



Viewpoint

Urban form in traditional Islamic cultures: further studies needed for formulating theory¹

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A large number of random studies on traditional Islamic cities have been published over the past two decades. This paper suggests 15 studies which need to be thoroughly researched and published to add to our current knowledge base on this subject. Once this material is available, it would be feasible to construct a comprehensive theory of urban form in traditional Islamic cities, which currently does not exist. © 1999 Elsevier Science Ltd. All rights reserved

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A steady growth of studies since the early 1980s, including the occasional dissertation, addressed aspects of research objectives which I set out for myself in early 1975.² At this time in

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¹The completion of the preliminary draft of this article coincided with the passing away of my dear father, Dr. Selim Hakim, on 24 June 1995. This humble contribution is dedicated to his memory.

²I first started studying the Islamic city in the context of Arab culture in North Africa in early 1975 when I was a visiting professor during the Spring semester at the Technical Institute of Architecture and Urbanism in Tunis. The primary objective of the study as I conceived it at that time was: "To identify and record the building and planning principles which shaped the traditional Arabic – Islamic city." This evolved to include the legal and customary laws as the basis for the rule system which people respected and followed in decisions affecting their built environment. At that time material directly usable for the

the late 1990s, it is a valuable exercise to acquire an overview of the currently available literature for the purpose of identifying further research topics which are necessary as building blocks for structuring a theory of urban form in traditional Islamic cultures. For that purpose I have been able, through a continuous process of reading and scanning the material, to identify gaps in our knowledge. Studies designed to fill these gaps should be undertaken by individuals and institutions, and after

study was practically nonexistent, although after extensive research, some sources were uncovered which were partly and indirectly valuable. For a discussion of objectives and related issues see pp 11–14 of the "Introduction" of my *Arabic – Islamic Cities: Building and Planning Principles*, Kegan Paul International, London and New York [1979 (1986)], and pp 15–22 for sources which were partly or indirectly valuable. See also the results of my research on customary law in Hakim (1994).

this is accomplished we will be able to begin the task of constructing a framework for theory.

The amount of published literature in journals and books and the occasional dissertation on various aspects of the Islamic city which have appeared during the 1980s and 1990s are not focused enough to be directly useful as building blocks for the construction of theory. However, aspects of those efforts may be valuable as secondary sources. Generally the material, which was and continues to be generated, is by some MA and mostly PhD students at various universities in the Western world, with occasional relevant studies from the Arab world. Scholars undertaking research and teaching in the Western world, whether they are of Western origin or scholars whose origins are of the Islamic world, have been and continue to generate articles and occasionally books which are partly relevant for our purpose. Those efforts

are usually in response to call for conference papers, invited chapters for books on thematic topics, but very rarely in response to the gaps in knowledge of this emerging field of study. This is also true of topics selected for PhD dissertations. Those are randomly chosen based on the student's awareness and interests in issues shaped by the boundaries of the discipline to which he/she belongs, and in response to the interests and expertise of the supervising professor.

What compounds this problem is the lack of leadership in the field and particularly the lack of funding for relevant research. This is further aggravated due to the strangulating effect by the discipline of art history on the majority of research activities in this field. Art history tends to encourage work and publications related to that discipline's goals and parameters; thus the resulting work is always skewed, wanting, or downright useless for the purposes of constructing theory. There are, however, rare exceptions which are valuable as indicated in the notes and references.

In an extensive review of the literature covering the period from the mid 1970s to the early 1980s (Hakim, 1990), I did point out the following observations which unfortunately continue to plague the field.

—Ernst Grube's question and answers to "What is Islamic architecture?" as it appeared in the introduction of the book *Architecture of the Islamic World* (Grube, 1978) continues to influence good intentioned upstarts in the field, particularly those whose experience was limited to the practice of architecture or whose studies was influenced by the discipline of art history.

—The continued permeation of the theme of power, which is a legacy of art historian Oleg Grabar, passed on to his students and their students. Although it is a useful analytical tool, it does have its limitations and can be counterproductive if misused.

—The concern with origins continues to be of interest but for the wrong reasons. Trying to prove that certain practices were not invented by Muslims but are a result of cultural diffusion from others is useful if undertaken for scientific purposes, but useless if used

as a tool of cultural discrimination.—

In my review essay (mentioned earlier), the book *Architecture and Continuity: Building in the Islamic World Today*, edited by Holod and Rastorfer (Aperture, Millerton, NY, 1983). was reviewed in detail as an example, of the work of the Aga Khan Award for Architecture and its affiliate programs at Harvard and MIT. Although other publications from this organization have appeared, rigorous scholarship continues to be lacking and the selection of participants who have not undertaken serious research in this field continues to be mystifying. This situation hinders the field from growing in maturity and strength. The larger context for architecture is dealt with superficially, and the view of the built environment as an integrated system of all of its levels is not properly addressed. My earlier recommendations for the Aga Khan program and for other similar existing and future organizations are still valid today. They are: (i) develop an agenda and framework for research involving all major disciplines, with the specific purpose for developing theory; (ii) categorize all published materials according to the research framework established in the first step, and identify gaps in research for the purposes of constructing theory; (iii) solicit and support top quality research from the most able and qualified people in the world; (iv) create an award program for research and publications; and (v) allocate adequate funds to translate key works from and to the primary languages in the Islamic world, with Arabic having the first priority.

The rest of the article will: (i) point out examples of what we currently have as building blocks for theory, and (ii) suggest a list of studies which are needed to be researched and developed for the purpose of structuring theory.

Available knowledge for theory: some examples

Although the built environment in traditional Islamic cities, as is the situation in other societies, is an integrated system functioning at different levels with systemic linkages from one level to the other, it is helpful for research purposes to examine it in at least three

levels: (i) the level of the single building, primarily buildings designed for public use, such as religious, economic, government and defense, health and water works; and private edifices built by the rich and/or powerful, such as palaces, pavilions and gardens; (ii) the level of clusters of buildings within neighborhoods, such as clusters of houses, streets and the access system within clusters and quarters; and (iii) the level of the settlement as a whole is the level concerned with the various physical elements and spatial units which constitute a village, town, or city and how those elements relate to each other, and the rules governing their aggregation in making up the whole entity.

For illustrative purposes, I will point out examples of studies which are valuable for each of the above three levels. A thorough and extensive search will be necessary to generate a comprehensive list. Examples for the *first* level are abundant. This is primarily due to the efforts of Western scholars within the discipline of art history. In that tradition the study of the single monument, particularly its architecture and decoration as a work of art, is the primary concern (eg Grabar, 1973; El-Said and Parman, 1976; al-Faruqi, 1985). Although there is always a desire for more studies dealing with decoration and other aspects of architecture as art, what is not adequately covered at this level of the built environment are issues concerning construction systems and especially techniques of conception, design development, and on-site decision-making processes and related procedures. Nevertheless, the knowledge for constructing theory at this level of the built environment is more readily available than for the other two levels.

Examples for the *second* level is primarily the result of recent work undertaken by individuals with architectural/urban design backgrounds. My work in this area has created the impetus for others to follow.³ This body of work provides the theoretical building blocks for the workings of the rule system, its underlying rational and

³For an account of the diffusion of my work see Hakim (1988) and MESA Bulletin (1992).

how it functioned as part of the decision-making processes in shaping the built environment at this level of the settlement.

Examples for the *third* level is available through the work of historians and geographers (eg Bonine, 1979; Raymond, 1985). I have analyzed and documented the physical components of a typical city, and their relationship to each other functionally and contextually in making up the settlement.⁴

Those few references are illustrative examples of the available knowledge that can be used for constructing theory. Two recent books should prove valuable in identifying a large number of studies which can also be used for this purpose (Haneda and Miura, 1994; Bonine *et al.*, 1994). A more focused and thorough examination of published studies of relevance to urban form will be a prerequisite for establishing what is available for theory. However, and as an interim measure, I am indicating a group of topics which I believe will be essential to study to fill the gap in our knowledge and/or for further supporting evidence which is necessary for making generalizations, an essential necessity for constructing theory.

Studies needed for theory: a preliminary list

The following suggestions for study and research are not exhaustive, but should be considered as an essential preliminary list of topics which are necessary to be undertaken for generating the knowledge and the building blocks, so that a serious attempt can take place in constructing a theory of urban form in Islamic cultures. The list was prepared by following a reverse order of the previous section, ie by listing topics dealing with the settlement level followed by those of relevance at the cluster/neighborhood level, and then those of value at the single building level. Some of the suggestions are of significance to all three levels combined, and some to two levels.

(1) Pre-Islamic conceptions of the

⁴Tunis medina, in my *Arabic – Islamic Cities*, full citation in note 2; and the village of Sidi Bou Sa'id north of Tunis medina, in Hakim (1978).

urban settlement and the city in the Near East and especially in the western region of the Arabian peninsula. How did the Arabs, who were converted to Islam, apply the concepts in establishing new settlements and in adapting existing towns and cities, such as the case of Damascus and Aleppo? No substantive studies, to my knowledge, are available which address patterns in land tenure, ownership rights, and control of space. How did those patterns affect the configurations of buildings, streets, and the alignment of shops in commercial areas and markets?

- (2) The process of land demarcation and subdivision in the early formation of Islamic cities. This is the initial process undertaken for allocating land to public and private uses. Did the allocation of private land precede considerations for the layout of public right-of-ways? What was the technique in undertaking this task? Or was the process in reverse?⁵
- (3) A detailed study of the principles and workings of land allotment (Iqta), and revivification (Ihya) of land within and on the fringes of settlements. The Prophet applied the principle of Iqta in Madina soon after he settled there. There is abundant descriptions of that example in the Arabic literature and it should be possible to reconstruct what occurred at that time using a process of simulation which is based on the available information.⁶

⁵J. Akbar attempted to explain this in his "Khatta and the territorial structure of early Muslim towns", in *Muqarnas* 6 (1989), pp 22–32. The effort addresses important issues and should be viewed as a good start. More extensive research is needed. Here the techniques and skills of archaeologists would be most valuable. A good example of an earlier study is by archaeologist Schmidt (1964).

⁶See the book *Wafa al-Wafa*, by Nuraldin al-Samhudi (died 1505), four parts in 2 volumes (Dar Ihya al-Turath al-Arabi, Beirut, 1955). As for the principle and implementation of Ihya, information based on the legal literature of the predominant Islamic Madahib (schools of law) aided by on site archaeological investigations of cities which were influenced by a specific school of law

(4) The process of territorialization of land (Ikhtitat), in the initial and early formation of the quarter (Mahalla) or neighborhood level. After land was allotted to a group of people, they were responsible for its territorialization into clusters of plots, and allocating adequate land for access which eventually became the streets and cul-de-sacs. Since this phenomenon occurred during the early formation of most Islamic cities, it is difficult to find adequate and reliable information describing this process. Yet it is very important to develop a number of alternative scenarios for purposes of constructing theory.

- (5) How did the institution of Waqf function in terms of its impact on buildings and by extension on urban form? What was the impact on the processes of growth and change? There are a large number of studies on the institution of Waqf, which originates with the teaching of the Prophet. An important saying is "If you wish, retain its origin (habbasta aslaha) and provide it as charity," cited by al-Bukhari. The Hanafi School of Law defines the Waqf as: "the detention of the corpus from the ownership of any person and the gift of its income or usufruct either presently or in the future, to some charitable purpose" (Cattan, 1955). Most of the studies available deal with specific buildings designated as Waqf, but, to my knowledge, there are no studies which attempt to explain the impact of a large number of buildings and real estate on the city as a whole, its processes of growth and change, and the consequence on urban form across time.
- (6) What were the various types of tenure and ownership of land and buildings? What was the effect of taxation on the various types of tenure? There is a great deal of information available regarding these questions in the classical Arabic sources, and more recently in late 19th century Ottoman sources.

would clarify the workings of this principle.

A sketchy attempt to address these issues was published (see Serageldin *et al.* (1980), but to my knowledge no extensive studies are available which tackle these questions.

- (7) The institution of Hisba—what was its jurisdiction and responsibilities?—and its impact on urban management. What was the overlap and/or interaction with the judge's (Qadi) realm of jurisdiction? There are a number of well known Hisba manuals from the eastern (Mashriq) and western (Maghrib) regions of the Islamic world which should be carefully examined for answering these questions. Further clarifications will emerge from a process of detailed study and analysis of these manuals.
- (8) Local customs (Urf) in design and building construction practices were a primary engine affecting decision-making and the choice of design solutions in a specific locality. Those customs were sanctioned by the School of Law (Madhab) having the jurisdiction in a locality, provided the custom did not contravene principles of Islamic law (Shari'a). Research is required for a comparative analysis of "solutions" which were generated within the umbrella of the various schools of law, and the manifestation of those solutions in physical terms, particularly noting the differences in solutions to similar problems. This research would rely on cases of rulings by customary law as was recorded by local judges (Qadis), and in the compilations of specialists on law (Muftis), aided were feasible by on-site investigations.
- (9) Field research of numerous cities within major regions of the Islamic world which are designed to document the design language (linguistic Urf), indicating the sources for the terms, their meaning, and the actual physical configuration and arrangements which the vocabulary of the local design language referred to, including their implication on the design of buildings and the shaping of urban form. Comparative study of the results of these surveys would gre-

atly enhance our understanding of the built form qualities of those cities.⁷

- (10) Symbolic manifestations occurs at different levels of the built environment, the design and details of decorations in various locations of a building, such as part of the main entrance, around windows, and on the walls surrounding the interior courtyards. In a locality embedded in religious associations, the location of a mosque, water wells for public use, and other elements in the settlement is influenced by historical and religious associations. Comparative research of such example in various regions of the Islamic world is necessary.⁸
- (11) Mathematics, geometry, surveying, and engineering techniques which were used in building design and construction. Little serious research on these inter-related aspects has been undertaken. Very recent scholarship is very encouraging; however, this area of investigation is open for a great deal of research possibilities.⁹
- (12) Building materials and construction techniques. What were their attributes and limitations? How and in what context were materials used separately or in combination with others? For what purposes and how was recycled material used? What were the structural limitations of materials, and how did builders innovate within those constraints?
- (13) Traditional energy saving practices and techniques, for example,

the utilization of water, cooling devices such as wind towers, and disposal methods of human and animal excrement. Although research on these topics are mostly available on Iran, very little has been done for other regions. Comprehensive studies are needed to understand design solutions used for dealing with conditions in different climate zones and topographical features.

- (14) A study which focuses on the use of the courtyard in the design and planning of houses, with particular attention to its use as a customary inherited element, ie when used unconsciously as a customary practice without concern for its design potentials vs. its intentional use as a device embodied with design possibilities and opportunities for climate control.
- (15) An atlas of Islamic cities in various regions of the Islamic world which would document: (i) city maps drawn in the same format, using the same system of colors, and supplemented by the necessary aerial photographs; (ii) morphological patterns at the levels of the city, neighborhood, and building clusters and would include, for example, the patterns of public through streets and private cul-de-sacs, and the analysis of the typology's strengths and weaknesses. Certain peculiarities would also be studied, such as the preference for the location of a small mesjid at the strategic junction of a fork in the street system;¹⁰ and (iii) study of building types drawn to the same scale and presented in plans, elevations, and sections.

I hope that the above list of topics will be valuable for those concerned with the lack of theory. Other topics

⁷For a detailed discussion of what is the "design language" see Chapter 2 of my book *Arabic - Islamic Cities*, full citation in note 2 above. For what is the "linguistic Urf" see Hakim (1994).

⁸See Chapter 4, "Symbolism and form", of Hakim (1978). This chapter analyzes symbolism in the village at three levels: (i) the village, (ii) entrances, windows, and steps, and (iii) surface embellishments such as plaster carvings, stonework, and tiles. See also Abdelhalim (1978).

⁹See the articles by Chorbachi (1989) and Ozdural (1995) and the published manuscript of Efendi (1987).

¹⁰The utilization of this type of junction, which results from the convergence of two streets into one, within this morphological type can also be traced as far back as 2000 BC in Ur, southern Mesopotamia. See Exhibit 2 of Hakim (1982); or Figure 1 in Hakim (1989); also the street analysis in Chapter 3, "Spatial structure and built form", pp 19-56, in Hakim (1978).

addressing detailed aspects can be developed and added. It is important to stress that we are at a point in the development of this field which necessitates cooperative efforts to address the above issues, so as to make it possible to construct theory. Cooperation can be achieved in many ways, through (i) effective and accessible communication tools, such as through the World Wide Web pages of the Internet. Web pages can be created by individual scholars and institutions where the latest research is summarized and/or made available for downloading to personal computers; (ii) focused symposia and conferences such as those which were organized in Tokyo, Japan in 1989 and 1990 under the co-sponsorship of the research project "Urbanism in Islam, a Comparative Study", which was a priority area research project supported by Japan's Ministry of Education, Science and Culture Grant-in-Aid and the Middle Eastern Culture Center in Tokyo; and (iii) testing in contemporary projects by recycling the principles underlying traditional ideas and procedures.¹¹ If the

¹¹I have constructed a framework for action which was published in the 1991 article "Urban design in traditional Islamic culture: Recycling its successes" in *Cities*, 8(4), pp 274–277. On 7 June 1997 I delivered a keynote address at a Vision symposium in Riyadh, Saudi Arabia which was organized by Arriyadh Development Authority (ADA), on the occasion of the completion of phase 1 of three-phase planning process known as Metropolitan Development Strategy for Arriyadh (MEDSTAR). One of the proposals I made in that address was based on the principle of bottom – up decision-making at the neighborhood level. This principle was operational in all traditional cities and settlements in the Islamic world and was replaced, in the case of Saudi Arabia, by a top – down decision-making structure during the mid years of this 20th century as a result of Western influences and for reasons related to local political preferences. My proposal was to create neighborhood organizations whose task would be to coordinate decisions affecting the well being of a neighborhood including matters related to design and planning. This would create a situation where neighborhoods would be encouraged to compete with each other for the best ideas and designs which would alleviate or solve pervasive and common problems, such as safety in neighborhood streets, greening of streets by planting and main-

suggestions made in this article are carried out, then an achievement of this magnitude will not only be of immense value to the Islamic world and its numerous subcultures, but it will also be a significant contribution to our understanding of urbanism and the urban phenomenon as a cultural expression within a global context.

References

- Abdelhalim, A. (1978) *The Building Ceremony*. PhD dissertation, University of California, Berkeley.
- Bonine, M. (1979) The morphogenesis of Iranian cities. *Annals of the Association of American Geographers* 69(2), 208–224.
- Bonine, M., Ehlers, E., Kraft, T. and Stober, G. (Eds) (1994) *The Middle Eastern City and Islamic Urbanism: An Annotated Bibliography of Western Literature*. Ferd. Dummlers Verlag, Bonn.
- Cattan, H. (1955) The law of Waqf. In *Law in the Middle East*, eds M. Khadduri and H. J. Liebesny. The Middle East Institute, Washington, DC.
- Chorbachi, W. (1989) In the tower of Babel: beyond symmetry in Islamic design. *Computers and Mathematics with Applications* 17(4–6), 751–789.
- Efendi, C. (1987) *Risale -i Mimariyye: an early 17th century Ottoman treatise on architecture*, translated by Howard Crane. Brill, Leiden.
- El-Said, I. and Parman, A. (1976) *Geometric Concepts in Islamic Art*. World of Islam Festival Publishing, London.
- al-Faruqi, L. (1985) Appreciating Islamic art. *Arts and the Islamic World* 3(3), 31–37.
- Grabar, O. (1973) *The Formation of Islamic Art*. Yale University Press, New Haven.
- Grube, E. (1978) Introduction: What is Islamic Architecture? 10–14. In *Architecture of the Islamic World*, ed. G. Michell. Thames & Hudson, London.
- Hakim, B. S. (Ed) (1978) *Sidi Bou Sa'id, Tunisia: A Study in Structure and Form*. Technical University of Nova Scotia, Halifax [currently available from Books on Demand, University Microfilms International, Ann Arbor, MI].
- Hakim, B. S. (1982) Arab – Islamic urban structure. *Arabian Journal for Science and Engineering* 7(2), 69–79.
- Hakim, B. S. (1988) *Al-Muhandis* 67(8). Riyadh, Saudi Arabia.
- Hakim, B. S. (1989) Islamic architecture and urbanism. In *Encyclopedia of Architecture: Design, Engineering and Construction*, Vol. 3, pp. 86–103. John Wiley, New York.
- Hakim, B. S. (1990) The Islamic city and its architecture: a review essay. *Third World Planning Review* 12(1), 75–89.
- Hakim, B. S. (1994) The "Urf" and its role in diversifying the architecture of traditional Islamic cities. *Journal of Architectural and Planning Research* 11(2), 108–127.
- Haneda, M. and Miura, T. (Eds) (1994) *Islamic Urban Studies: Historical Review and Perspectives*. Kegan Paul International, London and New York.
- MESA Bulletin* (1992), 26(1), 150–152.
- Ozdural, A. (1995) Omar Khayyam, mathematicians, and conversazioni with artisans. *Journal of Society of Architectural Historians* 54(1), 54–71.
- Raymond, R. (1985) *Grandes villes arabes a l'epoque ottomane*. Sinbad, Paris.
- Schmidt, J. (1964) Strassen in Altorientalischen wohngebieten: eine studie zur geschichte des stadtebaues in Mesopotamien und Syrien. In *Deutsches Archäologisches Institut Abteilung Baghdad: Baghdader Mitteilungen*, Vol. 3, pp. 125–147. Verlag Gebr. Mann, Berlin.
- Serageldin, M., Doebele, W. and ElAraby, K. (1980) Land tenure systems and development controls in the Arab countries of the Middle East. In *Housing Process and Physical Form*, Proceedings of Seminar Three held in Jakarta, Indonesia, March 1979, sponsored by the Aga Khan Award for Architecture, pp. 75–88.
- maintaining trees and shrubs, creating pleasant pedestrian paths which would ensure the safety and protection of women and children. My other proposal was to rewrite the city's planning codes in a manner which will utilize the wisdom inherent in the traditional codes, in lieu of trying to fix codes which were formulated in the early 1980s and which have proved to be inferior as it is evident in various parts of the city. It remains to be seen if these and other suggestions will be incorporated in the process of crafting the metropolitan development strategy for Arriyadh, the capital of Saudi Arabia. I have also addressed similar issues for the context of historic towns in the Maghrib countries of North Africa in a paper titled: "Reviving the rule system: an approach for revitalizing traditional towns in the Maghrib", to be published as papers of the conference "The Living Medina: The Walled Arab City in Architecture, Literature, and History" held in Tangier, Morocco, June 1996, sponsored by the American Institute of Maghribi Studies (AIMS).