Besim Selim Hakim

Arabic-Islamic Cities

Building and Planning Principles

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Introduction

Since my final year as an architecture student in 1962 I have been interested in the factors that shaped 'vernacular' cities and villages. To pursue this interest effectively and fully utilize my background, sensitivities and skills, I decided to concentrate on the region of the Middle East and North Africa molded by the Arabic–Islamic civilization since the mid-seventh century.

Instigated by the accelerated building and construction activity in that region since 1973, I outlined, in August 1974, a research concept for which I began to seek support and which ultimately created this study. Implicit in undertaking this work was the conviction that building and urban development accomplished within the framework of Arabic-Islamic civilization achieved a high level of sophistication and merited thorough study and evaluation in terms of our current needs. The goal set out for the research was to provide the necessary information and techniques to help bridge the gap between current practice in the Arab and Islamic world (primarily imported from the West) and the traditional experience which developed continuously over a period of at least 1,000 years. Accordingly three specific objectives were set out to accomplish that goal:

1 To identify and record the building and planning principles which shaped the traditional Arabic–Islamic city.

2 To evaluate, recycle and test the traditional principles (or derivates) via a contemporary urban design project to determine their validity and usefulness today and for the foreseeable future.

3 To document the findings in a systematic and clear format so that others may benefit directly.

This book documents the results of implementing objectives 1 and 3. Objective 2 was partially undertaken by testing the organization/design system inherent in the traditional experience with the design of a prototype neighbourhood suitable for most arid conditions in the Middle East and North Africa. The project consists of 428 units and supporting community facilities on a typical, flat site of 17.67 hectares. For various reasons the decision was made not to include the test design in this publication, but I would like to mention that even though the test uses traditional physical features and is only part of the findings available to us, it nevertheless proves that with minor adaptations those features are suited to our contemporary needs and can create an attractive and viable alternative to present models.

Before indicating the approach followed in achieving objectives 1 and 3, it would be helpful to highlight a few of the historical facts that have affected the selection of the title for this book. During the years 1/622–133/750, (approximately by the end of the Umayyad dynasty) the geographic area extending from Spain to India embraced the religion of Islam, and constituted what is referred to today as the Muslim World. During the first three centuries of Islamic history (i.e., by the year 288/900), the foundations and principles of the social, economic, and legislative frameworks were accomplished. Building and urban activity occurred at a relatively accelerated pace during those years, and building activity — with its unavoidable problems — created the demand for guidelines and a legislative framework to regulate and adjudicate on those problems. In this way, a remarkable body of information was generated in various regions of the Islamic world, and this was actively exchanged by learned men on their travels, students seeking knowledge, and the acquisition of manuscripts.

The uniform legislative guidelines, and the almost identical socio-cultural framework created by Islam — in addition to the similarity of climatic conditions and construction techniques within most of the Islamic world — helped produce remarkable similarities in approach to the city-building process. This resulted in the frequent occurrence of the familiar beehive urban pattern throughout this vast geographic area. Deviations from this basically uniform urban pattern did occur owing to the modifying influences of micro-climates, economic conditions, available building materials and localized stylistic approaches and influences.

We find that this long tradition of building and urban development (which achieved its maturity by the year 288/900 and continued for the next ten centuries) came to a rather abrupt stop around the turn of this century, finally ending with the collapse of the Ottoman Empire in 1337/1918.

Why then is this book titled *Arabic–Islamic Cities* instead of just *Islamic Cities*? The primary reasons can be summarized thus:

1 Islam emerged from the heartland of Arabia, which had strong pre-Islamic Arab traditions in various spheres of life including building practice. Many of the traditions that were not compatible with Islamic values were prohibited but others, with modifications, became part of Islamic civilization. I believe that various aspects of pre-Islamic building practice were absorbed and modified and emerged with a distinct Islamic character. Some of those influences could be traced back to earlier Semitic and Arab civilizations particularly in the region of Mesopotamia.

2 The language of the Qur'an is Arabic, which became the most important language for communicating and generating knowledge within the Islamic world. Thus prime sources in various disciplines are in Arabic.

3 Of the predominant five schools of law in the Islamic world (four Sunni and one Shi'i), the Maliki School of Law, attributed to Imam Malik, is the one closest to the traditions and practices in Medina-Arabia, the Prophet's city. The foundations of those traditions were established during the decade before the Prophet's death in 11/632. Societal framework, attributes, and the experiences gained during that decade by the first Arab–Islamic community under the leadership and guidance of the Prophet were (and still are) considered by many the model to emulate.

4 Even though numerous Islamic cities were founded and built by Arab leaders in non-Arabic-speaking territories during the seventh and eighth centuries, there is no doubt that local building traditions and the nature of pre-Islamic cities must have had considerable influence, particularly in the eastern regions of the Islamic world. However, the region that exerted the least influence on emerging Islamic cities was in the Maghrib (the region extending from Libya to Spain). Thus cities founded by Arab-Islamic leaders in the western regions of the Islamic world were the 'purest' in terms of their general Islamic framework and their specific Arabic attributes. Although the lack of local influence was important in this regard, the teachings and outlook of the Maliki School were possibly more crucial.

Given the above reasons, it would have been feasible to entitle this book *Maghribi Islamic Cities* or *North African Cities* or even *Moorish Cities*; however, I believe the title *Arabic–Islamic Cities* is historically and culturally more accurate.

The approach I pursued in achieving the objectives mentioned earlier was directly influenced by the availability and type of information I could acquire. Even though I outlined an initial approach in my first research proposal, a clearer one soon emerged which partly confirmed my earlier intentions. The work had to be pursued within the following two areas:

1 The detailed study and analysis of an existing traditional Arabic–Islamic city which has undergone minor modification owing to recent technological influences. Within the Maghrib region the city of Tunis proved to be an excellent candidate.
2 Investigation of ancient Arabic manuscripts and historical records which would shed light on the city-building process. The area of Islamic law (Fiqh) proved the best source for that, as the problems arising from the city-building process were well recognized and addressed within the framework of Islamic values and ethics.

The vigour with which I pursued this work was also influenced by my conviction that the bulk of the values and experiences embodied in the theory and practice of modern architecture are rooted in a small segment of man's experience in building and urban development. This experience has been, to date, dependent solely on monumental buildings as works of art. The bulk of man's experience as builder of his habitat — popularly described by modern architects as 'architecture without architects' — has hardly influenced the shaping of values and theories of contemporary architecture. This historical fact has harmed the development of cities in Western countries as well as, more recently, those in other cultures. Luckily there are efforts in the West today to enlarge this narrow viewpoint, but it might take years before the damage caused by current practices can be fully recognized and rectified.

This study is therefore primarily addressed to architects, urban planners, city administrators and elected or appointed officials who have direct or indirect influence on urban development and government. It is also for those involved academically in the same areas. I hope the results of this work will also be of benefit to historians, archeologists, anthropologists and lawyers, on whose disciplines I drew a great deal in studying various aspects of the traditional city in the context of the Arabic–Islamic civilization.

This brings us to the problem of information, which was the most difficult task confronting me. I literally had to piece

together sentences, paragraphs, portions of maps — in the form of a jigsaw puzzle — to reconstruct a clear picture of what happened. In doing so I utilized sources from four languages: Arabic, English, French and German.

I approached the research with an open mind and with no biases. I also assumed that the most remote and unexpected sources could provide a clue to the truth of what happened in history. This open-minded policy paid off handsomely as I found that valuable information existed in sources which, as an architect, I could not possibly have foreseen or imagined. One fact emerged: the type of sources we usually use in architecture and city planning for explaining historical phenomenon are relatively unhelpful in seeking reality.

Another useful strategy I pursued during the three years of research (1975–77) was constantly to seek out information as the work was progressing. This input allowed for continuous verification and/or modification of the findings. Accordingly I can say with full confidence that the results of this work represent the essential core of knowledge — within the limitations of one case study — of:

1 the principles and guidelines used during the building *process*; and
2 the organizational framework and associated techniques utilized in creating the urban form, or the built *product*.

Future research using other case studies will no doubt sharpen these findings and provide insight into similarities and subtle differences which existed from city to city and region to region, particularly as a result of the application of building principles and guidelines derived from Islamic values.

The work is grouped in four chapters, and four appendices. The first chapter details the first of two major areas of knowledge about the factors that shaped the Arabic-Islamic city — namely the neighbourhood building guidelines which were generated by Islamic jurists and administered/implemented by *Kadis* (judges) in cases of conflict. It is supplemented by Appendices 1, 2 and 3 which present integral components of the information.

Chapter 2 sets out the physical organizational system used in achieving the familiar beehive urban form. The components of the system are based on a hierarchy of identifiable urban and building scale elements which function together as a versatile design language. Chapters 1 and 2 therefore explain the essence of the 'why' and 'how' of the traditional Arabic–Islamic city as demonstrated by the case of Tunis.

Chapter 3 is interpretative and its purpose is to illuminate the interaction of the two fundamental mechanisms identified as building process and product (i.e., Chapters 1 and 2). Qualitative and quantitative elaboration and interpretation of the Medina of Tunis as a case study is undertaken, and examples are selected at both the city and neighbourhood scales. Appendix 4 points out some benefits which could be derived from the traditional experience for our contemporary use, in terms of the building process and the primary urban form components.

Chapter 4, the conclusion, summarizes the findings of the study and indicates areas for further related research to fill the gaps in the knowledge and experience of the past century that have occurred in the Arab and Islamic world, and no doubt in other cultures as well. This knowledge is crucial for a sucessful linkage between past, present, and future in the area of building and urban development.

Besim Hakim
7 Ramadan 1399/31 July 1979

Chapter 1

Islamic law and neighbourhood building guidelines

The basic principles and guidelines of the building process and its framework were derived from the essence and spirit of Islam. It can safely be asserted that the development of these basic principles and guidelines started in 1 AH or 622 AD (referred to as 1/622 in future) when the Prophet Mohammed settled in Medina.

The development of building and urban design principles centred primarily around housing and access. Their development paralleled that of Islamic law, and soon became semi-legislative in nature. Since building and the development of communities is a continuous process, related rules and guidelines were in demand constantly.

The multitude of cases due to conflicts between neighbours had to be resolved expeditiously and fairly. The resulting cases attracted the attention of interested judges, master masons and others, and were soon used as precedents. In this way, the development of Islamic law responded well in fulfilling the demand for building/urban design guidelines and a framework for adjudicating related conflicts. Research indicates that the development and maturity of these guidelines did, in fact, coincide with the development of Islamic law. The spread of Islam produced a great deal of intellectual activity and knowledge particularly related to the conduct of life as prescribed by religious principles and codes.

Many great scholars spent their lifetime studying, teaching and writing on the subject. Some of these scholars developed their work to such an extent that they soon formed schools of law (Madhhab) based on their teachings. Although numerous schools of law arose, only five have survived: the Hanafi, Maliki, Shafi'i, Hanbali and Jaffari. The first four are Sunni Schools and the fifth is Shi'i.

The lives of the schools' founders reflect the historical timeframe within which their work developed. Most of the development occurred within the first 200 years of Islam, and each school of law created its own geographic sphere of influence, though in some cases overlap did occur. However, it should be noted that these spheres of influence have not remained stationary during the past 1,300 years. For instance, the Maliki School spread from the Prophet's city 'Madina' in Arabia via Egypt to the Maghreb region and to Al-Andalus (Muslim Spain). To this day Morocco and Algeria subscribe only to the Maliki School. On the other hand, however, the Hanafi School was introduced to Tunisia and Libya in the mid-sixteenth century by the Ottoman Turks. Today most of the population in both countries are still Malikis, even though both Madhhabs have equal status.

Differences and similarities exist between the schools of law (although they will not be

discussed here) but they were all influenced, and subsequently shaped by, the teachings of Muhammad Ibn-Idris al-Shafi'i who established the *Sunna* (practice of the Prophet Mohammad) as the second source of law after the *Qur'an*. A brief account of al-Shafi'i's legal theory is important as it will clarify subsequent material to be presented.

According to al-Shafi'i there are four major sources or roots (*usul*) of law: the *Qur'an*, the *Sunna* (the divinely inspired behaviour of the Prophet Mohammad), the *Ijma'* (the consensus of the entire Muslim community), and *Qiyas* or *Ijtihad* (the use of human reason in the elaboration of law). Al-Shafi'i's legal theory is presented in his *Risala* which he wrote during the five years before his death in 204/819. It was drawn along simple, yet bold and uncompromising lines and was an innovation the value of which lay not in the introduction of any entirely original concepts but in giving existing ideas a novel connotation and emphasis and combining them within a systematic scheme.[1]

The Qur'an, apart from its substantive provisions, also indicated the means by which some of its material is to be interpreted and supplemented. In particular, the repeated command to 'obey God and his Prophet' established the precedents of Prophet Mohammad as a source of law second only to the word of God. The recognition of the Traditions (*Hadith*, precedents of the Prophet) as a source of the divine will complementary to the Qur'an is the supreme contribution of al-Shafi'i to Islamic jurisprudence. His arguments proved irrefutable, and once they were accepted, traditions could no longer be rejected by objective criticism of their content; their authority was binding unless the authenticity of the report itself could be denied.[2]

In Ijma, he takes up an existing notion and gives it a new connotation designed to achieve uniformity in the law. Denying that the agreement of the scholars of a particular locality had any authority, he argues that there could be only one valid consensus, that of the entire Muslim community, lawyers and lay members alike. Qiyas (or reasoning by analogy, in its widest sense) is the use of human reason in the elaboration of the law. It was also termed Ijtihad (effort or the exercise of one's own judgment) and covered a variety of mental processes, ranging from the interpretation of texts to the assessment of the authenticity of traditions. Qiyas or analogical reasoning, then, is a particular form of Ijtihad, the method by which the principles established by the Qur'an, Sunna and consensus are to be extended and applied to the solution of problems not expressly regulated therein. The role of juristic reasoning is thus completely subordinate to the dictates of divine revelation. Analogical deduction must have its starting point in a principle of the Qur'an, Sunna or consensus, and cannot be used to achieve a result that contradicts a rule established by any of these three primary sources.[3]

The following is a statement by al-Shafi'i which summarizes his legal theory:

> On points on which there exists an explicit decision of God or a Sunna of the Prophet or a consensus of the Muslims, no disagreement is allowed. On the other points scholars must exert their own judgment in search of an indication in one of these three sources; he who is qualified for this research is entitled to hold the opinion which he finds implied in the Qur'an, Sunna, or consensus; if a problem has two solutions, either opinion may be held as a result of systematic reasoning, but this occurs only rarely.[4]

Later jurisprudence modified al-Shafi'i's ideas of the relationship between the component parts of this theory, but his fundamental theory was never seriously challenged.

In the century that followed the death of al-Shafi'i in 204/819, the Sunna of the

Prophet became the focus of attention, and by the year 288/900 Muslim jurisprudence as a whole had succeeded in absorbing al-Shafi'i's teaching in a generally acceptable form.[5] The outstanding feature of this period is the growth of a separate science of traditions with a literature of its own. Specialist scholars devoted themselves to the process of collecting, documenting, and classifying traditions. Once the trustworthiness of their reporters was established, traditions were classified in varying grades of authority according to the strength of their *Isnads*. If the continuity of transmission was broken — for example, where two successive links in the chain of reports could not historically have been in contact with each other — this naturally detracted from, although it did not necessarily wholly destroy, the authority of the tradition. Apart from such considerations the criterion was the number of transmitters in each generation.

During the latter part of the third Islamic century (250–300/864–912) scholarship in this field claimed to have sifted the genuine from the false. Two such manuals in particular, those of al-Bukhari (died 257/870) and Muslim (died 262/875), have always enjoyed a high reputation in Islamic jurisprudence as authentic accounts of the practice of the Prophet.[6]

By the beginning of the fourth century of Islam (about 900 AD), the scholars of the surviving schools felt that all essential questions had been thoroughly discussed and finally settled, and a consensus gradually established itself that from that time onwards no one could be deemed to have the necessary qualifications for independent reasoning in law, and that all future activity would have to be confined to the explanation, application and, at the most, interpretation of the doctrine as it had been laid down once and for all. It followed that from then on every Muslim had to belong to one of the recognized schools. After this 'closing of the door of independent reasoning,' as it was called, the doctrine had to be derived not independently from the Qur'an, the Sunna, and the consensus, but from the authoritative handbooks of the several schools.[7] The activity of jurists was subsequently no less creative, within the limits set, than that of their predecessors. New sets of facts constantly arose in life, and they had to be mastered and moulded with the traditional tools provided by legal science. This activity was also carried out by the *muftis*.[8]

Tunis, the subject of the case study, reached development maturity during the period of the Hafsids (627/1229–982/1574). As mentioned before, the only school of law at that time which was followed in all the Maghreb region including Al-Andalus was the Maliki School. Although the Turks introduced the Hanafi School of Law in Tunis during their period of rule, its influence in matters relating to building law and guidelines was minimal. Concentrating on the study of the Maliki School would therefore be the most beneficial for understanding the underlying principles and practice related to building and urban design in Tunis.

The father of the Maliki School is Malik ben Anas Al-Asbahi who was born in Madina in 93/711, lived there most of his life, and died there in 179/795. His primary written contribution is the Muwatta which is a collection of Hadith and Fatawi (plural of Fatwa, in other words the opinions and cases of important contemporaries). Appendix 2 presents a chronological list of significant persons who spread the teaching of Malik and his school. They were identified as the basic sources used by Ibn al-Rami, who is the author of the fourteenth-century manuscript upon which the cases in this chapter

are based. They represent the chain from Malik to Ibn al-Rami's period.[9]

Two factors need emphasis:

1 The first fourteen men after Malik lived during the first 260 years of Islam. Their work, therefore, was the basis and reference point for subsequent generations, as we shall see in our study of specific cases within the eighth century AH in Tunis (fourteenth century AD).
2 Al-Shafi'i's influence was widespread and well accepted by the year 288/900, so that the Sunna of the Prophet became the focal point of attention after his death in 204/819.

This chapter will continue in the following format: first I will present a selection of principles and behavioural guidelines which I have identified and specified by the interpretation of the material available from the eighth entury AH (fourteenth century AD) Tunis. They have never been presented in this format. They could be viewed as the general 'performance specifications' followed by the local Kadis and master masons in Tunis and elsewhere. All principles and guidelines are, whenever appropriate, identified with the Qur'anic verses and sayings of the Prophet from which they were derived or influenced. All appropriate verses and sayings are presented in Appendix 1.

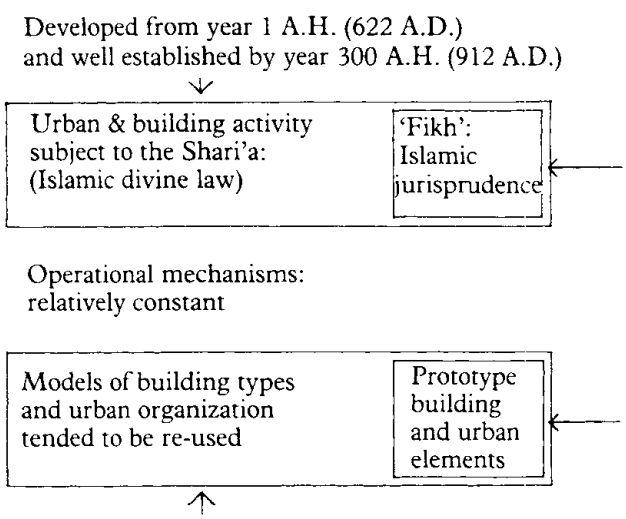
The verses were selected because of their direct or indirect meaning, influence, and guidance to matters affecting urban living. The selection of sayings or Hadith have had direct influence on conduct and decision making within the urban milieu. Most were used by religious scholars and Kadis for setting principles and guidelines to be followed in the activity of urbanism.

Secondly, I will present a selection of cases and Fatawi (opinions by muftis) from the Hafsid period in Tunis, specifically from the late seventh and eighth centuries AH (late thirteenth and early fourteenth centuries AD). These are grouped and presented within a framework, devised for this purpose, of five categories of factors that shape urban form and tissue.

Referring to the chart in Figure 1, we note that the dynamic decision-making process operating in the city was primarily based on decisions by rulers and citizens. Rulers' decisions were macro in nature, creating in most cases a 'planned' effect on the urban fabric, or initiating the building of a Jami, a Madrassa, or extending a road, and so on. In other words these decisions had relatively obvious manifestations.

Citizens' decisions were of a micro nature, with less discernible effects than the decisions of rulers, but their aggregate

Figure 1 Conceptual model of selected factors that shaped the traditional Arabic–Islamic city



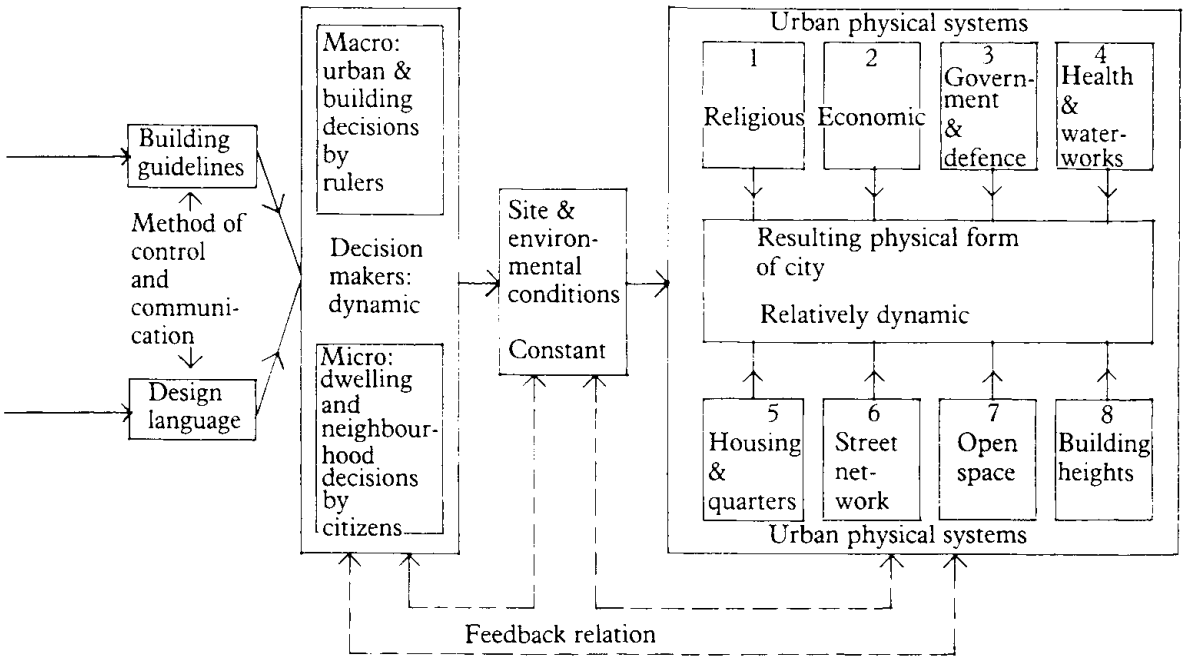
impact on the city was ultimately more significant, and affected the lives of most people directly. This aspect of the history of the city has been ignored by most contemporary urban historians, with a devastating effect on the theory and practice of the Modern Movement of Western architecture during this century. Since World War II this negative effect has spread to other cultures in the world, including the Arab and most Islamic countries.

Principles and behavioural guidelines

The following principles and guidelines common in Tunis during the eighth century AH (fourteenth century AD) were used by the local Kadis in resolving conflicts among neighbours and others. They would therefore represent the core of the building principles and guidelines of the Maliki School affecting the 'Micro urban decisions by citizens' (see Figure 1). These were also followed, where applicable, by rulers and others undertaking building activity (classified as 'Macro urban decisions by rulers' in the same chart).

Each principle/guideline is cross referenced with the relevant Qur'anic verse (V) and/or saying of the Prophet (S) in Appendix 1:

1 **Harm.** V: 6, 18, 19; S: 34, 35. The essence is that one should exercise one's full rights in what is rightfully his providing the decision/action will not generate harm to others. Likewise others should exercise their full rights in what is rightfully theirs providing their decision/action will not harm others.
2 **Interdependence.** V: 1, 2, 4, 5; S: 7, 8, 12, 13, 14, 15, 33, 39, 40, 42, 44, 45. This principle reinforces our contemporary



knowledge of the science of ecology and values emanating from it. A framework based on this principle is crucial for generating building 'solutions' to the special requirements of the built-form prevalent in Islamic cities. Note that Verse 5 prescribes the policing of this principle by encouraging self-regulatory behaviour. It is one of the pillars of the Islamic Hisba institution.

3 **Privacy**. V: 13, 14, 15, 16; S: 29, 30, 31, 32. In physical terms it refers to personal clothing and the private domain of the home. It also refers to the privacy of communication. The privacy of others must be respected and its invasion is prohibited, such as via direct visual corridors into the private domain of others. The Qur'an prescribes various behaviour patterns including those designed to respect the privacy of others, such as the manner of announcing one's presence to the occupants of a house, and others.

4 **Rights of original (or earlier) usage**. S: 17, 18, 19, 20. Ownership pattern across time creates rights of earlier ownership or usage, in effect granting certain rights to older and established facts. For example, this principle is used in resolving disputes related to the ownership and rights of party walls, the location of windows, etc.

5 **Rights of building higher within one's air space, even if it excludes air and sun from others**. V: 17; S: 26, 44. The Maliki School followed the prescription in Verse 17 and allowed the owner of a property or building to maximize its utilization for personal benefit by allowing, for example, the extension of the structure within the property's vertical air space. This is allowed even if the extension harms a neighbour by the exclusion of air and sun, and is the only exception to the principle of harm. However this allowance was waived when there was evidence that the intent to build higher was to harm a specific neighbour.

6 **Respect for the property of others**. V: 17; S: 10, 11, 16. The ownership and integrity of a property (land, building or any other item) must be respected and no action is allowed which will depress its value or usefulness or create nuisance to its owner.

7 **Pre-emption**. S: 46, 47, 48, 49, 50, 51. Pre-emption is the right of a neighbour or partner to purchase an adjacent property or structure when offered for sale by another neighbour or partner. The Prophet prescribed the application of pre-emption on primarily physically indivisible items. The intent is to protect the neighbour or partner from the potential harm or inconvenience of a stranger becoming a joint owner of an indivisible property, such as a party wall or garden.

8 **Seven cubits as the minimum width of public thoroughfares**. S: 4. The basis for this width is to allow two fully loaded camels to pass. The cubit ranges from 46 to 50 cm. The width, therefore, ranged from 3.23 to 3.50 m. From my research I found that the minimum vertical height of a public through street is also 7 cubits. This corresponds to the maximum vertical height of a camel with the highest load, see Figure 2(a). Therefore a through public street should have a minimum dimension of 3.23 to 3.50 m horizontally and vertically.

9 **Any public thoroughfare should not be obstructed (by temporary or permanent obstructions)**. S: 5, 6.

10 **Excess of water should not be barred from others**. S: 12, 13, 14, 15. The Prophet prescribed that people

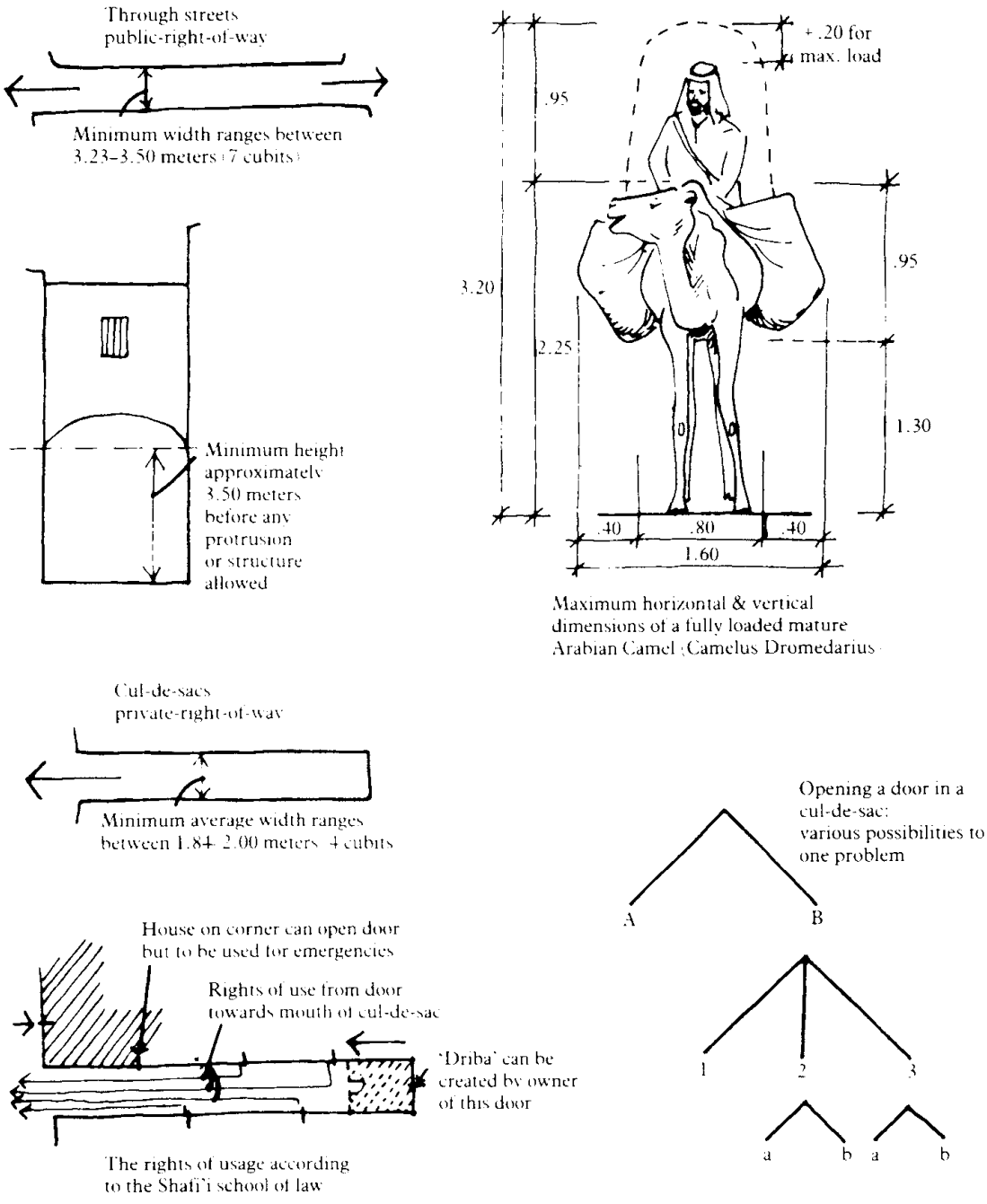


Figure 2(a) Streets: thoroughfares and cul-de-sacs