts of richness and visual appropriateness, while the social tradition was encapsulated by concepts of permeability, variety, legibility, and robustness. Personalization emphasized the importance of individual preferences in providing scope for individual environmental modification.

⁷ Appropriateness of use requires that a building should express its function so that its purpose and the activities it contains are self-evident. This is important to the successful functioning of the building and to its successful marketing. It is also an important component of the legibility of places and of way finding in a city, and of ensuring that areas of different uses have different identities. The majority of buildings need to be conceived as background buildings and be designed to conform to the scale, rhythm, and materials of adjacent buildings to make a rich, interesting townscape. The landmark buildings will be most appropriate at important junctions on corners (Tugnutt & Robertson, 1987).

Bentley et al. also defined the richness as the ways which increase the choice of sense-experiences which users can enjoy. Richness can be derived from a variety of detailed aspects of design, including scale, vertical/horizontal emphasis, modelling, fenestration and pattern - as well as materials, colours, decoration and ornamentation.

“Richness is especially important at the pedestrian level, and particularly where people come right up to the building at entrances or display windows, but it is also important in buildings that close views or act as local landmarks.” (Bentley et al., 1985, P. 81)

The final stage in the process, known as personalization, is the point at which design moves away from the professional designer of the public realm to decisions made by individual owners and users about the decoration and 'garnishing' of buildings and spaces. The authors stress the desirability of designing to support personalization while trying to ensure that its results do not detract from any public role.

1.3.3 RAYMOND J. CURRAN

Curran (1983) examined the three visual components that make up the public domain. They include built and spatial forms, the treatment of defining surfaces, and ground treatment and furnishing. Under component one, Built and Spatial Forms, Curran focused on buildings and the exterior public spaces between them. He considered how individual buildings, as forms, are expressive of their interior functions and act as symbols for particular ideas and values. Under component two, The Treatment of Defining Surfaces, he demonstrated that while the organization of facades can have an important impact on the scale and character of public spaces, the use of openings is also critical. Contributing to the scale and character of public spaces, windows, and doors can be highly expressive of the uses contained within buildings. They also provide both visual and functional linkage between the exterior public domain and the interior private domain. The third component, Ground Treatment and Furnishing, he focused on the way the ground surface is treated in terms of materials, textures, patterns, etc. and on the various elements can be put into our public spaces. This includes everything from monuments, which act as focal points, and trees, which fill up and subdivide spaces, to the use of bollards and seating⁸.

⁸ Social conception of urban design was less of a focus upon buildings, architecture and elevations and more of a concern with public space, streets, and pedestrian routes, now commonly grouped under the concept of “the public realm”. Public realm stresses the importance of keeping streets and footpaths attractive, lively, and safe. Building and street relationships are critical to surveillance and safety, while the visual link between the insides and the outsides of buildings helps to dictate the character of areas. The comfort, safety, and health of the public realm are all dependent upon levels of traffic calming and traffic exclusion, the provision of soft, and hard landscaping.

Cluster Spaces - Curran

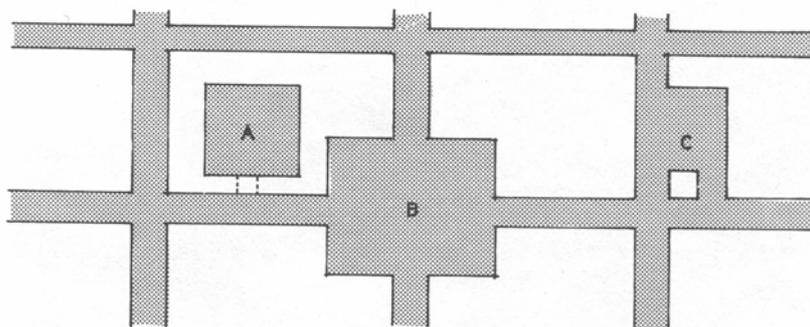


Figure 1-1 Three basic classes of cluster spaces: the first class (A), is totally enclosed and only indirectly linked with the surrounding city. The second class (B) is clearly linked into the city's system of linear spaces. In the third class of cluster spaces (C), characteristics of the first two classes are combined. Providing a strong sense of enclosure, they are also well linked to the system of linear spaces.

1.3.4 JOHN PUNTER

In the design dimension of planning, Punter (1997) focused upon design policies in development plans and defined urban design as the necessary core of the design policies in the new generation of district-wide plans. He argued that the good-practice design policy has moved beyond a preoccupation with the control of external appearance to seek more fundamental role for urban design. It is concerned with buildings and the spaces between, the public and private realms - not just with the way things look and the aesthetic experiences that they provide, but also with all aspects of human needs in the external built environment. These needs include aesthetic needs for quality architecture, townscape, and landscape, but they also embrace needs for creativity, self-esteem, a sense of belonging to a place, safety and security, shelter and a healthy environment. Thus, the design policies embrace issues of recreational spaces, public spaces and activities, community identity and legibility, safe and accessible streets and spaces, privacy and public contact, and healthy and comfortable urban environments.

Table 1-1 Key principles of urban design (after Bentley, 1985) and components of the urban environment (after Punter, 1997).

Urban Design Principles	Architecture	Townscape	Urban Form	Public Realm	Landscape
Permeability		Morphology	Layout	Access, linkages, spaces	Green networks
Legibility		Landmarks, views, districts, identity			Landscape relationship
Variety		Character		Mixed use, active frontage	Ecological balance, biodiversity
Robustness	Adaptability, sustainability		Enclosure, privacy, sunlight, daylight, building line	Servicing, safety, surveillance, active frontages, grain	Self-management, maintenance, sustainability
Appropriateness	Scale, bulk, expression, materials, vertical/horizontal emphasis	Context, massing, setting	Scale, height, density, overdevelopment		Landscape design, species choice
Richness	Proportion, fenestration, detailing, colour, stylistic pluralism, visual interest, materials	Character			Bio-diversity, trees
Personalization					
Energy Efficiency	Local materials		Building orientation, shadowing, density, facility location	Pedestrian and cycle networks	Shelter
Pollution Minimization			Density, noise	Pedestrian and cycle networks	Carbon fixing and particulate removal
Ecosystem Maintenance					Protection of hydrology, retention of key habitats

Punter discussed the design policies and assessed five dimensions of the urban environment. They include townscape (the visual relationships between groups of buildings that make up the urban scheme), urban form (largely three-dimensional characteristics of built form), public realm (the streets and spaces and their character), architecture (individual buildings), and landscape (which focuses particularly upon the natural environment)⁹.

The townscape policies provide the principal means of ensuring that a development responds to its wider setting that it respects the character of the surroundings and the place of which it is a part. They also aimed at protecting views, valued skylines, and are likely to be relevant to the image and identity of the settlement and to the visual quality of the townscape at the level of the individual site. According to Punter, the basic elements of the urban form are the massing and site dimensions and the general issues of morphology and grain.

“The human scale will be guaranteed by a respect for both the existing morphology and grain and the prevalent building forms. In new environments, a key issue will be the tension between the pedestrian and vehicle scales and speeds of movement. There is a need to ensure that, where pedestrian movement is dominant or desirable, development is appropriately scaled and detailed.” (Punter, 1997, P.167)

Punter indicated that the public realm policies are an ideal counterpoint to townscape and building form concerns because they downplay the importance of the visual relationships between buildings in favour of the direct and public place experience of streets and public spaces. He argued that the context and the relationship of a development to its surroundings are of fundamental importance to the judgement of architecture, but that context is not everything, and that other architectural approaches and ideas must be encouraged if architectural creativity, and the built environment, are not to atrophy. He examined matters of architectural detail and the range of criteria that might be used to guide architectural design. Punter explored three particular sets of architectural considerations. These included general architectural form considerations of scale, height, general elevational issues of style, visual interest, and a wide range of matters of elevational detail.

Punter indicated that landscaping should be considered merely as a way of creating new habitats and environmental qualities (improving microclimate, enhancing smell, colour, texture etc.) in an area, and of creating usable amenities and aesthetic coherence over a large area. Policy might specifically address five key areas: paving, enclosures, street furniture, accessibility, and safety.

⁹ The theoretical underpinnings of each of these elements have been derived from a synthesis of urban design principles developed by British theorists in the townscape tradition, and American theorists writing in the public realm/public space/public perception traditions. Sustainability issues in design are seen as offering a new slant on some of these issues and underlining the importance of new concerns such as energy, ecology, air, and water quality.

1.3.5 RESEARCH APPROACH

From the previous theories of urban design, a systematic model for visual quality analysis of cities with emphasis on the social and cultural values as the main aspects of the analysis can be concluded and formulated. It has been suggested that the visual quality of cities, according to Punter, can be analysed in terms of its components of urban environment; townscape, urban form, public realm, and architecture, while landscape is treated as the key component of the public realm. Using this approach, visual quality of cities include; townscape (character, context, landmarks, identify, street scene, views, skylines, and vistas), urban form (density, massing, privacy, plot size, street pattern, building line, and enclosure), public realm (access, public space, space network, public art, and permeability), and architecture (elevation character, style, richness, and visual interest).

Table 1-2 The visual quality consideration in relation to components of urban environment.

ELEMENTS OF THE URBAN ENVIRONMENT																				
TOWNSCAPE					URBAN FORM					PUBLIC REALM					ARCHITECTURE					
DESIGN CONSIDERATIONS	Character/ Context/ Landmarks/ Identify/ Street scene/ Views/ Skylines/ Vistas					Density/ Massing/ Privacy/ Plot size/ Street pattern/ Building line/ Enclosure					Access/ Public space/ Space network/ Public art/ Permeability					Elevation character/ Style/ Richness/ Visual interest				

1.4 VISUAL CHARACTERISTICS OF THE URBAN PATTERNS

As we indicated in the previous section, the Arabic city has been showed many changes under very different influences and finally it offered a wide field of distinct architecture with varying characteristics. To shed more light on the urban patterns of Arabic cities particularly the visual characteristic aspects, it is useful to point out the key features of traditional, colonial, and modern patterns.

1.4.1 TOWNSCAPE

■ TOWNSCAPE OF TRADITIONAL CITIES

The character of traditional cities emerged from the organic growth of houses, mixed with shops and other business buildings, keeping the community mosques as the focal points. The minarets, and possibly one or several larger domes, are the only elements emerging from the continuous roofscape, which extends like a blanket above the aggregated volumes. Looking at the traditional pattern from a distance, there is always a feeling of interweaving with the sky as a backdrop while seldom creating a sudden linear cut-off at the roofline. Looking closer at the top of the walls, one sees interplay between the top edge of the walls and the sky above through various designs that break the linearity of the roof and wall top. Once again, the unity of the sky and the earth becomes affirmed through these details (Khan, 1978).

■ TOWNSCAPE OF COLONIAL CITIES

In his book “Urban design-ornament and decoration”; Moughtin explored the characteristics of European architecture. According to Moughtin, the most usual type of landmark in the city was a building or the upper part of a building such as a dome. For the building to impress itself as a landmark upon the urban scene and therefore upon the eye of the beholder, it must dominate the surrounding built forms or contrast sharply with them. By virtue of their size and scale, such landmarks were the principal decorative elements of a city. The buildings showed great respect for context: window shapes, details, materials, gable, and colours blend to form a highly decorative and unified street scene. The shop front was the element of the facade which people have greatest with contact. The arcade was a most useful and highly decorative method of providing cover for the shopper in both the hot climate and in the wet and windy conditions. The arcade also introduced a unifying element of continuity to the potentially diverse street scene made up of various retailers (Moughtin, 1995).

Traditional Cities-Townscape



Figure 1-2 The skyline of the traditional city is characterized by domes and minarets, the old city of Cairo.

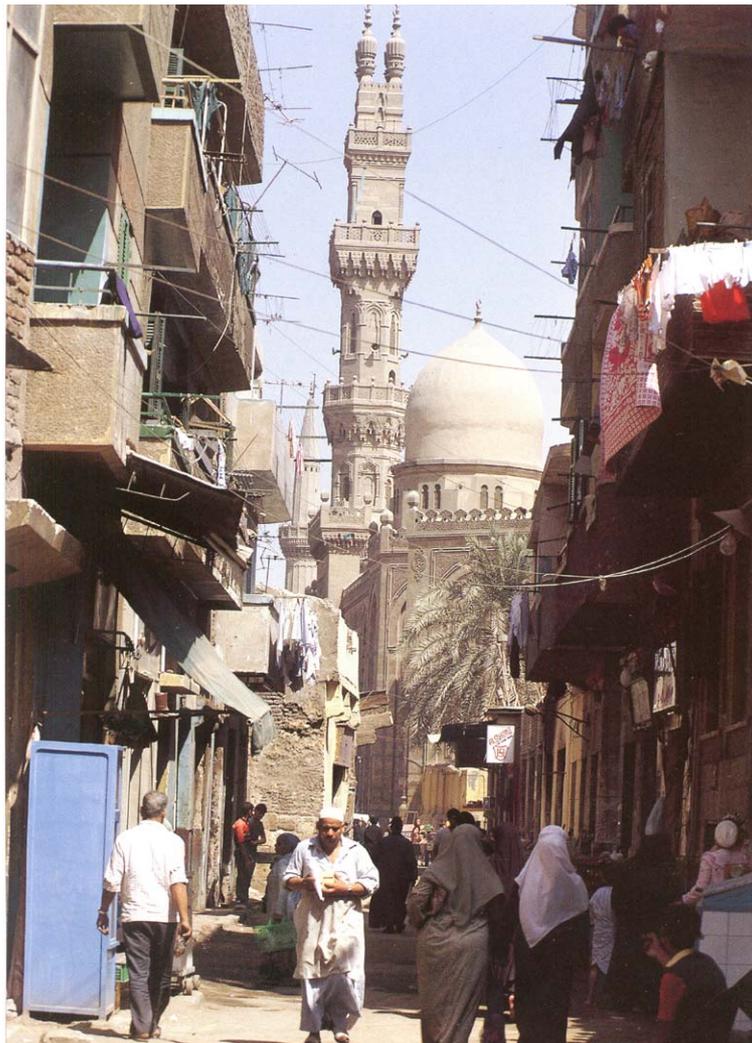


Figure 1-3 Minarets were typically used in the old city Cairo as visual points.

Colonial Cities-Townscape



Figure 1-4 Part of the skyline of a colonial city, EL-Minya, Egypt



Figure 1-5 In the colonial city, the buildings show great respect for context: window shapes, details, materials, and colours blend to form a highly decorative and unified street scene, colonial city, Aleppo, Syria.

■ TOWNSCAPE OF MODERN CITIES

The sharp contrast between the character of the traditional built environment and the modern built environment is puzzling. The skyline of a modern city is a negotiated symbol. The city silhouette is the official profile, that is, the result of a competitive struggle. The skyline is dynamic or chaotic depending upon one's viewpoint. It is continually changing, the result which is usually of the uncoordinated efforts of individual institutions striving to decorate and to put their own distinctive mark upon the skyline (Moughtin, 1995).

Modern Cities-Townscape



Figure 1-6 Tall buildings provide a sense of social power and prestige, a corporate image of economic power, and a government image of national progress and technological achievement, Al-Ahli Bank (1987) by Skidmore, Kuwait.



Figure 1-7 The skyline of the modern city is dynamic or chaotic depending upon one's viewpoint. It is continually changing, the result usually of the uncoordinated efforts of individual institutions, the city centre of Cairo.

1.4.2 URBAN FORM

■ URBAN FORM OF TRADITIONAL CITIES

The urban form of a traditional city grew as an aggregation of enclosed cellular units, taking the shape of private houses, mosques and markets, all collected within a coherent urban fabric. Buildings were not conceived as detached objects but as living architectural shells, shaped according to the internal needs and responding to the enclosed activities. It, therefore, constituted an integral and autonomous entity with its own resource of air, light and open space, independent of the street space (Bianca, 2000).

Buildings were shaped according to the internal needs responding to the enclosed activities. Each individual enclosure incorporated the necessary amount of open space and the required access system within its respective boundaries. Close linkages with other buildings ensured the integration of single units into larger clusters, producing a cohesive urban form. Each enclosed area is focused on the centre of its courtyard, and the elevations of the building are turned inward, facing each other instead of looking onto the street. The repetition of similar patterns of enclosure and inclusion of plot size, throughout various hierarchical levels of the built form, resulted in complete structural integration. The outer walls are often blind or do not appear at all, as they are shared with attached neighbouring buildings. Street fronts are of secondary importance or vanish altogether. Buildings exude a definite sense of place and identity, and provide the users with a feeling of security, peace and equilibrium.

The mosque complex became the reference point in the urban fabric. Meandering streets all seem to radiate and merge from one mosque to the next. The division of land was not based on a uniform method and was seldom done with geometric discipline, therefore hardly ever followed straight lines with no end. The size and alignment of lots was due to the continuous subdividing of land and the result of uncontrolled urban homesteading. The walls on these meandering roads were often delicate plans of small and large homes, each responding to the local climate and to Islamic life with its accent on privacy (Khan, 1978).

The concept of symmetry in plan and elevation outside buildings as well as inside courts has been a feature of Islamic architecture. Centrality and symmetry help harmony and unity and are extensively used in the mosque as well as in houses. The dimensions of intended rectangular or square shapes were not exactly maintained and, therefore, frequently had different side angles and lengths. These technical and measurement discrepancies, notwithstanding the symmetry and centrality of the spaces created, were essential in their effect on the inherent quality of space and the sense of harmony (Khan, 1978).

Traditional Cities-Urban Form



Figure 1-8 Urban tissue of Fez (Morocco).

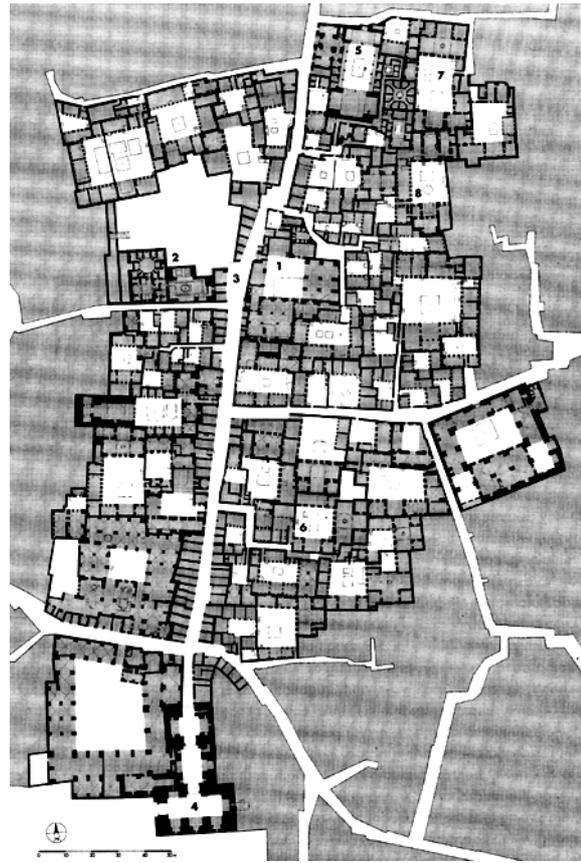


Figure 1-9 Plan of the residential neighbourhood of Bab Qinasreen in Aleppo



Figure 1-10 The sections show, on the one hand, the volumetric coherence of the urban form achieved through coinciding enclosure walls shared by adjacent housing units, and, on the other hand, the subdivision of urban space into independent, autonomous residential units, focused on their own courtyards. Street and alleyways are virtually swallowed by the residential clusters, being transformed into a series of internal corridors. The houses can only be seen and experienced from within and do not depend on external open spaces.

The buildings evolved in manner that could trap the cool airflow. For such climate, it is understandable that the building elements of walls and roofs would have to have sufficient thermal resistance. This dictated the use of heavy, thick walls of mud, masonry, or stone. The openings to the outside were only small windows placed on the outside wall and protected from vision as well as strong sun by a decorated grillage of masonry or wood – mashrabiya. The inside plan of the building frequently used the court form. Surrounding the court were covered colonnades and the rooms were arranged to open onto balconies overlooking the court. This arrangement allowed cool air to flow through the building into every room in the evening. In the daytime, when outside windows were closed, the coolness was maintained inside the rooms by heavy walls, which absorbed any heat build-up. The courtyard then became the controlled source of light, provided shade as the sun moved across the sky, and allowed a portion of that light to be used all day for indoor living purposes. Thus, the open courtyard was in effect the inner living space (Khan, 1978).

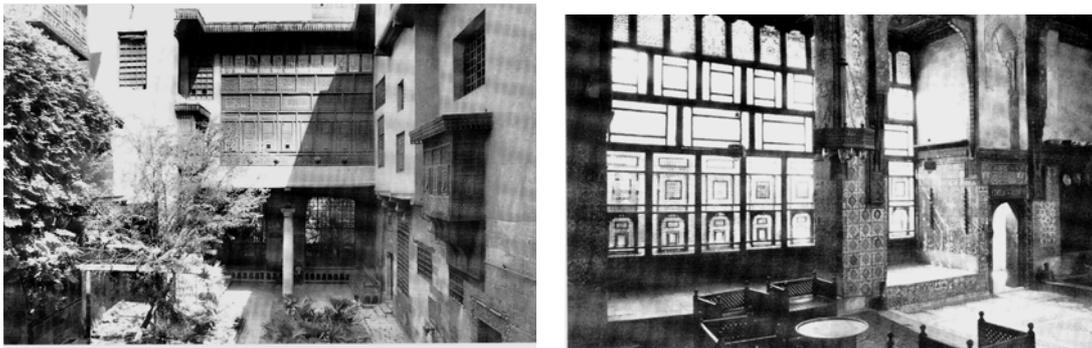


Figure 1-11 The courtyard as a temperature regulator, Bait al-Suheimi, Cairo

In more densely built cities such as Holy Mecca, the building lots were too small to provide reasonably – sized courtyards and buildings used only exposed mashrabiya on the outside walls and had inner windows opening into small light-wells. In most cases, the streets were narrow enough so that buildings provided shade throughout the day. For the mashrabiya timber was considered the most acceptable material, primarily because it did not retain sufficient heat during the day to radiate it back in the evening. Wood is a cool material and its use in the mashrabiya provided a sense of coolness during the daytime. Also, it could be easily adjusted for the proper level of privacy. Additionally, it is easier to create intricate patterns with wood than with stones (Khan, 1978). The oldest surviving houses of Sana'a show an ingenious fenestration system, which allowed for a minimum permanent lighting, combined with possibilities of individual daylight regulation (Bianca, 2000).

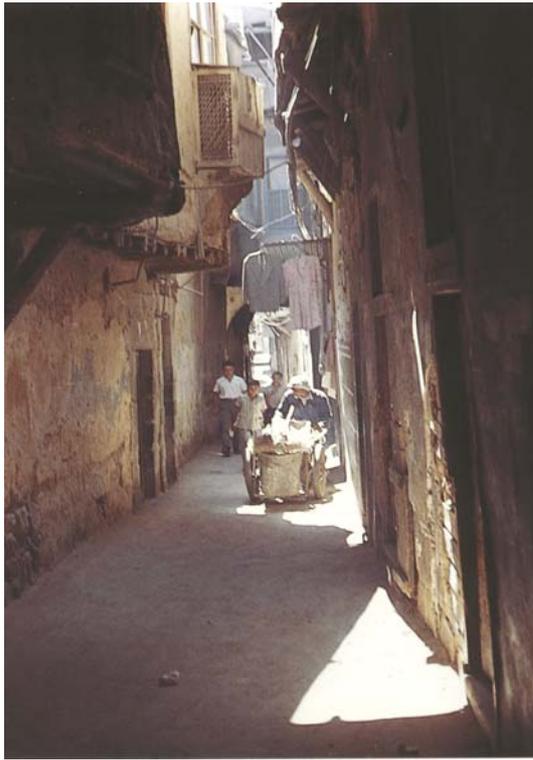


Figure 1-12 View of a partly covered alleyway in Damascus providing shade and a cool microclimate, Syria.

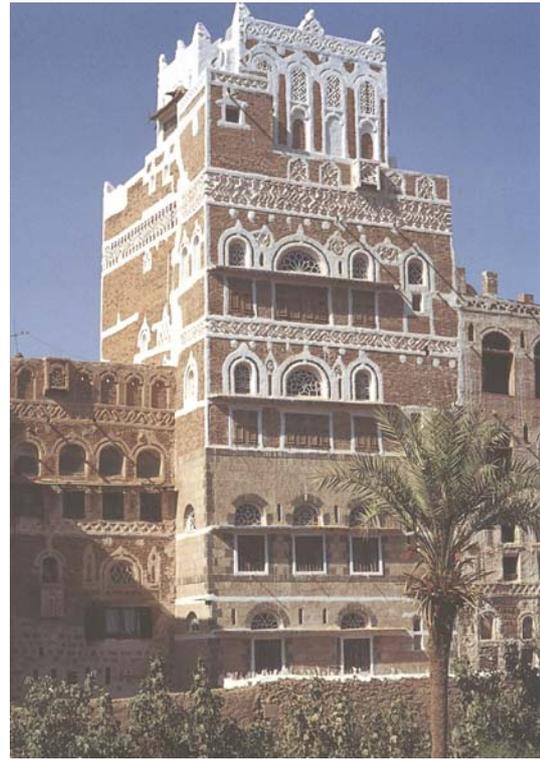


Figure 1-13 Traditional Yemeni mountain houses, which were not exposed to the hot and humid climate. Openings were reduced to a minimum and often camouflaged by an ornamental web, which covered the body of the house.

■ URBAN FORM OF COLONIAL CITIES

The colonial city is characterized by the grid-iron pattern of streets. Design has concerned with human scale, that is, the relationship of buildings and urban space to the size of a human being. Man was therefore the measure used for the built environment. A street width of 21-24 m for three storey facades and a street width of 12 m for two storey buildings appeared to coincide with the dictates of this common sense definition of intimate human scale. At these scales and distances particularly on the ground and first floors, architectural ornaments have no decorative elements with their smaller dimensions less than 1-1.5 cm. Beyond the third floor, a bolder treatment of ornament is necessary for it to impinge upon the senses. A wide overhanging cornice or highly modelled roofline is most effective at this viewing distance (see Moughtin, 1995).

Colonial Cities-Urban Form

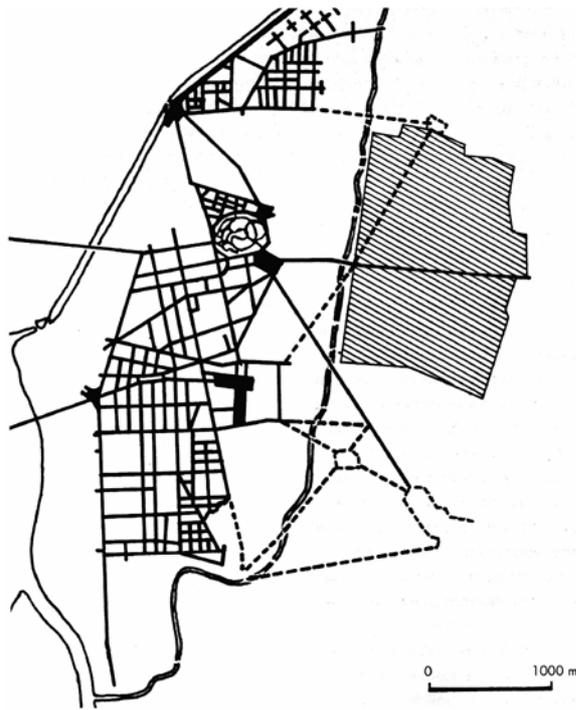


Figure 1-14 The axial layout in Cairo under the Khedive Ismail, around 1870. Hatching marks the old Fatimid nucleus. The Khedive's new town plan was a small-scale replica of Haussmann's schemes, with several axes extending from the new city centre into the old city.



Figure 1-15 Plan of Aleppo in 1930 shows the former moats of the walled city being converted into major traffic spines. Two new roads converge at the north-western corner of the old city, from where the colonial Ottoman centre, extended by the French colonial city, started developing.



Figure 1-16 Buildings expressed a coherent street façades through continuity of heights, widths, forms, colours, and materials, the colonial city of Cairo.

In the design of a colonial city, following the laws of proportion, a visual element or group of related elements dominate the whole composition of the urban form. The dominant may be the main pattern square around which the main civic buildings are arranged. Equally important for unity is the dominance of one decorative theme: the repetition of roof materials, skyline, verge, and eaves details; the consistent use of floorscape materials and patterning; and the choice of street fittings of compatible form.

The visual image of the colonial city and its skyline remained intact for centuries, largely due to the limitations of available building materials and techniques, and by fire-conscious building regulations, which restricted building heights. The houses were generally of red brick and of a modest height of about three or four storeys. The most dramatic change came with the advent of the tall buildings. The technological inventions and innovations, which permitted the development of such buildings were, the safety elevator, invented in 1854 by Elisha Graves Otis, and in 1884 a method of steel-frame construction, making very high buildings structurally possible and high buildings of all kinds much cheaper¹⁰.

■ URBAN FORM OF MODERN CITIES

Since modern town planning became equivalent with road planning, the urban form of modern city patterns in Arab cities, had an addition of isolated blocks, and were dissected by a rectangular grid of streets and avenues. Land subdivisions in modern cities have been institutionalized, through regulatory measures such as zoning, codes, legislation, master plans, and other prescribed ordinances, primarily into squares or rectangular lots, as the model for urban form. Contextual values and human-scale interrelations between buildings, or between buildings and open spaces, are neglected in favour of a rigid functional separation of housing, public facilities, traffic and open spaces, single functions being isolated and inflated to a point where they became meaningless.

While the high-rise housing blocks have provided the city with its own individual identities and urban image, their appearance and location in the city have generally been unplanned. They have created various visual problems, primarily because their location, site planning, and design have not always been in harmony with a broader design context of the urban complex. In many cases high-rise housing blocks dissolve the ground floor pedestrian scale, prevent the differentiation of attractive "inside" and "outside" sequences and produce anonymity, crowding and alienation (Bianca, 2000).

¹⁰ The problem with high-rise construction in brick or stone was that beyond a few storeys, load-bearing walls must be so thick at the base in order to carry their own weight and resist bending and overturning movements within the structure, as to make the extra floors so gained uneconomic. The advance of the steel frame was that it dispensed with this enormous mass of masonry construction.

Modern Cities-Urban Form



New blocks rising above the destroyed traditional urban fabric of the old Bab AL-Faraj area, Aleppo.



Contrasts in the historic city centre of Baghdad

Figure 1-17 Detrimental consequences of poor design and siting of tall buildings can contribute to negative aesthetic aspects of the urban image through destruction of a pleasing skyline and alternation of the unique character of the historic city.



Figure 1-18 The urban form of Arab Gulf States was influenced by western architecture following the discovery of oil with commercial quantities during the 1930s, Abu Dhabi (U.A.E).

High-rise housing blocks became a source of the visual pollution in the urban environment especially if they were poorly designed and located insensitively within the urban fabric of the cities. They produced generating wind tunnels at street level due to poor design, altering the city's micro-climate by creating urban walls through groups of high-rise buildings, problems of solar shading (reflection) and views, and parking with accompanying air pollution problems generated by increased automobile traffic into high-density areas, especially in commercial high-rise centers (Ackerknecht, 1986).

With the introduction of new building materials like cement, steel, and glass ...etc. abolished all relationships man had with nature. As a result, there is an increasing demand to incorporate central air-conditioning systems in buildings. However, these central systems can also have undesirable side effects. Compressors have undesirable results, producing increased outdoor noise levels, possible visual impact on the roofline, as well as the modifications needed for the increased structural loads and additional space requirements.

1.4.3 PUBLIC REALM

■ PUBLIC REALM OF TRADITIONAL CITIES

Traditional Arabic cities were built on a pedestrian scale and provided an extremely dense townscape, showing a high degree of complexity. Available public spaces were allocated to and often integrated with specific architectural units, such as mosques, madrasa, khans or private houses and therefore detached from the urban realm. The streets became subsidiary to the urban structure and were often transformed into narrow internal corridors. In the constitution of the urban fabric, priority was given to the clear definition of well-marked territories and space compartments for various private and public uses. As the various sections of the ramified street network were absorbed by the corresponding architectural units, the main thoroughfares were integrated into the suq, secondary lanes into the residential quarters, and the dead-end alleys into the clusters of private houses to which they gave access. The sequence corresponded to a well-established hierarchy and was punctuated by gates and thresholds. The circulation system therefore helped implement increasing degrees of privacy, ensuring that every section of the network matched the character of the space it served and the social needs of its users (Bianca, 2000).

The layouts of the traditional city pattern are usually focused on a multifunctional core structure enveloping or at least partially surrounding the central mosque by different layers of interconnected suqs. These are interspersed with a number of hammams, madrasas and caravanserais which constitute the support system for the mosque and the retail shops.

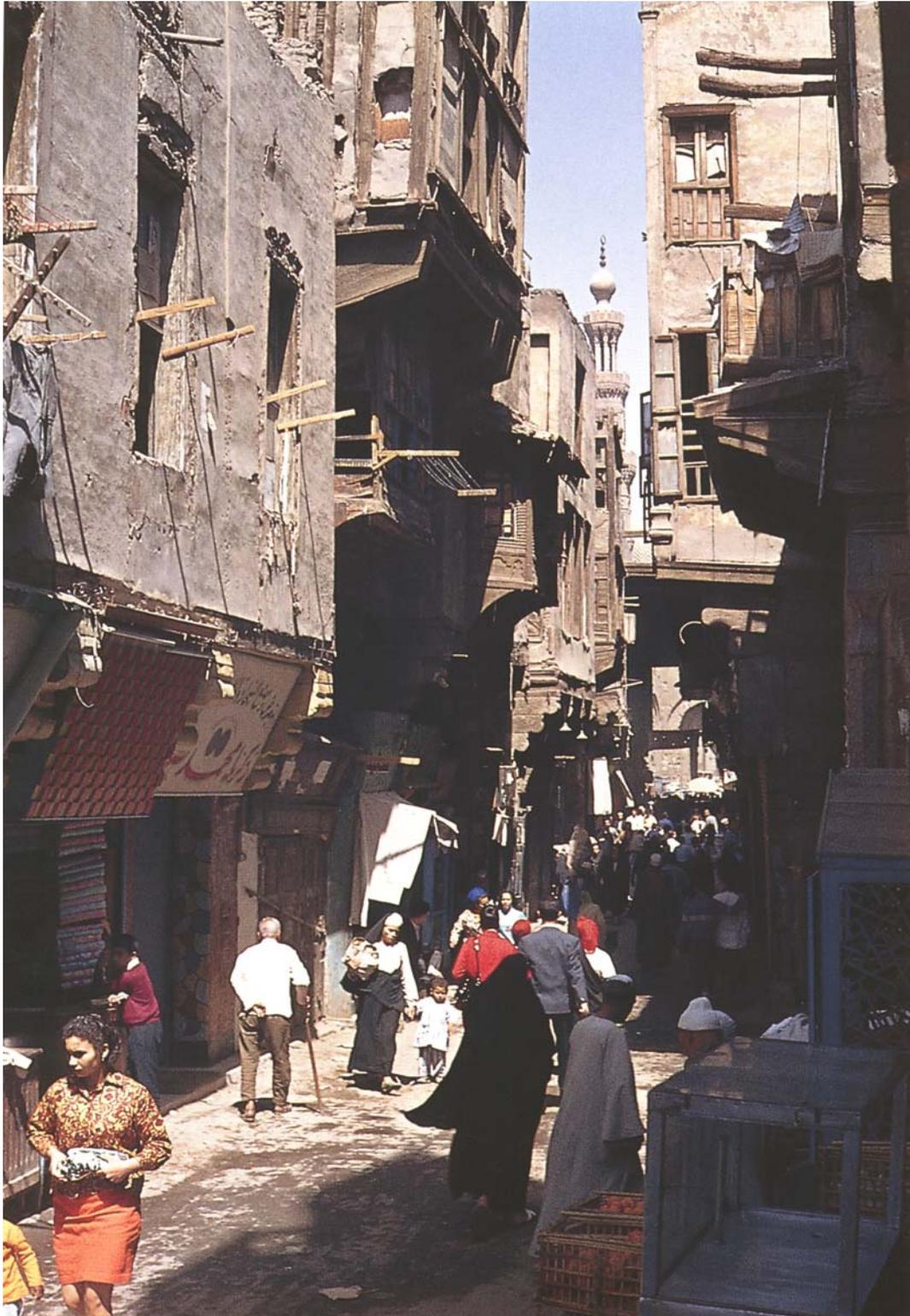
Traditional Cities-Public Realm

Figure 1-19 Residential alleyway were built on a pedestrian scale and provided an extremely dense townscape, showing a high degree of complexity, the old city of Cairo.

The large central courtyard at the heart of the Friday mosque becomes the primary public realm of the central compound and of the city as a whole. As the central mosque is often enmeshed in a system of surrounding alleyways or suqs, it is usually accessible from different sides through a number of entry gates. The compactness of this central compound, based on its exclusively pedestrian movement mode, clearly compresses the available public space within the suqs, it is balanced by the courtyards of the ancillary or satellite buildings, such as madrasas and caravanserais. They are meant to provide compensatory public realm off the covered main alleyways and are allocated to more specialized functions and social needs. When moving through this highly articulated complex, the visitor experiences a distinct feeling of spatial continuity transcending the limits of individual buildings and connecting the various realms of public life. Yet at the same time, he receives clear physical guidance with respect to the differentiation between different sectors (Bianca, 2000).

“A subtle visual reference system relates to accepted codes of social behaviour within the given urban compartments. Each individual realm carefully retains its specific spatial character, while interacting with neighbouring units through distinct architectural devices, such as intermediate gateways, internal passages, thresholds, and communicating doors. Hence the impression of meandering through a seemingly endless series of interconnected chambers within a highly articulated and yet homogeneous urban universe.” (Bianca, 2000, P.147)

Traditional Cities-Public Realm



Figure 1-20 Available public spaces were allocated to and often integrated with specific architectural units, such as mosques, or madrasa, the courtyard of the Attarin Madrasa in Fez (14th century).

Water is a life-sustaining and very limited natural resource in contemporary and historic Arabia. Islamic architecture in the arid lands, therefore, always acknowledged its limited supply and considered its restrained use a very important aesthetic element. It is not the gushing, spraying fountains that represent the ideal, but the gentle, single, thin jet of water making soft, trickling sounds in a delicate setting. Instead of using water in abundance outside buildings, it was always used in sensitive settings inside buildings. Almost every court was adorned with a fountain, each different from the other.

■ PUBLIC REALM OF COLONIAL CITIES

Urban streets of the colonial city can be broadly grouped into three functional types: the great civic streets, which dominated by civic buildings such as government offices; the commercial streets; and the residential streets. Residential streets constitute the largest part of urban areas. Columns, pediments and other classical elements are used to achieve the unity in the streets despite the variety of different building types, heights, and massing.

Squares in this pattern were a place of rest within the busy street network. As such, the nodes were places where people gather and rest before continuing the journey. These patterns usually have civic squares, commercial squares and residential squares. The civic square facades were usually restrained and classical, designed to impress. The most important concern in decorating was achieving unity and rhythm. Commercial squares were often examples of the comic scene, displaying exuberance through a variety of decorated facades. The residential squares, unlike residential streets, tend to display tragic scenes, restrained facades decorated by unity and rhythm of small cues. Each city has a number of squares but one square or group of related squares at its centre was the most important and was larger than the rest. In these dominated squares, the community displayed to greatest effect its public art, great sculptures, fountains and obelisks the important and most decorative buildings were located.

Dominated squares were categorized by one individual structure or a group of buildings towards which the open space is directed and to which all other surrounding structures are related. This dominating building may be a palace, town hall, or railway station. The squares were distinguished by two types of squares, the “deep”, and the “wide”. The networks of streets were entering the squares at angles where the viewer would be immediately aware of the imposing main buildings. It is on these buildings that most of the rich decoration was bestowed. The ornament concentrated on the facade of the main buildings reinforced the concentration of attention, fully establishing the landmark in the minds of both citizen and visitor (see Moughatin, 1995).

Colonial Cities-Public Realm

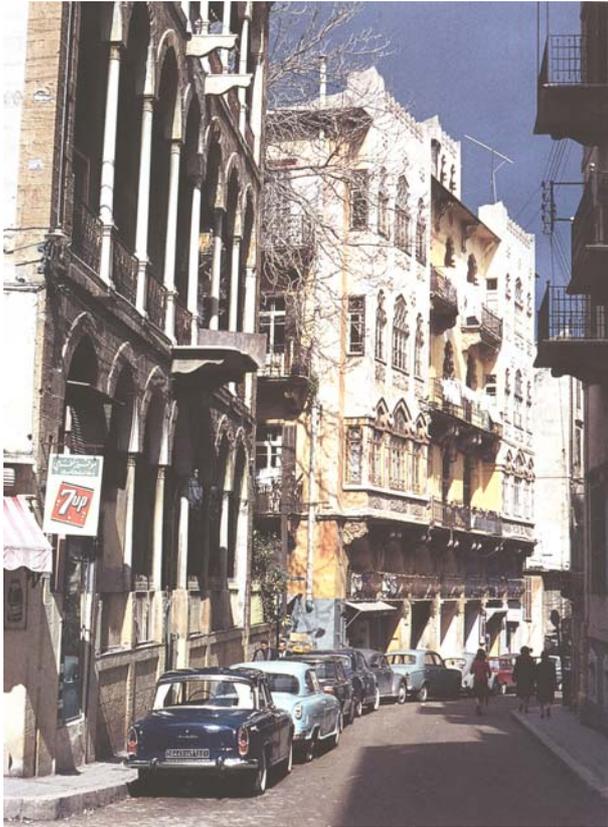


Figure 1-21 A residential street of a colonial city, Beirut (Lebanon).



Figure 1-22 Status of a landmark enhances of streets and squares, Suleiman Pasha Square, part of Khedive Ismail's plan for Cairo.

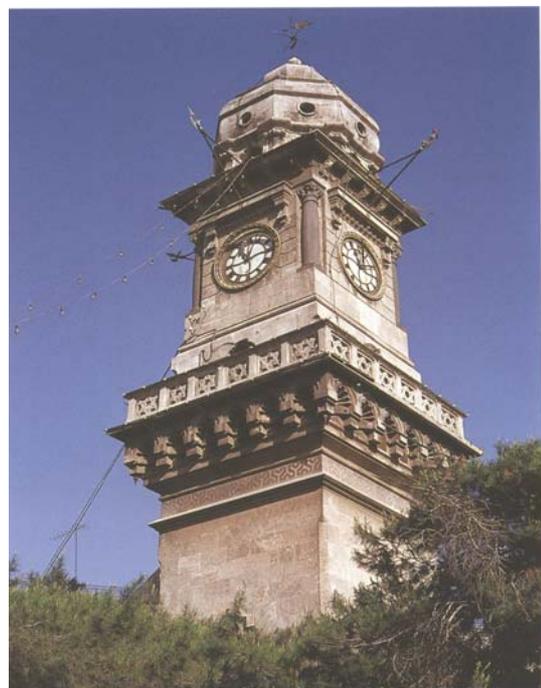


Figure 1-23 Ottoman clock tower, Aleppo, Syria

Most civic furniture acted in harmony with or enhanced by counterpoints of the public realm of the city. Some major pieces of civic furniture may acquire the status of a landmark but all, without exception, were used to decorate the city. Between the natural paths, which cross public spaces, something was chosen to stand roughly in the middle: a fountain, a tree, a statue, a clock tower with seats, which gave a strong and steady pulse to the spaces.

■ PUBLIC REALM OF MODERN CITIES

A modern city is organized in the grid pattern and designed to maximize movement and accessibility. Streets, thus, show more concern for cars than for people. While the streets in the traditional patterns reflected residents' needs such as climatic comfort, privacy and security, the streets in the modern patterns disregard these aspects. Furthermore, although many of the public spaces are quite large, generally they are neither very green nor very accessible for use.

The concentration of commercial and public buildings in special downtown areas destroys the interface between various facets of social and public life, which undermines the quality of public spaces and generates a fatal increase in traffic volume. Massive traffic arteries disrupt potentially connected urban components, generate heavy pollution, and produce a kind of urban wasteland. Such buildings are frequently very intrusive and poorly integrated with other buildings, and even when they incorporate excellent landscaping and amenities, these often remain unconnected to public footpath systems or to adjacent landscape elements (Bianca, 2000).

In contrast to the orderly well-placed street furniture, modern streets appear to be filled with a clutter of signs, kiosks, lampposts of various sizes and shapes, overhead wires and advertisement hoardings. They are placed with little consideration for their grouping and the effect they have on the street scene. The opportunity of repeating, in the paving pattern, the sinuous forms of the street plan has been missed, together with the opportunity of retaining the proportion and scale of the street by using raised pavements on both sides of the space (Moughtin, 1995).

Modern Cities-Public Realm

Figure 1-24 Modern cities are organized in the grid pattern and designed to maximize movement and accessibility, Abu Dubai, U.A.E.



Figure 1-25 A modern clock tower, Abu Dhabi, U.A.E

1.4.4 ARCHITECTURE

■ ARCHITECTURE OF TRADITIONAL CITIES

Islamic architecture has taken the most appropriate materials of time and place and used them to create spaces of tranquillity and unity. The origin of Islamic architecture was in the Arabian Peninsula and the Mediterranean where the most prevalent construction materials were stone of various kinds and sun-dried or baked brick¹¹. It is in the context of these materials that architectural forms were evolved. Bearing walls with domes were the resulting most common forms. Domes were the natural roof forms to span larger covered spaces. For colonnades with flat roofs, wooden logs or cut-timber beams were the most natural choice (Khan, 1978).

The intimate connection between Islamic architecture and fine arts was supported by the fact that the main means of artistic expression, i.e. calligraphy, geometric patterns, and the arabesque, were surface-related and therefore suitable to fully merge with the planes of walls or ceilings, which was to carry their message. While limited to the wall surface and subtle relief structures, Islamic art was able to gain a new dimension through its marriage with architectural structures. This is due to the specific sense of space generated by the dominant courtyard typology. The main elevations were introverted and therefore facing each other, the central enclosed open space became detached from the outside world. The decorated architectural surfaces performed a function; the intention was not to display material qualities or structural forces but to transform the physical structure to a point where it could reflect the supreme reality to which calligraphy and geometry referred. The rich ornamental tapestries of many buildings therefore follow a logic, which goes far beyond superficial decoration.

“This enabled the courtyard to be deeply imbued with and transformed by the imprint of the ornamented walls. Accordingly, the de-materialization process was extended into the third dimension and the core of the building acquired a timeless quality, often sustained by the interaction with fountains and gardens evoking the image of paradise. Architecture thus achieves a paradoxical function, since it first defines a clear-cut central space, while at the same time it de-materializes and transfigures it, abolishing the limits of time and space by artistic means.” (Bianca, 2000, P. 212)

Besides calligraphy, the two other main tools of artistic expression cultivated in Islam were geometrical patterns and the arabesque. Arabesque and geometrical patterns were often juxtaposed with calligraphy to form frames and panels of continuous decoration.

¹¹ The building materials used for Maghrebi houses were sun-dried or baked bricks and cedar wood. While the floors and the lower part of the walls were covered with tiles, ornamental panels of carved plaster featuring geometric patterns, arabesques, and calligraphy enhanced the upper parts of the walls. The elaborate decoration of the interior elevations around the courtyard helped constitute the inner realm of the house as a qualitative space of its own, very detached from the external world.

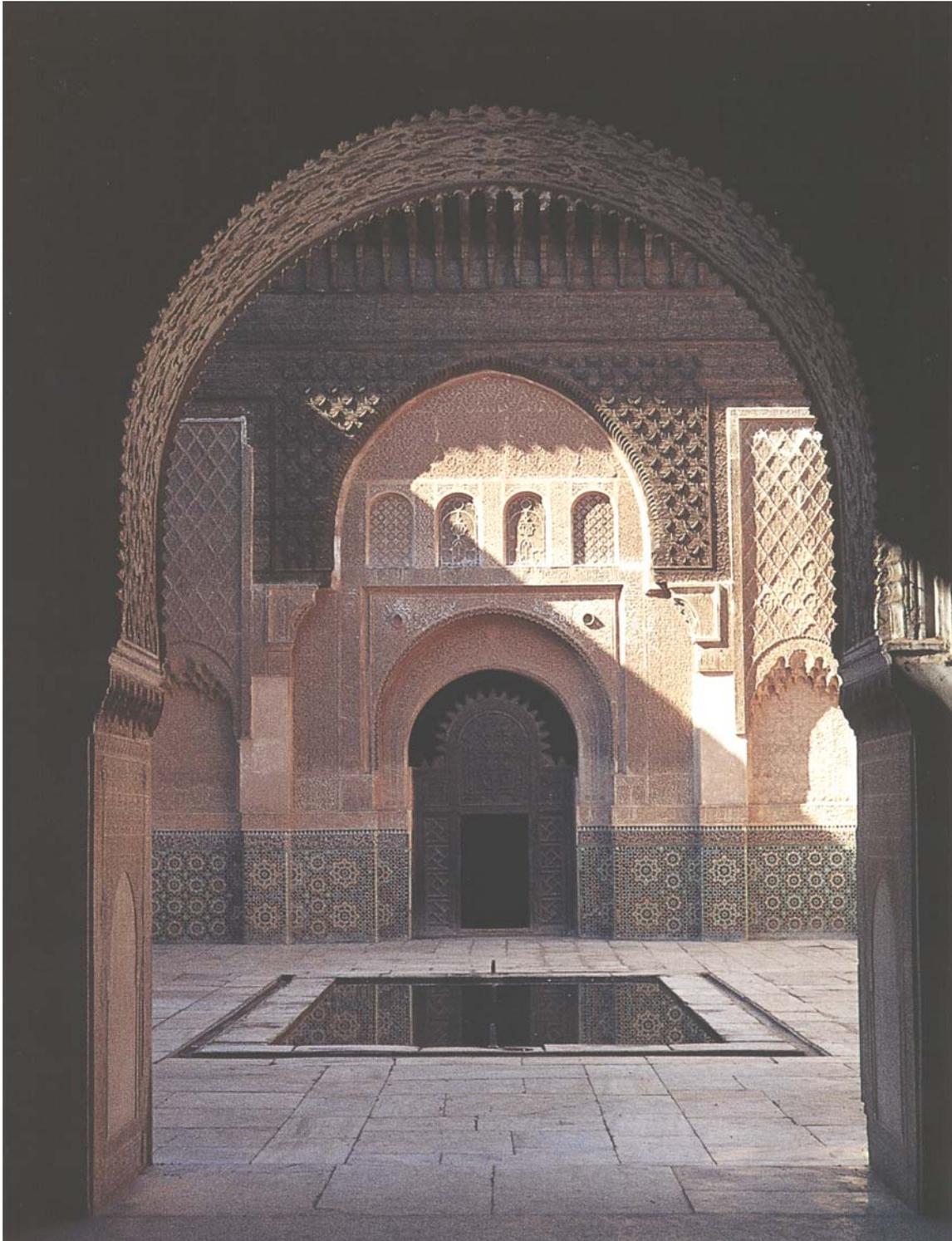
Traditional Cities-Architecture

Figure 1-26 The courtyard of the Madrasa ben Youssef in Marrakech (Morocco), an example of a perfectly balanced architectural composition, kept in suspension by the mirroring in the central pool and the transfiguration of ornamented wall surfaces.

While Islamic art favoured plane surfaces (such as walls, panels, arcades, lintels, etc.) for its use of geometrical patterns and arabesques, it also developed a three-dimensional geometric pattern, which through its intermediate character between architecture and ornament became an important vehicle of artistic expression. The basic component of this three-dimensional adornment is the muqarnas. The muqarnas have become a hallmark of Islamic architecture. Their use was by no means restricted to the supporting corners of vaulted structures but became a ubiquitous decorative element, filling the interior of domes, the cavities of niches and the projecting edges of balconies and cornices with their stalactites or hanging niches.

■ ARCHITECTURE OF COLONIAL CITIES

According to Moughtin, the building façade of the European city is subdivided horizontally and vertically by the main elements of the order, the entablature and the column or pilaster. Each floor is emphasized and distinguished by the use of a different order. The building façade consist of three main sections: a foundation or base that connects the building with the ground or pavement; a middle section with its rows of windows; and the roof zone, which connects the building to the sky by silhouette. The relative weight given to each section in terms of decoration depends upon the position of the building in relation to the viewer, its height, mass and the location of its most important function. The elements were emphasized by a simple horizontal stringcourse or by a more distinctive treatment. Within the zone, the articulation was largely achieved through the decoration around the edges of windows, niches, or the treatment of projecting bays, balconies, and stairwells. Often the ornamental work is of contrasting colour and material from the main background walling material. The design of the facades, often of load-bearing masonry construction with large window areas, was a skilful engineering achievement (Moughtin, 1995).

“Since the colonial period, there have been many attempts to combine modern Western building structures with Islamic ornamental features. Most of them, however, have failed because they used Islamic art out of context, that is, without considering the interrelation between the artistic decoration of walls and the corresponding concept of space, which calls for a specific architectural approach. Deprived of this correlation, traditional decoration loses its deeper meaning and is reduced to a shallow ornamental feature.” (Bianca, 2000, P. 212)

The corner, because of its significance, has often been an important element on the colonial city architecture. The street corners are given emphasis with their decorative treatment and thus they become memorable in the mind of the viewer. As such, it is significant in strengthening the imageability of the city. A prime location for architectural decoration was at the external corners of buildings, particularly if the corner is at the junction of several streets.

Colonial Cities-Architecture



Figure 1-27 Design of the facades, often of load-bearing masonry construction with large window areas, was a skilful engineering achievement, colonial city of Aleppo, Syria.



Note particularly the carved wooden mashrabiya and vertical ornamentation at the corners, an apartment house on 26th of July Street, Cairo.



Left: A doorway in the Sakakini District, Cairo.
 Far left: A doorway in the Faggala District, Cairo.
 Below, left: Portico of the new wing to the American University in Cairo, built in 1932.
 Below, far left: Entrance to the Khayry Bey Palace in Cairo, built in 1870.

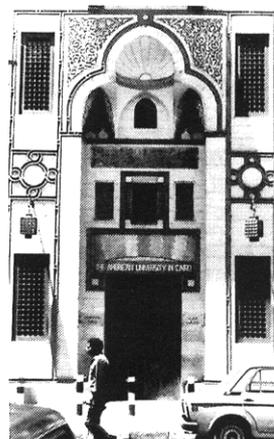
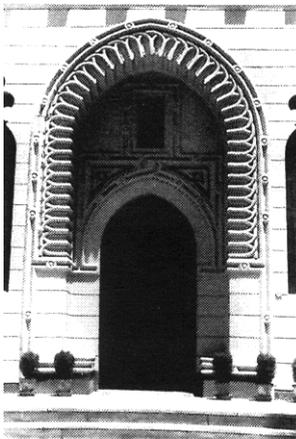


Figure 1-28 Attempts to combine modern Western building structures with Islamic ornamental features.

Until the nineteenth century, Arabic cities developed slowly, employing indigenous materials from their regions for the building envelope. Architectural styles changed but the building materials did not. The constant use of local materials produced streets, squares, and whole cities with great visual harmony despite the varied forms. In this way, the colour of the city was established and is an aspect of its history, which has not been completely submerged by nineteenth- and twentieth century developments. In the colonial city, there was easy access to cheap earth pigments for painting facades. Even in the nineteenth century, it was only the wealthy, who could afford the brighter “imported” or “foreign” colours for doors and windows.

In the colonial city, the complementary design resources were used to achieve an effective cooling of the indoor spaces, and reduce the undesirable impact of solar radiation and outdoor temperature variations. The heavy mass of the buildings with relatively controlled openings provided excellent thermal inertia, reducing and delaying the transfer of the external heat loads to the interior. At the same time, the mouldings and cornices shaded the glazed openings, which also had shutters, awnings, or roller blinds in an extendable frame allowing ventilation and light, while providing effective shade. Mansard roofs, forming large ventilated airspaces protected the floors below, reducing heat losses in winter and unwanted heat gains in summer.

Colonial Cities-Architecture

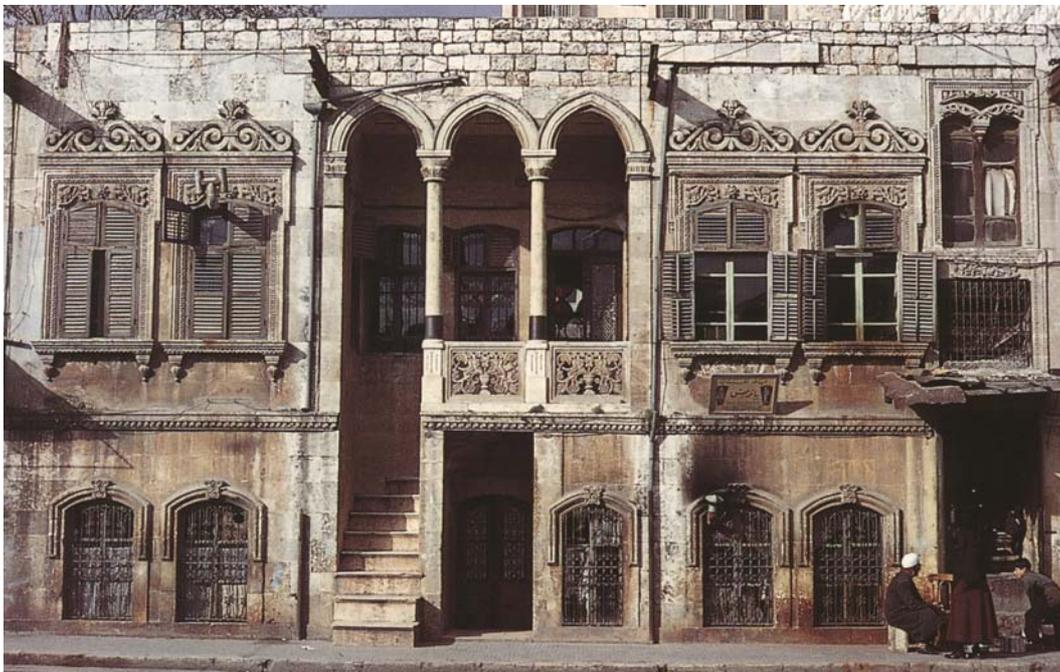


Figure 1-29 The urban facade is characterized by the vertical windows and cornices to ensure adequate natural ventilation, colonial city of Aleppo, Syria

In addition, many buildings included sliding glass domes that provided lighting and adjustable ventilation to indoor spaces. When the internal temperature was higher than the external temperature, the glass dome was moved on horizontal rails to allow the warm air to escape. At night, the cooler outdoor air would enter the building and lower the temperature of the high heat capacity surfaces. The sliding dome also had glass louvers to increase the ventilation, or provide partial ventilation without allowing rain to enter. The light-wells that penetrated to the interior also provided complementary ventilation, allowing hot air to rise while cooler air enters through the windows.

As a result of the combination of these features, adequate comfort conditions were maintained in hot summer days without dependence on artificial and energy intensive cooling systems. However, the operation of these systems depended on maintenance personnel who would open the vents, blinds and shutters, operate the sliding domes and protect the interior from rain, sudden cold spells, and strong winds, by closing these adjustable passive cooling systems.

■ ARCHITECTURE OF MODERN CITIES

With the introduction of new technology and materials and the increasing number of expatriates, more buildings that are multi-storey have been built in Arab cities. The ground floor is, in most cases, designed as retail stores and shops with a small apartment left for the keeper or guard. Apartments usually start from the first floor. One or two elevators are used and open stairs or fire-stairs are almost non-existent except in big new projects. Most apartments rise to the height of 6-10 storeys, with flat roofs. Two and three bedroom units are the most common with 100-120 sq m areas. They mostly look toward the street, which surrounds the building (Ackerknecht, 1986).

Modernist architecture, in its puritanical zeal, rejected ornament and decoration. The modern city, thus, was considered as a machine to provide work, housing, and other activities connected by roads not streets. Buildings are constructed for profit, and if they are to be reduced in cost and therefore maximize profits, tend to be constructed of standard prefabricated, factory-made components requiring little fixing on the site. Where decoration or expensive materials are used, it is to express commercial strength; it symbolizes the power and prestige of the enterprise, usually a multi-national organization. Much of this attitude is influenced by the ideal of the machine and its functional features, to the point that many modern design products are less practical, less comfortable, and even less functional than many of their traditionally crafted predecessors. The introduction of Western building typologies and the corresponding aesthetics threaten to reduce the vital role of the arts in Islamic societies and thereby impede a significant visual expression of the synthesis between material and spiritual concerns (Bianca, 2000).

Modern Cities-Architecture

Figure 1-30 Modern architecture tends to display construction systems to express the dynamics of structural forces and to expose building materials, Marine Operating Company headquarters by Jung Brannen, 1996, Abu Dhabi, U. A. E.

1.5 CONCLUSION

Arabic cities have been influenced by the succession of different historical periods, which elapsed in the Arab world history. These historical periods shaped the contemporary Arabic cities. The urban patterns, which resulted from these historical periods, offered a wide field of distinct architecture and characteristic. This chapter explains the visual characteristics of each urban pattern and explores its key features.

The traditional city is characterized by: the willingness to adapt to local materials and local image; symmetry in the plan and elevation outside buildings; the organic growth as an aggregation of private houses, mosques and markets, all collected within a coherent urban fabric; the sequence hierarchy of space from the public, semi-private and private spaces to maximize family privacy; built on a pedestrian scale provided an extremely dense townscape; and the calligraphy, geometric patterns and the arabesque as the main means of the visual interest and richness.

Throughout European colonialism, all Arabic countries were influenced by general attitudes coming from several dominant design considerations. There was a preoccupation with: symmetry of design elements to make a balanced composition around one or more axial lines; closing of vistas by careful placing of monumental buildings, suitably imposing statues, at the ends of long, straight streets; and individual buildings integrated into a single, coherent, architectural ensemble, frequently through the repetition of a basic elevation design.

The modern patterns tend to differentiate urban along isolated function for housing, commerce, recreation, industrial activities and governmental use. Thus, ensure that functional segregation disconnects related human activities and make up for lost social interaction. Road and transportation systems are transformed the urban form into isolated pieces.

Table 1-3 Visual characteristics of Arabic cities

VISUAL CHARACTERISTICS		
Townscape	Traditional Cities	<ul style="list-style-type: none"> ■ The organic growth of houses, mixed with shops and other business buildings, keeping the community mosques as the focal points. ■ The minarets, and possibly one or several larger domes, are the only elements emerging from the continuous roofscape, which extends like a blanket above the aggregated volumes.
	Colonial Cities	<ul style="list-style-type: none"> ■ The most usual type of landmark was a building or the upper pan of a building such as a dome. ■ The buildings showed great respect for context: window shapes, details, materials, gable, and colours blend to form a highly decorative and unified street scene.
	Modern Cities	<ul style="list-style-type: none"> ■ The skyline is a negotiated symbol. It is continually changing, the result which is usually of the uncoordinated efforts of individual institutions.
Urban Form	Traditional Cities	<ul style="list-style-type: none"> ■ The urban form grew as an aggregation of enclosed cellular units, taking the shape of private houses, mosques and markets, all collected within a coherent urban fabric. ■ Buildings were shaped according to the internal needs responding to the enclosed activities. ■ The division of land was not based on a uniform method and was seldom done with geometric discipline. ■ Buildings evolved in manner that could trap the cool airflow. ■ The courtyard became the controlled source of light, provided shade as the sun moved across the sky, and allowed a portion of that light to be used all day for indoor living purposes.
	Colonial Cities	<ul style="list-style-type: none"> ■ Pattern is organized in the grid-iron streets and the design was concerned with human scale.
	Modern Cities	<ul style="list-style-type: none"> ■ Since modern town planning became equivalent with road planning, the urban form had an addition of isolated blocks, and were dissected by a rectangular grid of streets and avenues. ■ Contextual values and human-scale interrelations between buildings, or between buildings and open spaces, are neglected in favour of a rigid functional separation of housing, public facilities, traffic and open spaces, single functions being isolated and inflated to a point where they became meaningless.

Public Realm	Traditional Cities	<ul style="list-style-type: none"> ■ Available public spaces were allocated to and often integrated with specific architectural units, such as mosques, khans or private houses and therefore detached from the public realm. ■ Streets became subsidiary to the urban structure and were often transformed into narrow internal corridors. As the various sections of the ramified street network were absorbed by the corresponding architectural units, the main thoroughfares were integrated into the suqs, secondary lanes into the residential quarters, and the dead-end alleys into the clusters of private houses to which they gave access.
	Colonial Cities	<ul style="list-style-type: none"> ■ Urban streets grouped into three functional types, the great civic streets dominated by civic buildings, the commercial streets, and the residential street. ■ Dominated squares were categorized by one individual structure or a group of buildings towards which the open space is directed and to which all other surrounding structures are related. ■ Most civic furniture acted in harmony with or enhanced by counterpoints of the public realm of the city.
	Modern Cities	<ul style="list-style-type: none"> ■ Modern cities are organized in the grid pattern and designed to maximize movement and accessibility. Streets show more concern for cars than for people. While the streets in the traditional patterns reflected residents' needs such as climatic comfort, privacy and security, the streets in the modern patterns disregard these aspects.
Architecture	Traditional Cities	<ul style="list-style-type: none"> ■ Islamic architecture has taken the most appropriate materials of time and place and used them to create spaces of tranquillity and unity. The most prevalent construction materials were stone of various kinds, imported timber and sun-dried or baked brick ■ Calligraphy, geometric patterns and the arabesque as the main means of the visual interest and richness ■ The muqamas became a ubiquitous decorative element, filling the interior of domes, the cavities of niches and the projecting edges of balconies and cornices with their stalactites or hanging niches.
	Colonial Cities	<ul style="list-style-type: none"> ■ Facades, often of load-bearing masonry construction with large window areas, was a skillful engineering achievement. ■ The corner, because of its significance, has often been an important element on the colonial architecture. It thus takes on added significance, performing the role of landmark. ■ The articulation was largely achieved through the decoration around the edges of windows, niches, or the treatment of projecting bays, balconies, and stairwells. Often the ornamental work is of contrasting colour and material from the main background walling material
	Modern Cities	<ul style="list-style-type: none"> ■ Modernist architecture rejected ornament and decoration. ■ Modern architecture display construction systems, to express the dynamics of structural forces and to expose building materials.

