ASPECTS
OF
ARABIC ISLAMIC ARCHITECTURAL
DISCOURSE

Aspecten
van de
Arabisch-Islamitisch architectonische verhandeling

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INTRODUCTION

This study is concerned with Arabic Islamic architectural discourse that has not yet been discovered or revealed from its own sources and within its own cultural context, as coined, displayed and argued by Arab and Muslim intellectuals. Thus, this study is endeavouring to highlight Arabic Islamic architectural discourse as displayed in Arabic Islamic sources. It aims to sketch out the ways in which Arab Muslims thought about and practiced architecture. It also seeks to explore principles, concepts and notions that partly constituted and presumably are still constituting the structure of this discourse and partly governed the making of Arabic Islamic architecture in order to reimplement them in the making of contemporary Arabic Islamic architecture. In so doing, an attempt will be made to investigate the origin and formation of this discourse.

This study therefore, is concerned with the process of forming Arabic Islamic architectural discourse, from its beginning to its mature stage, as a means to discover its substance and structure. This formation will be displayed in three stages: general, specific and case studies. The general stage is concerned with the contribution of non-architectural studies such as verse, religious studies, literary, scientific, geographical and historical studies. This stage constituted the beginning of Arabic Islamic architectural discourse and the point of departure for producing what I will call 'independent' studies of architecture which, in turn, formed the second stage. The second stage is concerned with specific studies that were devoted to the interpretation of specific architectural subjects such as studies of building rules and laws, building types, urban planning, archaeology and the history of architecture. For although these studies are interrelated, each one developed, expanded and marked its position as an independent element within the structure of Arabic Islamic architectural discourse. It is the concern of the
third stage and the major concern of this study to dwell upon the contribution of case studies of the history of architecture.

It is worth mentioning here that this study was carried out in partial fulfillment of the Doctoral degree in Architecture at the Delft University of Technology. The work was carried out in the Department of Architecture as part of the "Architectural Knowledge Systems", which is directed by Professor Tzonis, and under his supervision together with Professor S. J. Doorman.

Having indicated the general scope of this study, I shall take the time here to state my method of investigation, indicate the current approach of studies of Arabic Islamic architecture, state the position of my study among these studies and to focus upon its shape.

The methodological problem posed here is the following: when is the beginning and the end of the period within which the sources that constitute the Arabic Islamic architectural discourse to be found? Which are these sources that define this discourse?

I found it necessary to start my investigation as early as al-Jāhiliyya (pre-Islamic) period and to end this investigation with the beginning of Orientalism which took place in the 18th century AD, Saïd (1980). I conducted my investigation within this period because the beginning of Arabic Islamic architectural discourse was initiated, formed and reached its mature stage without any foreign cultural influence within this period. The sources consulted in this study will be those produced by Arab and Muslim intellectuals and written in the Arabic language within the indicated period.

I chose this early start that took place in the 5th century AD, because Islam was born within the same geographical, social and intellectual environment of al-Jāhiliyya and because part of the
social and intellectual life of the latter were approved by Islam and merged within its social order and intellectual disciplines. Most important is that the beginning of Arabic Islamic architectural discourse was initiated in al-Jāhiliyya verse. The concept of 'function' was clearly manifested in this verse, techniques and principles of architectural documentation and archaeological exploration were also originated in al-Jāhiliyya verse as I shall be demonstrating in chapter 1.

The reason for choosing this end is because Western studies of Arabic Islamic architecture, which have been originated by Orientalists, dominated the production of Arabic Islamic architecture and shaped its discourse until the present time. This occurred because the Arab World was experiencing a decline in the production of its intellectual disciplines, particularly in the architectural one. In the following discussion I shall be highlighting the approach of Western studies of Islamic architecture and stating the position of my study among them.

The current (Western) approach was coined by Western archaeologists and art and architectural historians in the beginning of the second half of the 18th century, Collins (1971). This approach developed in the course of time and applied to the studies of the history of Arabic Islamic architecture by Orientalists as I indicated earlier. One of the first studies of Islamic architecture, if not the first, was part of the comprehensive anthropologist study of the French scientists, Description de l'Egypte (AD 1809-1822). Many studies were produced since that date, institutions for the studies of Islamic art and architecture were also found. The remarkable one of those institutions is The Agha Khan Programme at Harvard university and MIT.

It seems necessary to point out that these studies are studies of history of the physical objects of architecture (history of architecture). They are not associated with the theories of
Arabic Islamic architecture. They adopted the same approach of Western studies of the history of architecture which based on the technique of formal analysis and the Western notion of historical periods, which is differ from the notion of historical continuity of Islamic history.

The above approach as defined in the studies of Islamic architecture is consisted in its interpretation from a stylistic point of view which was concerned with the description of architectural forms, surveying technical achievements, depiction of artistic features, recording and examining changes on the formal repertoire to distinguish styles and periods. It has been defined by Tzonis and Lefaiivre (1978:4) as an approach that "perceived the design products not as answers to functionalist problems but as aesthetic creations asking only to be looked at and appreciated." Furthermore, this approach adopted an archaeological interpretation. It manipulated Islamic architecture in much the same way similar approaches manipulated the architecture of ancient civilizations, although Islamic civilization is still alive and functioning. Moreover, it is perhaps the only civilization in which the making and documentation of its phenomena went side by side, from their beginning to their mature stages. This is true particularly, for the architectural phenomenon.

It is interesting to indicate that Tzonis and Lefaiivre (1978:9) disputed this approach and emphasized the need to "establish analogies between texts and design products." This, in fact, is the endeavour of my study as I shall be emphasizing after stating its position among studies of Islamic architecture.

Many studies were made by Western scholars about Islamic architecture over the past two centuries and joined by Arab scholars since the turn of this century. These studies ignored documented Arabic Islamic architectural literature (Arabic manuscripts) as a source for interpretation and a material for discourse. No
attempt of these studies has been devoted to illustrate principles and concepts of Arabic Islamic architecture, as viewed by Arab and Muslim intellectuals in the manuscripts. Western and similar Arabic studies reduced Arabic manuscripts to a source of historical information about Arabic Islamic architecture such as dates of construction and names of patrons. A good example of these studies is Description de l’Egypte, as I indicated earlier, where no reference has been made to Arabic manuscripts in the discussion of the architecture of Egypt. Emile Prisse d’Avennes (AD 1877) Arab Art, is another example. The sub-title of his book: As Seen Through The Monuments of Cairo From The 7th to the 18th Century, in fact, indicates such ignorance, despite the fact that Prisse d’Avennes referred to the production of many Arab scholars, but without making use of their architectural contributions. As a case in point, he referred to the study of al-Maqrizi المقرزو (died AH 845, AD 1441), al-Mawā’iḍ Wal-Iʿtibār bi-Dhikr al-Khiṭaṭ Wal-Athār المواعظ والاعتبار بذكر الخط والآثار. But without exploiting the architectural contribution of al-Maqrizi which covered the regional and urban planning of Egypt and urban planning and design of Cairo القاهرة. He referred only to the geographical site of the city of Cairo.

Studies produced in the 20th century are no exception, because the role of Arabic manuscripts has not changed in these studies. Creswell (AD 1979) Early Muslim Architecture, first published (AD 1932-1940), is a good example. He discussed Islamic architecture from (AD 622-935), he referred to many Arabic manuscripts without making appropriate use of their architectural interpretation except citing historical dates. For instance, Creswell (1979 vol 1: 1) claimed that "the sacred well of Zamzam رمز مت is located within the enclosure of al-Kaʿba الكعبة [the holy shrine]." In fact, and according to al-Azraqī الإزرفي (died AH 250, AD 864), Akhbār Mecca Wa-mā Jāʾ Bihā Min al-Athār أخبار مكة وما جاء بها من الآثار, Zamzam is located outside the enclosure of al-Kaʿba. Creswell indicated in the same page, (quoting Caetani, annali
that there were four stones embedded in each of the four corners of al-Ka'ba. He argued that these stones have a "special form and mysterious origin ...." As is clearly stated in al-Azraqī there is only one stone, namely al-ḥājajar al-ḥāsod (the black stone).

Nevertheless, these examples should not be understood as an attempt to undermine Creswell's study as a whole, in fact, they are indicated to demonstrate the role of Arabic manuscripts in his study which seem not to be used appropriately.

It is important to note that Arabic manuscripts were not the only source for such historical information. They were joined and, in many cases, replaced by earlier Western studies. Creswell relied on the studies of Caetani, Herzfeld and Butler, perhaps, more than he relied on Arabic manuscripts. Grabar (AD 1973) *The Formation of Islamic Art*, also relied on Western studies. Richard Ettinghausen and Grabar (AD 1987) *The Art And Architecture Of Islām from (AD 650-1250)* and Doris Behrens-Abouseif (AD 1989) *Islamic Architecture in Cairo*, are no exceptions. All these studies and many others which I presume I have no place to enumerate in this study, adopted the same way of interpretation which was mainly based upon formal analysis. Those authors ignored originality of Arabic Islamic architecture in their interpretation and hence claimed foreign influence upon it.

This claim is a central issue in Western studies. It seems to be, perhaps, a direct result of the ad hoc historical interpretation of these studies that traces the origin of elements of Arabic Islamic architecture and ascribed them to a non-Arabic origin, namely Sasanid and Byzantine. This claim was manifested very clearly as an approach to Creswell's study, *Early Muslim Architecture*, he stated it in the introduction as follows: "in dealing with each monument I have adopted the following system: (1) a description of the original structure, (2) an analysis
(where necessary), and (3) architectural origins [My underlining]." This claim was also emphasized by Grabar (AD 1973:19), he argued that "Islamic culture in general and Islamic art in particular can be imagined as a sort of graft on other living entities ...."

The question of originality, therefore, might be one of the reasons behind ignoring Arabic manuscripts as a source for principles and concepts that govern the making of Arabic Islamic architecture which emphasizes its originality and ignores the claimed foreign influence and impact. Other reasons could be found in the article of Grabar (1985:1-7), Upon Reading al-Azraqī, where he disputed the architectural contribution and product of Arabic manuscripts altogether. He argued (1985:2) that investigations in these manuscripts are "far removed from the art historian's and archaeologist's concerns and competence." He described the study of al-Azraqī (1985:2) as "neither an account in chronological sequence nor is it an orderly description of space." Grabar (1985:3) reduced its contribution to "architectural terms pertaining to building's construction." It seems clear that the assessment of Grabar departed from the ad hoc historical interpretation as I indicated earlier.

It is worth mentioning here that neither is the endeavour of these remarks, nor is it the right context, to dwell upon the issue of originality and to dispute the claims of Creswell and Grabar. They are used to demonstrate the adverse impact of these claims upon the role of Arabic manuscripts in both Western studies and modern Arabic studies of Islamic art and architecture, as I shall be demonstrating in the following discussion.

The majority of modern Arabic studies seem to have reduced the role of Arabic manuscripts to a source of historical information, as was done in Western studies, despite the fact that modern Arabic studies adopted the same approach of Western studies, part
of them disputed the Western claim of foreign influence upon Islamic art and architecture. It should not be understood that the role of Arabic manuscripts increased in this part of these studies, in fact, it was ignored. A good example of these studies is the encyclopaedic work of the Egyptian art and architectural historian, Zakī M. Ḥasan (AD 1935) al-Fīn al-Islāmī. The work of the Egyptian archaeologist Su'ād Māhir (AD 1986), al-Yunūn al-Islāmiyya, is another example. Other striking examples are the work of the Syrian art and architectural historian `Afīf Bahnasī (AD 1983) al-Fīn Wal-Istshāq, the work of the Egyptian architect Aḥmad Fikrī (AD 1962) Masājid al-Qāhira Wa-Madārisahā and the work of the Egyptian historian, Abū Ṣāliḥ al-`Alī (AD 1974) al-Fīn al-Islāmī.

None of these studies made reference to Arabic manuscripts. The only exception was made by the Egyptian architect Farīd Shāfi`ī (AD 1982) al-`Imāra al-Arabiyya al-Islāmiyya. He drew the attention to the concept of privacy that was coined by the second Khalīfa, 'Umar Ibn al-Khaṭṭāb the light of the Prophet's companions and indicated by Ibn Duqmāq (AH 750-809, AD 1349-1407) al-Intiṣār li-Wāṣaṭat 'Aqd al-Amār al-ḥasan al-ʿamsar.

It seems clear from examining the studies I have indicated that the majority of modern Arabic studies did not alter the role of Arabic manuscripts as a source of historical information. Nevertheless, this role seems to have been changed in the rest of modern Arabic studies.

For instance, the studies of the Ḥijāzī historian Ḥusain ‘Abdullāh Bāṣalāma, are good examples for the rest of Arabic studies. He made two studies: Tārīkh al-Kaʿba, first published (AH 1354, AD 1937) and Tārīkh ‘Imārat al-Ḥasjid al-Ḥarām, first published (AH 1354, AD 1937). Their value came from being the only two studies that counted only on Arabic
manuscripts. In fact, one might consider the two studies as a
to the role of Arabic manuscripts, in forming and
establishing the tradition of writing studies of the history of
architecture. The two studies emphasized the principles and
techniques of writing the history of architecture, in terms of
interpreting: types of buildings, their function, names of
patrons, designers, builders, chronological history of construc-
tion, together with extensions, development of plan, description
of the structural elements of form and depiction of its art
and architectural units and elements. These principles will be
highlighted in the course of this study. The point at issue here,
is that these two studies are the outcome of original Arabic
Islamic contribution and the author was thinking from inside
Arabic Islamic culture, without any foreign cultural influence.

This approach was integrated in the study of the Egyptian
physician Ahmad 'Isā احمد عيسى (first edition AD 1940, second
edition AD 1981) Tārīkh al-Baymāristānāt (single Baymāristān)
Fī al-Islām تاريخ البimarستانات في الإسلام. The author traced
the history of hospitals from Khaymat Rāfīda خديمة رفيدة (the
tent hospital of sister Rāfīda), in the days of our prophet
Muḥammad محمد, peace be upon him, to the founding of the first
"modern" hospital, namely Abū Za’bal ابوب زبأبل, in the year (AD
1825), in the city of Cairo. For although the author referred to
some Western studies, he counted mainly upon Arabic manuscripts.
The study covered two major parts. The first part covered the
profession of medicine, its branches, clinical departments and
medical education, physician ranks, technical and administrative
systems. In other words, the first part is concerned with the
pre-design and data stage that influenced the design process. The
second part is concerned with the description of the planning and
construction of Baymāristānāt together with their history. The
value of this study, in my view, did not come from being a
continuation of Arabic manuscripts in the field of building
types. It rather came from being, perhaps, the first study of
building types in modern architectural studies, if not the only one in the field and, at the same time, in the realm of modern Arabic architectural interpretation.

Nevertheless, the role of Arabic manuscripts extended to cover the field of rules and laws of building. The study of the Irāqī architect Besīm S. Ḩakīm (AD 1986), Arabic Islamic Cities, Building And Planning Principles, recorded some of the Islamic building rules and laws and emphasized their role in "shaping the Arabic Islamic cities." This study is a "controversial" one, al-Sayyad (1988:64), it seems to lack depth of analysis and unity of text. The author seems to have succeeded in recording and demonstrating, in contemporary standards, most of the elements of planning of Arabic Islamic cities that indicated mainly in the manuscript of the Tunisian master builder, Ibn ar-Rāmi (died AH 734, AD 1334), al-I‘lān bi-Aḥkām al-Bunyān accordance of the planning principle. Besīm’s attempt seems, in my view, to close his study from the field of studies of theories of architecture and at the same time distinguishes it from the many ad hoc studies that were devoted to the planning of some Arab cities, in particular the Irāqī cities of al-Baṣra, al-Kūfa, Sāmarā‘, Samarra‘, the cities of Iraq, and Baghdād. Such studies were concerned with the chronological history and growth of cities, demonstration of the socio-political, economic and administrative systems, description of their zoning, land use, urban elements, architectural fabric and infrastructure. A good example of these studies is the one made by the Irāqī historian Sāliḥ al-Alī (AD 1985) Baghdād Hadīnat as-Salām.

It is important to note that the role of modern studies of the planning of Arab cities, seems to be a continuation of the studies of al-Azraqī and al-Maqrīzī. So to speak, these studies made no attempt to generalize the role of Arabic manuscripts in this field. Unlike them Besīm’s study seems to have succeeded in generalizing (through his recording process) part of the rules
that Ibn ar-Ra'āmī indicated in his manuscript. It is this
generality, in my view, that maintains the presence of Arabic
manuscripts in the field of architectural interpretation. This
presence will be a central issue in this study.

So far, I have tried to show the contribution of modern Arabic
studies in the field of Islamic architecture. I went on to
illustrate their approaches, types of architectural interpreta-
tion and to emphasize the role of Arabic manuscripts in these
studies. In search of this role, I brought to light the fact
that modern studies of Arabic Islamic architecture, both Western
and Arabic, with few exceptions of the latter, ignored the value
and advantage of reliability of Arabic manuscripts as a source of
Arabic Islamic architectural discourse.

In conclusion, the above formal object oriented approach reduces
Arabic Islamic architecture to a kind of tradition that was
practiced without foundations of principles and concepts. It
ignores the role of Arabic manuscripts as a source for inter-
pretation of Arabic Islamic architecture. Furthermore, this ap-
proach by ignoring the conceptual world behind the architectural
products, presented Arabic Islamic architecture as if it is
belonging to a dead civilization, an architecture without intel-
lectual support being incapable of having a presence or function.

Here I propose a different approach to the study of Arabic
Islamic architecture. One which considers it as a well structured
intellectual discipline and not as a non-conscious tradition. To
carry out this task I will examine the development of Arabic
Islamic architectural discourse from its beginning to its mature
stage as I indicated earlier.

It is my intention in this study to use this approach in order to
restore the value of the Arabic manuscripts by reinstrumenting
them as a source for architectural discourse. This study,
therefore, is an attempt to reconstruct principles, concepts and notions of Arabic Islamic architecture as coined, displayed and manipulated by Arab and Muslim intellectuals and master builders, within the context of Arabic Islamic culture. In other words, it is a study in the theoretical production of Arabic Islamic architecture and not about its formal product. This approach allows one to explore the potential of Arabic Islamic architectural discourse and discover its presence in contemporary architectural discourse. It also distinguishes this study from other studies of Islamic architecture.

Having gone so far as to record the aims, emphasize the method of investigation, display the approach of Western studies of Islamic architecture, state the position of my study among studies of Islamic architecture and emphasize its approach, it seems possible to detail its shape.

This study covers three stages, as I already indicated, and extends over five chapters. The first chapter is devoted to the general stage. The second chapter is devoted to the specific stage. The last three chapters are devoted to the third stage, which is concerned with the studies of the history of architecture. In the following summary I shall be reviewing the role of each chapter.

Chapter one is devoted to highlighting the sources of Arabic Islamic architectural discourse. I conduct my Investigation into six intellectual disciplines (non-architectural sources). The first one al-Jāhiliyya verse is Pre-Islamic and the rest are Islamic: religious, literary, scientific, geographical and historical disciplines. I highlight the architectural contribution of each discipline and classify it as principles, concepts and notions. I demonstrate the interaction of principles, concepts and notions of architecture with other intellectual disciplines, I elaborate upon the unity of the architectural thinking of Arab
and Muslim intellectuals and argue that the contribution of these sources constitute the beginning of Arabic Islamic architectural discourse. I conclude that this contribution paved the way for the development of independent studies of Arabic Islamic architecture which constitute the second stage of this study.

What is of importance here methodologically, is the choice of these sources. Strictly speaking there is no text, devoted exclusively and autonomously, of these sources to architecture. However, by broadening the scope and including sources from the above six intellectual disciplines, I was able to show that a body of discourse with structure and coherence was evident already.

In chapter two I examine five types of independent studies of architecture: ḥakām al-bunyān, building types, urban planning and historical studies. I elaborate on the first four and preserve the fifth for the next three chapters. I display the main theme of each study, highlight their contribution and classify it as in chapter one. I conclude that the outcome of this contribution, on the one hand, results in forming Arabic Islamic architectural discourse and brings it to its mature stage, on the other it proves that Arabic Islamic architectural discourse has two sides, the first one governs the making of Arabic Islamic architecture and the second is concerned with the documentation of architecture, Islamic and non-Islamic, as will be demonstrated in the archaeological and historical studies, where the latter will be emphasized in the following chapters.

The last three chapters are presenting the third stage of this study and the second side of Arabic Islamic architectural discourse. The analysis of the studies I examine in these chapters, particularly in chapter 4, shows that these studies are both a history of form and a history of discourse.

Chapter three is devoted to the studies of the history of pre-
Islamic architecture, in which I examine the study of Ibn al-Kalbī (died AH 204, AD 819), al-Aṣnām الإسحاق ابن الكلبي. I demonstrate the way in which pre-Islamic Arabs thought about and practiced religious architecture and I highlight principles and techniques of writing the history of architecture.

Chapter four is devoted to studies of the history of Arabic Islamic architecture, in which I examine the study of al-Azraqī and emphasize his role in manifesting principles, concepts, notions and meaning of Arabic Islamic architecture that he introduced in his interpretation of the planning of the city of Mecca, the history of the architecture of al-Ka'ba and al-Masjid al-Ḥarām المسجد الحرام. I highlight the role of this study in forming the technique of analytical discription, abstract depiction and the structure of writing the history of architecture which consists of documenting the names of patrons, designers and builders, chronological sequence and illustration of the physical and artistic characteristics of architectural objects.

Chapter five is devoted to the studies of Christian architecture. It will focus upon the study of ash-Shābushtī (died AH 388, AD 988), Kitāb ad-Diyārāt كتاب الديارات and other related studies. Its purpose is to highlight the way in which Arab Muslim historians interpreted Christian architecture. In this chapter I emphasize the notions of cultural and urban contexts, I also emphasize the contribution of this study to Arabic Islamic architectural discourse.

Finally, the conclusion summarizes the findings. This summary clarifies how to make use of these findings and demonstrates their presence and bearing on contemporary architectural discourse.
CHAPTER 1

SOURCES OF ARABIC ISLAMIC ARCHITECTURAL DISCOURSE

This chapter is devoted to demonstrating the sources of Arabic Islamic architectural discourse. Its purpose is to highlight the role of these sources, in setting out the beginning and formative stage of this discourse, and to pave the way for a more detailed analysis of one of the elements of the architectural source, namely historical studies of architecture. In so doing, an attempt will be made to interpret six sources:

1. Al-Jāhiliyya (Pre-Islamic) verse
2. The religious source
3. The literary source
4. The scientific source
5. The geographical source
6. The historical source

Here each source constitutes a group of fundamental issues. These issues were gathered, categorized and classified in independent studies that covered most, if not all, branches of Arabic Islamic architectural discourse and brought this discourse to its mature stage. In the following discussion I shall be reviewing the contribution of each source, starting with al-Jāhiliyya verse.

1. Al-Jāhiliyya verse

This source is concerned with the pre-Islamic contribution to Arabic Islamic architectural discourse, because the rising of Islam took place in the same environment of al-Jāhiliyya verse. As a result of this, I shall be highlighting the geographical division of the Arabian Peninsula, the social life of al-Jāhiliyya, the status of this verse in the cultural life of al-
Jāhiliyya and the contribution of this verse to Arabic Islamic architectural discourse.

The Arabian Peninsula was divided, by Arab geographers\(^4\), to five parts: as-Surāt al-sa'āda, Tuhāma, al-Ḥijāz, Najd and Yemen, as illustrated in (Figure-1). These parts housed two styles of life: sedentary and bedouin (nomad). The first occupied Yemen and some urban centres of al-Ḥijāz like Mecca, al-Madīna, Tīmā, Madā'in Sāliḥ and aṭ-Ṭā'if, while the bedouin occupied the other four parts.

The daily life of these two styles were experienced in two different kinds of architecture or built environment: al-‘umrān ath-thābit (sedentary social life, that used fixed and constructed architecture); and al-‘umrān al-mutanaqil (migratory social life that used movable and non-constructed architecture). The interaction of Arab poets with these two styles of life, in particular the bedouin one with their environment, social and climatic, drew the contribution of this verse to the architectural discourse.

Furthermore, this interaction resulted from recording all aspects of al-Jāhiliyya life,\(^2\) social, political, religious, economic and environmental. It is this encyclopaedic approach that led the second Khalīfa 'Umar Ibn al-Khaṭṭāb\(^3\) (AH 13-23, AD 634-643) to describe al-Jāhiliyya verse "as a science of a people that had no other science better than it."\(^4\) For instance, the Arab elder and poet of al-Jāhiliyya, al-Afwaḥ al-Awadī, stated the position of this verse in the cultural life of al-Jāhiliyya and the position of architecture in the verse itself. He interpreted architecture from a socio-political point of view. He viewed it as a well defined coherent structure and an ideal model for Arab social and political order. He said\(^5\):

والبيت لا يبتنى إلا الله وحده ولا عمد إلا الله مرسى امتداده
A bayt (house-tent) cannot be built without columns and columns cannot be erected without fixing stakes
فان تجمع اوتاد وعمدة وسكن بلغوا الأمر الذي كادوا
If stakes and columns are gathered together with a dweller (inhabitant), they will achieve the purpose they aim at
لا بدع الناس فهم لا سراة لهم ولا سراة إذا جهالهم سادوا
Men cannot lead their lives disorganized, without leadership
and there is no question of leadership if ignorant men are in charge
حيفا لأمورهل الراي ما ملحت فان حولت فبالشرار حلفاد
The situation is sustained in good order, as long as elders are in charge
but if not, it will be ruled by evil men
Furthermore, architecture was the subject matter of one of the genres\(^6\) of al-Jāhiliyya verse, namely an-nasīb\(^7\) or at-tashbīb (memory of the houses and places of residence of poets' behoves). Despite the fact that the attempt of al-Afwah initiated major principles of Arabic architectural discourse such as structure, construction process, use as a condition for the making of architecture and the establishment of social organization. It is an-nasīb, together with the documentation of Yemeni architecture, that initiated the beginning of Arabic architectural discourse, as I shall be highlighting in the following discussion.

I have indicated earlier that the contribution of al-Jāhiliyya verse was the outcome of interaction between poets and their environment. To illustrate this interaction, I shall be demonstrating the relationship of Arab poets with their environment and its role in establishing the bases of the architectural discourse in terms of principles of historical and archaeological interpretation.
Two types of relationships governed the architectural production of al-Jāhiliyya verse. Both were woven between man (poet or documenter) and place, including its architecture. The first one of al-ʻumrān ath-thābit was the kind of relationship that emphasized the cultural and national identity of poets. It took the form of absolute documentation that was based on seeing and spelled it out through description and comprehensive commentary. It lacked emotional association and scrutiny along with exploratory techniques. Its outcome was a record of the architecture of Yemen. It is from this relationship that one is, perhaps, introduced to the elements and principles of writing history of architecture such as the place and its environment, climatic factors, type of architecture (antiquities) and its function, name of patron and his social position, the history of making architecture and the period of construction, building materials, construction techniques, dimensions, area of premises and characteristics of form. These elements are not necessarily found in one attempt. They might be found in different ones, in the verse of one poet or more. But, all of them in general served the purpose of documenting the history of the architecture of Yemen, in particular the palaces. Most of this verse, if not all, was indicated by the Yemeni historian and geographer al-Hamdānī (died AH 350, AD 962). He devoted the eighth volume of his book, al-Aklīl, to study the architecture of Yemen, partly from the point of view of this verse, and partly from his own archaeological exploration. My concern in this source will be devoted only to the verse, the source of all the indicated elements. I shall try to demonstrate pieces of this verse, as a case in point, to show its contribution. For instance, al-Hamdānī ascribed to 'Asʿd Tubaʿ, the following verse:

دارنا الدار ما حرام اهتماما
من عدو ودارنا خير دار

Our home (the city of Ṣanʿā', صنعاء) is the home that opposes aggression
from enemy and our home is the best home.
Quṭṭān (the grand-father of the Yemeni people) has built it and built it among land and sea.
It has been surrounded with gardens and palms and plants of the best types of trees.
Eyes wonder in its scenery and nothing is heard but the sound of the water flowing in its rivers.
No harm caused by heat to its residents and no harm of cold in the time of cold.
In it, plants, water and sleep were good and its night was as good as its day.
Our antiquities are signs for our culture look, after, our passing, at antiquities.
Regardless of how general this attempt looks, it does include some of the indicated elements, in particular the interaction with environment and the role of antiquities in architectural interpretation. These elements will be emphasized more clearly soon after demonstrating other specific attempts. Al-Hamdāny ascribed to Umayya Ibn Abī Ḍalīl al-Ṣalt, a description of the palace of Ghumdān.

Enjoy drinking with your crown over your head in your court at the top of Ghumdān.

A palace was built by your father al-Qīl dhū-Sharḥ did any one achieve what he had achieved?
Birds are eager to reach its height
they are trying and flying up and down
ما ان تجديهم الا هأس اعظمها طول التخلاف ادبارا وافتى
When they reach its height most of them fall exhausted
because of their continuous trying, coming and going
منطق بالرخام المستمر لد هرى على كل ركن مبه تحشائى
Marble cladding makes the palace richer
where you can see at each corner a sculpture

This attempt indicated different elements such as the patron,
type of architecture, building material, and artistic elements.
The rest of the indicated elements could be found in other
attempts that were devoted to the same palace, other palaces,10
dams, temples11 and graves.12 For instance, 'As'd Tuba' indicated
the element of dimension in his description of the palace of
الملكة بلقيس (the Queen of Sheba):

كلله بجوهر وفريد
Her throne is square, its length is eighty cubits
she decorated it with jewels and special stones

Other elements could be found in the verse of 'Alqama علمه,
in which he indicated patron, building material and construction
technique, al-Hamdāny ascribed to him14:

من رخام ومرمر وسلام
Himyar has long experience in constructing palaces
from marble, marmar (marble) and stones
نحتوا الصخر في الجبال بيوبتا فهموها بقوة واعتزام
They carved the rocks of the mountains and made houses
and performed this with strength and determination
It seems clear by now, that the indicated attempts give one an idea about the role of the verse of poets of al-‘umrān ath-thābit in coining principles and elements of the history of architecture. It is important to indicate that the ground for this classification is the documentary nature of this verse, unlike the exploratory nature of the verse of poets of al-‘umrān al-mutanaqil, as I shall be demonstrating in the following discussion. It is important to note that whenever I use the term al-Jāhiliyya verse, I refer mainly to the verse of al-‘umrān al-mutanaqil.

Having gone this far in illustrating the interaction of poets of al-‘umrān ath-thābit with their environment and emphasized the outcome of this interaction in the architectural discourse, I shall take the time here to highlight the interaction of poets of al-‘umrān al-mutanaqil with their environment. I shall focus upon the relationship between poets and places of their ‘umrān and illustrate the role of this relationship in forming the techniques of archaeological exploration and emphasize the role of the latter in Arabic Islamic architectural discourse.

The relationship between poets of al-‘umrān al-mutanaqil and places of this ‘umrān as described by them seems to be a private one. It can be read as documented in their verse as an emotional relationship between them and places in which their beliefs lived. This relationship went through two stages: the first one took place during the occupation of place, while the emotional relationship took the form of an ongoing process. Events occurred while al-‘umrān existed in the place, that is to say the history of this relationship was made in the place and its ‘umrān. Unlike the second stage, where events were no longer occurred, because the place was no longer occupied, consequently al-‘umrān no longer existed, but memory of events that were experienced in the remains of al-‘umrān that existed in the same place. In other words, history was no longer made, it was replaced by memory. As
a result of this replacement, an-nasīb was originated and the role of archaeological interpretation marked its place in the architectural discourse. I shall be demonstrating this role soon after highlighting the concept of memory.

Memory has been viewed by poets of al-Jāhiliyya,¹⁵ as an attempt of surviving or living through an old vanished emotional relationship between themselves and their beloves that was experienced in defined places. It is a relationship between poets - who have had a personal presence in the places, where relationships were experienced - and their beloves who had only evidence of material remains in the same places. And because each relationship was a living fact, the association of every poet with material remains was also a living fact. This in turn, in my view, elevated memory to a kind of archaeological exploration. This was emphasized in the verse of one of the early poets of al-Jāhiliyya, namely Imru' al-Qays¹⁶:

هبا نبك من ذكرى حبيب ومترأ بسقط اللوى بين الدخل ووامل
Stop [my friend], let us cry on the memory of my beloved and residence,

ات سقطت عاة، بدو الدخول ووامل
at Siqṭ al-Liwā, between ad-Dukhūl and Ḥawmāl

فوجع فانحراف حبا لم يحتفظها من جنوب وشمل
Tuwḍāḥ and al-Muqrāt, still have material remains

تعدت عموما لم يحلكه من جنوب وشمال
as a result of the sequence effects of southern and northern winds

Imru' al-Qays seems to have succeeded in drawing the relationship between himself and the place through memory. He indicated the name of the place Siqṭ al-Liwā, which means the end of sand (desert) and the beginning of solid land that suits the fixing of stakes for erecting tents. He located its position between two other places, ad-Dukhūl and Ḥawmāl. He also indicated the effect of the southern winds in covering the remains of the residence (of the people of his beloved) with sand and the effect of
northern winds in dispersing this sand, because both winds blew from opposite directions.

For although the scope of the attempt of Imru’ al-Qays was limited to the environmental, geographical and climatic factors of the place, it contributed to the archaeological exploration, despite the fact that there were no clear signs of intentional exploration of the indicated remains. Unlike the attempts of an-Nābigha, where he intentionally explored the material remains of the residence of his beloved Nu’ma and her people:

Stop, say hello to the remains of the house of Nu’ma.

What are you greeting? trench and stones

Evacuated and decamped of Nu’ma and changed by the effect of wind storms, that keep coming and going

I stopped on these remains in the middle of the day wondering

about the people of Nu’ma, while I am travelling on my female camel

The house of Nu’ma could not answer us (was deserted) and if the residence answered us (occupied) it will have news

I could not find anything that stimulated me except ath-thumām (shrubs) and the fire place

An-Nābigha emphasized his intention to explore with his direct question. He indicated the material remains such as an-nu’y (trench) that excavated around the tent (house) of his beloved in order to prevent water from entering inside. The stones that
were used for fixing the sides of the tent to the ground in order to avoid the effect of wind, and as three supports for the fire place. Most important are the shrubs of ath-thumām that were grown in the place of water that were used for daily life. He also emphasized the role of climatic conditions in changing the shape of the homeless environment.

In another attempt, an-Nābigha introduced new elements of exploration in his memory of the residence of a woman called Maya\(^1\)  

**بادار 명ة بالحلياء، فالسند اقتو وظل عليها سالف الاب**  
Oh, house of Maya, at the top of the valley side decamped and remained a long time deserted  
**وقفت فيها اميتانا اسألها؟ عيب جوابا وما بالربح من احد**  
I stopped, in it, at noon time wondering why it could not answer and there was nobody in ar-rub\(^1\) (place of residence)  
**ال الاواري لاياما ابيته والمؤي كالحوض بالمظلومه الجلد**  
But al-awārī (stake for tying animals) that I can barely recognize it  
and an-nu‘y, like a basin in the solid earth

These elements are the topography of the place, the element of time, al-awārī and most important is his concentration on the difficulties he faced in his exploration. This, in turn, emphasized the intentional will behind this exploration, which was elaborated upon more clearly by an-Nābigha:\(^2\):

**توهمت آيات لها، فعرفتها لسنة اعوام ودا العام سابع**  
I imagined its landmarks and I knew it but after six years and this is the seventh year.  
**رماد كحل العين لابابينة ونوء كحوض اظلم خشج**  
Ash, like fine black kohl, I barely recognized it and a nu‘y like a shallow, unorganized, basin
This attempt emphasized once again the intentional purpose of exploration through the elaboration on the element of time and the difficulties an-Nābigha faced in his exploration. Furthermore, this attempt enlarged the scope of exploration because it introduced a new element of material remains, namely ash, and because it was carried out through personal association. This association, in fact, governed the contribution of poets of al-Jāhiliyya in forming and establishing elements and techniques of archaeological exploration and interpretation. Zuhayr Ibn Abī Sulmā emphasized the element of time in his exploration attempt: 

وُفِقَتْ بِهَا بَعْد عَشْرِين حَاجَة
 فلاِيَا عرَفَت الدَّار بَعْد دُوَّهُم
I visited it [residence of his beloved] after twenty years
I barely recognized the house after long wondering

Al-Mukhhabbal as-Sa’dy, also used the element of ash, together with other elements in his exploration attempt:

وَأَرَى لِها دَارًا بِالقَوْرَة الْمُفْرَدَ
السَّيِّدَان لَمْ يَدْرَسْ لَهُا رَسْم
I can recognize her house at aghwirat as-
siddān [name of a place] that its remains not
defaced

الإِرَمَادَا هَامُدا دَفْحَت
عَنْهَا الرِّبَاح خَوَالَدُ سَم
But sticky ash protected

فَكَانَ مَا اَبْقِى الْبَوَارِج وَا لَا
مَقَار، مِن عَرْضَانِهَا، الْوَضْم
What has remained from the effect of wind and

رَأَءْتَهَا بِهَا الْبَقْر الْمَسَاَبِب وَا لَا
خَلَطَتْ بِهِ الْأَرامَ وَا لَا دَم
Zebras enjoys pasture at it and

يَدْخَلَ بِهَا الْأَرَامِ وَا لَا وَالْأَلَام
وَنَجْوَى بِهَا الْجَذَرِ وَا لَا
joined with black and white - and white deer

وَكَانَ اَطْلَاء الْجَذَرِ وَا لَا قُرْنًا حَوْلِ رُسُومَهَا الْبَيْم
Small zebras and deer look
around its remains, as if they are small sheep

This attempt together with the previous ones, seems to extend the role of archaeological exploration to the stage of exegesis. Al-Mukhábbal succeeded in his attempt to explain the effect of wind and rain on ash and other remains. This reasonable and practical justification seems to have constituted a fundamental issue in the archaeological interpretation of al-Jähiliyya verse. Another fundamental issue is the replacement of inhabitants by some kinds of undomesticated animals, because the presence of the latter in the places of 'umrān of the first, was justified by poets of al-Jähiliyya as a sign of a total absence of human race.

Other issues have already been pointed out such as patron, place, climatic factors, personal experience and emotional association, so to speak, social life. Issues of writing and religion seem to have constituted a very limited presence in al-Jähiliyya verse. Unlike the others, where they constituted the structure of one of the genres of al-Jähiliyya, namely an-nasīb, as indicated earlier.

The wide presence of these issues in most of al-Jähiliyya verse, in my view, laid down, if not constituted, the techniques of archaeological interpretation. This technique, seems to be a comprehensive one, it based upon personal association, close seeing, examining gaze, critical notice and analytical description. It took the form of a clear systematic process of exploration that began by indicating and clarifying the identity of owners (patrons) of remains (antiquities), identity of remains, places of remains, nature of environment and ended with a descriptive documentation of the remains of architecture and places of 'umrān in the Arabian Peninsula.

The outcome of this interpretation, seems to be a group of principles, concepts and measures that governed the making of
architecture and choosing places of residence, as indicated in the course of discussion. The value of this interpretation does not seem to be limited to its outcome, it rather to its presence in Arabic Islamic architectural discourse, as I shall be demonstrating later in the course of discussion.

By now, I have tried to show the contribution of al-Jāhiliyya (pre-Islamic) verse on Arabic Islamic architectural discourse. In the course of discussion, I demonstrated the interaction between al-Jāhiliyya poets and their environment and came to the conclusion that this interaction resulted in coining principles and elements of historical studies of architecture and principles, elements and techniques of archaeological exploration and interpretation. This contribution occupies the core of Arabic Islamic architectural discourse, partly because it introduces one to the ways in which pre-Islamic Arabs had thought about and practiced architecture, and partly because it furnished the grounds for the contribution of Islamic sources, which will be highlighted in the following discussion.

2. The religious source

This source represents the beginning of Arabic Islamic architectural discourse that initiated a new approach. It had progressed from the emotional stage of al-Jāhiliyya verse to a rational one and from recording and documenting to theorizing and reasoning. Its sources have increased and consequently, its subjects and scope have also increased. Therefore, it has been established as an independent subject, that possessed characteristics, branches and interaction with other subjects, within the realm of both Islamic systems: ideological (belief system) and epistemological.

I have already indicated these sources which displayed a group of fundamental architectural issues that, in turn, constituted
Arabic Islamic architectural discourse. In the following discussions, I shall be highlighting the religious source as, displayed in the holy Qurān والقرآن and al-Ḥadīth الحديث (tradition = the sayings and practice of prophet Muḥammad, peace be upon him).

This source displayed general issues, its detailed interpretation was left to fuqahā' فقهاء (single faqīh = legislator) and Muslim intellectuals. For instance, al-Qurān interpreted architecture from a hierarchical point of view. Al-Qurān interpreted, first, the comprehensive 'ummān of environment', or the inhabitants of the earth. It then interpreted the stability of the human race on earth after the flood and the establishment of civilizations. And finally, al-Qurān interpreted architecture as a cultural phenomenon that was required by virtue of necessity to form and establish social organizations. The following discussion will be focused on the latter.

Al-Qurān, interpreted this phenomenon from two points of view. The first one is concerned with the study of this phenomenon and the second one is concerned with its practice. The first one seems to be a continuation of the role of al-Jāhiliyya verse, but al-Qurān replaced the role of memory with rational documentation. This, in turn, helped in studying the architecture of ancient Arab civilizations such as 'Ād, ʿūd, Thamūd, Sabā' سبأ and others. This view was exploited by Arab and Muslim historians and geographers in their studies of the architecture of pre-Islamic Yemen and ancient Egypt, which will be emphasized later in the discussion of the history of al-Ka'ba.

The second view is concerned with principles that governed the practice of architecture. Five subjects of thought or topics were displayed in this source: environmental, social, technical, aesthetic and functional.

The first one is displayed in al-Qurān, where components of
environment were made subject to man in order to domesticate and make use of them for his comfort in his built environment. The value of this principle came from the fact that al-Qurān indicated each component and its opposite in the same environment, perhaps, as a means of making use of it. For instance, al-Qurān indicated that the sun\textsuperscript{26} was made subject to man and its opposite, shadow, was made subject to him as well. Light and its opposite, dark, were also made subject to man. Night and its opposite day were also made subject to man. And so forth for the rest of the components of the environment. This, in turn, created a kind of balance in the environment or an environmental integration that facilitated the employment of these components within the built environment. Al-Qurān demonstrated the use of this environmental balance to serve man and his built environment as follows\textsuperscript{27}:

"الله جعل لكم من بيوتكم سكنًا وجعل لكم من جلود الانعام بيوتا تستفرونها يوم ضعنكم وبوم اقدمكم ومن امواهها واوربارها واشارها اثنا ومشاعا الى حين والله جعل لكم مما خلق ظالا وجعل لكم من الجبال اكتانا وجعل لكم سرابيل تقيكم الحر وسرابيل تقيكم باسكم، كذلك يحم نعمة عليكم لحكم تسلمون"

"It is God who made your habitations, Homes of rest and quiet. For you; and made for you, out of the skins of animals, (Tents for) dwellings, which Ye find so light (and handy), when ye travel and when ye stop (in your travels); And out of their wool, And their soft fibres (Between wool and hair), And their hair, rich stuff, And articles of convenience (To serve you) for a time. It is God who made out of the things, He created, Some things to give you shade; Of the hills He made some For your shelter; He made you Garments to protect you From heat, and coats of mail To protect you from Your (mutual) violence. Thus does He complete His favours on
you, that Ye may bow to his will (In Islam)."

This environmental system has been developed from the stage of epistemological presentation in al-Qurān to a canonical stage in al-fiqh الفقه (jurisprudence) and finally to constitute part of the structure of the architectural discourse. For instance, all issues of natural environment that affect the man made environment (architecture) were discussed in detail by al-fuqahā' and interpreted by them as ḥakām al-bunyān إحكام البنية (building rules and laws). These ḥakām will be reviewed later in the architectural studies.

The second subject of thought is a social one. It has emphasized the nature of relationships inside the household and among neighbours and constituted principles of Islamic social order. Similar to the environmental issues, social issues were manipulated, discussed in detail and canonized by al-fuqahā'. They were transformed by Muslim master builders and architects to architectural elements, spaces and forms. Where through this transformation, social concepts such as privacy, prevention and easements were fulfilled architecturally. These concepts will also be reviewed in the architectural studies.

The third subject of thought is technical. One has been introduced to this concept through the concept of firmness that constituted a remarkable presence in Islamic thought. The firmness of the construction of architecture is, in fact, the symbol that al-Qurān and al-Ḥadīth projected onto the strength of belief and coherence of the structure of society. This was emphasized in the following verse28:

"افمن اسس بنائه على حفوي من الله ورموان خبر امن استى بنائه على شفا جرف هار فانهار في نار جهنم.

"Which then is best?—he that layeth his foundation On
piety to God And His Good Pleasure? - or he That layeth his foundation On an undermined sand-cliff Ready to crumble to pieces? And it doth crumble to pieces? with him, into the fire of Hell."

This concept has been emphasized on different occasions in al-Qurān\textsuperscript{29} and al-Ḥadīth\textsuperscript{30} and marked its presence in other sources, such as literary ones, as will be demonstrated in the course of discussion.

The fourth subject of thought is beauty. This source, as indicated in al-Qurān, seems to come from two concepts. The first one is thinking and speculating\textsuperscript{31} as a means to reach the truth of the existence of God by wondering about the creation of the universe in order to notice its order and perfection or, in other words, its beauty, while the second concept is an artistic picturing of elements and of the phenomena of the universe. Nevertheless, both concepts are concerned with illuminating artistic meanings and elements such as light, shadow,\textsuperscript{32} colour and many others that will be surveyed and highlighted in the discussion of the scientific source.

The final subject of thought is the functional one. This concept is clearly illustrated in the sayings of prophet Moḥammad\textsuperscript{33}:

"كل بناء وбан على صاحب سوم القيامه الا بناء كفافا"

"Each building is penal upon its owner on the day of resurrection, except building that meets the needs."

This concept was applied by the prophet himself in his mosque at al-Madīna and by Ḥumāyūn Ibn al-Khaṭṭāb,\textsuperscript{34} where the latter asserted in his instructions to the two leaders of his army in Irāq to build to al-qadar القدر (limit). He defined it "as the necessity, that does not exaggerate the cost or deprave the
purpose."

For although function, as displayed in the indicated examples, seems to be the outcome of religious, social and economic purposes, it should not be understood as a mere commitment to abstraction of form and reduction in its artistic qualities. In fact, it is an invitation to moderation in order to avoid cuts in the production of architecture, in particular the architecture of mosques. Function, therefore, is a means to satisfying religious and social needs that endeavour to ease the production of architecture and not an aesthetic approach.

With function, I have come to the end of the contribution of the religious source, in which I indicated five subjects of thought, where each one had initiated a beginning in Arabic Islamic architectural discourse. This contribution, in fact, seems to mark and, perhaps, govern the contribution of other sources, in particular the literary one, as will be highlighted in the following discussion.

3. The literary source

The contribution of this source seems to be an integration of the contribution of al-Jāḥiliyya verse and the religious source. It played a remarkable role in the development of Arabic Islamic architectural discourse. It took a critical form that endeavoured to enlarge the contribution of valid concepts. I shall be highlighting the contribution of three major figures in Arabic literature: al-Jāḥiẓ (AH 150-255, AD 767-869), Ibn Qutayba (AH 213-276, AD 828-889) and Ibn Rashīq (AH 390-456, AD 1000-1064).

The contribution of al-Jāḥiẓ focused upon archaeological interpretation. He introduced two new elements to its discourse: language and critical inquiry. He indicated a double functional
role of language: writing on walls of buildings or archaeological documentation and writing in books or historical studies. He argued that the latter is more reliable in its documentation of "achievements of civilizations" (architecture). And that because evidence showed, according to al-Jāḥiẓ, that kings and princes had demolished the architectural performance of their predecessors.

He turned to archaeological exploration and through it, he negated the validity of the theory of the giant size of men of old civilizations except for men of 'Ād. He conducted a critical process of exploration of their antiquities in order to cite evidence to support his view. He noted the small size of doors in palaces and mausoleums, the low lintel height of doors, the low height of the positions of oil-lamps in "churches, halls and places of worship."

For although the contribution of al-Jāḥiẓ seems to be conceptual because his discussions were general and not limited to certain civilizations or places, it was original, and in my view, it enlarged the scope of archaeological interpretation.

Nevertheless, al-Jāḥiẓ extended his contribution to the field of architecture. In one of his short stories of al-Bukhalāʾ, he made a detailed description of one of the houses of the city of al-Bağra. He emphasized the inner planning of the house, services, construction techniques, use and maintenance. He interpreted some of the elements of the house in relation to their functions such as kitchen, washing area and water closet. This functional interpretation, in turn, partly emphasized the composition of the plan and partly demonstrated the standards of life at the time of al-Jāḥiẓ. The outcome of the description of al-Jāḥiẓ, in my view, introduces one to principles of house design such as privacy, prevention, safety and orientation. These principles were integrated by the contribution of Ibn Qutayba. He
devoted one chapter\textsuperscript{45} of his book 'Uyūn al-Akhbār عيون الأخبار, to construction and houses. He indicated principles of planning such as land use\textsuperscript{46} and orientation. He argued for the need of locating houses in the east and plantation in the west. He also argued that the best site\textsuperscript{47} for buildings is the overlooking one, on top of a mountain that is oriented towards the east. He referred to construction techniques and building materials.

But it seems that the original contribution of Ibn Qutayba is the functional one. He referred to a story\textsuperscript{48} between a man and his son, where the son was in the process of building his house in al-Baṣra. The man told his son that the house should be similar to "a shirt, subject to enlargement and tightening"\textsuperscript{49} according to the size of his body. The house, therefore, should meet his needs as a user. The story went on to coin another principle, namely aesthetics.\textsuperscript{50} Ibn Qutayba, indicated that the man visited his son in Baghdad, while the son was building his house. The man told his son, when he saw the labourers plastering its walls: "Do you know that you are covering gold with silver?"\textsuperscript{51} The son answered: "It is not in every place that gold can be 'anfī انفع (more useful) than silver." The son asked: "But do you see any fault?"\textsuperscript{52} The man answered: "Yes, being located among houses of lay citizens."

This story emphasized the concept of function as "fitness for purpose." It disputed the idea that aesthetics in architecture can only be achieved by using exposed building material. Furthermore, the story shows the indigenous participation of the lay public in coining principles of architecture and their role in manipulating and applying these principles in its making. Nevertheless, this story emphasizes the view that I have already indicated earlier, that function was not meant to be a mere reduction in the quality of form, it most likely aimed at easing the production of architecture. This view was emphasized more clearly by Ibn Rashīq, al-'Umda\textsuperscript{53} الفهم:
"A verse of poetry is like a built house, its foundation is character, its height is narrative telling, its supports is knowledge, its door is continuous practice, its inhabitant is meaning and no need for a house that is not inhabited. Musical rules together with rhythms became similar to levels and measures of buildings, like stakes for tents. As for other good qualities of verse, in fact, are not more than extra decoration. If it doesn’t exist, it will not affect the quality of verse."

The contribution of Ibn Rashīq seems to be a comprehensive one. It indicated concepts such as structure, use, function, meaning and aesthetics. It might be considered, in my view, as a partial outline of Arabic Islamic architectural discourse. What concerns one in this contribution is the analogy between the structure of a house as part of the structure of architecture and the structure of one verse as part of the structure of poetry. He made the first a prototype for the second. Ibn Rashīq argued that function and aesthetics are integrated. He indicated that aesthetics existed in the elements of the structure of architecture, in much the same way, in which it existed in the elements of the structure of verse such as musical rules and rhythms, order and balance. He argued that non-structural elements are not more than extra decorative elements. Their absence will not decrease the original aesthetics that originated in the elements of the structure. This, in turn, emphasizes that the concepts of function, aesthetics and meaning are inseparable elements in the structure of architecture. This, in fact, supports the view I
already indicated earlier, that function is not a secondary representation of form. It is rather a central element in the production of aesthetics and the meaning of architecture.

It seems clear by now that the concept of function, together with archaeological interpretation, has been manipulated in the three discussed sources in much the same way. What was discussed in the literary source does not seem to be more than a continuation of what had been discussed in the religious source and al-Jāhiliyya verse. This continuity, in my view, is a sign of unity of Arabic Islamic architectural discourse. I shall be highlighting other sides of it in the scientific source.

4. The scientific source

This source represents the interaction between science and architecture. It covers the role of medicine, geometry and optics in the making of Arabic Islamic architecture. In the following discussion I shall be highlighting the contribution of each science, starting with medicine.

The contribution of medicine centered upon the role of environment in choosing places of residence and orientation of houses. The physician Abū zayd al-Balkhī (AH 236-322, AD 850-934), Mašāliḥ al-Abdān Wal-Anfūs, devoted most of his book to explaining the role of architecture in sustaining body and soul. He argued that places of residence should be located on higher positions, exposed to air and sun, rich with clean water and good for agriculture. He also argued that houses should be oriented towards the east in order to allow northeast winds and sun from entering houses. It is interesting to note that al-Balkhī emphasized the psychological role of orientation. He argued that the rising of the sun creates a great deal of energy in the body and soul of those who face its rising. In this, al-Balkhī seems to be, perhaps, the first to
introduce psychology to the architectural discourse.

Al-Balkhî extended his contribution to the design process. He argued that satisfying hygienic conditions in houses, requires considerations in اشکال (single shakl-form) and سیمآ (making or design and construction) of these houses. He recorded five considerations: first, to avoid orienting windows towards the winter winds, he suggested turning windows away from the direction of these winds; second, to increase the thickness of walls in order to prevent heat loss; third, to enlarge areas and increase the height of rooms in order to avoid polluted air that results from daily activities in houses; fourth, good illumination, because light, according to al-Balkhî, relaxes the soul and increases its energy; fifth, to elevate houses above ground level in order to avoid humidity and polluted air.

Most of the contribution of al-Balkhî was emphasized by the physician Ibn Sīnā (AH 370-428, AD 981-1037), al-Canon Fī at-Ṭibb. He indicated types of residence according to their geographical locations. He displayed the types of wind, explained their hygienic properties and effect on the health of residents. He emphasized the view of al-Balkhî that places of residence should be located on higher positions, exposed to air and sun. He argued that openings of houses should be oriented towards the east to allow northeast winds and sun to enter these houses.

Having indicated the contribution of medicine and emphasized its role in the design process, in the following discussion I shall be highlighting the contribution of geometry, proportion and function.

The contribution of geometry focused upon the properties of shapes and forms, units of measurement and surveying. For instance, the group of philosophers Ikhwân ʿāṣ-Ṣafâ اخوان المفا
(4th century AH=10th AD), the authors of Rasā’il Ikhwān aṣ-Ṣafā, devoted one of their letters⁶³ to the interpretation of the properties of geometrical shapes and surveying. They explained the role⁶⁴ of geometry in the making of crafts, emphasized the process⁶⁵ of configuration and the sequence of their production. They then explained the interaction⁶⁶ of geometry with surveying and indicated the units⁶⁷ of measurement that were used in the construction of buildings.

Ikhwān aṣ-Ṣafā, devoted the sixth letter to the study of an-nisab الحساب (proportions) in arithmetic, geometry, colours, music, paintings, creations of God and man made products. They argued that the source of beauty in each one is its proportions. They also devoted the eighth letter to the study of crafts. They categorized the craft of building as an "intentional" one, required by the virtue of necessity for sheltering and dwelling. They argued that this craft needs other supporting crafts such as carpentry and smithery. Finally, they argued that the purpose⁶⁸ of all crafts is to make pictures (forms) in materials in order to make use of them.

Ikhwān aṣ-Ṣafā went on to emphasize the role of function in the making of architecture. They made an analogy between the structure of the human body⁶⁹ and the planning of a house. They indicated that the human body is composed of soul and body, and argued that the soul to the body⁷⁰ is like an inhabitant to a house. The behaviour of the soul in the body is similar to the activities of an inhabitant in a house. On these grounds, they extended this analogy⁷¹ to include all elements (structure) of a house and organs of a human body. They emphasized the function of each organ in the human body by displaying the function of its similar element⁷² in a house. For instance, legs are like foundations,⁷³ a nose is like a windcatcher, a stomach is like a kitchen, a mouth is like an entrance of a house and so on. This analogy, in fact, emphasized the role of function in the
making of architecture and, at the same time, elevated its value in Arabic Islamic architectural discourse that seemed to have been enhanced by the contribution of Ikhwan al-Safā. In the following discussion, I shall be focusing upon the science of optics.

Optics played a distinguished role in Arabic Islamic architectural discourse. Al-Ḥasan Ibn al-Haytham (AH 354-432, AD 965-1041), Kitāb al-Manāẓir, emphasized the contribution of this science. He highlighted the process of perception and the techniques of the composition of pictures (objects) that resulted in establishing the principles and rules of drawing perspectives.

Al-Ḥasan argued that objects are visualized through the rays that are directed from each point in their surfaces to the eye, perceived and recognized through the "sub-meanings" that compose them. He emphasized the psychological process of perception through these sub-meanings. He indicated that part of these sub-meanings are perceived by sense, other parts by knowledge and other parts by analogy and distinction. Al-Ḥasan indicated that the sub-meanings that are perceived by vision, are great in number, but he categorized them under 22 sub-meanings:

"Aḏ-Ḍū'a' (light), al-Lūn (colour), al-Bu'd (distance), al-Wādi (position), at-Tajasum (configuration), ash-Shākī (form), al-I'zām (greatness), at-Tafaruq (disconnection), al-Aṯiṣāl (connection), al-'Adad (amount or numbers), al-Ḥarakah (movement), as-Sukūn (stability), al-Khushūna (roughness), al-Malāsa (softness), ash-Shafīf (transparency), al-Kathāfa (thickness), az-Zil (shade), az-Ẓulma (darkness), al-Ḥusn (beauty), al-Qubh (ugliness), at-Tashābuh (similarity)
He argued that objects are perceived through the sub-meanings that compose their surfaces, positions, configuration and forms. He indicated that surfaces are perceived by five sub-meanings (the light that existed in them, their colour, their distance from the eye, their directions and amount of distance that, according to al-Ḥasan, is different from distance, because the amount of distance is associated more with perceiving qualitative objects). He argued that these five sub-meanings are perceived altogether at one time, because they are perceived by knowledge and need no time for distinction and analogy. He indicated that the position of an object is perceived through the organization of its parts, consistency and harmony, or their inconstancy and contrast, as much as from the arrangement of these parts and the amount of their distance from the eye. The configuration of objects is perceived through the extension of their surfaces in the three dimensions: length, width and height, in space and from interaction of their surfaces. And finally, form is the perception of the real situation of the surfaces of an object.

This process of visual perception laid down principles of drawing perspective that, at a later stage, was fully implemented by architects in drawing perspective. This contribution, together with geometry, proportions and hygienic rules, so to speak, the contribution of the scientific source marked a crucial turning point in Arabic Islamic architectural discourse that one will see other sides of it in the geographical source.

5. The geographical source

The contribution of this source, including travellers' diaries, extended mainly over two topics: planning and the history of architecture. The first one was the subject matter of most
and al-Ikhtilāf (differences)."

He argued that objects are perceived through the sub-meanings that compose their surfaces, positions, configuration and forms. He indicated that surfaces are perceived by five sub-meanings (the light that existed in them, their colour, their distance from the eye, their directions and amount of distance that, according to al-Ḥasan, is different from distance, because the amount of distance is associated more with perceiving qualitative objects). He argued that these five sub-meanings are perceived altogether at one time, because they are perceived by knowledge and need no time for distinction and analogy. He indicated that the position of an object is perceived through the organization of its parts, consistency and harmony, or their inconsistency and contrast, as much as from the arrangement of these parts and the amount of their distance from the eye. The configuration of objects is perceived through the extension of their surfaces in the three dimensions -length, width and height- in space and from interaction of their surfaces. And finally, form is the perception of the real situation of the surfaces of an object.

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5. The geographical source

The contribution of this source, including travellers’ diaries, extended mainly over two topics: planning and the history of architecture. The first one was the subject matter of most
geographical studies, whereas the second resulted from the first. Discussion of this source will centre upon planning. I shall demonstrate its levels, principles and techniques of interpretation.

Geographical studies demonstrated different levels of planning: national, regional and urban planning. The first one seems to be interpreted in most of these studies. The most elaborated interpretation that contributed directly to the discipline of planning, seems to have been made by al-Moqaddasi (AH 335-390, AD 946-1000) Aḥsan at-Taqāsīm Fī Maʿrifat al-Aqālīm احسن التقسيم في معرفة الاقليم. He interpreted the three indicated levels of planning. He divided the "kingdom of Islām" into 14 aqālīm (single iqlīm = region), where the Arab world occupied 6 aqālīm: Arabian Peninsula al-Jazīrah al-'Arabīyya, Irāq Iraq, Aqwar al-Mūsīl and Diyarbakr, ash-Shām Syria, Miṣr Egypt and al-Maghrib North Africa.

Al-Moqaddasi drew the planning of each iqlīm, by illustrating a coloured skeleton drawing or a master plan for each iqlīm, where he indicated:

"I illustrated kuwar [single kūra = sub-region] each iqlīm, located its wāṣṭāt [single miṣr = capital] indicated its qaṣābāt [single qaṣaba = city], organized its madīnāt [single madīna = town]. I made all that after I represented it and drew its boundaries and territories, I marked its known roads with a red
colour, its golden sands with a yellow colour, its seas with green, its known rivers with blue and its known mountains with a dusty colour. In order to make a description easy for those concerned and laymen."

The point at issue here is not just the use of drawings and colours, although they constituted a turning point in Arabic Islamic architectural discourse. But the intentional conscious attempt of the hierarchal classification of planning, from the national to the regional and, at a later stage, urban planning. Furthermore, this classification was emphasized by the interpretation of other aspects of planning principles such as geographical and climatic characteristics, economic sources, social, political and administrative institutions of each icclīm.

These principles were indicated in most of the geographical studies, in particular geographical dictionaries. Yāqūt al-Ḥamawī (AH 575-626, AD 1179-1229), Mu‘djam al-Buldān, interpreted all aspects of national, regional and urban planning, together with the history of the architecture of certain buildings. Unlike al-Mogaddasī, Yāqūt recorded the accālīm of the Islamic world according to their locations from al-Ka‘ba as illustrated in (Figure-2). He located the qibla (the direction of praying of Muslims towards al-Ka‘ba at Mecca) of each icclīm. This locating constituted and still constitute a central issue in the making of the architecture of mosques. Yāqūt discussed in detail the conceptual meaning of the elements of national and regional planning such as icclīm, kūra, mikhlāf (sub-region like kūra but this term is used only for the sub-regions of Yemen), jund (sub-region like kūra and mikhlāf, but it applied only to the five sub-regions of Grand Syria and finally mīqr.

He recorded and described in detail the cities, towns and villages of the state of Islām. It is this description, in my
view, that marked the contribution of Yāqūt, al-Maqrīzī and the rest of geographical studies in Arabic Islamic architectural discourse. Geographical studies illustrated aspects and elements of urban planning such as location of sites, properties of cities, history of cities, land use, daily activities, road network, services, landscape and architectural fabric.

Description of cities, in fact, seems to have resulted upon establishing ad hoc studies that are associated with planning of a certain icclīm or city, like the study of al-Maqrīzī. These studies, in turn, constituted the discipline of urban planning, as I shall be demonstrating later in the architectural studies. Furthermore, description of cities extended the contribution of the geographical source to the field of the history of architecture. For instance, the history of the architecture of the three grand mosques, the mosque of Damascus, bayāristānāt, schools and ad-diyārāt (monasteries) were interpreted in most of the geographical studies. In spite of the fact that these interpretations were part of descriptions of cities, they might be considered, in my view, as independent studies, because each interpretation is complete in itself, where techniques of writing the history of architecture such as description of form, depiction of artistic features and documentation of dates, patrons, function and type were implemented.

Finally, the geographical source played a remarkable role in initiating the beginning of Arabic Islamic architectural discourse. Its contribution seems to be original in terms of planning and a continuation of historical studies, in terms of the history of architecture as I shall be demonstrating in the following discussion.
The Accūlīm of The Islamic World

(Figure-2)

Note: The drawing is copied as illustrated by Yāqūt al-Ḥamawī
6. The historical source

I have so far demonstrated the contribution of five sources of Arabic Islamic architectural discourse. In the following discussions, I shall be highlighting the notion of history, its meaning, endeavour and its role in Arabic Islamic architectural discourse.

The notion of history, according to the Arab historian Ibn Khaldūn ابن خلدون (AH 732-808, AD 1332-1406), *al-Muqaddimah* المقدمه, "is the news about changes that occur in man's political and social organization." He argued that "history is a discipline widely cultivated among nations and races." Its task is rational and its technique is quest or inquiry about events that had happened in the past. Its purpose is to offer knowledge about these events in order to enrich our experience.

Ibn Khaldūn indicated two meanings of history: "superficial" and "substantial". He interpreted the first as "surface understanding to history" that is associated only with information of "political events, dynasties" and understanding of human affairs. The second is associated with the "inner" structure of history. He argued that history, as a discipline, involves scientific investigations about "how" and "why" events happened in the past, in an attempt to discover the truth and origins of existing things. On these grounds, one may argue that the endeavour of history is an educational one. The last meaning seems to be associated with the philosophy of Arabic Islamic history that is based upon two concepts: first, "lessons and erudition" in order to make use of it; second, "thinking and speculation" as a process and technique to discover the truth.

It is from the meanings and philosophy of history that studies of the history of architecture and archaeology were inspired and influenced. Because architecture is a part of human affairs and
a live example for lessons of ancient civilizations that require thinking and speculation about causes and purposes of its making. This, in turn, emphasized the educational purpose and endeavour of the studies of the history of architecture. This endeavour introduces one to the experience of our predecessors. It offers knowledge about the ways in which they thought about and practiced architecture and introduced one to concepts, principles, values, characteristics and meaning of architecture in the course of history. This will be highlighted and analyzed together with the techniques of these studies in the course of this study, but for now, I shall be focusing upon the genealogy of these studies.

Having indicated the endeavour of studies of the history of architecture to be a record of knowledge about architecture, it seems possible to argue that the beginning of these studies took place in al-Jāhiliyya verse. The architecture of this period such as palaces of Yemen, al-Ka'ba and āţām100 آطام (fortified houses) of al-Ḥijāz, were described, depicted and documented. This beginning was also emphasized in the holy Qurān, where the process of building al-Ka'ba was interpreted as follows:

1. That God guided Abraham ابراهيم to the site of al-Ka'ba, as was indicated in al-Qurān:

واذ بواذ لابراهيم مكان البيت"101
"Behold! We gave the site to Abraham, of the (sacred) House [al-Ka'ba]."

2. That God described the process of constructing the house and the names of the two builders:

واذ برفع ابراهيم القواعد من البيت واسععيل"102
"And remember Abraham and Ismā'īl raised the foundation
of the House."

3. That God assigned the function of the house and indicated the requirements for its maintenance:

"Waاذ جعلنا البيت مكتبة للناس وآمنا واتخذنا من مقام ابراهيم معلنا إلى ابراهيم وإسماعيل ان طهرنا ببيتي للطائفين والعاكفين والركع السجود.

"Remember We made the House A place of assembly for men And a place of safety; And take ye the Station Of Abraham as a place Of prayer; and We covenanted With Abraham and Isma'il That they should sanctify My House for those who Compass it round or use it As a retreat, or bow, or Prostrate themselves (therein In prayer)."

The contribution of the holy Quran extended to cover the documentation of the architecture of Yemen and ancient Arab civilizations. This contribution was emphasized in historical studies, where most, if not all, building types (Islamic and non-Islamic) were described, depicted and documented.

For instance, the Arab historian al-Mas'ūdī (died AH 346, AD 956), Murūj adh-Dhahab Wa-Ma'ādin al-Jauhar مروج الذهب ومعدن الجوهر, recorded the architecture of ancient Egypt and some of the religious architecture of India, Persia, China, some of the Greek temples in Syria, some Roman temples in Syria, Tunisia, Sicily and temples of Harrān. He also recorded the architecture of ancient Arab tribes 'Ād, Thamūd, the antiquities of Yemen, the construction of al-Ka'ba and the church of Antioch.

Al-Mas'ūdī emphasized the technique of writing the history of architecture as description of form, depiction of artistic features, documentation of dates of construction, patrons,
builders and function. His contribution covered different types of architecture and seems to be original. For instance, in his interpretation of the architecture of pyramids, he argued that each pyramid was built in stages and each stage formed a step that worked as scaffolding during its construction. These steps were cut and carved from the top towards the bottom in order to form a soft inclined surface. This view, in turn, constituted a fundamental issue in the interpretation of the construction of the pyramids and, as a consequence, in Arabic Islamic architectural discourse. Al-Mas'ūdī, perhaps, was the first to introduce stylistic interpretation in the writings of the history of architecture. He argued that the 'Abbasīd Khalīfa al-Mutawakkil (AH 232-247, AD 847-862) "introduced a new type of building, which was unknown to people," namely "al-Ḥirī" (ascribed to the city of al-Ḥira in Irāq) and known as "al-kummayn (two sleeves) and al-arwīqa (single riwāq = cloister)." He indicated that the plan is composed of a riwāq (a central hall in the middle of the house) that is surrounded by al-kummayn from both sides. Al-Mas'ūdī indicated that this style was an imitation of a pre-Islamic one that was created by one of the kings of al-Ḥira. The king designed it in the form of an army prepared for war in order to keep the image of war maintained before him. Al-Mas'ūdī indicated that "ar-riwāq was similar to the central division of a prepared army, while al-kummayn were similar to its right and left divisions." This style, according to al-Mas'ūdī, was spread in Irāq after the imitation of al-Mutawakkil.

The issue here is not the architectural value of the style, but the use of stylistic interpretation as part of the technique of writing the history of architecture.

The contribution of al-Mas'ūdī was preceded and followed by other historians. Their contributions covered the field of the
history of architecture and extended to the field of urban planning. They produced studies about the history of famous Arabic Islamic cities in which they indicated technique, structure of studies of the history of architecture, principles, concepts and notions of architecture and urban planning.

The remarkable study of these was made by Ibn Khaldūn, al-Muqaddimah (the introduction) for his "universal history", Kitāb al-'Ibar. He examined all the aspects of at-tamaddun (urbanization) and indicated the requirements for the planning of towns and cities. He interpreted the "craft" of architecture and argued that the "purpose of (building towns) is to have places for dwelling and shelter." In this context, he listed principles of town planning. He illustrated the safety conditions of choosing sites of cities such as choosing an "inaccessible" site, "either upon a rugged hill or surrounded by sea or a river," in order to create natural obstacles and to make accessibility by artificial means like bridges. These principles were indicated in his criticism to the principles of planning that was coined by 'Umar Ibn al-Khaṭṭāb and governed the planning of the two Irāqī cities, al-Baghdād and al-Kūfah, Ibn Khaldūn argued:

"The founder (of a town) sometimes fails to make natural selection, he sees only to what seems most important to him or his people and does not think of the needs of others. The Arabs did that at the beginning of Islam. They saw only to what seemed important to them, namely pastures, trees and brackish water for their camels. They did not see to it that there was water for human consumption, fields of cultivation, firewood, or pastures for domestic animals...."

It is interesting to note that the issue of accessibility is a controversial one, because 'Umar Ibn al-Khaṭṭāb emphasized the
need for free\textsuperscript{132} accessibility. The reason for this discrepancy, in my view, perhaps is ascribed to the fact that Ibn al-Khaṭṭāb, as a statesman, departed from a strategic point of view. Unlike Ibn Khaldūn, although he was a historian and sociologist, he also was a first minister and part of the political game of his time which mainly constituted his view, not just in the issue of accessibility, defensible cities and planning in general, but also in the field of architecture.

Ibn Khaldūn, perhaps, was the first in the Arabic Islamic tradition of architecture to handle it as an independent\textsuperscript{133} subject. He interpreted it as a sinā'ā ("craft") and as an intellectual discipline. He defined it as "the first and oldest craft of sedentary civilization. It is the knowledge of how to go about [making] houses and mansions and using them for cover and shelter."\textsuperscript{134} He indicated all aspects and principles that governed its making such as social and environmental aspects, climatic conditions, construction techniques, specifications, personal social needs (fitness for purpose, privacy, safety and aesthetics) and rules of building. Finally, he argued that "architecture is the craft that satisfies requirements in all these respects."\textsuperscript{135} In this context, one may argue that the contribution of Ibn Khaldūn elevated the interpretation of architecture to a level that still of vital interest for us at the present time; so much so that the historical source resulted in forming independent studies of the history of architecture which will be the subject matter of this study.

With the historical source, I have come to the end of this chapter in which discussion have covered the contribution of al-Jāhiliyya verse, religious, literary, scientific and geographical sources. In al-Jāhiliyya verse, discussion highlighted its role in forming the outlines of the studies of the history of architecture and techniques of archaeological exploration. The discussion of the religious source indicated the comprehensive
'umrān of the earth, the establishment of civilizations and interpreted architecture as a cultural phenomenon. Discussion highlighted its documentation technique and indicated five subjects of thought that govern its practice: environmental, social, technical, aesthetic and functional.

Discussion turned to highlighting the continuation role of the literary source to the contribution of the two previous sources. Discussion emphasized the role of critical inquiry in the archaeological interpretation and exploration. Discussion highlighted the analogy between the structure of architecture as an intellectual discipline and structure of verse. It emphasized the concept of function in architecture as meaning for verse and the concept of beauty as musical rules and rhythms for verse. Discussion also highlighted the role of environment in the orientation of buildings.

The discussion that followed covered the contribution of the scientific source and highlighted the role of geometry, proportions, surveying and units of measurements in the making of architecture. Discussion highlighted the analogy between the concept of function in architecture and the function of the organs of the human body. It concluded that the perfection of the performance of organs should exist in the elements of houses. Discussion turned to highlighting the perception of pictures (forms) through the sub-meanings that compose them, to the process of perception and principles of drawing perspective.

Discussion turned to covering the contribution of the geographical source and its role in forming and establishing the discipline of planning. Discussion highlighted three levels of planning: national, regional and urban and highlighted the role of drawing and colours in the making of planning. Discussion recorded aspects and elements of urban planning. Discussion turned to focusing upon the history of the architecture of famous
buildings as part of the architectural fabric of cities. It emphasized techniques of description of forms, depiction of artistic features and the documentation of informative data such as names of patrons, master builders and architects, dates, period, technique and chronological history of construction, building materials, sites, dimensions, areas, function and building types.

Finally, discussion have covered the contribution of the historical source. Discussion highlighted the notion of history, its meaning, purpose and endeavour. Discussion illustrated its role in offering knowledge about the ways in which our predecessors thought about and practiced architecture. Discussion highlighted the role of historical studies in introducing principles, concepts, values, characteristics and meaning of architecture in the course of history. Discussion turned to highlighting the genealogy of studies of the history of architecture that took place in al-Jāhiliyya verse and the holy Qurān. The discussion that followed focused upon the contribution of al-Masʿūdī. It emphasized his role in establishing the techniques and structure of studies of the history of architecture and highlighted his stylistic interpretation of these studies. Discussion turned, once again, to highlighting principles of urban planning and emphasizing the strategical and political impact upon these principles. Discussion went on to highlight architecture as an independent subject that contains theory and practice. Discussion indicated the aspects and principles that govern its making and maintaining its presence in contemporary architectural discourse.

In conclusion, the contribution of these sources, in my view, on the one hand prove that the beginning of Arabic Islamic architectural discourse could have been only born within the realm of Arabic and Arabic Islamic intellectual disciplines and cultural phenomena. On the other hand, one may argue that each
source had displayed or redisplayed or participated in displaying a group of fundamental issues which, in turn, constituted the previously mentioned beginning and paved the way for independent studies of architecture, which will be highlighted in the following chapter.
CHAPTER 2

ARCHITECTURAL STUDIES

This chapter is devoted to identifying independent studies of Arabic Islamic architecture. Five types of studies will be examined: āḥkām al-bunyān, building types, urban planning, archaeological and historical studies of architecture. The purpose of this chapter is to highlight the contribution of these studies in forming the structure of Arabic Islamic architectural discourse. In so doing, an attempt will be made to sketch out principles, concepts and notions that govern the making and interpretation of Arabic Islamic architecture. In the following discussion I shall be highlighting the contribution of these studies, starting with āḥkām al-bunyān.

1. Āḥkām al-bunyān (buildings rules and laws)

These studies are concerned with rules and laws that govern the practice of architecture in Arabic Islamic cities. In the following discussion, I shall be indicating their origin and highlighting their contribution to Arabic Islamic architectural discourse.

Āḥkām al-bunyān studies were a continuation of the religious source. They were the outcome of the efforts of al-fugahāʾ, who dwelled upon the five subjects of thought that constituted the religious source, as I mentioned earlier. Al-fugahāʾ brought these subjects to a stage of āḥkām that, partly, governed the design of architecture and, partly, organized the construction of buildings. Every major book1 of fiqh devoted a chapter or more to āḥkām al-bunyān, but my concern will centre upon independent2 studies, in particular the study of Ibn ar-Rāmī, al-Iʿlān bi- Āḥkām al-Bunyān.

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The value of this study came, in my view, not just from being a comprehensive one in the field of al-ḥākām. But from being classified by a muʿalim (master builder), who exploited his theoretical knowledge and technical experience in classifying his study, in which he wove the relationship between theory and practice and emphasized the role of the first upon the second.

Ibn ar-Rāmī classified these āḥkām under different headings such as al-jīdār (wall), al-ʿuyūp fī ad-dūr (faults in houses), āḥkām al-qanawāt wal-majārī (rules of channels and drainage system), al-arḥiya (mills), easements and nafy ad-ḍarar (prohibition and prevention of harm). The first and the second headings are associated with issues of construction. The rest of these headings, in particular nafy ad-ḍarar, are associated with human comfort and personal social needs. In the following discussion, I shall be focusing upon nafy ad-ḍarar, because of its comprehensive and direct role in the making of architecture and urban planning.

Ibn ar-Rāmī indicated that ad-ḍarar came from ad-dukhān (smoke), ar-rāʾiḥa (smell), ad-ḍawūdā (noise), sūʾ istiʿmāl at-ṭarīq (the wrong use of road) and an-naẓar min al-kūwā wal-abwāb (looking through windows and doors). He argued that the harm of smoke came from two sources; first, the smoke of the cooking fire and this is not prohibited in residential areas because of the basic need for food; second, the smoke of baths and ovens which should be prohibited because of its bad effect on neighbouring inhabitants. Therefore, Ibn ar-Rāmī indicated that in order to avoid the harm of the smoke of baths and ovens, they must not be permitted and licensed to be located among residential areas. On these grounds, one may argue that nafy ad-ḍarar of smoke has emphasized the concepts of zoning and land use of the architectural fabric of Arabic Islamic cities.
This also applies to the sources of smell such as madhābīgh al-julūd (tanneries). Ibn ar-Rāmī indicated that these activities must not be licensed or permitted to function among residential areas, because of their bad smell. This, in turn, emphasized the role of nafy aḍ-ḍurar upon the concepts of zoning and land use. Furthermore, Ibn ar-Rāmī indicated that channels of drainage must not be exposed and they have to be covered in order to avoid the bad smell of sewage. This rule also emphasized the concern of aḥkām al-bunyān in satisfying personal social needs in the making of architecture and in urban design.

Ḍurar of noise was also treated in much the same way. Flour mills were prohibited from functioning among residential areas, because of the bad effect of their noise on inhabitants and because of their vibrations that might cause damage to adjacent houses. Other aspects of nafy aḍ-ḍurar such as rights of free use of way and ease of access to roads, were indicated. All these aspects, in fact, seem to govern if not constitute principles of urban design and planning more than architecture, unlike an-naẓar min al-kuwā wal-abwāb, which is associated more with architecture as Ibn ar-Rāmī indicated.

He argued that the looking through windows and doors by intruders and passers-by resulted in invading the privacy of the household and caused the deterioration of values, moral and behavioural. Therefore, Ibn ar-Rāmī argued that prohibition of this harm was a real necessity. He indicated that this prohibition could be achieved by increasing the height of levels of sills of windows of houses, in other words by architectural means. Ibn ar-Rāmī recorded two cases. The first is associated with windows of houses that overlook each other. He indicated that the height of the level of sills of windows from floor finished level, according to the judgment of ʿUmar Ibn al-Khaṭṭāb, should be "equal to the height of a man standing on a bed," approximately about 293-320 cm, as illustrated in (Figure-3a). The second case
The height of sills of windows overlooking other houses
(Fig.-3a)

The height of sills of windows overlooking the road
(Fig.-3b)

The height of sills of windows according to
Aḥkām al-Bunyān
(Figure-3)
is associated with windows of houses that overlook roads. Ibn ar-Rāmī indicated that the height of the levels of sills of windows from road level should not be less than 7 asḥbār (single shibir = measure of an open fist), approximately about 198 cm, as illustrated in (Figure-3b).

It seems clear that aḥkām al-bunyān were transformed into architectural means that offered architectural solutions. In spite of their exaggerated height of sills, they maintained privacy for households and succeeded in preventing temptation to invade the privacy of a household by passers-by. And, at the same time, they helped in controlling the behaviour of household and users of roads.

It seems important to indicate that the two concepts, privacy and prevention were the purpose of aḥkām al-bunyān. They were associated with nafy ʿaḍ-ḏarar which might occur by looking through doors. Ibn ar-Rāmī recorded many cases of looking through doors and displayed their controversial aspects. These cases were either real ones that responded to disputes among neighbours, or hypothetical cases that were discussed by fuqahā'. Ibn ar-Rāmī surveyed aḥkām al-fuqahā' of each case. The aḥkām of real cases either approved existing architectural solutions or negated them by alternative aḥkām that suggested or denoted alternative architectural solutions in order to apply them for solving disputed cases. And, at the same time, to make use of these alternative aḥkām in finding solutions for the making of new architecture, which was the purpose of the hypothetical cases.

It is clear, therefore, that the role of aḥkām al-bunyān is to govern the making of architecture. In the course of discussion, one is introduced to their role in emphasizing principles of urban planning, urban design, concepts of architecture and most important the introduction of design data, as in the case of
nafy aḍ-ḍarar from windows. This allows one to argue that the study of aḥkām al-bunyān, besides its theoretical role, as indicated earlier, had paved the way for interpretation of design data that constituted a fundamental aspect of Arabic Islamic architectural discourse. In the following discussion I shall be highlighting another aspect of it, namely building types.

2. Building types

Studies of building types are concerned with planning and programming or designing of buildings. The endeavour of these studies is to provide working knowledge about the making of the architecture of each type. This role had been demonstrated in studies of houses,23 masājīd, baths24 and baymāristānāt.25 In the following discussion I shall be highlighting studies of al-masājīd.

Al-Masājīd (mosques)

The architecture of mosques was and is still made to meet a religious activity, namely aṣ-ṣalāt (praying). This activity is organized within a body of aḥkām that constitutes its practice. Some of these aḥkām are associated with the ritual part of aṣ-ṣalāt and the others are associated with the architecture of mosques. The latter, aḥkām al-masājīd, is the concern of the following discussion.

Different studies were made about aḥkām aṣ-ṣalāt and aḥkām al-masājīd. The first26 comprehensive one that initiated this type of studies was made by az-Zarkashi (AH 745-794, AD 1344-1392) Iʿlām as-Sājjid bi-Aḥkām al-Masājīd. He approached the problem by devoting three chapters to the aḥkām of the three grand mosques: al-Masjīd al-Ḥarām in Mecca, Masjīd ar-Rasūl in al-Madīna.
Haram an-Nabawi ash-Sharif and al-Masjid al-Aqsa in Jerusalem and devoted one chapter to the aḥkām of mosques in general.

Az-Zarkashi described his study as unique in its field because, according to him, it was not preceded by similar studies. He began his interpretation by defining the linguistic meaning of the term masjid, then turned to emphasize its legislative concept. He argued that al-masjid is al-makān (place) where the five prayers are conducted. Az-Zarkashi went on and indicated the beginning of the architecture of mosques and recorded the honour and privilege of constructing them.

This introduction clearly indicates that az-Zarkashi introduces the reader in the problem of his study in a way which is still maintained in similar modern studies. Az-Zarkashi began his interpretation of al-aḥkām (laws, rules, principles and design data) that governed the making of architecture of mosques, which will be the subject matter of the following discussion.

It is important, at the outset, to indicate that aḥkām al-masājid are the same for all mosques including the three grand mosques, because these aḥkām, originally, were and are still associated with the practice of aṣ-ṣalāt. Therefore, their transformation into architectural means and elements, should be the same, although az-Zarkashi indicated some exceptions that were related to issues such as areas and capacities of mosques. These exceptions were made under the mandate of other legislative rules, as I shall be demonstrating in the course of discussion.

Az-Zarkashi indicated that alignment of lines of prayers and their tangency in the same line is one of aḥkām aṣ-ṣalāt that requires to be transformed into architectural means and applied in the design of mosques. The solution for this is to design mosques without interior columns, but because construction
necessitates using interior columns, therefore, their existence inside mosques was justified by applying the legislative rule: "aḍ-ḍarūrāt tubīḥ al-mahṣūrāt" (extreme necessities allows doing prohibited things). For although this could be resolved by modern theories of structure and construction techniques, it seems to be not considered in the design of modern mosques. The reason for this ignorance, perhaps, ascribes to the fact that modern Muslim architects are not aware of aḥkām al-masājid.

Az-Zarkashī indicated another rule that influenced the interior design of mosques. He argued that al-iktidā' (following up al-imām, leader of aṣ-ṣalāt, and interaction of prayers with imām), requires sequence of lines of prayers, without having obstacles such as columns or walls inside mosques, because these obstacles might prevent or, at least, reduce the two components of al-iktidā', seeing and hearing, to only hearing. He indicated that a mosque consists of a covered ẓāhîn (the covered hall of a mosque) and an open one, requiring openings in the wall that separate them in order to achieve al-iktidā', and to gain credit and privilege of ṣalāt al-jamā'a (group praying in a mosque behind imām), for those who pray in the open ẓāhîn behind the wall, because, according to some fuqahā', al-iktidā' is a precondition for achieving ṣalāt al-jamā'a. This precondition had been excluded in the three grand mosques because of the great number of prayers, in particular Friday praying, where prayers occupied every empty space all around the three grand mosques. This exception had been made under the power of the already indicated legislative rule "aḍ-ḍarūrāt tubīḥ al-mahṣūrāt."

Az-Zarkashī indicated another condition to achieve al-iktidā'. He argued that distance between al-imām and the last line of prayers should not exceed 300 dhīrā' (cubit) (approximately 169.5 meters). This design data should not be understood as a law, but
as an ideal data (distance) for achieving the two components of al-iktidā': seeing and hearing, within appropriate areas or enclosures of mosques. It is interesting to note that the three grand mosques had been excluded from this rule, because of the same reasons I already indicated and under the power of the same indicated legislative rule.

It should be clear that this exception is not only limited to the three grand mosques. In fact, other grand mosques could be excluded, like mosques for Friday prayers. It should be also understood that this data does not oppose or ignore solutions that might be found in modern technology, because these solutions, if founded, do help, in my view, in achieving al-iktidā'.

Az-Zarkashī went on and discussed decoration of walls. He indicated two views of their āhkām. The first one counts upon the tradition of prophet Muḥammad, where he said39:

"لا حصروا الجدران بالخيايب"

"Do not clad walls with clothes"

This Ḥadīth was conceived by some fuqahā' as an invitation to ban decoration of walls of mosques. The rest of fuqahā', led by al-imām al-Ghazālī الخزائي, disputed the first view. He argued40 that al-Ḥadīth is associated with one material, namely silk. And silk is ḥarām حرام (prohibited) on men only and not on walls. He concluded that decoration of walls is not prohibited. Furthermore, al-Ghazālī argued that if decoration of mosques is ḥarām, al-Ka'ba,41 therefore, should not be "decorated" (clad or covered with silk). Al-Ghazālī supported his view by citing a verse from the Qurān that permitted decoration42:

"قل من حرم زينة الله التي اخرج لعباده ".

"Say: Who hath forbidden the beautiful (gifts) of God,
which He hath produced for his servants ...." 

Az-Zarkashî indicated different views for advocates who banned decoration. He concluded that both views seem to be convincing, although, he indicated his proneness to the view that prohibited decoration.

Under these circumstances, it seems possible to argue that there is no precise rule that governs decoration of mosques. It seems that this matter has been left to personal judgment because each view has its advocates. The architectural value of this controversial rule is that architects are not bound by fixed aḥkām that might affect their creativity. Although az-Zarkashî was precise in some aḥkām, but these aḥkām are of less significance than those I already indicated. And they do not affect the creativity of architects. For instance, az-Zarkashî indicated that fixing maqāṣîr (single maqṣūra - closed room for the praying of Khalīfa, first used by Khalīfa Mu'āwiya Mawāhiq AH 40-60, AD 661-680) inside mosques was prohibited. The reason for this prohibition, according to az-Zrkashî, is because they cut continuity of the first lines of prayers. A similar rule was also indicated for al-minbar (pulpit). Az-Zarkashî indicated that if al-minbar reduces areas of mosques, it should not be used, but if it does not, it could be used. A last word about aḥkām al-masājid, is those aḥkām that are concerned with visual representation of architecture of mosques. Az-Zarkashî indicated that architecture of mosques should be independent buildings. He argued that it is makhruṣ (disliked) -for those who make donations to build masājid-to build houses for themselves over these masājid. This, in fact, emphasized the architectural identity of al-masājid in the landscape of Arabic Islamic cities.

Finally, one may argue that the study of az-Zarkashî has illustrated working knowledge about function, organization and
design data of al-masājid. It put at the disposal of designers a wide range of information about al-masājid. In fact, it displayed basic design criteria about this building type that distinguished it from other types of buildings of the architectural fabric of Arabic Islamic cities, where I shall be highlighting the principles of their planning in the following discussion.

3. Urban planning

In the course of discussion of chapter one, in the scientific source, I have indicated the environmental aspects of planning. In the geographical source, I indicated three levels of planning, in which I highlighted principles of urban planning and focused upon the contribution of al-Mogaddasi. In the historical source, I highlighted the theory of planning of ‘Umar Ibn al-Khaṭṭāb and Ibn Khaldūn. In this chapter I highlighted the role of aḥkām al-bunyān in emphasizing principles of zoning and land use, concepts of urban design and the architectural identity of the landscape of Arabic Islamic cities. However, all this contribution was classified in independent studies that formed the discipline of urban planning. In the following discussion I shall be highlighting the study of al-Maqrizi, (died AH 845, AD 1441) al-Mawā‘ir al-I‘timār bi-Dhikr al-Khiṭat Wal-Athār.

Al-Maqrizi focused in his study upon two major topics: the regional planning of Miṣr (Egypt) and the urban planning of the city of Cairo. He began his study by indicating the geographical location of Egypt. He displayed its topographic and climatic characteristics, natural and economic resources and its political and administrative systems. He emphasized behaviour and characters of its people and their urban and sub-urban centres. Al-Maqrizi recorded all cities and towns of Egypt, highlighted their history, documented their antiquities and described their architectural land marks.

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Al-Maqrīzī turned to focus upon the city of al-Qāhira (Cairo). He devoted most of his study to this city. He located its site, recorded its history and chronological physical growth of its planning. He highlighted its urban structure, through a process of morphological analysis, in which he indicated principles of its planning, political and administrative institutions, recorded its architectural fabric, road network, services, infrastructure and recreation areas. In the following discussion I shall be reviewing these issues, but after illustrating the chronological growth of Cairo.

Al-Maqrīzī indicated that the city of Cairo at his time consisted of the cities of: al-Fusṭāṭ, al-‘Askar, al-Qatā‘i, the city and Cairo itself. He argued that the planning of the first city was made according to the planning theory of ‘Umar Ibn al-Khaṭṭāb, in particular the choosing of the site of the city and its inner planning (design) that was based on the concept of al-khīṭṭā (single of khīṭāt = residential districts). Each khīṭṭā was allocated for residence of a tribe or a group of small tribes. He indicated that one of these khīṭāt was arranged around the grand mosque of al-Fusṭāṭ and the rest were arranged in the other sides of the city.

It is interesting to note that al-Maqrīzī indicated that the new tribes who came immediately after distribution of al-khīṭāt were intentionally allocated, by al-mukhaṭṭītūn (single planner), at zāhir (outskirts) of the city. As a result of this, one may argue that the city of al-Fusṭāṭ was planned and designed for a limited population and its growth was intentionally planned to be horizontal.

This growth seems to be emphasized in the interpretation of al-Maqrīzī for the other two cities: al-‘Askar and al-Qatā‘i'. He indicated that al-‘Askar was founded in the place of the deserted khīṭāt of al-ḥamrā‘ at the outskirts of al-Fusṭāṭ. Al-Maqrīzī indicated that the "houses" of al-‘Askar were first
planned and built, and at a later stage al-masjid al-jāmiʿ (grand mosque) and dār al-Imāra (city palace) were built. This, in turn, emphasized that al-'Askar was not planned to be an independent city by itself, but an extension or natural outgrowth of the city of al-Fustāṭ. So much so, that the "city" of al-Qatāʿî, where the palace of its founder was built first, then al-qīṭaʿ (single qīṭʿa = khitṭa), then the grand mosque. The point I am trying to make is that al-khitṭa was the major element in the planning of Arabic Islamic cities. The grounds for this view are not just the previous discussion, but also the planning theory of ʿUmar Ibn al-Khaṭṭāb that governed the planning of the two Irāqī cities, al-Baṣra and al-Kūfa. Furthermore, this view was emphasized in the discussion of the environmental principles and hygienic conditions that were devoted for residential areas and buildings in Arabic Islamic cities.

Having indicated the planning of old parts of Cairo and emphasized al-khitṭa as the major element of this planning, I shall take the time here to highlight other elements and principles from the planning of Cairo as interpreted and described by al-Maqrīzī.

Al-Maqrīzī indicated that the site of the city of Cairo was chosen by the Fatīmī Khalīfa al-Muʿizz, and the concept of its planning was made by his leader Jauhar. The first part of this view was disputed by Ibn Iyās (died 10th century AH), Badāʿiʿ az-Zuhūr Fī Wakāʿiʿ ad-Duhūr. He argued that al-Muʿizz, who arrived in Egypt four years after the arrival of Jauhar, criticized the site of the new city. He described it as a "low plain piece of land, not beside the river nor upon a hill." Al-Maqrīzī indicated that Jauhar marked the foundations of al-qasr (palace) on the same day that he arrived to the site of the new city and started its construction from the second day.
Al-Maqrizî indicated that each tribe had chosen its khitţa inside the wall that Jauhar had built around the site, because, according to al-Maqrizî, the city of Cairo was planned to be a fortified city. Al-Maqrizî indicated that this wall did not limit the population of Cairo, nor did it prevent its natural growth outside it but it connected the city of Cairo with al-Fustâṭ to form one city.

Al-Maqrizî indicated that Jauhar built the grand mosque of Cairo, al-jâmi' al-Azhar, after he built the wall and after "each tribe planned its khitţa." But Ibn Iyâs indicated that Jauhar built al-Azhar after the arrival and residence of al-Mu'izz in Cairo. Al-Maqrizî indicated that al-Mu'izz built another palace in front of the first one and made a large yard between the two palaces. Al-Maqrizî indicated that the main street of Cairo cross this yard, and known as bâyn al-qâşrâyn (between the two palaces), where the first palace was known as al-qâr al-kabîr (grand palace) and the other one as the small palace. Al-Maqrizî indicated that political and administrative institutions were parts of, or extensions to, al-qâr al-Kabîr. He also indicated that government political and social activities took place in the yard between the two palaces.

Al-Maqrizî seems, so far, to have illustrated the general planning scheme of the city of Cairo that marked its founding and, perhaps, governed its future growth. The elements of this scheme were surveyed, described and documented by al-Maqrizî. It is from this description that one is introduced to every single element of both the architectural fabric and the urban structure of the city of Cairo. It also introduces one to concepts and principles of its planning. For instance, one recognizes the zoning and land use of the city of Cairo through the function and types of buildings that formed its architectural fabric. And recognizes its urban structure that might be categorized,
according to the description of al-Maqrīzī:

a- as political and administrative institutions that used to take place in dār al-Imāra. But in Cairo, they took place in the grand palace and in independent buildings, because Cairo was the miṣr (capital) of the Fāṭimīd state, unlike the former three cities which were just qaṣabāt (cities). The role of these institutions in keeping the physical planning of Cairo in good order, were clearly demonstrated by al-Maqrīzī. He emphasized the role of al-qādī (judge) and al-muḥtasib (a municipal officer with a body of assistants who place under municipal control, all aspects of daily life in Arabic Islamic cities, in particular trade activities).

b- as residential areas that consisted, according to al-Maqrīzī, of five elements; al-khiṭṭa, al-ḥāra, darb, zuqāq and khūkha. Al-Khiṭṭa and al-ḥāra are two different names, according to al-Maqrīzī, for the same residential district that consisted of houses, streets, durūb (single darb), azīqa (single zuqāq) and khūwakh (single khūkha). It might have contained a mosque, a bath and other services. Darb is a narrow street or alley in a khitṭa or ḥāra that is surrounded with houses on both sides. It is also an element of road network of Arabic Islamic cities. Zuqāq is similar to darb, but narrower and might have a dead end. Khūkha is a group of houses in a short dead end zuqāq it has a large door on its open end, with an opening in it. It is this opening that, in fact, is called khūkha. Therefore, khūkha is a protected residential sub-district. It is also known as ‘aṭfa. Al-Maqrīzī indicated that residential buildings expanded over other urban elements, namely raḥbāt (single raḥba-open areas in different places of Cairo used for public activities). The name of this urban element remained the same, even after its
occupation with residential buildings.

c- as religious places that consisted of al-masjid al-jāmi', al-masājid, al-khawānq (single khānāqah = worship place for dervishes or sufis), ar-ribūt (single rābaț = worship house of sufis), az-zawāyā (single zāwiya = a private worship place for a shikh that was also used as a teaching place), al-mashāhid (single mashhad = a mosque with a mausoleum; Christian churches, diyārāt and Jewish synagogues.

d- as educational institutions that consisted of schools and mosques.

e- as commercial centres that consisted of al-qayāsir (single qaysariyya = department store), al-aswāq (single süq = market), and al-ahkār (single ḥakr = store).

f- as services that consisted of ḥammām (single ḥammām = bath) khānāt (single khān = inn) and wekalāt (single wekāla = a complex consisted of a khān and a wholesale trade centre), al-māristānāt (single maristān = baymāristān = hospital) and ribāṭāt (single ribāt = women elderly houses).

g- as road network that consisted of shawārī (single shāri' = main street), durūb and aziqa.

h- as public spaces that consisted of rahbāt, mayādin (single maydān = yard).

i- as recreation and landscape areas that consisted of al-manāẓir (single minzara = park), al-birak (single birka = pool), al-basātīn (single
bustān = garden planted with fruit trees).

j- as industrial zone where al-Maqrīzī indicated its location on the outskirts of Cairo.

k- as military and civil constructions that consisted of al-sūr (wall) of Cairo together with its doors, qilā’ al-falāgh (single qal’a = citadel), as-suţūn (single sijin = prison) and al-jawāsiq (single jawsaq = fortified house).

l- as infrastructure that consisted of al-qanāţir (single qanţara = arched bridge constructed with stones), al-jusūr (single jisir = bridge), and channels for water supplies.

These are, in fact, the major urban elements that constituted the urban structure of the city of Cairo. They had been designed, constructed and maintained within the realm of aḥkām al-bunyān and functioned according to the order of the political and administrative (qādī and muţtasib) institutions. In other words, the planning of the city of Cairo, from its schematic plan to its physical growth, at the time of al-Maqrīzī, was governed by principles of urban planning that I have already indicated in the course of discussion.

In conclusion, one may argue that the study of al-Maqrīzī was detailed enough, not just to emphasize the skeleton plan of Egypt and the master plan of Cairo. But it allows one to redraw these plans with full details. This study, therefore, is not just a documentary one that attempts to piece together principles of regional and urban planning. It is rather a source for these principles and for the discipline of planning that, in turn, enlarged the scope of Arabic Islamic architectural discourse. Where in the following discussion, I shall be highlighting the
fourth type of independent studies that constitute this discourse, namely archaeological studies.

4. Archaeological studies

Archaeological studies had gained great interest among Arab and Muslim intellectuals. In the first chapter, I highlighted the contribution of al-Jāhiliyya verse and other sources in forming principles, elements and techniques of archaeological exploration and interpretation. In the following discussion I shall be focusing upon the role of independent studies in widening the scope of archaeological interpretation and to emphasize their contribution to Arabic Islamic architectural discourse.

Many studies were made about the antiquities of the world in general and the Arabic Islamic world in particular. The reason for this interest in archaeological studies might be ascribed to the fact that these studies are tied together with the philosophy of Islamic history, as I have already indicated. Some of these studies were comprehensive and covered antiquities of more than one civilization, others were limited and devoted to antiquities of one civilization. In the following discussion I shall be highlighting the major contribution of these studies.

I have already referred to the study of al-Hamdāny, al-Akīlī that was devoted to the antiquities of Yemen, in which he surveyed all its antiquities: palaces, temples, dams, castles and graves. Al-Hamdāny implemented all known techniques of archaeological exploration and principles of archaeological interpretation of his time, including language. Al-Hamdāny, perhaps, was the first to instrument language in the exploration process. He translated the Ḥimyarīt inscriptions that were written on these antiquities, in particular those written on the graves and used them in his documentation. The value of the study of al-Hamdāny came from being, perhaps, the only archaeological
study that surveyed Arab Ḥimyarīt antiquities, and offered knowledge about the ways in which Arab Ḥimyarīt had thought about and practiced architecture. This study is considered, in my view, as a source for modern studies about the archaeology of Yemen.

Other independent studies were devoted to the antiquities of ancient Egypt. The most valuable one was made by al-Baghdādī, البغدادي (AH 557-629, AD 1162-1231), al-Ifāda Wal-Iʿtibār Fī al-Amūr al-Mushāhada Wal-Ḥawādith al-Huʿayana bi-Arḍ Miṣr الاغافدة والاعتبار في الأعمال المشاهدة والحوادث المعاينة في مصر, in which he surveyed the antiquities of Egypt and enlarged the scope of archaeological exploration. He described with full details, the industrial architecture of ancient Egypt, namely furnaces of hatchery,125 where he described their interior and exterior design. He indicated the dimensions126 of each element in these furnaces, illustrated its location in the design and its function and role in the hatching process. His description was clear to the extent that one might be able to redraw and reoperate these furnaces.

Al-Baghdādī demonstrated his capability of description in the documentation of al-aḥrām127 الاهرام (single haram = pyramid). He illustrated the geometrical characteristics128 of the pyramidal form and its resistance to environmental and climatic factors. He indicated the dimensions129 of al-aḥrām and emphasized the technique of measuring them. He illustrated the interior130 design of the grand pyramid, indicated its passages, corridors, rooms, coffins, illumination131 and ventilation systems. He described its construction132 with full details, in which, he agreed with the interpretation of al-Masʿūdī that I already indicated, upon the construction process of building al-aḥrām. But he emphasized the neatness of their construction and indicated that there were layers of mortar (in a thickness of paper) between stones that joined together with copper clamps133
fixed with lead. Al-Baghdādī referred to the inscriptions\textsuperscript{134} of antiquities and indicated his failure in reading them or finding anybody who could read them.

Al-Baghdādī, described and depicted Abū al-Ḥūl\textsuperscript{135} (sphinx). He indicated that his face was painted a red\textsuperscript{136} colour and he looked as if he was smiling. Al-Baghdādī focused upon the artistic features of Abū al-Ḥūl, the neatness of carving and accurateness of proportion\textsuperscript{137} of each part to the whole sculpture. He argued that proportions are the source of beauty in Egyptian sculptures and paintings. He made artistic analysis for some of these paintings, he depicted their contents and illustrated the techniques\textsuperscript{138} of painting such as position, texture, colour, movement and proportions as I mentioned. He came to the conclusion that some of the Egyptian "paintings were not meant to be made for the sake of beauty and decoration, but for representation of good valuable works and signs of unknown events...."\textsuperscript{139} It seems clear that the conscious artistic criticism of al-Baghdādī resulted in emphasizing the role and function of art in representing and documenting the social and cultural life of ancient Egypt.

Furthermore, al-Baghdādī extended his interpretation of proportions to the human body. He argued that the height of a normal man is 8 times\textsuperscript{140} his own shibir. He indicated measures of some parts of the human body and argued that the height or length of every part of the human body constitutes a proportion to its total height. And the height or length of every sub-part constitutes a proportion to its part and to the total height of the human body. He concluded that the human body is an order\textsuperscript{141} of proportions. This order was understood and implemented by Egyptian painters and sculptors in their work that was part of the architectural production. Therefore, proportions, according to al-Baghdādī, was a major element in the making of the architecture of ancient Egypt.
Finally, al-Baghdaḍī emphasized the role of antiquities as a cultural phenomenon. He described it as a record for history and as a witness of the cultural and civilized achievements of ancient nations that one should learn from. Al-Baghdaḍī, in fact, drew the relationship between archaeological studies and the philosophy of Islamic history that I already indicated earlier in this study. Furthermore, the study of al-Baghdaḍī seems to cover the contribution of archaeological studies in Arabic Islamic architectural discourse, in spite of the fact that it lacked employment of language and drawings in its exploration and documentation. I shall emphasize this contribution soon after displaying the use of drawings in these studies.

The use of drawings in archaeological studies was very limited. The reason for this might be ascribed to the fact that the endeavour of these studies was educational and philosophical more than technical. While the first was and is still a requirement of Islamic civilization, the second already existed, because the technical experience of ancient civilizations - of Yemen, Egypt and the rest of the Arabic Islamic world - passed through the same people and was implemented in Arabic Islamic architecture. In spite of this endeavour some studies used drawings in their interpretations of the antiquities of Egypt. Al-Ghīrābī (AH 473-565, AD 1080-1170), Tuḥfat al-Albāb Wa-ʾAḥkam al-ʾAjāb inement his interpretation with sketches for the stepped pyramid as in (Figure-4a), the plain pyramid (Figure-4b) and the obelisk of the city of ʿUʾain Shams (Figure-4c). Al-Qazwīnī (AH 600-682, AD 1203-1283), ʿAthār al-Bilād Wa-ʾAkhbār al-Ibād, also used drawing. He illustrated his interpretation of the lighthouse of Alexandria with a vertical section, as in (Figure-5).

For although these drawings were just sketches and lacked architectural details, they constituted a fundamental issue in
Elevation of the stepped pyramid
(Fig.-4a)

Elevation of the plain pyramid
(Fig.-4b)

Elevation Of obelisek Of 'Uin Shams
(Fig.-4c)

(Figure-4)

Note: The drawings are copied as illustrated by al-Ghīrânī
The lighthouse of Alexandria

(Figure-5)

Note: The drawing is copied as illustrated by al-Qazwini
Arabic Islamic architectural discourse. Language, that was introduced by al-Hamdāny, was another fundamental issue. Proportions, artistic criticism and the rest of the contribution of al-Baghdādī were also constituted fundamental issues in Arabic Islamic architectural discourse. This, in fact, is just part of the contribution of archaeological studies which enlarged the scope of architectural studies, increased knowledge of construction techniques, disclosed principles of design and furnished the grounds for further or future archaeological studies. In fact, archaeological studies introduce one to the ways in which pre-Islamic people of the Arab world had thought about and practiced architecture. This contribution, in Arabic Islamic architectural discourse, is similar to that of the studies of the history of architecture, as I shall be highlighting in the following discussion.

5. Studies of the history of architecture

I have already highlighted the notion of history, its meaning and endeavour. I also highlighted techniques, structure and purpose of writing the history of architecture and came to the conclusion that the history of architecture is a record of knowledge about architecture. All these issues were not just implemented in independent studies of the history of architecture, in fact, they constituted their structure.

Independent studies of the history of architecture had covered all types of architecture, including pre-Islamic, Islamic and non-Islamic architecture. Most of these studies were concerned with religious architecture, thus I have devoted the following three chapters to this architecture. But for now, I shall be focusing upon the role of studies of the history of Islamic architecture in Arabic Islamic architectural discourse.

This role, in fact, depends on the presence of the discourse
itself in the making of architecture. In case of its presence, the role of studies of the history of architecture is limited to its documentation frame, as part or an aspect of the discourse production. But in case of its absence, the alternatives for the discourse are studies of the history of architecture.

I have demonstrated, in the previous discussion, the presence of Arabic Islamic architectural discourse, which has not yet been recognized. This is because most, if not all, modern studies of Islamic and Arabic Islamic architecture have been devoted to the history of its form (physical objects), as I have already explained in the introduction of this study. However, although old Arabic studies of the history of Arabic Islamic architecture are both history of form and history of discourse, as I shall be highlighting in chapter four. But they are not more than one part or aspect of Arabic Islamic architectural discourse and not an alternative for it.

By highlighting the general scope and role of the independent studies of the history of architecture, I have come to the end of this chapter that was devoted to the specific stage, in which I highlighted four types of independent studies and preserve the fifth that represents the third stage for the three following chapters.

Discussion in the first four studies focused upon the contribution of aḥkām al-bunyān in forming Arabic Islamic architectural discourse and emphasized the relationship between aḥkām al-bunyān and the religious source. Discussion developed to displaying the role of al-aḥkām in coining principles, concepts and design data of architecture, urban design and urban planning.

Discussion turned to highlighting the contribution of studies of building types. It focused upon the studies of al-masājid, as a case in point, for building types. Discussion emphasized the
purpose of these studies as a source for working knowledge about their design. Discussion emphasized the techniques of interpretation of these studies that began with defining the problem, developed to highlight principles, concepts, aḥkām and design data that governed the design process and ended with a basic design criteria.

The discussion that followed centred on the contribution of studies of urban planning. Discussion focused upon the study of al-Maqrīzī, it highlighted principles of regional planning of icclīm Miṣr. Discussion turned to highlighting principles and concepts that governed the planning of Cairo from its schematic plan to its physical growth up to the days of the author. Discussion indicated the role of aḥkām al-bunyān, the political and administrative institutions upon the forming and growth of both the urban structure and architectural fabric of Cairo. These studies, in fact, represent the unity of Arabic Islamic architectural discourse. The grounds for this view are that all principles, concepts and aḥkām that were highlighted in the course of this study, had governed the making of the urban structure and architectural fabric of Arabic Islamic cities.

Discussion turned to highlighting the contribution of archaeological studies in Arabic Islamic architectural discourse. It focused upon many studies, emphasized the contribution of each one and came to the conclusion that their collective contribution enlarged the scope of architectural studies. The discussion that followed emphasized the same role for studies of the history of architecture.

In conclusion, the contribution of these studies emphasized that elements of Arabic Islamic architectural discourse do interact and are interrelated. They form a coherent body of principles, concepts, notions, rules and values which brought Arabic Islamic architectural discourse to its mature stage. This body has two
sides, the first one governs the making of architecture and is represented in the first three studies and the second is concerned with documentation of architecture and is represented in the last two studies: archaeological and historical studies. Where the rest of this study will be devoted to studies of the history of architecture.
CHAPTER 3

STUDIES OF THE HISTORY OF PRE-ISLAMIC ARCHITECTURE

Different studies\(^1\) were made about the Pre-Islamic Arabic and non-Arabic architecture. As a case in point, I shall be highlighting the study of Ibn al-Kalbī\(^2\) (died AH 204, AD 819) al-\*Aṣnām\(^3\) (Idols). This is the only architectural book that remains from the production of Ibn al-Kalbī. He was the author of many architectural books like: Kitāb al-Buldān al-Kabīr كِتَاب الْبُلدَانِ الْكَبِيرِ, Kitāb al-Buldān as-\*ṣaḥīr كِتَاب الْبُلدَانِ الصَّغِيرِ, Kitāb al-'Ajā'ib al-Arba'a كِتَاب ٱلْعُجَابِ ٱلْأَرْبَعِ, Kitāb Aswāq al-Arāb كِتَاب أَسْوَاقِ ٱلْأَرَبَّى, Kitāb al-\*Hīra Wa-Tamsiyat al-Biya'i Wa-ad-Diyārāt Wa-Nasab al-\*Abādīn كِتَاب الْحِرَاءِ وَتَمْسِيَّاتِ ٱلْبِيْنِ وَادِينَ دِيْرَاتِ وَنَسْبِ ٱلْأَبْدَيْنِ.

The value of this book\(^4\) (al-\*Aṣnām) rests upon the fact that it is, perhaps, the first independent one that dealt with the architecture of the three major religions\(^5\) of pre-Islamic Arabia: al-\*Hanīfiyya as-samḥa', Idolatry and Christianity. Most of the book is devoted to the Idolatry religion, because its architecture housed some of these Aṣnām. The endeavour of this chapter is to highlight the architectural values of this book and to emphasize its role in forming the structure and techniques of studies of history of architecture.

The book began in investigating the origin of the Idolatry religion and its symbols. Ibn al-Kalbī indicated the development of al-\*Aṣnām. He argued that they were just stones taken from the stones of the city of Mecca to be used for blessing by those who travelled or emigrated from Mecca. He indicated that at a point in time,\(^6\) these stones were turned to sculptures brought from the city of al-Balqā'\(^7\) in Syria by ʿUmar Ibn Luḥā\(^8\) عَمَر بْنَ ِلُحَاء, the custodian of "al-bayt" (the shrine or al-Ka'ba). He erected the Aṣnām (sculpture) he brought around al-
Ka‘ba in order to bring rain and give support against enemies, as he was told at al-Balqā’. It is important to note, that at this point in time, al-Ka‘ba turned to house another religion besides the old one of al-Ḥanīfīyya as-samḥa’, the religion of Abraham and Ismā‘īl. This new religion is al-Awthān (Idolatry), which gradually replaced the old one. Al-Ka‘ba remained the house of al-Awthān religion until it had been suppressed by Islām.

The point at issue here is the role of al-Askām in founding the architecture of al-Awthān religion and the influence of al-Ka‘ba of Mecca upon this architecture and Christian architecture of Pre-Islamic Arabia.

Ibn al-Kalbī indicated the names of nine religious buildings and the names of their patrons. He located their places, described them and emphasized some of their inner planning. Seven of these religious buildings belonged to al-Awthān religion and two belonged to the Christian religion: Ka‘bat Mecca, ṣuq Mecca, bayt riyām, bayt al-lāt, bayt al-‘ūzā, bayt riqā, bayt dhū al-khulṣa, ṣuq al-khawāṣ, ṣuq al-fātima, ṣuq al-‘abasa, ṣuq al-salāma, ṣuq al-sinā‘, ṣuq al-qālīs.

Ibn al-Kalbī indicated that Ka‘bat Mecca was the prototype for the architecture of both religions, al-Awthān and Christianity. He indicated that the church of the city of Najrān Najrān was called Ka‘ba of Najrān, he described it as a cubby built by a Christian Arab tribe, namely bani al-Ḫārith to practice their rituals. The name and form of this church as described by Ibn al-Kalbī, perhaps, emphasized the influence of al-Ka‘ba of Mecca upon Christian architecture of pre-Islamic Arabia. This influence was emphasized in the church of al-qūlis, which was built, as Ibn al-Kalbī indicated, by the Ethiopian leader Abraha al-Ashram in the city of Ṣan‘ā’, the capital
of Yemen. The purpose of building this church, according to Ibn al-Kalbī, was the intention of Abraha to turn the pilgrimage from al-Ka'ba of Mecca to al-qulis of Ṣan‘ā'. Ibn al-Kalbī indicated that Abraha spelled out his intention in a letter he wrote to the king of Ethiopia, in which he informed the king that he had built a church with marble and wood coated with gold.

For although Ibn al-Kalbī did not elaborate on the description of its form, one cannot ignore the influence of al-Ka'ba of Mecca upon al-qulis. This influence will be demonstrated later in chapter four. Where full description and depiction, were made by the Arab Muslim historian, al-Azraqī (died AH 250), Akhbār Mecca Wa-mā Jā' Bihā Min al-Athār

By the same token, one may argue that the form of al-Ka'ba maintained formal influence upon the seven "houses" of al-Awthān, because all of them were square or rectangular in plan and cubic in form. Furthermore, all of them had the same name, bayt or Ka'ba and built to operate for the same purposes. Ibn al-Kalbī indicated that Qurish went on its imitation of al-Ka'ba, to the degree that they assigned ḥaram (a sacred zone around al-Ka'ba) around bayt al-‘uzā' (a bayt built by Qurish at the outskirts of Mecca), similar to the ḥaram of al-Ka'ba. Ibn al-Kalbī also indicated that Qurish made a minḥār (altar) called al-ghubghub (for slaughtering their oblations and offerings), similar to that of al-Ka'ba.

Ibn al-Kalbī did not elaborate much on the inner planning of these Ka‘bāt (single Ka'ba), nor did he elaborate on their artistic characteristics, except what he had indicated about the building material of al-qulis, as I already indicated earlier. Even for al-Aṣnām, his description was general and lacked details, although he distinguished between Aṣnām and Awthān, according to their materials. He defined both as sculptures of the "picture" of the human being, except that the material of the
first is either wood, gold or silver, whereas the material of the second is stone.

This distinction caused a kind of contradiction in the study of Ibn al-Kalbī, because he described the ṣanām Hūpāl (ṣanām is single of ṣanām), which was erected inside al-Ka'ba, as "a piece of agate carved like the picture of a human being." This contradiction seems not to affect the value of the contribution of the study of Ibn al-Kalbī among the studies of the history of architecture. Although its contribution was limited in terms of structure and techniques, it was unique in being, perhaps, the first unitary attempt that was devoted to the study of religious architecture of pre-Islamic Arabia. This, in my view, marked the beginning of the independent studies of the history of architecture.

Finally, one may argue that the outcome of this study seems to be of remarkable value. It introduced one to the ways in which our predecessors thought about and practiced architecture. It also introduced one to the meaning of pre-Islamic religious architecture in terms of sacredness of form. This study also manifested major concepts in the architectural interpretation such as the concept of precedence and originality of form. Both concepts will be demonstrated more clearly in the following chapter, which devoted to the history of Islamic architecture.
CHAPTER 4

STUDIES OF THE HISTORY OF ISLAMIC ARCHITECTURE

Having gone so far as to highlight the study of Ibn al-Kalbī, as a case in point, for the studies of pre-Islamic architecture that marked the beginning of independent studies of the history of architecture, I shall take the time here to highlight and analyse the studies of Islamic architecture.

Independent studies of Islamic architecture are great in number and varied in subjects, as I indicated earlier. Most of these studies were devoted to the architecture of al-masajid. The reasons for this interest might be ascribed to the daily association of users with this architecture. And to its sacred value and symbolic meaning in Islamic social, political and cultural life. Therefore, these studies seem to be of great value for the interpretation of Arabic Islamic architecture and as a consequence for Arabic Islamic architectural discourse. This value came, in my view, from their great numbers, which by necessity were required to be interdependent. This kind of continuity, seems to, have maintained some kind of creativity that influenced the structure and technique of these studies, as I shall be demonstrating in the course of discussion.

This chapter will be devoted to the history of al-Ka'ba and al-masjid al-ḥarâm of Mecca, that was made by the Arab historian al-Azraqī, Akhbār Mecca الخبراء مكة. The reasons behind this selection are partly because this study seems to be the first completed one that was made about the history of the architecture of al-masajid, and partly because of the high level of accuracy in its documentation.

Having selected the study, I shall take the time here to highlight and analyze its contribution. In so doing, an attempt
will be made to explore its structure, technique and its role upon studies of the history of architecture, but after reviewing its general theme.

For although the title of the book is the history of Mecca, the two volumes of the book are devoted to the history of the architecture of Mecca. The first volume is devoted to the history of al-Ka'ba and the history of the church of al-qulís of Ṣan‘ā'. It is important to indicate here that I shall be interpreting the history of al-qulís in the discussion of al-Ka'ba, and not in chapter 5 that will be devoted to Christian architecture, because of its direct relation with al-Ka'ba. The second volume covers three topics: the history of al-masjid al-ḥarām, the history of other eight mosques¹, located on the outskirts of Mecca and the inner structure (planning) of the city of Mecca.

In spite of the fact that discussion in this chapter will be devoted to the architecture of al-Ka'ba and al-masjid al-ḥarām, it seems necessary first to highlight the planning of Mecca in order to illustrate the urban context of both al-Ka'ba and al-masjid al-ḥarām. Al-Azraqī surveyed the urban elements of Mecca. He started from the centre of the city towards the outskirts. He began with al-Ka'ba, the open area around it, the architectural fabric of Mecca, services, infrastructure topography and the ḥaram (a sacred zone around Mecca) of Mecca.

It seems necessary, before one proceeds in the discussion of the planning of Mecca, to indicate that al-Azraqī was conscious of the process of founding the city of Mecca. He indicated that the first urban element founded in Mecca was al-Ka'ba in a place known as bekka. His interpretation emphasized that the city of Mecca was formed, established and grown around this place. The point at issue here, is not the interpretation of planning in itself, despite its value in the studies of planning. It rather
the approach of al-Azraqī to study the history of the architecture of al-Kaʿba, within its urban context. This approach, in my view, constituted a fundamental issue in the structure and technique of studies of the history of architecture.

Al-Azraqī indicated three types of the architectural fabric of the city of Mecca, besides the religious one. These types are residential, administrative and commercial. Al-Azraqī indicated all houses of Mecca, assigned their patrons and located their sites. His interpretation was based upon dividing Mecca into ribāʿī (single rubʿ= a residential district or one house), each one belongs to a family of Qurish, where he recorded all of them. He indicated that administrative issues and matters such as social, political and commercial were discussed in dār an-nadwa (the city hall of Mecca). He indicated the commercial element, namely at-ṭāhūna (mill) as part of the architectural fabric and aswāq as part of the sector of services. He named every sūq with its trade activity such as sūq al-ghanam (sheep market), shiʿb al-jazārīn (butchers alley), sūq al-bazāzīn (clothes market), sūq aṣ-ṣayārīfa (money exchangers market), sūq ar-ruṭab (date market) and many others. Al-Azraqī also indicated different types of urban elements that one may categorize as services such as al-maqbara (cemetery), al-abār (single bīr = water well), birak and siqāyā (single siqāya = drinking water fountain). Al-Azraqī also recorded the infrastructure of Mecca, he indicated four types of roads: tanya (a way in a mountain), shiʿb (a way between two mountains = alley), zuqāq (a narrow way between houses = alley) and țariq (way or route). Al-Azraqī indicated the names of the floods of Mecca together with as-sudūd (single sad = dam).

Al-Azraqī turned his discussion to the topography, he indicated
that Mecca was divided topographically into two parts: al-Mi'lah (upper most) and al-Missfala (lower most). He argued that the dividing line was and is still an imaginary one passing through the centre of al-Ka'ba. He indicated that what is up to this line belongs to al-Mi'lah and what is below it belongs to al-Missfala. According to the description of al-Azraqī, al-Mi'lah is the eastern part where the face of al-Ka'ba and al-Missfala is its western part. Al-Azraqī ended his interpretation of the planning of Mecca by locating its geographical site and marking the territories of its ḥaram (a sacred zone around Mecca), as illustrated in (Figure-6). It seems important to indicate that al-Azraqī's interpretation of the planning of Mecca was emphasized conceptually by al-Qazwīnī. The latter illustrated the planning process that was interpreted by al-Azraqī, in a schematic plan, (Figure-7). In which he illustrated "the layout of al-Ka'ba, surrounded by al-masjid al-ḥarām, surrounded by the city of Mecca, surrounded by the ḥaram of Mecca, which is surrounded by the world."  

It seems clear that the contribution of al-Qazwīnī supplemented the contribution of al-Azraqī that, in my view, initiated studies of urban planning. It also emphasized the notion of urban context of al-Ka'ba and al-masjid al-ḥarām, where the growth of the latter was and is still bound, to a great deal, by this context.

Having gone this far in interpreting the general theme of the study of al-Azraqī and emphasize the notion of urban context, I shall take the time here to highlight the history of the architecture of al-Ka'ba.

Al-Ka'ba

Al-Azraqī began his interpretation of the history of al-Ka'ba by indicating the idea behind building it. He argued that al-Ka'ba
The Haram of Mecca

(Figure-6)

Scale: 1cm = 4km
Al-Ka'ba and its urban context

(Figure-7)

1. al-Ka'ba
2. al-Hasjid al-Ḥarām
3. City of Mecca
4. The ḥaram of Mecca
5. The world

Note: The drawing is copied as illustrated by al-Qazwînî
was just an imitation to bayt ad-Durāḥ٢٧ بيت الخراج (a house in heaven) which was known as al-bayt al-Maʿmūr البيت المحمور. This bayt, according to al-Azraqī, was built under the order of God,٢٨ by the angels, for the angels under the "Throne",٢٩ to practice their rituals. Al-Azraqī described it "as a square, consisting of four columns of chrysolite and covered with a piece of ruby".٣٠ He indicated that God had ordered the angels to build a "replica"٣١ of al-bayt al-Maʿmūr on earth, exactly under the projection of its layout, for his creation٣٢ (human race) on earth to practice their rituals around it.

On these grounds, it seems that the first principle behind the idea of constructing al-Kaʾba was a "functional" one, because the purpose of constructing it was practicing rituals. The interpretation of this idea indicated the patron, designer of al-Kaʾba, namely God and the builders, namely the angels.

No matter how imaginative this information looks, the concern of this study is not centred only upon the validity of the idea, although I shall discuss it after interpreting the construction of Adam and his son. It rather centres upon the principles and concepts that the idea denoted or connoted outside its historical validity.

Al-Azraqī considered the construction of the angels, as the first step (time) in the process of constructing and reconstructing al-Kaʾba. He recorded another nine times, where the second was the construction of Adam,٣٣ under the order of God. Where "God asked Adam to construct for him [God] a bayt to practice rituals and to remember God around it, similar to what he had seen the angles doing around the Throne."٣٤ Al-Azraqī indicated two stories٣٥. The first emphasized the construction of the angels, where Adam built his construction on the foundation of their construction. The second one negated the construction of the angels. Al-Azraqī claimed that "God supplied Adam with a tent
of ruby and erected it in the place of al-Ka'ba before al-Ka'ba itself had existed."  The negation occurred here. Al-Azraqī indicated that the "material of the tent was ruby from paradise. It had three lanterns of gold, from the gold of paradise, a white ruby chair for Adam and finally, it had two doors on the eastern and western sides.  This tent, according to al-Azraqī, remained at Mecca until the death of Adam, where God "elevated it to paradise." He also indicated that Shīt was the son of Adam reconstructed al-Ka'ba after its elevation, for the third time and built it with mud and stones. This construction remained until it had been demolished by the flood.

The two stories of the construction of Adam are contradicting rather than supplementing each other. Both seem to be as imaginative as the first one and seem to lack validity of historical evidence. But the fact of the matter is rather different and the point of departure for the interpretation of al-Azraqī seems to be a verse of the Qurān:

ان أول بيت وضع للناس للدي ببكة مباركوفدى للعالمين

"The first house (of worship) [bayt] Appointed for men was that at Bekka Full of blessing And of guidance of beings."

The exegesis of this verse is a controversial one, in terms of setting out the history of the first construction of al-Ka'ba, where two views had dominated. The first one was adopted by al-Azraqī. He argued that the term first referred to an absolute beginning in time that had no precedence. Therefore, the architecture of al-Ka'ba has to be the first and as a consequence its construction must be the first. The second view was adopted by at-Ṭabarī (AH 224-310, AD 839-923) Jāmi' al-Bayān fī Tafsīr al-Qurān جامع البيان في تفسير القرآن, where he demonstrated all the views that were indicated by al-Azraqī and disputed.
them, because he argued that they lacked historical evidence. He argued that the term first should not be understood as an absolute beginning in time that had not been preceded by any other beginning, because many buyūt (single bayt) were constructed before al-Ka‘ba. To prove his claim, at-Tabarī argued that the term first has to be understood in association with the term an-Nās (men), as the first bayt for all men, to practice rituals of the religion of God and not for specific men, who practice rituals of man-made religion, because the latter had preceded the former in time, consequently the architecture of the latter had to be preceded by the architecture of the former. Therefore, al-Ka‘ba as a bayt, for the religion of God, could not be the first one. Bearing this in mind, at-Tabarī argued that the first construction of al-Ka‘ba had to be of Abraham and his son Ismā‘īl as indicated in the Qurān, which was already demonstrated earlier in this chapter.

Another study had contributed to the second view. It was made by Shihāb ad-Dīn al-Ḥamawī (late 11th century AH, 17th AD), Tuḥfat al-Akyās Fī Tafsīr Qulih Ta‘ālā, Aen Awal Bayt Wudī‘a lil-Nās حُفَّة الاطِبَاس فِي تَفْسِير قُلْهُ تَعَالَى: اَنْ أُولِ بَيْتٍ وَضَعْ لِلَّنَاس. It is worth mentioning that this study was made on the request of the Egyptian minister ‘Abd ar-Ruḥmān, president of "The Higher Council Of Egypt." The author demonstrated all the views that were indicated by al-Azraqī about the existence of al-Ka‘ba, before Abraham, but as a place and not as architecture. Shihāb ad-Dīn argued that as far as no historical evidence proved the construction of al-Ka‘ba before the construction of Abraham, then the term first must have referred to the place of al-Ka‘ba. He argued that the prophets who preceded Abraham needed to have a qibla (shrine) to practice their prayers. This shrine, by necessity, according to Shihāb, has to be the place of al-Ka‘ba, as indicated in the said verse, because if it is other wise, then according to Shihāb: "the verse would be inappropriate and this is impossible." He argued that this view would solve the
dilemma of the term first, which seems likely to be the case.

As a result, Shihāb and aṭ-Ṭabarī emphasized that the first construction of al-Ka'ba has been made "by the order of God as patron, angel Jabrīl جبريل as muhandis مهندس (architect), Abraham as a builder and Ismā'īl as tilmīd تلميذ (assistant builder)."^52

The value of the study of Shihāb came from being devoted to one issue, so it was specific in its subject, deep in its analysis, coherent and convincing in its conclusion. The central idea that stands behind it seems to be the role of historical evidence as a major element in the studies of the history of architecture. It also emphasized the role of place as another important element in these studies.

Conceptually, Shihāb dissociated between the holiness and sacredness of the place of al-Ka'ba and its architecture, where he credited the value of the place upon the value of architecture. Unlike al-Azraqī, who equated between the values of holiness and sacredness of the place of al-Ka'ba and its architecture, although he focused upon the architecture more than the place. This concept seems to stand behind the idea of the attempt of al-Azraqī to set out the beginning of the construction of al-Ka'ba that deep in time.

In the sequence of discussion, one may argue that the interpretation of al-Azraqī of the three constructions and reconstructions of al-Ka'ba were not as imaginative, as they look. This imagination seems to be based upon reality, such reality that was interpreted in an ad hoc manner, as it has already been illustrated by aṭ-Ṭabarī and Shihāb. Nevertheless, what has been considered by aṭ-Ṭabarī and Shihāb as the first construction of al-Ka'ba has been considered by al-Azraqī as the fourth reconstruction of al-Ka'ba. In the following discussion I shall be demonstrating the interpretation of al-Azraqī for this
construction and highlighting its principles and concepts.

The process of building al-Ka'ba by Abraham and his son Ismā'īl, as indicated in al-Qurān has already been demonstrated in the first chapter. Al-Azraqī emphasized the same process but he indicated that the foundations of al-Ka'ba were already existing. Abraham excavated the site that he was given by God until he reached the existing foundations. He together with Ismā'īl, raised them and continued the construction of al-Ka'ba. Al-Azraqī indicated that “the construction of Abraham was in the form of a Ku‘yb كحب (cubby). It had no roof and its door was just an opening in the level of the ground and without steps. Al-Azraqī indicated that “Abraham excavated a jib جب (well) inside al-Ka'ba to use it as a cupboard for keeping its gifts.”

He also indicated the dimensions of the construction of Abraham. He claimed that the height of al-Ka'ba was 9 cubits, its length from ar-rukn al-Aswad الركن الأسود (black corner) to ar-rukn ash-Shāmī الركن الشامي (ash-Shām corner) was 32 cubits and from ar-rukn al-Gharbī الركن الغربي (western corner) to ar-rukn al-Yemānī الركن اليمني (al-Yemen corner) was 31 cubits. Its width from ar-rukn al-Aswad to ar-rukn al-Yemānī was 20 cubits and from ar-rukn ash-Shāmī to ar-rukn al-Gharbī was 22 cubits as illustrated in (Figure-8a). These dimensions proved that the form of al-Ka'ba was an irregular cube. It was not carefully built and that, in turn, in my view, emphasized the view of Shihāb about the holiness and sacredness of the place of al-Ka'ba upon its architecture.

Al-Azraqī did not indicate the source of these dimensions. But one may presume that these dimensions were derived from a later construction, as will be illustrated in the course of discussion. Given the fact that the foundations of al-Ka'ba are the same from the claimed construction of the angels until the contemporary one, as also will be illustrated after highlighting the outcome of the interpretation of the fourth reconstruction.
Note: All dimensions are in cubits and fingers

- cubit = 2 shibir
- cubit = 24 fingers
- finger = 2.357 cm
- cubit = 56.6 cm

Plan
(Fig.-8a)

Elevation
(Fig.-8b)

Plan
(Fig.-8c)

Layout of al-Ka'ba

(figure-8)
Al-Azraqī introduced two principles to the studies of the history of architecture, the chronological interpretation of the history of al-Ka‘ba and measurements. He was, perhaps, the first to introduce the second principle. In my view, both principles constituted and are still constituting fundamental issues in the studies of the history of architecture.

Al-Azraqī continued in his chronological interpretation, to record the fifth reconstruction of al-Ka‘ba that was made by the Arab tribe al-Amālīqa58 الجماعل. The sixth reconstruction that was made by the Arab tribe Jurham59 جرهم. The seventh reconstruction that was made by the statesman of Mecca and the custodian of al-Ka‘ba, Quṣay Ibn Kilāb60 فسي بن كلاب where he also built dār an-nadwa. Al-Azraqī did not elaborate on these reconstructions. He only indicated that the height of the reconstruction of Jurham was 9 cubits,61 similar to the height of the construction of Abraham. As a consequence, these three reconstructions did not contribute to the studies of the history of architecture.

Before the eighth reconstruction of al-Ka‘ba took place, al-Azraqī indicated that Abraha al-Ashram launched a campaign62 to demolish al-Ka‘ba, but he failed. In this context, al-Azraqī demonstrated the history of the church of al-qulis. He emphasized the purpose of building this church, described its construction and depicted its artistic features. It is important to remember that the reason for interpreting al-qulis in this chapter (and not in the following chapter that will be devoted to Christian architecture) is that it constitutes part of the study of al-Azraqī and because of its direct relation with al-Ka‘ba.

Al-Azraqī began his interpretation of al-qulis by indicating the purpose of building it. He emphasized the interpretation of Ibn al-Kalbī and indicated the intention of Abraha63 to change the pilgrimage from al-Ka‘ba to al-qulis. Al-Azraqī located its
site next to the palace of Ghumdān. He described it as a unique one, its plan was "regular square" and its height was 60 cubits. He indicated that Abraha used the stones and marble of aṣ-Ṣarḥ (palace of the Queen of Sheba) together with another kind of stone, namely al-jarūb. Al-Azraqī described its construction technically and artistically, where he argued that its stones were neatly cut and tightly laid to the extent that a needle could not get through among them. He indicated that the first 20 cubits of the height of its construction was built of al-jarūb stone and the rest of its construction was built with other types of coloured stone. He described them as triangular in shape with five different colours, green, red, white, yellow and black. He indicated that they were fixed alternatively and interlocked with each other. He indicated that every two courses of stones were separated by a "wooden beam", projected to outside, "its cross section is similar in size to the waist of a human being." Al-Azraqī did not indicate the height of these courses or the amount of the projection of the wooden beam. He indicated that the height of the parapet of al-gulis was 2 cubits, constructed of marble and projected 1 cubit outside the walls of al-gulis.

Al-Azraqī indicated that ar-ruwāḥ الرواه (single rāwī = newstaller) did not record the external dimensions of al-gulis. Although he indicated the internal dimensions and the thickness of the external walls, in his depiction to its interior. He indicated that the door of al-gulis was made of brass, its size was 10 x 4 cubits. This door led to a hall 80 x 40 cubits, its roof was made of carved teak wood, "fixed with gold and silver nails." This hall led to an īwān ایوان (hall) where al-Azraqī described it as:

"... the area of the hall was 40x40 cubits, its arches were covered with fusayfisā فسایفس (mosaic), formed in the shapes of trees and among them stars formed of
golden fusayfisā'. The Īwān lead to a qubba [dome-hall] its area was 30x30 cubits, its walls were covered with fusayfisā', formed in the shapes of crosses painted with gold and silver. In the eastern side of the hall was fixed a piece of transparent marble 10 x 10 cubits in order to allow the light of the sun and the moon to illuminate the hall. Under this piece of marble, there was a minbar made of ebony wood and inlaid with ivory. Its stair was covered with gold and silver. There were two pieces of wood carved in the forms of a man called Kuʿyb كعب and a woman known as the wife of Kuʿyb. Each piece of wood was 60 cubits in height...."71

Al-Azraqī indicated that Kuʿyb and his wife together with the church, were destroyed and demolished during the regime of the second 'Abbasīd Khalīfa al-Manṣūr72 الخليفة المنصور (AH 136-158, AD 754-775).73 The description of al-Azraqī seems to bear some contradiction and this may be ascribed to the fact that his description was based on ar-ruwāḥ74 and not in close association or self experience. For instance, the dimensions were not based on any reference, it seems that he invented them from his own imagination, which in some sense seems to be helpful in the studies of the history of architecture, because imagination helped in developing the technique of depiction. This technique, in my view, constituted and is still constituting a major element in the studies of the history of architecture.

One more point, one has to emphasize, is the influence of al-Kaʿba upon Christian architecture of pre-Islamic Arabia. This influence took place in the planning of al-qulis, which was built in the first half of the sixth75 century AD, where earlier to this date, many churches76 were built in Palestine and Syria. The style and planning of these churches were similar to, if not, the Roman basilica.77 This planning is totally different from the planning of al-qulis. This difference together with the
similarity of the form of al-qulis with that of al-Kaʿba, perhaps, allows one to argue that the architecture of pre-Islamic Arabia, represented by al-Kaʿba, maintained influence upon Christian architecture of the same environment, as in the case of the only two churches of pre-Islamic Arabia, the Kaʿba of Najrān and al-qulis.

Having gone so far, as to highlight the repeated constructing and reconstructing of al-Kaʿba together with the history of al-qulis church, I shall take the time here to highlight the eighth reconstruction of al-Kaʿba which was made by Qurish.

This reconstruction seems to be the most important one in the chain of constructing and reconstructing of al-Kaʿba, because it took place in the turn of Islam and because prophet Muḥammad, peace be upon him, participated in this reconstruction. In the second half of sixth century AD, the construction of al-Kaʿba, according to al-Azraqī, was partly demolished as a result of a fire or a flood. Qurish decided to demolish al-Kaʿba and reconstruct it. Al-Azraqī indicated that they set a budget and began their work by demolishing the upper structure and excavated until they reached the foundations of Abraham. They also bought a ship of wood and hired a Rūmī carpenter, called Bāqūm, to fix the roof. Al-Azraqī indicated that Qurish decided to reduce the area of al-Kaʿba because of the shortage in the set budget.

It seems necessary to demonstrate that al-Azraqī recorded some stories about the demolishing of al-Kaʿba, before analyzing his interpretation of the construction of Qurish. One of these stories was about a snake that was inside al-Kaʿba. This snake, according to, al-Azraqī prevented Qurish from demolishing al-Kaʿba, until a big bird came and picked it up outside al-Kaʿba. He indicated another story about the fear of the consequences of demolishing it. These stories were only associated with the
interpretation of the pre-Islamic history of al-Ka'ba, because they were not mentioned in the interpretation of its two Islamic constructions, as will be highlighted later in this chapter. More to the point, these stories, perhaps, meant to enhance the values of holiness and sacredness of pre-Islamic Ka'ba, where in Islam, these values are essential elements of al-Ka'ba.

Al-Azraqī indicated that after Qurish reached to a decision about reducing the area of al-Ka'ba, they built new foundations and made the reduction of 6 cubits and 1 shibir, from the north side towards the south one. By this, Qurish increased the area of al-ḥijr (unbuilt part of al-Ka'ba, in the shape of half a circle, surrounded with a balustrade and located in front of its north facade). Al-Azraqī indicated that Qurish elevated the door of al-Ka'ba 4 cubits and 1 shibir from the ground level. The reason for this, according to al-Azraqī, was to protect the interior of al-Ka'ba from floods and intruders. By this, Qurish added a stair to the architecture of al-Ka'ba, Al-Azraqī did not indicate as to whether this stair was fixed or demountable.

Al-Azraqī emphasized that Qurish built al-Ka'ba of stones and wood, alternatively, a course of stones followed by a course of wood. He indicated that the whole construction consisted of 31 courses, 16 of stones and 15 of wood. Al-Azraqī mentioned that when Qurish reached the position of al-ḥajar al-Aswad (black stone), a dispute occurred among them. The reason for this dispute was as to which one of them should fix this stone. Finally, they agreed that the first who come to the site should fix it. The first was prophet Mūḥammad (before he had received his mission from God), he solved this problem "by spreading his cloth and put al-ḥajar al-Aswad in it. He asked the four elder persons, who represented the major families of Qurish who participated in the reconstruction of al-Ka'ba, to carry his cloth towards the black corner. He carried the black stone and fixed it in its place." It is interesting to indicate that,
according to al-Azraqī, the major families of Qurish, distributed the work among them in four groups in order not to miss the honour of this work. Each group of them, was involved in constructing one of the four walls of al-Ka'ba. More to the point, al-Azraqī indicated, that the budget they set was raised under the condition that it has to be from Qurish good money and not from ribā (interests of loans) or gambling money and the like. This, in fact, emphasizes the value of holiness and sacredness that was paid for al-Ka'ba and its architecture by Qurish before Islām.

Al-Azraqī indicated that when Qurish finished the construction of walls, they asked Bāqūm to fix the roof. He asked them as to whether they wanted it mukabas (non-flat) or flat. Qurish responded that the house of God (al-Ka'ba) has to be flat. Al-Azraqī indicated that they fixed 6 pillars of wood in two rows inside al-Ka'ba. They fixed the roof and made its external height 18 cubits (twice its former height). They also fixed an internal stair of wood in the north west corner (ar-rukn ash-Shāmī) to lead to the roof. Al-Azraqī indicated that Qurish fixed al-mizāb (a gutter) at the north west facade in order, for the rain water to pour on al-ḥijr. The reason for this, in my view, perhaps, ascribed to the fact that al-ḥijr is a non-compassing area, where compassers have to compass around it, which causes no harm to them.

Al-Azraqī indicated that Qurish decorated the ceiling, internal walls and pillars of al-Ka'ba, with paintings of trees, angels and prophets. It is interesting to note that two of these paintings were recognized as one of Abraham and the other of Jesus and his mother. The latter brought a dispute among ar-ruwāh, al-Azraqī indicated two views, the first one claimed that after Muḥammad conquered Mecca, he entered al-Ka'ba, and ordered all paintings to be erased inside it except the painting of Jesus and his mother. The second one emphasized that prophet Muḥammad did
not enter al-Ka‘ba until all the paintings inside it were erased. He ordered99 ‘Umar Ibn al-Khaṭṭāb to erase all the paintings. The first one claimed that the painting of Jesus and his mother100 remained until the reconstruction of Ibn az-Zubayr ابن الزبير took place, as I shall be demonstrating later in this study. The point at issue here is that the claim of the first one had resulted in using, may be, the first architectural drawing in the history of Islamic architecture. They illustrated their view by drawing a plan for al-Ka‘ba. Some of them claimed that the painting of Jesus and his mother was on the first pillar101 which was located next to the door of al-Ka‘ba. The others claimed that it was on the second pillar.102 Nevertheless, the validity or invalidity of this view is not the subject matter of this study. What important for this study, is the architectural drawing which, in my view, had constituted and is still constituting a fundamental issue in the studies of the history of architecture. For although the drawing was just an abstract plan for al-Ka‘ba, it does contain an illustrating message and simple technique of symbolic representation. I was introduced to three copies of the book of al-Azraqī, two manuscripts103 and one annotated and edited book. I shall analyze the three drawings as illustrated in the three copies. I shall refer to the drawing of the edited book as (Figure-9a), the first manuscript as (Figure-9b) and the second manuscript (Figure-9c). It is important to note that the annotator of the edited manuscript did not count in his investigation upon the two manuscripts that I have, but he investigated another four manuscripts.104 The reason for this note is the difference in the drawing of each copy.

For instance, (Figure-9a) is just a simple rectangle with six pillars inside it, well distributed and it seems that they had been organized by the annotator. Unlike (Figure-9b) which seems to be more elaborate, because it illustrates other elements that contained some symbolic presentation such as ar-rukn al-Aswad and the location of al-ḥajar al-Aswad, the 6 pillars, the internal
(Fig.-9a)
- The numbers indicate the pillars on which the painting of Jesus was drawn

Plan
(Fig.-9a)
Annotated book

(Fig.-9b & 9c)
- a. al-ḥajar al-Aswad (black stone)
- b. The internal stair
- c. The two rows of pillars
- d. Al-Ḥijr
- e. The area of compassing
- f. Al-Ḥizāb (gutter)

Plan
(Fig.-9b)
Dār al-Kutub manuscript

Notes:
- The drawings are copied as illustrated in their original sources.
- The difference of the position of the two plans b and c seems to be made by the writers of the manuscripts.

(Fig.-9c)
Plan
aṣ-Ṣāhiriyya manuscript

Plans of al-Ka'ba
(Figure-9)
stair and the location of al-ḥijr. This plan, in fact, coincides with the description of al-Azraqî, although the pillars were not appropriately distributed and the curved corners of al-ḥijr did not illustrate its half circle plan as in reality. The curved corners together with the stair, in fact, illustrate the symbolic presentation of the architectural elements of al-Ka'ba, at the time of al-Azraqî. Probably the external line, refers either to the area of compassing, or to the boundaries of al-masjid al-ḥarām at the time of al-Azraqî. These elements were emphasized in (Figure-9c), but the symbolic presentation was slightly different. For instance, al-ḥijr was drawn as a square without curve in its corners as in the case of (Figure-9b). The symbolic presentation of the stair in (Figure-9c) was deferred from that of (Figure-9b). Moreover, a new element was illustrated in (Figure-9c), namely al-mīzāb. Despite the limited role of these drawings in the interpretation of al-Azraqî, in fact, he initiated the beginning of the use of drawings in the studies of the history of architecture.

In the circumstances, the architectural drawings are not the only fundamental issue in the interpretation of the reconstruction of Qurish. In fact, this interpretation introduces one to the design decisions that were made by Qurish such as the influence of the budget on the construction of al-Ka'ba, which, in turn, influenced its design. The elevating of the level of the door of al-Ka'ba, fixing the gutter, choosing the type of roof, considering environmental factors such as rain water and floods and most important was the decoration of al-Ka'ba. The value of these decisions did not come from just constituting fundamental issues in the studies of the history of architecture. It came rather from being part of the architectural thinking of pre-Islamic Arabs of Qurish. These decisions give one a clear idea about the public participation in the design process and the making of architecture, because all these decisions were not made by individuals but by Qurish, as indicated earlier. Furthermore,
the interpretation of these decisions, in fact, emphasize that
the study of al-Azraqi is a study of theories of architecture, as
much as, it is a study of history of architecture. This view will
be emphasized more in the course of discussion.

In the sequence of discussion, one may argue that the eighth
reconstruction of al-Ka'ba (despite the lack of information about
the technique of construction), introduces one to the ways in
which Qurish had thought about and practiced architecture. This,
in my view, coincides with the endeavour of studies of the
history of architecture.

A final word about the way in which Qurish had thought about
architecture, is that all houses of Qurish were built circular
in plan and cylindrical in form, until Hamid Ibn Zuhayr, a
citizen of Qurish, built a house square in plan and cubic in
form. Qurish was worried about the consequences of breaking
the rule of the formal type of the architectural fabric of Mecca,
which, according to al-Azraqi, was not allowed or permitted for
any of its buildings from overlooking al-Ka'ba. As a result
of this, one may argue that typology and rules were part of the
architectural thinking of Qurish that were considered in the
making of the architecture of Mecca, although they were ignored
in the late days of Qurish. But one cannot ignore the fact that
they were and are still fundamental issues in the study of al-
Azraqi. This, in fact, emphasizes my view that the study of al-
Azraqi is a study of both theories and history of architecture.

Having gone so far, as to highlight the eight constructions and
reconstructions of al-Ka'ba, which by the eighth one, a belief
system ended and a new one started. In the following discussion
I shall be highlighting the two remaining reconstructions of
al-Ka'ba together with its maintenance that took place from the
rise of Islam until the death of Al-Azraqi (AH 250, AD 864). I
shall take the documentation of the reconstruction and mainte-
nance of al-Ka'ba, as a case in point, to emphasize that studies of the history of Arabic Islamic architecture were written through close association, live experience or based on live experience. And not a mere formal analysis that was based on guessing that took place at a later period. I shall prove that these studies were and are still acting as a record for principles, concepts and values and not as a source for them. In so doing, I shall be highlighting first the reconstruction of Ibn az-Zubayr.

Al-Azraqī indicated that in the year (AH 64, AD 684) the city of Mecca was seized\textsuperscript{108} by the army of the second Umayyad Khalīfa Yazīd\textsuperscript{109} (AH 60-64, AD 680-684) the attacking army which caused considerable damage\textsuperscript{110} to the walls of al-Ka'ba. Al-Azraqī indicated that in the same year Yazīd died and the people of Mecca convinced the leader of the attacking army to end the seize and leave for Damascus, where he yielded\textsuperscript{111} to their request.

After he left, al-Azraqī indicated that the governor of Mecca, namely 'Abdullāh Ibn az-Zubayr,\textsuperscript{112} called the "elite" of Mecca to a public meeting. He discussed with them the structural situation of al-Ka'ba. He suggested demolishing and reconstructing it once again. A minority, according to al-Azraqī, were for demolishing\textsuperscript{113} it, but the greater majority were against it. Those who opposed it were led by the cousin of prophet Mūhammad, namely 'Abdullāh Ibn 'Abbās. He asked Ibn az-Zubayr to leave al-Ka'ba as prophet Mūhammad left it. He expressed his fear to Ibn az-Zubayr that other governors who would come after him might also demolish it and it would carry on being demolished and reconstructed, which might cause reduction in its value and respect among people. Ibn 'Abbās suggested restoring (maintaining)\textsuperscript{114} it. Ibn az-Zubayr refused and claimed that "restoring the house of God does not satisfy God."\textsuperscript{115}
Besides, he argued that restoration is not the appropriate solution for the structural situation of al-Ka'ba. Ibn az-Zubayr decided on demolishing it, because, according to al-Azraqī, Ibn az-Zubayr wanted to be the one who reconstructed it on the foundation of Abraham that was reduced by Qurish, as already indicated earlier. This reduction was claimed according to Ibn az-Zubayr, to be documented in al-Ḥadīth:

"He [Ibn az-Zubayr] heard the wife of the prophet, ʿA'isha, say that prophet Moḥammad said your people [Qurish] reduced the construction of al-bayt [al-Ka'ba], because of the shortage in budget, they left at al-ḥijr some cubits. But because they are close in time to unbelief, I do not want to demolish it and reconstruct what they left. Had I demolished it, I shall make an eastern door as an entrance and a western door as an exit... if your people seeing its demolition, come I show you what they had left at al-ḥijr, where he showed her approximately 7 cubits."117

This in fact emphasize two points: first, the desire of Ibn az-Zubayr behind demolishing it was, perhaps, to gain the honour of enlarging al-Ka'ba. Second, it disclosed the origin of the dimensions that had been indicated in the interpretation of the construction of Abraham, earlier in this chapter, which was approved in the excavation of Ibn az-Zubayr,119 as will be demonstrated in a moment.

Ibn az-Zubayr, according to al-Azraqī, started the site mobilization. He consulted Qurish about the suitable material for the mortar. He was advised to buy al-quṣa from Ṣanʿāʾ, where he bought this material for 400 danār (single dīnār) Ibn az-Zubayr also asked about the source of the stones that were used in the construction of Qurish. He was guided to a place called al-maqla' (stone pit),121 at the outskirts of Mecca,
where he brought his requirements for the reconstruction.

After Ibn az-Zubayr finished the site mobilization and before he started the demolishing, the citizens of Mecca who opposed the demolishing, according to al-Azraqī, left to Minā̄ (a suburb of Mecca). They were scared from consequential punishment that might occur as a result of the demolishing. Ibn az-Zubayr gave the order of demolishing, but no one had the courage to do such a thing. Under these circumstances, Ibn az-Zubayr, according to al-Azraqī, mounted al-Ka'ba and started the demolishing himself. Al-Azraqī indicated that when his people saw that nothing happened to him, they mounted al-Ka'ba and finished the demolishing on the same day, Saturday, the 15th of Jumādā al-Ākhira (AH 64, AD 684).

Al-Azraqī indicated that Ibn 'Abbās remained at Minā̄ and did not approach Mecca until the demolishing was over. Ibn 'Abbās sent to Ibn az-Zubayr and asked him "as not to leave men without qibla during the reconstruction process and advised him to erect wood around al-Ka'ba and to cover it with curtains in order to allow men to compass it round." Ibn az-Zubayr responded to the request of Ibn 'Abbās and continued the excavation to the foundation of Abraham where he found them "extended at al-ḥijr about 6 cubits and 1 shibir." Al-Azraqī indicated that Ibn az-Zubayr, recalled the intention of prophet Moḥammad of reconstructing al-Ka'ba at the foundation of Abraham, as indicated earlier. He invited "fifty persons of the elite of Mecca and witnessed them on the foundation of Abraham and laid his construction upon this foundation."

Ibn az-Zubayr made two doors, eastern one in the same place of the former door, but at the ground level and western one at the same level of the eastern door. Al-Azraqī indicated that al-ḥajar al-Aswad was hidden in dār an-nadwa, gifts and offerings of al-Ka'ba were hidden in its cupboard in the house of its
custodian, Shība Ibn 'Uthmān. Al-Azraqī indicated that when the builders reached the position of al-ḥajjar al-Aswad, Ibn az-Zubayr asked his son 'Abbād and Jubayr, the son of Shība, to bring al-ḥajjar al-Aswad, at the time of the noon prayer and to fix it during the prayer. Where he, as imām, shall extend the time of prayer until they finish fixing it and they have to say allāh akbar as a signal of finishing the job. They brought the stone and 'Abbād fixed it in its place with the help of Jubayr and gave the signal after they finished to the imām, who eased in his praying. The elite of Mecca expressed their disquietude about the way Ibn az-Zubayr handled the fixation of al-ḥajjar al-Aswad. Ibn az-Zubayr tied al-ḥajjar al-Aswad with a frame of silver, of 2 cubits height, similar to the thickness of the walls of al-Kaʿba.

Al-Azraqī indicated that when Ibn az-Zubayr reached the former height of al-Kaʿba, 18 cubits, he found that the "proportion" of the former height to the new length was inconvenient. To adjust this proportion, he increased the height 9 cubits and the total height became 27 cubits. It is important to note that the amount of increase in height that Ibn az-Zubayr made, was equal to that made by Qurish over the construction of Abraham. Al-Azraqī indicated that the new height of al-Kaʿba consisted of 27 courses, which means that each course was equal to 1 cubit.

He also indicated that Ibn az-Zubayr imported marble called al-bulk (transparent marble) from Ṣanʿāʾ and fixed it at ar-rawāzin (windows) of the roof to make natural lighting inside al-Kaʿba. Ibn az-Zubayr also reduced the number of pillars inside al-Kaʿba from six to three. He also changed the door from a one leaf door to a pair door with a height of 11 cubits from the ground level. He fixed al-mīzāb in its former position and made a stair of wood and fixed it in its former position inside al-Kaʿba. Al-Azraqī, indicated that after Ibn az-Zubayr finished his construction, he covered al-Kaʿba from
inside and outside with al-qabāṭī (textile made in Egypt) and made a celebration.

Having gone so far as to highlight the reconstruction of Ibn az-Zubayr, one may argue that the interpretation of al-Azraqī for this reconstruction was comprehensive, because most of the architectural elements of al-Ka'ba were indicated and described with some details. This interpretation introduces one to the ways in which Arab Muslims had thought about and practiced architecture in the early days of Islām, where public participation was a central issue in the architectural thinking and making of these days. The argument between Ibn az-Zubayr and Ibn 'Abbās, in fact, emphasized the notion of public participation. Moreover, the role of Ibn az-Zubayr in consulting the elite of Mecca on the pre-construction (design) stage also emphasized the notion of public participation. Their disquietude of isolating them from being consulted about the fixing of al-ḥajār al-Aswad also emphasized this notion.

The argument established, in my view, a kind of architectural dialogue between Ibn az-Zubayr and Ibn 'Abbās. They were motivated by their emotions and sensibility, both had departed from an ideological (belief system) point of view as to how the architecture of al-Ka'ba ought to be. Ibn az-Zubayr, although his ideological ground was mixed with personal ambitions. He struggled for a firm, strong and neat architecture for al-Ka'ba. It is worth mentioning here that Ibn az-Zubayr was considered by az-Zarkashī as the first one who increased the quality and neatness of al-masjid al-ḥarām. Unlike Ibn 'Abbās who believed that the architecture of al-Ka'ba should be treated as a symbol, in itself, and not in its architectural quality. Therefore, the architecture of al-Ka'ba, according to Ibn 'Abbās, seems to be just a sign to indicate the place, no matter if this architecture is large or not, neat or not. What strengthens the view of Ibn 'Abbās, is that rituals such as compassing and prayers were
practiced without stopping during the absence of the sign (the architecture of al-Ka'ba) that designated the place of compassing and the direction of prayer. On these grounds, one may argue that the architecture of al-Ka'ba, according to Ibn 'Abbās, had derived its value from the value of the place and not from the neatness of its construction. Unlike Ibn az-Zubayr who elevated the value of the architecture of al-Ka'ba from being an abstract symbol to an artistic one. The grounds for this view came from the concept proportion that was introduced and applied by Ibn az-Zubayr in the form of al-Ka'ba. This argument, besides it emphasized the architectural thinking of Arab Muslims in the early days of Islam, as indicated earlier. It also emphasized the notion of artistic interpretation, which will be highlighted and analyzed later in this chapter. A final word about the role of this interpretation in the design making, is the principle of flow of movement, which was emphasized by the entrance and exit of al-Ka'ba that Ibn az-Zubayr had made.

In the sequence of discoveries in the outcome of the contribution of Ibn az-Zubayr and before I turn to highlight the last reconstruction of al-Ka'ba, one may argue that the interpretation of the reconstruction of Ibn az-Zubayr has resulted in establishing many fundamental issues in the field of the studies of the history of architecture. And as a consequence in Arabic Islamic architectural discourse. The most important of which was the archaeological exploration of the foundation of al-Ka'ba.

The final reconstruction of al-Ka'ba, up to the year (AH 250, AD 864), was made by the Umayyad general al-Ḥajjāj (AH 74, AD 693), where he conquered Ibn az-Zubayr and killed him in the same year. Al-Ḥajjāj reported the reconstruction of Ibn az-Zubayr to the Umayyad Khalīfa 'Abd al-Malik Ibn Marwān (AH 65-86, AD 684-705). "He informed the Khalīfa that Ibn az-Zubayr added to the construction of al-Ka'ba what did not belong to its architecture and founded a new door.
Al-Ḥajjāj requested al-Khalīfa to demolish the additions of Ibn az-Zubayr and to set back the architecture of al-Ka'ba to the reconstruction of Qurish\textsuperscript{138}, that preceded the reconstruction of Ibn az-Zubayr. The Khalīfa approved the request of al-Ḥajjāj and the latter demolished\textsuperscript{139} the additions of Ibn az-Zubayr, closed the western door and elevated the level of the eastern door 4 cubits and 1 shibir. Nothing had been made on the new height, nor had any other element of the reconstruction of Ibn az-Zubayr changed, except what I indicated.

The changes that were made by al-Ḥajjāj should not be considered as a reconstruction, they rather some adjustments to the construction of Ibn az-Zubayr. These changes had been regretted and condemned, according to az-Zarkashī\textsuperscript{140} by the same Khalīfa when he was introduced to what had been recalled on behalf of the prophet. They also had been condemned by al-Khalīfa al-Manṣūr\textsuperscript{141} and al-Khalīfa Hārūn ar-Rashīd\textsuperscript{142} (AH 170-193, AD 786-809),\textsuperscript{143} where both al-Manṣūr and ar-Rashīd were willing to reconstruct it as Ibn az-Zubayr had done. They were requested by Mālik Ibn Anas\textsuperscript{144}, the founder of the Mālikī school of jurisprudence as not to change the construction of al-Ka'ba in order to preserve its value in the hearts of forthcoming "kings".

It is important to illustrate that no reconstruction has been made of al-Ka'ba from the date of the reconstruction of al-Ḥajjāj (AH 74, AD 693) until our days (AH 1412, AD 1991), except one,\textsuperscript{145} which took place in the year (AH 1040, AD 1630), as a result of a flood. Works other than that were maintenance, as I shall be highlighting soon after indicating the measurement of al-Ka'ba after the work of al-Ḥajjāj.

Al-Azraqī indicated the external and internal dimensions\textsuperscript{146} of al-Ka'ba and described some of its elements through the process

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of measurement. He indicated that its height was 27 cubits, its length from ar-rūkn al-Aswad to ash-Shām corner was 25 cubits and from al-Yemen corner to the western corner was 25 cubits. Its width from ar-rūkn al-Aswad to al-Yemen corner was 20 cubits and from ash-Shām corner to the western corner was 21 cubits, as illustrated in (Figure-8c). Al-Azraqi indicated that "al-Ka'ba has two roofs."147 The height of the first roof was 18.5 cubits and the height of the second roof was 20 cubits. The height of the parapet was 2.5 cubits and the level of the ground floor was 4.5 cubits from the ground level. The internal length of the floor from ar-rūkn al-Aswad to ash-Shām corner was 19 cubits and 10 fingers and from al-Yemen corner to the western corner was 20 cubits and 6 fingers. The internal width from ash-Shām corner to the western corner was 15 cubits and 18 fingers and from ar-rūkn al-Aswad to al-Yemen corner was 16 cubits and 6 fingers.148 He also recorded the dimensions between the internal pillars as illustrated in (Figure-8b) but he did not indicate the dimensions of the cross section of these pillars.

A final word about the reconstruction (adjustments) of al-Hajjāj is that it ended an era of demolishing and reconstructing of al-Ka'ba and started the era of additional work and maintenance. To project this upon the studies of the history of architecture, one may argue that al-Azraqi ended the techniques of documentation, recordation and description to start the technique of depiction. In fact, he emphasized the description technique by using the depiction one as I shall be highlighting soon after demonstrating the influence of the architecture of al-Ka'ba upon its urban context.

The influence of the architecture of al-Ka'ba upon the houses of Mecca has already been indicated earlier in this chapter, where their design used to be circular in plan, cylindrical in form and their height was less than the height of al-Ka'ba. This influence extended to the public services of Mecca. Al-Azraqi
indicated that "night lighting was used around al-Ka'ba, al-
masjid al-ḥarām and in the streets of Mecca." Other aspects
of this influence like transferring the flow of the valley of
Mecca, will be emphasized later in the discussion of al-masjid
al-ḥarām. As for now I shall be focusing upon the artistic
interpretation of al-Ka'ba.

The point I am trying to make is that the study of al-Azraqī of
the history of al-Ka'ba, was not just a mere architectural
interpretation that was based upon the description of form and
depiction of its artistic features. It was rather a comprehensive
one, associated with thinking about as to how the architecture of
al-Ka'ba should be made, in much the same way, it was associated
with its chronological history. It was conducted within its
religious, social, political, cultural and urban context. The
study of al-Azraqī, therefore, is more comprehensive than being
an artistic interpretation, which was the last element discussed
in it, as I shall be highlighting in the following discussion.

Al-Azraqī made a general depiction for the architectural elements
of al-Ka'ba, he started with the exterior:

"... the location of the four rawāzin (single ruwzin)
were at the ceiling of al-Ka'ba they were square in
shape covered with transparent marble. The ceiling was
tiled with fūṣāyīfīsā' which had been removed in the year
AH 200 [AD 816] and replaced with marmar مَرَمَر (marble)
that was fixed by mortar. There was a beam of teak wood
fixed on the interior side of the parapet, in it steel
wall hooks were fixed as hangers for the kiswa of al-
Ka'ba. Al-Mīzāb was fixed in the wall that faces al-
ḥijr, its length was 4 cubits; 1 cubit and 17 fingers
were fixed inside the wall of the parapet and the rest
was projected outside it. It was in the form of a
channel, with a cross section of 8 x 8 fingers and
covered with plates of gold from inside and outside."

Al-Azraqī depicted the interior of al-Ka'ba. He indicated that "there were three chairs, inside al-Ka'ba, made of teak wood, the height of the chair was 1.5 cubit and its width was 1 cubit and 8 fingers. These chairs were covered with gold, the gold was covered with silk and the chairs rested on a piece of red marble 7 fingers in height."\textsuperscript{151} Al-Azraqī indicated that "the ceiling of al-Ka'ba was decorated and painted with gold. The top of the walls were decorated with a frieze painted with gold and under it another frieze made of fusayfisā'."\textsuperscript{152}

The artistic quality of these elements resulted from the additional work and maintenance that was made after the reconstruction of al-Ḥajjāj, where every Khalīfa\textsuperscript{153} was willing to add to, or maintain the architecture of al-Ka'ba. This, in turn, enriched its architecture and as a consequence enriched the studies of the history of architecture. Al-Azraqī turned to be more specific in his depiction, he indicated صفة (picture of) some architectural elements of al-Ka'ba such as al-jaz'a الجزع (black marble with white lines), ad-daraja الدره (stair), al-izār, الازار (frieze), al-masāmīr المسامير (nails), floor of al-Ka'ba, ash-shadhīrwan الشاذوروان (base wall) and al-ḥijr. As a case in point, in the following discussion I shall be translating and highlighting two elements, al-jaz'a and the door of al-Ka'ba\textsuperscript{154}:

1. صفة الجزع (picture of al-jaz'a)

"Abū al-Walūd [al-Azraqī] said: in the wall that faces the door of al-Ka'ba, known as dubr دير (back of) al-Ka'ba, there was a black jaz'a with white lines. It was circular in shape and its diameter was 12 fingers. It had been surrounded with a frame of gold, 3 fingers
wide. Its height from the floor of al-Ka'ba was 6.5 cubits, it has been said that it had been erected towards the place that prophet Moḥammad prayed in it. Abū al-Walīd said that [al-Khalīfa] al-Walīd Ibn 'Abd al-Malik [AH 86-96, AD 705-715] had sent this jaz'a."

2. Şifat bāb al-Ka'ba مَعْطَة بَابِ الكَعْبَة
(picture of the door of al-Ka'ba).\textsuperscript{155}

"The height of the door of al-Ka'ba was 6 cubits and 10 fingers, its width was 3 cubits and 18 fingers. The walls, the door jambs, sill and the lintel were covered with decorated plates of gold. There were 14 wall hooks with a ring of steel, silver plated, fixed on the door jambs, seven at each one. They were used for fixing the kiswa of al-Ka'ba. In the lintel, there were 18 decorated steel nails with domed heads, gold plated, 4 of them were fixed at the door and 14 at the face of the lintel. The diameter of the domed head of the nails was 7 fingers each. The sill of the teak wood door was covered with plates of gold. Its cross section was 10 x 4 fingers, it was fixed in the floor with 46 nails.

The door consisted of two leafs of teak wood, the thickness of each leaf was 3 fingers, its width was 1 cubit and 18 fingers, the total width of the door was 3.5 cubits. There were 6 rails of sāsim سَاسِم (ebony wood) in each leaf. The internal side of the door was covered with plates of silver. A Rūmī hasp and staple were fixed on the right leaf of the door. The staple was silver plated and the length of the hasp was 14 fingers. A hook of silver was fixed on the left leaf of the door to receive the hasp. The face of the door was covered with decorated plates of gold... the nose stile of the door was fixed at the left leaf, covered with plates of..."
gold and decorated with a verse of al-Qurān: ‘بسم الله الرحمن الرحيم In the name of God, most Gracious, most Merciful.

ومن حيث خرجت قول وجهك نظر المسجد الحرام’, From whencesoever Thou startest forth turn Thy face in the direction of the Sacred Mosque’. The total number of nails were 200. Half of them were big and the others were small, where 72 of the big nails were used for fixing the rails, 6 in each one. And in each leaf, 10 nails were fixed and between every two rails, 2 nails were fixed near the two ends of the leaf. And around the silver hook, 12 small nails were fixed. And at the right leaf, two nails of silver, with gold plated domed heads, were fixed. The distance between the two nails was 9 fingers and these worked as a guide for the hasp. At the left leaf there were 50 small nails used for fixing the decorated square plates, among the rails, there were 10 nails used for fixing each plate. The small nails were gold plated with decorated domed heads. The hanging stile for both leaves were steel covered with gold and at the closing stile, for both leaves, there were two knobs of silver with two rings of gold. The diameter of each ring was 8 fingers. The knobs were projected from a small plate of gold, that was projected from another plate of gold, both were fixed at a distance of 2 cubits and 16 fingers and used for closing the door”.

It seems that the artistic depiction of al-Azraqī is abstract. No analysis had been made for the composition of the work of art, nor had it been made for its techniques. Nor had al-Azraqī indicated any features or characteristics to this work. The reason for the lack of artistic analysis might be ascribed to the small size and fixed form of the architecture of al-Ka‘ba. Besides, all attempts of changing in its architecture were resisted, as indicated earlier. Furthermore, deep analysis for
artistic features, is not the concern of studies of the history of architecture but of art.

A last point one has to emphasize is that al-Azraqī indicated some of the names of the technicians who worked in al-Ka'ba, namely the gold smiths Ishāq Ibn Salama اشعاق بن سلمه and Sālim Ibn al-Jarāh سالم بن الجراح.

Finally, it seems so far, that the study of al-Azraqī is associated with the making of architecture, or with the design process, as much as it is associated with documentation of architecture, because it recorded principles, concepts, values and rules that preceded the making of architecture, as in the case of Ibn az-Zubayr. Consequently and with some sense, one, perhaps might be able to categorize it as a pre-design study that is associated with theories of architecture as much as it is associated with history. Therefore it is a study of history of architectural discourse. This view will be emphasized more in the following discussion, where I shall be highlighting the history of the architecture of al-masjid al- Haram.

Al-Masjid al-Ḥarām

Similar to the interpretation of the history of the architecture of al-Ka'ba, al-Azraqī conducted his interpretation of the history of the architecture of al-masjid al-Ḥarām. He began his interpretation by recording the chronological stages of its construction. He indicated the names of patrons (donators), designers, what was built, when it was built, how and why it was built. These issues were recorded, documented, described and depicted. This process which was already used in the interpretation of al-Ka'ba, resulted in establishing the structure and techniques of the studies of the history of architecture. It also emphasized principles, concepts and values of architecture, as I shall be highlighting in the following
discussion.

Al-Azraqī indicated that al-masjid al-ḥarām was in its very beginning, "just an open area around al-Ka'ba, surrounded by houses from all sides." It was not defined by territorial means of its own, except the doors that were found among the adjacent houses to al-Ka'ba. In other words, al-masjid al-ḥarām was not an independent building on its own that had its own urban setting and order in space, which they gained at a later stage.

This stage was extended over many attempts, the first in the chain was made by 'Umar Ibn al-Khaṭṭāb. He found that houses were so close to al-Ka'ba which squeezed its finā' (compass round area) and prevented any future extension that became in the time of Ibn al-Khaṭṭāb an urgent necessity. He decided to meet this necessity, he bought the adjacent houses, where some of the owners refused to sell, he forced them and accused them of being intruders to the finā' of al-Ka'ba. He argued that "al-Ka'ba is the house of God and the house of God has to have a finā', the owners invaded this finā' and not the finā' of al-Ka'ba invaded them." Therefore, Ibn al-Khaṭṭāb demolished the houses, increased the area of the finā' and built a low wall around it.

This wall is considered, in my view, the first architectural element that marked the territories of the architecture of al-masjid al-ḥarām. The point at issue here, is the conceptual approach of the finā' that was spelt out by Ibn al-Khaṭṭāb. This emphasized the fact that al-masjid al-ḥarām is a subsequent architecture that was meant to mark the territorial means of al-Ka'ba more than being an independent architecture of its own, like other mosques. This also introduces one to the ways in which Ibn al-Khaṭṭāb had thought about architecture. It is worth mentioning here that this concept was not the only architectural contribution of Ibn al-Khaṭṭāb. He was the first to spell out the mere function of the architecture of mosques, he described it
as an architecture that "protects men from sun and rain." The most interesting architectural contribution of Ibn al-Khaṭṭāb were his theory of planning as I already indicated.

The attempt of Ibn al-Khaṭṭāb seems to be of great value because it had set out the beginning of the independent or semi-independent architecture of al-masjid al-ḥaram, which entailed many attempts.

The second attempt was made by the third Khalīfa ʿUthmān Ibn ʿAfān161 (AH 23–35, AD 643–655). He bought some other houses, demolished them and increased the area of fināʾ al-Kaʿba. It is necessary to indicate that it was resisted by the owners of these houses, but he jailed162 them before the demolishing. The point at issue here is that public participation in the two indicated attempts were motivated by personal interest that opposed the expansion of the area of al-masjid al-ḥaram at the expense of public ownership. For although this public participation had not been directly involved in the design process, it had been involved in the decision making, which seems not to affect the making of the architecture of al-masjid al-ḥaram. In fact it drew the interaction between al-masjid al-ḥaram and its urban context, that seems to be increased by the sequence of attempts of expanding its architecture, which I shall be highlighting in the following discussion.

The third attempt was made, according to al-Azraqī, by Ibn az-Zubayr.163 He bought the adjacent houses, demolished them and increased the area of al-masjid al-ḥaram. Al-Azraqī indicated that Ibn az-Zubayr used al-mīṭmār (thread) to set the alignment of the walls of al-masjid. This process eased the identification of the territorial means of the architecture of al-masjid al-ḥaram. Al-Azraqī recorded that Ibn az-Zubayr defined his extension by very well known urban elements of Mecca such as bayt ash-Sharāb, dār Shība Ibn ʿUthmān, dār an-nadwa

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and the valley.

The interpretation of al-Azraqī so far, emphasized the territorial means of al-masjid al-ḥarām, its urban setting and in some sense its order in space. The grounds for this view are not just the alignment of its walls and its regular or semi-regular form, but because al-Azraqī indicated that "Ibn az-Zubayr made part of the roof or all the roof of al-masjid."\textsuperscript{164} It is from the roof that the architecture of al-masjid began to mark its order in space.

It seems important to indicate that the interpretation\textsuperscript{165} of az-Zarkashī to the role of Ibn az-Zubayr, in expanding the architecture of al-masjid al-ḥarām, contradicts the interpretation of al-Azraqī. The first indicated that the role of Ibn az-Zubayr was an artistic one. He was concerned with the neatness of the architecture of al-masjid and not with its area. It seems that the role of Ibn az-Zubayr was concerned with both the expansion of the architecture of al-masjid and its quality. The ground for my view is that neatness needs to be preceded by an identified architecture and this had not existed, according to their interpretation, before the addition of Ibn az-Zubayr. This addition marked, in my view, and according to the interpretation of al-Azraqī, the beginning of forming an independent architectural identity for al-masjid al-ḥarām. This identity had been emphasized by the additions that supplemented the one of Ibn az-Zubayr, which I shall be highlighting in the following discussion.

The fourth attempt was made, according to al-Azraqī, by 'Abd al-Malik Ibn Harwān. He "increased the height of its walls, made the roof of teak wood and covered the capitals of the columns with gold."\textsuperscript{166} For although the addition of 'Abd al-Malik was limited, the height of the walls did emphasize the architectural identity of al-masjid al-ḥarām in terms of territorial means and order in
space. This attempt and its role in forming the identity of al-masjid al-ḥarām seems to be emphasized more in the fifth attempt of al-Walīd Ibn ʿAbd al-Malik.

Al-Azraqī indicated that al-Walīdī was the first who used decorations and ornaments in the architecture of mosques and the first who used asāṭīn (single ʿusṭuwana = cylindrical column) of marble. He demolished the work of his father and reconstructed it more neatly. He used arches, decorated teak wood for the roof and covered the capitals of al-asāṭīn with gold. He made an izār of marble all around the interior walls and covered the walls over the arches with fusayfīsā’. He was the first to use fusayfīsā’ in the architecture of al-masjid al-ḥarām. Al-Azraqī did not indicate that al-Walīd added any new architectural element. Consequently, his contribution in the formation of the architectural identity of al-masjid al-ḥarām was just reassertion of the contribution of his father. Unlike the sixth addition which I shall be highlighting in the following discussion.

This attempt was made by al-Manṣūr. He appointed the governor of Mecca to be in charge of his extension. The governor made his extension at ash-Shām side of al-masjid. He bought the houses that were close to this side and demolished them. He used al-miṭmār and brought the walls of his extension to very well known elements of the architectural fabric of Mecca such as bayt zayt qanādīl al-masjid (the house of oil-lamps of al-masjid) dār an-nadwa and dār Shība. He demolished parts of the last two houses and added these parts to the architecture of al-masjid. Al-Azraqī recorded that the corner of al-masjid was among these two indicated houses and at this corner, the governor constructed a minaret. It is important to note that this is the first time that al-Azraqī mentioned the existence of a minaret as an architectural element of al-masjid al-ḥarām in his interpretation. Al-Azraqī also indicated that the governor connected the new extension with
the extension of al-Walīd, although al-Azraqī indicated that al-Walīd did not add to the architecture of al-Masjid, but emphasized the addition of his father. Nevertheless, al-Azraqī indicated that the extension of al-Mansūr was influenced by the work of al-Walīd, where arches were used, the İzār of marble continued in the new extension and the walls over the arches were covered with fumsayfisā'. He also indicated that the governor made "a paved trench under the entrance of al-masjid to prevent the flood from entering inside." With this al-Azraqī emphasized the influence of al-masjid al-ḥarām upon its urban context.

The extension of al-Mansūr emphasized, in my view, for the first time, through the minaret, the order in space of the architecture of al-masjid al-ḥarām. It also emphasized the unity of thinking in the making of Arabic Islamic architecture. The point at issue here is the conscious interpretation of al-Azraqī for this unity. Al-Azraqī also indicated three important points in the studies of history of architecture: first, he recorded the history of the extension of al-Mansūr, which took place (AH 137-140, AD 754-758); second, he indicated the area of this extension, where it was twice the former area of al-masjid al-ḥarām; third, he documented the writing on the walls of the extension of al-Mansūr which indicated the name of the patron (al-Mansūr), the type of work and verses from al-Qurān. The value of these points did not come only from their role in the historical documentation of this particular architecture which, at the same time, emphasized its identity. But from their role in forming the structure of the studies of history of architecture.

Finally, the attempt of al-Mansūr seems to satisfy all the spatial characteristics such as territorial means, urban setting and order in space. These characteristics seem to be emphasized more by the two extensions that were made by the third 'Abbasīd Khalīfa al-Mahdī (AH 158-169, AD 775-785) and the continuation of the second extension that was made by his son al-Khalīfa
Hūsā al-Hāḍī(179) (AH 169-170, AD 785-786).(180) These additions represented the last attempts of expanding the architecture of al-masjid al-ḥarām, until the year of the death of al-Azraqī (AH 250, AD 864).

Al-Azraqī indicated that the first extension of al-Mahdī took place at the upper(181) part of al-masjid. He appointed the qāḍī (judge) of Mecca to be in charge of this extension. Al-qāḍī bought all the houses that were located between al-mas'ā al-muru'ah (the street between as-ṣafā(182) and al-Ḥarām(183) where pilgrims have to jog this street 7 times as a part of the rituals of pilgrimage) and the eastern walls of al-masjid that extended from the south to the north, parallel to the street of al-mas'ā. He demolished these houses and constructed the eastern wall of al-masjid on the street of al-mas'ā. This construction marked, perhaps, the final extension on this side, because, al-mas'ā is functioning as a jogging(184) element and not a praying one. In fact, it works as a buffer zone, in the plan, between prayers in al-masjid and any proposed extension in the eastern side, if occurred, which is not permitted, according to aḥkām aṣ-ṣalāt(185) āhkām al-malā, as I indicated earlier in this study. As a consequence no extension can be made in the eastern side. The point I am trying to make is that the decision of al-qāḍī brought the architecture of al-masjid on this particular side to a well defined order in space that resulted from a final urban setting with well marked territorial means.

Al-Azraqī recorded that al-qāḍī continued the extension on the three other sides. He ended this extension on well defined urban elements such as the corner of the minaret, sūq al-khulqān(186) سوق الخلفان (old things market), sūq al-ḥadāthīn(187) سوق الحداثين (horseshoes market) and other well known houses. It is important to note that al-qāḍī made the place of dār al-qawārīn دار القوارين (house of bottles), which was inside the extension, as raḥba(188) (open public space). He indicated that it remained raḥba
until it had been owned by the ‘Abbasīd minister Jāfar al-Barmakī.\textsuperscript{189} He rebuilt it and used it, perhaps, as a rest house during the time of pilgrimage. It is interesting to note that this house was owned after Jāfar by a person called "Hāmād al-Barbarī, who rebuilt it once again with bottles from inside, marble and fusayfisā' from outside."\textsuperscript{190} It is the first time that al-Azraqī indicated in his interpretation a fancy building material to produce fancy architecture at Mecca.

Al-Azraqī indicated that al-qādī connected this extension with the former extension of al-Manṣūr. He also indicated that al-Mahdī ordered to bring asāṭīn of marble from ash-Shām. Al-qādī fixed three rows of these asāṭīn at the upper part of al-masjid and fixed two other rows in the extension of al-Manṣūr, at ash-Shām part of al-masjid. He increased the rows of al-asāṭīn in the latter part from one to three. Al-Azraqī described the erection of al-asāṭīn, he indicated that arbād\textsuperscript{191} (foundations) were excavated and al-asāṭīn fixed in these arbād. He also indicated that walls (ground beams) were built under the ground level to form a "cross" around each usṭūwāna. He indicated that a mixture\textsuperscript{192} of calcium, ash and gypsum were poured around al-asāṭīn and over the ground beams up to the ground level. Al-Azraqī illustrated his description by drawings (Figure-10a and 10b). Despite the simplicity of these drawings, their intentional and conscious use did, in fact, in my view, emphasize the beginning of the rule of drawing as an element of the structure and part of the technique of the studies of the history of architecture.

This extension together with the former additions and extensions, resulted in forming an unorganized plan. This was recognized by al-Mahdī when he visited Mecca for pilgrimage in the year (AH 164, AD 781). Al-Azraqī indicated that al-Mahdī noticed that al-Ka'ba was not in the centre\textsuperscript{193} of the compass round area (the open area of al-masjid al-ḥarām). Al-Mahdī noticed that the dis-
Portion plans of al-Masjid al-Ḥarām
(Figure-10)

Maqām Abraham

Layout Of al-Kaʿba and al-Maqām
(Figure-11)

Note: The drawing of (Figure-10) is copied as illustrated by al-Azraqī
All dimensions are in cubits and fingers
tances between the walls of al-Ka'ba and the internal walls of al-masjid (that marked the territories of compass round area) were unequal. Al-Mahdī expressed his disquietude and called upon al-muhandisūn (single muhandis) and consulted them about the possibility of recentering al-Ka'ba in the middle once again. It seems worth mentioning at this stage and before I turn to the view of al-muhandisūn, that the point of departure of al-Mahdī centred upon the fact that he considered al-Ka'ba as the constant element and the central power that shaped, formed and is still shaping and forming the architecture of al-masjid al-ḥarām. It seems also important to note that this principle was first introduced by 'Umar Ibn al-Khaṭṭāb, as indicated earlier in this study. Nevertheless, al-muhandisūn were aware of this principle and their response was negative. They justified it from two points of view, environmental and economic. They argued that in order to make al-Ka'ba in the centre, the expansion of the compass round area has to take place on the southern part, because the internal wall of this part was closed to al-Ka'ba, where the valley and the flow of the annual floods were located. They told al-Mahdī that they considered transferring the flow of the valley, but they were not sure of the success of this solution, because of the steep topography of the valley, besides the high cost of this operation, which required buying all the houses on this side and demolishing them.

Al-Mahdī ignored these difficulties and insisted upon the extension. He argued that "al-Ka'ba must be located in the middle of al-masjid, no matter if it would cost all the money of bayt al-māl (treasury)." Al-Muhandisūn made their estimation during the stay of al-Mahdī at Mecca. Al-Azraqī described the way they conducted their estimation. He indicated that "al-muhandisūn" erected rimāḥ (spears = surveying posts) on the roofs of the houses of the southern part of al-masjid and on the two banks of the valley. They measured the distances between the rimāḥ and decided upon the required area that they
needed for the extension.\textsuperscript{199} They reported their estimation before al-Mahdī. He paid the money and ordered al-qādī to import asāṭīn of marble and granite from Syria and Egypt. Al-qādī bought the houses that were included in the extension, by 25 danānīr for each square cubit\textsuperscript{200} and the houses that were included in the operation of transferring the flow of the valley, by 15 danānīr for each square cubit. They started the work\textsuperscript{201} in the year (AH 167, AD 784), when the imported asāṭīn arrived. They demolished the houses together with the southern construction of al-masjid, transferred the flow of the valley and directed it towards the "old" valley.\textsuperscript{202} Al-Azraqī indicated that they reconstructed the southern part of al-masjid at a distance\textsuperscript{203} of 90 cubits from its former position. As a result of this, the distance between the southern wall of al-Ka'ba and the internal side of the new construction, became 139.5 cubits, where the former distance was 49.5 cubits only. He also indicated that al-muhandisūn made opposite doors\textsuperscript{204} in both directions, the upper part and the lower part of al-masjid in order to avoid any damage that might occur if the flood entered al-masjid.

Al-Azraqī recorded that al-Mahdī died (AH 169, AD 786), during this period, al-muhandisūn erected all the asāṭīn of marble and constructed the roof\textsuperscript{205} over these asāṭīn. They covered it with teak wood, they decorated it and painted it with gold from inside, but they did not finish the work. Al-Azraqī indicated that they continued\textsuperscript{206} the work during the regime of his son Mūsā al-Hādī, where they used asāṭīn of stone\textsuperscript{207} and covered them with gypsum plaster and made the rest of the roof the same as the former. But, according to al-Azraqī, it was less in quality.\textsuperscript{208} He indicated that they constructed a minaret near the door of grand ajyād ـ (a suburb of Mecca). This, according to al-Azraqī, was the last architectural element made in the second extension of al-Mahdī where al-Azraqī ended his interpretation of the history of the architecture of al-masjid al-ḥarām. "He indicated that he recorded all what had been made in its
architecture, up to this day (AH 170, AD 786)." He traced the
development of its architecture from being a limited open space
around al-Ka'ba, defined negatively by other architectural terri-
torial means (the houses of Mecca); until it became a well
defined architecture that had its own territorial means, marked
its urban setting and drew its order in space.

Nevertheless, it is important to note that this date only applied
to the major extensions and not to the minor and maintenance
work, which was supposed to be extended up to the year of his
death (AH 250, AD 864). In the circumstances, one more point
should be cleared, that the book of al-Azraqī included little
information about works that took place after the year (AH 250).
This information was not attributed to al-Azraqī, but according
to the annotator, to two well known intellectuals of Mecca. And, perhaps, these additions were made by an-nussakh (single nasikh-hand writer) who wrote the manuscript, in a later period, after the death of al-Azraqī.

Al-Azraqī, in fact, ended one part of his interpretation to start
another. He interpreted the major extensions of al-masjid al-
Ḥarām, namely the development of the design of its plan and turn
to interpret the architectural elements of al-masjid. He first
indicated the dimensions of the plan, then described and
depicted the architectural elements of al-masjid that shaped its
interior and form. I shall be highlighting (these elements) soon
after indicating the dimensions of al-masjid.

Al-Azraqī indicated that the total area of al-masjid was 120000
square cubits. Its length from the door of banī Jimaḥ to
the door of banī Hāshim was 404 cubits and from the
door of dār an-nadwa to the door of aq-ṣafā was 304 cubits. Its
width from the minaret of al-mas'ā to the minaret of the door of
banī Shība was 278 cubits and from the minaret of the door of
ajyād to the minaret of banī sahīm was 278 cubits. He recorded
different heights for the external walls of al-masjīd. He indicated that the height of the wall of al-mas'ā (the eastern wall) was 18 cubits, the height of the wall of the Yemenī side was 22 cubits, the height of the western side was 22.5 cubits and the height of the wall of ash-Shām side was 19.5 cubits.

The point at issue in these dimensions is that al-masjīd was well defined by four minarets. Al-Azraqī did not interpret the four of them in his former interpretation. This seems to be part of his technique of interpretation, where he focused upon the plan first, then turned to the architectural elements and the interior design of al-masjīd al-ḥarām. This, in fact, is similar to his interpretation of al-Ka'ba. In both interpretations he seems to be treating the plan as an abstract independent architectural element that needs to be studied on its own, apart from its architectural elements. I shall be highlighting these elements in the following discussions.

Al-Azraqī indicated all the architectural elements of al-masjīd al-ḥarām such as al-asāṭīn, aṭ-ṭaqāṭ (single ṭāq = arch), al-abwāb (single bāb = door), walls, ash-shurufāt (single shuruфа = merlon), as-saqf (ceiling), minarets, al-qanādīl (single qandīl = oil lamp), the shed of al-mu’dhīnīn (single mu‘dhīn = the one who calls for prayers), the minbar, Zamzam and the drinking fountains.

All these elements were described in details and depicted thoroughly, similar to his interpretation for the interior of al-Ka'ba. Nevertheless, I shall go through some of these elements.

Al-Asāṭīn (the columns)

Al-Azraqī indicated that there were 484 asāṭīn, inside and outside al-masjīd. He indicated that the height of each usṭuwāna was 10 cubits, its circumference was 3 cubits and the distance
between every two asāṭīn was 6 cubits and 13 fingers. Al-Azraqi also indicated that 321 asāṭīn had a golden painted base. He recorded their distribution in each part of al-masjid and indicated that al-asāṭīn were connected with malābin (single malbin = wooden rafter). These were decorated, ornamented and fixed over the capitals of al-asāṭīn. He recorded their material and argued that all of them were of marble, except 44 which were made of stones. Al-Azraqi recorded the history of each group of al-asāṭīn. He indicated when, where and in what extension such groups were fixed. He also indicated the colours of these asāṭīn, white, red, green and violet. He argued that the limited number of the coloured asāṭīn were fixed in the openings of the doors of al-masjid. This in turn, in my view, illustrated the conceptual design thinking of those who were in charge of the extensions of al-masjid al-ḥarām, where they employed colour in emphasizing its entrances. Al-Azraqi indicated that the four asāṭīn of the door of aṣ-Ṣafā were carved to their middle and contained some inscriptions with gold, but these inscriptions no longer exist. He also argued that some of the asāṭīn of the doors were carved vertically and others were carved horizontally.

At-Ṭaqāṭ (the arches):-

Al-Azraqi indicated that there were 498 ṭaqāṭ over al-asāṭīn inside al-masjid al-ḥarām and the external walls. He recorded the number of these ṭaqāṭ in each part of the four parts of al-masjid, but he did not describe their shapes, nor did he indicate any artistic qualities. This seems to be the only thing lacking in the interpretation of al-Azraqi. He recorded the internal dimensions of al-masjid al-ḥarām. He illustrated these dimensions in relation to al-Kaʾba and located all the architectural elements of al-masjid also in relation to al-Kaʾba. For instance, he located maqām Abraham (the station of Abraham - the stone on which Abraham stood when he built al-
Ka'ba and the sign that marked the position of al-imām in leading the prayers in al-masjid al-ḥarām) in relation to the eastern wall of al-Ka'ba. He indicated the distance of al-maqām from al-ḥajjar al-Aswad, ar-rukn ash-Shāmī and the middle of the eastern wall, as illustrated in (Figure-11). It seems possible at this stage to argue that the description and depiction of al-Azraqī is clear to the extent that it allows one to redraw the plan of al-masjid al-ḥarām. This point will be emphasized more in his description and depiction of abwāb al-masjid al-ḥarām.

Al-Abwāb (the doors)

Al-Azraqī indicated that there were 23 doors with 43 arches. This means that decorative arches were used over the doors. Al-Azraqī indicated their location on the elevations of al-masjid. He recorded that 5 doors with 11 arches were located on ash-Shām elevation, 7 doors with 17 arches on the Yemenī elevation, 6 doors with 10 arches on the western elevation and 6 doors on the northern elevation. He did not indicate directly the number of arches on the northern elevation, but he recorded 3 arches during his interpretation. It seems necessary to indicate that there is a discrepancy between the total number of doors and the arches that he recorded on the beginning of his interpretation and the outcome of the total number of doors and arches on each elevation. The outcome resulted on 24 doors and 41 arches. This discrepancy seems to be a consequence of indicating a blocked door in ash-Shām elevation and, perhaps, al-Azraqī forbade recording the arches of the two remaining doors of this elevation. This might be the reason for this discrepancy.

Al-Azraqī interpreted the history of these doors. He argued that the door of banī Shība that was located on ash-Shām elevation, was founded before Islam. It was known as the door of banī 'Abd Shams. It had two asāṭīn and three arches, its height was 10 cubits and the faces of these arches were covered
with fusayfisā'. He indicated that there was, over the door, a
decorated balcony²²⁴ of teak wood, painted with gold, its length
was 27 cubits, its width was 315 cubits and its height from
the ground level was 17 cubits. The width of the door was 24
cubits and its softies were covered with white marble. He
indicated that the level of the door sill was higher than the
finished floor level of al-masjid with 4 steps.

Al-Azraqī continued his description and depiction of the rest of
the doors, in much the same way. He also described the rest of
the architectural elements of al-masjid al-ḥarām, where I shall
only be highlighting the roof.

As-Saqf (the roof)

Al-Azraqī indicated that al-masjid al-ḥarām had two roofs²²⁵, the
higher roof was structural, made from ad-darim al-Yemānī²²⁶ (a kind of black wood) and the lower one was a decorative
ceiling, made of teak wood and zulīj²²⁷ (ceramic). He in-
dicated that the teak roof was decorated, painted with gold and
on the wood was written some verse of the Qurān. He recorded
that the distance²²⁸ between the two roofs was 2.5 cubits. The
point at issue here is that the double roof was indicated twice
in the interpretation of al-Azraqī which meant that environmental
factors like the sun and rain were considered in the making of
the architecture of al-masjid. So much so, the artistic factor
that was clearly depicted by al-Azraqī as I already indicated.

With this I shall be ending the interpretation of the architec-
tural elements of al-masjid al-ḥarām, where I have highlighted
four major architectural elements. I have tried to demonstrate
the techniques of the analytical description and depiction of al-
Azraqī, and to emphasize the possibility of redrawing the plan,
elevations and form of al-masjid al-ḥarām as it was before (AH
250), without artistic features and architectural characteris-
tics. This because al-Azraqī did not depict in details the
ornaments of the ceiling and other elements, nor did he describe
the forms of the capitals of al-asāṭīn or the shape of the
arches. For although this was the only thing lacking in the
interpretation of al-Azraqī of al-masjid al-ḥarām which, in
fact, did reduce the architectural identity to an abstract one,
but it did not affect its urban setting and order in space. In
fact, one may argue that al-Azraqī seems to be the first to
introduce with success these principles in his interpretation
which was based upon close and live association. These are not
the only principles that were introduced in the interpretation of
al-masjid al-ḥarām, in fact, these had resulted from other
principles. The most important of them was the emotional and
sensible approach of Ibn al-Khaṭṭāb and al-Mahdī which, in my
view, elevated their thinking about architecture to an ideo-
logical one. At the same time, it emphasized the relationship
between the architecture of al-masjid and its urban context. I
indicated a similar relationship earlier, in the interpretation
of al-Ka'ba, where I referred to two elements, namely rules and
typology.

In the sequence of discoveries, one may emphasize the belief that
the study of al-Azraqī is a history of both architectural
discourse and form. One cannot ignore the interpretation of pre-
design thinking that was clearly indicated by al-Azraqī, nor can
one ignore the documented chronological interpretation of the
development of the construction of both al-Ka'ba and al-masjid
al-ḥarām.

In conclusion, one may argue that al-Azraqī emphasized in his
study the technique and structure of historical studies. He used
analytical description and abstract depiction as techniques for
his study. Documentation of the contribution of those who were
involved in the making of architecture (patrons, architects and
builders), chronological interpretation of the construction and
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illustration of the physical and artistic characteristics of the architectural objects. These three headings were the major elements of the structure of his study, each one entails sub-elements, as I already indicated in the course of discussion. A last word about the contribution of al-Azraqī, is that his technique and structure have constituted the skeleton of the subsequent studies of the history of architecture.

I have so far highlighted two types of historical studies, pre-Islamic and Islamic. While the first was approached from a cultural and belief system distance, the second was approached from inside its own culture and belief system. In the following discussion I shall be highlighting a third and final study of the history of architecture that is associated culturally and recognized as a belief system, namely Christian architecture.
CHAPTER 5

STUDIES OF THE HISTORY OF CHRISTIAN ARCHITECTURE

This chapter is devoted to Christian architecture that existed in the Islamic world, in particular the Arab countries. Many studies were made about this subject. Gurgiis Awwad, the annotator of the study of ash-Shābushtī (died AH 388, AD 988) ad-Diyārāt (monasteries), recorded 11 independent studies\(^1\) and 9 studies\(^2\) that manipulated news of monks, in particular, their education. Ḥabīb Zayāt (AD 1938), ad-Diyārāt an-Naqrāniyya Fī al-Islām (diyārāt an-Naqrāniyya Fī al-Islām) recorded 12 studies.\(^3\)

I have already indicated the role of Christian architecture in the study of al-Naqrīzī in chapter 2, where he interpreted the churches of Cairo as a type of its architectural fabric. In chapter 3, I highlighted the interpretation of Ibn al-Kalbī about the Christian architecture of the pre-Islamic period. In chapter 4, I highlighted the interpretation of al-Azraqī to the church of al-qulīs. In this chapter, I shall be highlighting the study of as-Shābushtī because it is the only independent one that was saved from becoming lost. I shall be focusing upon the architectural side, because the study, according to its annotator\(^4\), has literary, historical and geographical sides. I shall first define the term dayr (single of diyārāt) and record its elements as indicated by ash-Shābushtī. I shall also demonstrate the interaction of ad-diyārāt with adjacent urban centres and emphasize the role of the first in creating public recreation centres for the latter. And finally, I shall emphasize the role of this study in Arabic Islamic architectural discourse.

Ad-dayr, according to Yāqūt, is "a house for worship of monks located outside cities, in deserts or on top of mountains, but if it is located inside cities, it will be a church and not a dayr".\(^5\) Ḥabīb Zayāt disputed this definition and approved the one
made by al-Maqrīzī: "ad-dayr in Christian religion is assigned for the worship of monks or nuns who dwell inside it, whereas church is the place for worship of all Christians." The last definition seems to have emphasized the function of both dayr and church. Ibn Baṭṭūṭa emphasized the function of the first in his interpretation for the diyārāt of Constantinople. He argued that a dayr is similar to a zāwiya (a private worship place for a shikh that was used also as a teaching place) in Islam.

Ash-Shābushtī did not define ad-dayr conceptually as the indicated definitions. But he did bring about a similar definition in his interpretation that lacked, according to Ḥabīb Zayāt, architectural analysis. No description was made of the planning or forms of ad-diyyārāt, except some elements indicated in the course of interpretation. I shall survey these elements, soon after reviewing the general theme of the study of ash-Shābushtī.

Ash-Shābushtī recorded 53 diyārāt, 37 in Irāq, 3 in ash-Shām, 9 in Egypt and 4 diyārāt in al-Jāzīra (the upper part of Irāq and diyār bakr دیار بکر, between the two rivers). None of these was described thoroughly. In other words, no chronological history was made for any of these diyārāt. The only historical information indicated in the study, was associated with four diyārāt, fīq9 فیق, at-ṭūr10 الطور, Hind11 هند and al-asāqīf12 الاساقیف. He indicated that dayr fīq was the first one made for an-Naṣārāi Christians. Ash-Shābushtī indicated that prophet Jesus, peace be upon him, used to visit this dayr, where according to ash-Shābushtī, "in it he met with the apostles." He located its site on fīq mountain, next to the city of Ṭabarīyya طبریة (Tiberias). Ash-Shābushtī also indicated that prophet Jesus "appeared after his death for the apostles in dayr at-ṭūr." Through this information one might discover the history of the founding of the two indicated diyārāt that extended in time to the beginning of Christianity. With the same
technique, one might discover the history of dayr Hind and al-asāqīf. The first was built\textsuperscript{15}, according to ash-Shābushtī by Hind, the sister of the king of al-Ḥira, an-Nuʿmān Ibn al-Mundhir النعمان بن المنذر, who lived in the late 6th century AD. It is interesting to note that dayr Hind was the only one that ash-Shābushtī assigned its donator. While al-asāqīf was founded on the remains of the palaces\textsuperscript{16} of al-Ḥira, in particular the palace of as-Sadīr السدير. These palaces had belonged to the kings of al-Ḥira, where the fall of this kingdom took place in the late 7th century AD. This is historical information that one might discover from the study of ash-Shābushtī.

Ash-Shābushtī located the site of these diyārāt and described their environment. He distinguished between diyārāt that were assigned for monks and those assigned for nuns. Furthermore, he assigned the sect\textsuperscript{17} of some of these diyārāt. He did not directly or indirectly refer to the impact or influence of sex or sect upon the architecture of these diyārāt, if there is any.

Having defined the term dayr and displayed the general theme of the study of ash-Shābushtī. I shall take the time here to high-light the architectural elements together with the interaction of ad-diyyārāt with adjacent urban centres and to find the outcome of this interaction.

I have already indicated that ash-Shābushtī allocated the sites of ad-diyyārāt and described their environment, where most of them, in particular those of Irāq, were located near cities, on the bank of the Tigris river and in planted areas. Ash-Shābushtī argued that ad-diyyārāt played a remarkable role in the recreational\textsuperscript{18} life of Arabic Islamic cities. Their sites used to be places for public gathering and parks for cities. Inhabitants of cities, "Muslims and Christians, used to gather in these places. While the first enjoyed their holidays, the second celebrated their feasts."\textsuperscript{19} In this context, ad-diyyārāt constituted part of
the outskirts of Arabic Islamic cities. Therefore, they were part of the urban structure and architectural fabric of Arabic Islamic cities.

Furthermore, ash-Shābushtī indicated that the recreational role extended from the site of ad-diyyarāt to their enclosure, where a new architectural element, namely ḥāna (tavern), was found inside them to serve al-khulāṣ (single khalīf = not a good Muslim, in particular alcoholic). Furthermore, some of al-Khulafā’ al-ḍafīfa (single Khalīfa) and governors used to rest and dwell in some of these diyarāt during their travels. Ḥabīb Zayāt indicated that Aḥmad Ibn Tulūn used to visit dayr al-qaṣīr on a regular basis. Ash-Shābushtī indicated that Khumārawayh Ibn Aḥmad Ibn Tulūn, built for himself, in the same dayr, "a room with four windows." The reason for this cult in dwelling in ad-diyyarāt, according to ash-Shābushtī, came from its pleasant natural environment. This, in fact, emphasized the environmental thinking of monks, where they, in my view, succeeded in merging architecture with its surrounding landscape. The interaction of ad-diyyarāt with adjacent urban centres, in fact, diminished the state of isolation of the first and activated their role in the daily life of the second. This in its turn influenced the inner planning of ad-diyyarāt, as in the case of ḥāna, but one cannot figure out this influence, whether it was readaptation or additions to their plans. The reason for this, is once again, the lack of information.

This interaction extended to "hospitality", ash-Shābushtī indicated that travellers used to dwell in ad-diyyarāt. Ḥabīb Zayāt argued that hospitality was a part of an agreement between the Arab Muslim leader Abū 'Ubaydā and Christians of Syria during the regime of 'Umar Ibn al-Khaṭṭāb. Ḥabīb indicated that as a result of "the increased number of guests, holiday makers and khulaṣā necessity requires to build special rooms for
them." The view of Ḥabīb seems to be convincing, therefore, one may argue that interaction with ad-diyyārāt influenced their inner planning.

Ash-Shābushtī indicated 5 more elements: wall\textsuperscript{27} that surrounded the dayr; ṣawma'a\textsuperscript{28} (a cell for monks), according to ash-Shābushtī, it seems to be an independent element (building); church\textsuperscript{29}; qalālī\textsuperscript{30} (single qilya) similar to sawāma'i; al-qā'īm\textsuperscript{31} (a tower for observation). The annotator also indicated three\textsuperscript{32} more elements: library, water reservoir and kitchen. None of these elements were directly or indirectly discussed or described by ash-Shābushtī.

Under these circumstance, one does not seem to be able to conclude much about the inner planning of ad-diyyārāt, except that they consisted of different buildings. For although one cannot survey all of them, but one can imagine a partial layout based on the available interpretation of ash-Shābushtī that lacked also description of construction techniques, except what he had indicated about carving\textsuperscript{33} some of these diyyārāt in rock.

Finally, the outcome of the study of ash-Shābushtī, seems to be limited to the notion of adaptation, where palaces were adapted to function as dayr. And to the role of interaction that diminished the atmosphere of isolation of ad-diyyārāt and brought them to the realm of recognition spatially, socially and culturally within the urban context of Arabic Islamic cities. The contribution of the study of ash-Shābushtī in Arabic Islamic architectural discourse seems to be a documentary one. This might facilitate a future archaeological exploration that if it occurs, would, perhaps, introduce one to the ways in which monks had thought about and practiced the architecture of monasteries.
COMMENTARY AND CONCLUSION

In outlining Arabic Islamic architectural discourse I have taken into account two major points: period and sources. I chose the first in relation to the second. I conducted my investigation in the sources which were produced by Arab and Muslim intellectuals and written in the Arabic language, within the chosen period which extended over 13th century.

I ascribed the early start of my investigation to the fact that the beginning of Arabic Islamic architectural discourse originated in al-Jāhiliyya verse and because Islam was born within the same geographical, social and intellectual environment of al-Jāhiliyya. I ascribed the end of these investigations to the changes which occurred in the shape of Arabic Islamic architectural discourse as a result of the influence of Western studies and the decline in the production of architectural literature in the Arab World. The latter, in fact, paved the way for the advancement of the first, because the decline started in the 16th century. Therefore, the main investigation was conducted in the sources and studies which were produced before the decline started.

I divided my study into three stages: general, specific and case studies. The general stage was devoted to indicate the beginning of Arabic Islamic architectural discourse. The second and the third stages were devoted to its formation.

In the general stage six sources, taken in order, were investigated: al-Jāhiliyya verse, religious, literary, scientific, geographical and historical disciplines. The outcome of investigation of each source as described in chapter one resulted in creating and developing principles, concepts and notions, in the following I shall be recording the findings of each source.

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1- Investigation in al-Jāhiliyya verse resulted in:

a- manifesting the concepts, function and memory
b- creating principles of writing history of architecture, such as documentation of patrons, their social positions, type and function of architecture, dates and periods of constructions, building material, location of sites and climatic factors, dimensions and areas of premises and characteristics of form.
c- creating an developing techniques of architectural interpretation that based upon personal association, close seeing, examining gaze, critical notes and analytical description. It took the form of a clear systematic process of exploration which began by indicating and clarifying identity of owners of remains, nature of environment and ended with descriptive documentation of the remains of architecture.

2- Investigation in the religious source resulted in:

a- introducing rational interpretation to architecture
b- widening the scope of architectural interpretation to include the comprehensive 'umrān of environment, the inhabitant of the earth and the establishment of civilizations.
c- classifying architecture as a cultural phenomenon which was required by the virtue of necessity of forming and establishing social organisation.
d- emphasizing the role of the environmental, social, technical, aesthetic and functional factors in the making of architecture.

3- Investigation in the literary source resulted in:

a- widening the scope of archaeological exploration and
interpretation
b- displaying principles and concepts of house design such as privacy, prevention, safety and orientation
c- displaying principles of urban planning such as choosing sites of residential areas, land use and landscape
d- emphasizing the role of the concept of function and the notion of aesthetics
e- displaying architecture as a well balanced structure and an ideal model for the structure of verse
f- emphasizing, once again, the concepts of function and use and the notions of aesthetics and meaning of architecture

4- Investigation in the scientific source resulted in:

a- displaying the role of environment in the process of urban planning, in terms of climatic, topographic and hygienic conditions
b- introducing hygiene and psychology in the making of architecture in order to achieve fitness in its making
c- displaying a design process consists of five points:

1- orientation of openings of houses towards the east to allow the morning sun and northern wind from entering houses, because facing the morning sun creates a great deal of energy in the bodies and souls of users and to avoid orientation towards the winter wind.
2- to increase thickness of walls in order to prevent heat transfer.
3- to enlarge areas and increase height of rooms in order to avoid polluted air.
4- to make good illumination because light relaxes the soul and increases its energy.
5- to elevate houses over ground level in order to avoid humidity and polluted air.

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d- emphasizing the role of proportions and the geometrical properties of shape

e- emphasizing the concept of function and displaying architecture as an ideal structure operates and functions as the human body.

f- displaying the psychological process of perception and emphasizing the sub-meanings, which compose objects, in this process.

g- introducing principles of drawing perspective

5- Investigation in the geographical source resulted in:

a- illustrating the three levels of planning: national, regional and urban planning

b- introducing the use of drawings and colours in the interpretation of planning

c- displaying principles of urban planning such as geographical locations and climatic characteristics of sites of cities, economic sources, social, political and administrative institutions of cities, history of cities, land use, daily activities, road network, services, landscape and architectural fabric of cities.

d- defining the conceptual meaning of the elements of the national regional and urban planning such as icclîm, kûra, mikhîf, jund and mişr

e- introducing the technique of description of cities and writing history of architecture

6- Investigation in the historical sources resulted in:

a- defining the notion of history, displaying its meaning and philosophy and illustrating their role in inspiring the studies of history of architecture

b- interpreting history of architecture as a record of knowledge about architecture and emphasizing that the begin-
ning of studies of history of architecture was initiated in al-Jāhiliyya verse, emphasized in al-Qurān and implemented in the geographical studies

- explaining techniques of construction of the architecture of ancient civilizations
- introducing stylistic interpretation in the studies of history of architecture
- emphasizing the indicated principles of urban planning, in the geographical source, and strengthening the architectural discourse by criticizing the planning theory of ʿUmar Ibn al-Khaṭṭāb
- interpreting architecture as an independent intellectual discipline that possesses theory and practice

Finally, one may argue that in the process of investigation, it has been emphasized that the contribution of these disciplines were interrelated, the contribution of each discipline supplemented the contribution of the others. What has been created in al-Jāhiliyya verse, has been emphasized in al-Qurān. And what has been coined in the latter has been elaborated in the other four disciplines. As a case in point, principles, techniques and structure of writing the history of architecture were introduced in al-Jāhiliyya verse emphasized in al-Qurān and literary studies, implemented in the geographical and historical disciplines. For instance, the concept of memory had been developed from its emotional role in al-Jāhiliyya verse to constitute a philosophical one in al-Qurān and in historical discipline. The technique of interpretation had also been developed from personal experience and association to a rational one. This also applied to the concept of function that was originated by al-Afwah al-Awadī in al-Jāhiliyya verse and emphasized in al-Qurān, al-Ḥadīth, literary and scientific sources, so much so, for the rest of these principles and concepts.

This integration, in the outcome of these disciplines, emphasized
the unity of the Arabic Islamic architectural thinking that continued in the form of independent architectural studies.

These independent studies constituted the second stage of my study. Five types of them arranged according to their theme, ʿaḍkām al-bunyān, building types, urban planning, archaeological and historical studies, were examined in chapter two. In the following I shall be recording the findings of each study.

1- Investigation in the study of ʿaḍkām al-bunyān resulted in:
   a- emphasizing that studies of ʿaḍkām al-bunyān were a continuation of the religious source
   b- indicating the involvement of master builders in the interpretation of architecture
   c- illustrating the elements of human comfort and personal hygiene such as smoke, noise, and smell which resulted in coining principles of zoning and land use
   d- emphasizing the concepts of privacy and prevention
   e- illustrating design data and suggesting architectural solutions for privacy
   f- emphasizing that Arabic Islamic architecture was practiced within the realm of the constitutional power of principles, rules and laws that coined in ʿaḍkām al-bunyān. So to speak that the intellectual and practical tradition of urban design originated by these ʿaḍkām.

2- Investigation in the studies of building types (al-masājid) resulted in:
   a- illustrating the aim of studies of building types as planning and programming for the design process
   b- illustrating the technique of these studies by defining the problem, solving it and creating a design criterion for each type
c- recording the structure of the function (aḥkām aṣ-ṣalāt), then suggesting architectural solutions for them

d- introducing design data such as dimensions and ideal areas of mosques

e- emphasizing that architects were and are still not bound by fixed aḥkām regarding decoration

f- emphasizing that architecture of al-masājid should be independent buildings and mark its own order in space

3- Investigation in the studies of urban planning

a- emphasizing all the previous indicated findings in terms of levels of planning, environmental aspects, principles of urban planning, the theory of planning of Ḥāwar Ibn al-Khaṭṭāb and Ibn Khaldūn and principles of zoning and land use

b- illustrating the structure of the studies of urban planning and emphasizing the technique of morphological analysis

c- introducing the concept of al-khiṭṭa as the major element in the urban planning of Cairo

d- illustrating the general planning scheme of the city of Cairo that was based on the theory of planning of Ḥāwar Ibn al-Khaṭṭāb

e- illustrating the urban structure of the city of Cairo

4- Investigation in the archaeological studies resulted in:

a- emphasizing the indicated technique of exploration and principles of interpretation

b- instrumenting language in the exploration and interpretation process of archaeology

c- enlarging the scope of architectural interpretation to include non-Arabic and non-Islamic architecture through archaeological studies
d- offering knowledge about construction technique of architecture of ancient civilization

e- emphasizing the technique of description and depiction in the interpretation of architecture

f- introducing artistic analysis in the interpretation of architecture and emphasizing the representational role of art

g- interpreting proportions as the source of beauty and the human body as an order of proportions

h- introducing the use of drawing in the archaeological interpretation

5- Investigation in the historical studies resulted in a general conclusion emphasizing that modern studies of history of Arabic Islamic architecture are not an alternative to Arabic Islamic architectural discourse.

Finally, these findings prove that Arabic Islamic architectural discourse consists of branches and elements that possess theory and practice and has two sides. The first one is concerned with theories of architecture, urban design and planning. The second one is concerned with the documentation of architecture.

The first one is limited to Arabic Islamic architecture. It governs its making and produces its meaning. This occurred through principles, concepts, aḥkām, design data, working knowledge about programming, function and planning that was introduced in the studies of this side. This outcome brought the product of Arabic Islamic architecture, directly and from its very beginning, to the realm of design and freed it from falling within the realm of tradition, habit and imitation. Therefore, at this stage, one may conclude that the outcome of this side had put at the disposal of architects a wide range of information that enables them to make their design more functional and more meaningful.
The second side is general, it exceeds the interpretation of Arabic Islamic architecture to non-Islamic. This side emphasizes and implements techniques and structure of historical and archaeological studies. While the first acts as a record for achievements of Arabic Islamic architecture, the latter acts as a record for architecture of non-existing cultures. It almost played no role in the making or documenting of Arabic Islamic architecture, although it did play a considerable role in widening the scope of Arabic Islamic architectural discourse. The reason for this is because Arabic Islamic culture is still alive. Its major architectural production such as masājid, ḥammāmāt, and wekalāt are still functioning. Besides their history was written in close association with the making of their architecture. This also applied to the architectural production that existed but is no longer functioning such as baymāristānāt and khānāt, because their basic design criteria was made known through the contribution of the first side and in the documentation of their architectural history.

This cultural and architectural presence ignores the need for archaeological exploration in documenting Arabic Islamic architecture. And it frees the room for historical interpretation that represents the last element in Arabic Islamic architectural discourse, which is almost, the most comprehensive one.

In exploring the position and the role of studies of history of architecture which is the concern of the third stage of this study, I examined three studies, pre-Islamic, Islamic and Christian architecture.

In chapter 3, I examined the study of Ibn al-Kalbī, al-Aghām. This study was approached from a cultural and belief system distance. It lacks personal experience, close association and was written at a later stage, its outcome resulted in:
a- introducing the concept of historical precedence
b- emphasizing the meaning of pre-Islamic religious archi-
tecture in terms of originality and sacredness of form.

In chapter 4, I examined the study of al-Azraqī, Akhbār Mecca. It was approached from inside its own culture and belief system. It was the product of personal life experience and close association. The outcome of this study resulted in:

a- implementation of principles and techniques of writing the history of architecture that based on analytical de-
scription, abstract depiction and illustration with drawings
b- emphasizing and documenting the chronological process of design and construction
c- introducing the concept of pre-design decisions and the notion of public participation in the making of architec-
ture
d- emphasizing the principle of territorial means in the making of architecture
e- emphasizing the concept of urban setting
f- emphasizing the concept of order in space
g- illustrating the unity of the architectural thinking of those who were involved in this process
h- emphasizing that the history of Arabic Islamic architec-
ture is not a mere surveying of technical achievement of form, but a record of architectural discourse.
i- emphasizing that studies of theories and history of Arabic Islamic architecture were inseparable, each one delineated its position clearly in these studies and in Arabic Islamic architectural discourse.

In chapter 5, I examined the study of ash-Shābushtī, ad-Diyārāt. It was approached within the context of Arabic Islamic culture, but with little personal experience and association. It is for
this reason that the study lacked historical information and principles of architectural design. But the cultural context, on the one hand, emphasized principles of urban design that widened the scope of Arabic Islamic architectural discourse. On the other, diminished the atmosphere of isolation of ad-Diyārāt and brought them to the realm of recognition, spatially, socially and culturally.

In conclusion, the outcome of investigation into the sources of Arabic Islamic architectural discourse emphasized that this discourse has been born within the context of Arabic Islamic intellectual disciplines and cultural phenomena. It was developed and formed within the same environment. The outcome of examining its achievements emphasized that Arabic Islamic architectural discourse reached its mature stage and marked its position, as an intellectual discipline and a cultural phenomenon in Arabic Islamic culture. Furthermore, the outcome of these investigations prove the presence of Arabic Islamic architectural discourse in the contemporary architectural discourse, because most, if not all, principles, concepts and notions of the first, in their abstraction and generality, are still valid issues on the second. For instance, concepts such as function and memory and notions such as history and aesthetics are proved to be of living interest for architects and those concerned in the interpretation of architecture.

My conclusion is that Arabic Islamic architectural discourse is a comprehensive autonomous discourse, immune for outside criticism by its own achievements and capabilities. It proves its presence as an intellectual discipline and a cultural phenomenon, in spite of attempts to ignore it. But it still lacks adequate recognition and requires to be reclassified and implemented in the architectural education and institutions of the Arabic and Islamic worlds.
Appendix

Transliteration of Arabic words

The following table shows the system that I have followed in transliterating the letters of the Arabic alphabet:

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<th>Arabic Letter</th>
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(note: the sign of hamza is an apostrophe)

(the sign of 'ain is an inverted apostrophe)
Vowels

Short vowels:  

- fatha (ء)  
- kasra (١)  
- qamama (۳)  

Long vowels:  

- ā  
- ū  
- ī  

1- I used the article لام (ال) in its two pronunciation forms. The first form is known as لام القمرية and pronounced as clear (الأل), therefore I transliterated as al, as in: al-Qamar, al-Ka'ba, al-Azraqī.

The second form is لام الشمسي, where the لام is diphthongizing with the letter that follows it. Therefore its pronunciation is similar to the pronunciation of the same letter that follows it but preceded with (اً=أ), like: ash-Shams, at-Tabarī, an-nadwa.

2- For the sign الشدة (و), I have used double letters as in: Islāmiyya, ِHAMMĀM and Abbās, because the use of the sign (و) over Arabic letters (except hamza) means that the letters should be pronounced twice: the first is consonant and the other is consonantal.

3- For internationalised words and names, I have used the current spelling in the English, like: Arab, Islām, Mecca.
Abraham, Jesus (only for prophet, for other names I used the Arabic form Ibrāhīm and 'Isā); with some exceptions as in the case of Ishmael, I used the Arabic form Ismā'īl.

4- I have avoided the use of the Latin forms of Arabs and Muslims scholars, like: al-Hazan, avccenna; and I use the Arab forms: al-Ḥasan and Ibn Sīnā.

5- The final (h=ɔ) which preceded by the short vowel a is rarely pronounced, therefore I have left it out.

6- For yāʾ an-nisba ياء النسب I have used the current transliteration in the English language which mainly used the long vowel (i) instead of (iy) as in al-Azraqī and not al-Azraqi and at-Ṭabarī and not at-Ṭabarīy. I have made this choice in order not to abuse the access to valid Western indexes.
NOTES TO CHAPTER 1

1- see: Al-Hamdāny, Șifat Jazīrat al-Arab, pp.: 58
   Al-Bakrī, Muḍjam Ma Istu'djam, pp.: 5-89
2- see: Al-Ḥufī, al-Ḥayāt al-Arabiyya Min ash-Sha'ir al-
   Jāhiliyy, pp.: 47-51
3- For the political life of ʿUmar Ibn al-Khaṭṭāb, see:
   aṭ-Ṭabarī, Tārikh aṭ-Ṭabarī, vol. 3/428-623, vol. 4/5-194
4- For the view of ʿUmar Ibn al-Khaṭṭāb, about verse, see:
   Ibn Rashīq, al-ʿUmda vol.1/27
   For the substance of this view, see: note no.2
5 -see: Jawād ʿAlī al-Mufaṣṣal Fī Tārikh al-Arab qabla al-
   Islām, vol.9/449-450
6- see: Ibn Rashīq, al-ʿUmda, vol.1/120
   Al-Ḥufī, pp.: 47-51
7- Ibid, vol. 1/120, pp.: 47-51
8- see: al-Hamdāny, al-Aklīl, vol.8/17
9- Ibid, pp.: 14
10- Ibid, palaces like Sulḥīn and Bynūn, pp.: 53-57
11- Ibid, temples like: Riyām, pp.: 66-68
12- Ibid, al-Hamdāny recorded a great number of graves,
   pp.:124-227
13- Ibid, pp.: 50
14- Ibid, pp.: 64
15- Memory has been indicated clearly in the verse of
   Labīd Ibn Abī Rabīʿa and ʿAntara
   Ibn Shaddād عنصره بن شداد
   see: Dīwān (poetry of) Labīd, pp.:297-321
   Dīwān ʿAntara, pp.: 15-31
16- see: Dīwān Imruʿ al-Qays
17- see: Dīwan an-Mābigha, pp.: 48-54

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18- Ibid, pp.: 30-37
19- Ibid, pp.: 78-82
20- see: Dīwān Zuhayr Ibn Abī Sulmā, pp.: 19:32
21- see: At-Tabrízī, Ikhtīarāt al-Mufaddal aq-Ḍubī, vol.1/533-558

22- The comprehensive ’Umrān of environment has been displayed in al-Qurān through the process of inhabiting the earth with man that began with the consultation with angels and ended with the re-inhabiting of earth after the flood, in which the establishment of civilizations took place:

"وَأَذَّنَ فَالرِّيَلَ للمَلاَكِةِ تَأَتَّى جَاعِلٌ فِي الْأَرْضِ حَليِّةَ"

Behold, they Lord said to the angels: "I will create a vicegerent on earth."
Sūra (2:30), pp.: 24

"وقَلْنَا اهْبِطُوا بِعِصْرِكُمْ لِبَعْضِ عَدَوٍّ وَلِكَمْ فِي الْأَرْضِ مستقرٌ ومَتَاعٌ إلى حين"

"We said: "Get Ye down, all (Ye people), with enmity between yourselves. On earth will be your dwelling-place. And your means of livelihood for a time."
Sūra (2:36), pp.: 26

"فَأَوْحَيْنَا لِهِمَا اسْتَمِعُوا فَلَمَّا جَاءَ امْرُنَا وَفَارَ الحَدُور فَأَسْلَمُوا فِيهَا مِن كُلِّ زَوْجِينِ أُثْنَىَ وَأَهْلَكَ الَّذِينَ مِن قَبْلِهِمَا "

"So We inspired him (With this message): Construct the Ark within our sight and under our guidance; then when comes our command, and the fountains of the earth gush..."
forth, take thou on board pairs of every species, male and female, and thy family —
except those of them against whom the word has already gone forth."
Sura: (23:27), pp.: 879

23- see: The holy Qurān, Sūra (23:27), pp.: 879.

24- The documentation of the achievements of ancient Arab civilization of ‘Ād and Thamūd has been indicated in the holy Qurān:

"مَثَلَ كَيْفَ فَعَلَ رَبُّكَ بَعْدَ ارْمٍ ذَاتِ الْعَمَادِ الْحَيِّ
لَمْ يَلْقَى مَثَلَهَا فِي الْبَيْلَادِ وَشَمَوْرُ الذِّنَّ جَابُوا
الْجَبَلِ بَالْوَادِ وَفُرُوعٌ ذِي الْأَوْلَادِ
"

Seest thou not how thy Lord dealt with the ‘Ad (people), of the (city of) Iram with lofty pillars, the like of which were not produced in (all) the land? And with Thamūd (people), who cut out (huge) rocks in the valley? And with Pharaoh, Lord of Stakes."
Sūra (89: 6-10), pp.: 1732 ·

25- The documentation of the achievements of the Arab civilization of Sabā’ of Yemen has been indicated in the holy Qurān:

"إِنِّي وَجَدُتُ امْرَأَةً فِي وَلَدِهَا وَمُلْكِهَا وَوَلِيَّةً
عَرْشَ عَظِيمٍ
"

"I found (there) a woman ruling over them and provided with every requisite; and she
Has magnificent throne."
Sūra (27:23), pp.: 983

"He said: "Transform her throne ..." So when she arrived, she was asked, "Is this Thy throne?" She said, It was just like this; ... " She was asked to enter The lofty Palace; but When she saw it, she Thought it was a lake Of water, and she (tucked up Her skirts), uncovering her legs. He said: "This is But a palace paved Smooth with slabs of glass."
Sūra (27:41), pp.: 987-988

26- The role of environment upon the making of architecture has been indicated in the holy Qurān on different occasions, for instance:

"وسخر لكم الليل والنهار والشمس والقمر"

"He has made subject to you The Night and the Day; The sun and the Moon;"
Sūra (16:12), pp.: 658

27- see The holy Qurān, Sūra (16:80-81), pp.: 678
29- : Ibid, Sūra (15:82), pp.: 651
30- : Firmness has also been indicated on the saying of prophet Muḥammad:
"Believer for believer is like construction tighten itself by itself."

see: Muslim, al-Imām, Saḥīḥ Muslim, vol. 4/1999
31- This philosophy has been indicated on al-Qurān in different occasions:

"اقفم يسيروا في الأرض فبينظروا كيف كان عاقبة الذين من قبلهم."

"Do they not travel Through the earth, and see what was the end of those before them?"

32- Some of these elements have been clearly indicated in al-Qurān like: light, shadow, colour:

"الم نتر الى ريك كيف مد الظل ولو شاء لجعله ساكنا ثم جعلنا الشمى عليه دليلا"

"Hast thou not turned Thy vision to thy Lord? How He doth prolong The Shadow! If He willed, He could make it stationary! Then do We make The sun its guide;"
Sūra (25:45), pp.: 936

33- see: Ibn Ḥajar al-‘Asqalānī, al-Muṭālib al-‘Āliya, pp.:202
34- The concept al-qadar (limit) has been indicated in the letter of ‘Umar Ibn al-Khaṭṭāb that he sent to his two leaders in Irāq. His response to their request to settle in Irāq, resulted upon coining the first theory

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of urban planning in Arabic Islamic architectural discourse. He ordered them "to choose a site that suits the camels of Arabs, because [he argued] what suits camels suits Arabs. "He emphasized that the site must be open, pastoral, close to water and without any natural or artificial obstacle like rivers or bridges ....." He ordered that the area of houses should not exceed three rooms and not to be higher than al-qadar. He defined it as the necessity that does not exaggerate the cost or deprived the purpose. He classified the roads and indicated their width: main roads = 40 cubits \[40 \times 0.565 = 22.6\text{m}\]; sub-main = 30 cubits \[30 \times 0.565 = 16.9\text{m}\]; secondary roads = 20 cubits \[20 \times 0.565 = 11.3\text{m}\] and al-aziqa (single zuqāq = alley) = 7 cubits \[7 \times 0.565 = 3.955\text{m}\].

see: Aḥ-Ṭabarī, Tārīkh aḥ-Ṭabarī, vol.4/40-49

35- Moderation in Islamic discourse is a central issue, because God has classified the nation of Islam as a "justly balanced" nation. So to speak that the concept function in architecture seems to be part of this classification and interpretation.

see: The holy Qurān, Sūra (2:143), pp.:57

36- see: Al-Jāḥiẓ, Kitāb al-Ḥayawān, vol.1/72

37- Ibid, vol.1/73-75

38- see: Al-Jāḥiẓ, Risālat at-Tarbī‘ Wal-Tadwīr, pp.:40

39- Ibid, pp.: 40

40- Ibid, pp.: 40

41- Ibid, pp.: 40

42- Ibid, pp.: 40

43- see: Al-Jāḥiẓ, al-Bukhālā‘, pp.: 64-72

44- Ibid, pp.: 66

Ibn Qutayba, Adab al-Kātib, pp.: 97

45- see: Ibn Qutayba, ‘Uyūn al-Akhbār, vol.1/311-315

46- Ibid, vol.1/312-313

47- Ibid, vol.1/312

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49- : Ibid, vol.1/311
51- : Ibid, vol.1/311
52- : Ibid, vol.1/311
53- see: Ibn Rashīq, al-ʿUmda, pp.: 121-122
54- see: Abū Zayd al-Bālkhī, Maṣālih al-Abdān Wal-Anfus, pp.: 30
55- : Ibid, pp.: 41-43
56- : Ibid, pp.: 43-44
57- : Ibid, pp.: 53
59- see: Ibn Sīnā, al-Canon Fī at-Ṭibb, pp.: 124-127
60- : Ibid, pp.: 123-124
61- : Ibid, pp.: 124-125
62- : Ibid, pp.: 122
63- : Ikhwān aṣ-Ṣafā devoted the second letter, for geometry

see: Ikhwān aṣ-Ṣafā, Rasāʾil Ikhwān aṣ-Ṣafā, vol.1/78-113
65- : Ibid, vol.1/95
69- : see the ninth letter of Ikhwān aṣ-Ṣafā, vol.2/380-395
74- see: Al-Ḥasan Ibn al-Haytham, Kitāb al-Manāẓir, pp.: 244
75- : Ibid, pp.: 216-338
76- : Ibid, pp.: 230
77- : Ibid, pp.: 230-231
78- : Ibid, pp.: 244
79- : Ibid, pp.: 267-270
80- : Ibid, pp.: 270-273

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81- see: Ibn Baṭṭūta, Tuḥfat an-Nuẓẓār
82- see: Al-Moqaddasī, Aḥsan at-Taqāsīm, pp.: 9
83- : Ibid, pp.: 9
84- : Ibid, pp.: 9
85- : Ibid, pp.: 47, 67, 95, 113, 125, 151, 179
86- see: Yāqūt al-Ḥamawī, Muʿdjam al-Buldān, vol.1/7-13, 33-46
89- : Elements of planning has been demonstrated in the description of cities. See note, no. 88 and the many other cities, that were described by Yāqūt.
90- see: Al-Moqaddasī, Aḥsan at-Taqāsīm, pp.: 71-75, 80-82, 165-171.
Ibn Baṭṭūta, Tuḥfat an-Nuẓẓār, pp.: 45-47, 63-67, 80-85, 90-97
91- see: Ibn Baṭṭūta, Tuḥfat an-Nuẓẓār , pp.: 33
92- : Ibid, pp.: 68
93- : Ibid, pp.: 234-235
94- see: Ibn Khaldūn, al-Muqaddimah, both the Arabic edition and the English translation, where I shall refer to the language after the number of pages. See pp.: 3-4, 9 Arabic, ix, 5 English
95- : Ibid, pp.: 3 Arabic, ix English
96- : Ibid, pp.: 9 Arabic, 5-9 English
97- : Ibid, pp.: 3-4 Arabic, 5 English
98- : Ibid, pp.: 4 Arabic, 5 English
99- : This philosophy originated, firstly, in al-Jāḥiliyya verse, emphasized in al-Qurān, illustrated and manipulated by historians. See for instance the verse 164
of Qis Ibn Sā′da

Al-Jāḥiz, al-Bayān wal-Tabīn, pp.: 163-164
Al-Mas'ūdī, Murūj adh-Dhahab, vol.1/82
For the holy Qurān, see: note no. 31
For historians, see: Ibn Khaldūn, al-Muqaddimah, pp.: 9-10 Arabic, 5-9 English
100- see: Diwān al-`Ashā, pp.: 116-117, 131
101- see: The holy Qurān, Sūra (22:26), pp.: 857
104- see: Note no. 25
105- see: Note no. 24
106- see: Al-Mas'ūdī, Murūj adh-Dhahab, vol.1/387-394
108- : Ibid, vol.2/228, 244-246
112- : Ibid, vol.2/11-14, 111
113- : Ibid, vol.2/14
118- : Ibid, vol.4/4
119- : Ibid, vol.4/4
120- : Ibid, vol.4/4
121- : Ibid, vol.4/4
124- see: Ibn al-Kalbī, al-Aqnām
   Al-Azraqī, Akhbār Mecca
   Ibn Kathīr, al-Bidāya Wal-Nihāya
125- see: Al-Azraqī, Akhbār Mecca
   : Ibn 'Asākir, Tārīkh Dimashq
165
126- see: Ibn Khaldūn, al-Muqaddimah, pp.: 267-269 English
127- : Ibid, pp.: 267 English
128- : Ibid, pp.: 267 English
129- : Ibid, pp.: 267 English
130- see: Note no. 34
131- see: Ibn Khaldūn, al-Muqaddimah, pp.: 268 English
132- see: Note no. 34
133- see: Ibn Khaldūn, al-Muqaddimah, pp.: 319 English
134- : Ibid, pp.: 319 English
135- : Ibid, pp.: 320 English

NOTES TO CHAPTER 2

1- see: Ash-Shāfi‘ī, al-Um, vol.3/126-127
     Ibn Qudāma, al-Mughnī, vol.5/28-53

2- Many independent studies were made about āḥkām al-
Bunyān, some of those studies were indicated by the
annotator of Ibn ar-Rāmī, manuscript namely, ‘Abd ar-
Ruḥmān al-Āṭram.


3- : Ibid, vol.1/6-84
4- : Ibid, vol.1/241-289
7- : Ibid, vol.1/137-150
8- : Ibid, vol.1/92-152

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23- see: Ibn Qutayba, al-Jarāthīm, pp.: 173-193
24- see: Al-Kawkabānī, Ḥadāʾiq an-Namām
25- These types of independent studies were established in Waqf (permanent charitable) documents that were made by donators. Where they recorded in these documents a schematic plan to what they want to make it Waqf. They were very precise in indicating the function, position and relation of every single element with other elements. These studies are considered, in my view, as pre-design studies that define the problem and suggest its solution.
26- This note has been made by the annotator of the manuscript of az-Zarkashī.
27- see: Majallat al-Ahkām al-ʿadliya, item no. 21
28- see: Az-Zarkashī, Iʿlām as-Sājid bi-Aḥkām al-Hasājīd, pp.: 5, 24
29- see: Az-Zarkashī, Iʿlām as-Sājid bi-Aḥkām al-Hasājīd, pp.: 86-92
37- : Ibid, pp.: 89
38- : Ibid, pp.: 88
39- : Ibid, pp.: 140
40- : Ibid, pp.: 140-141
41- : Ibid, pp.: 141
42- : Ibid, pp.: 141, see also, Sūra (7:32), pp.: 348
43- : Ibid, pp.: 335-337
44- : Ibid, pp.: 337
45- : Ibid, pp.: 375
46- : Ibid, pp.: 374
47- : Ibid, pp.: 401
48- : Al-Azraqī, Akhbār Mecca
      Ibn `Asākir, Tārīkh Dimashq

49-see : Al-Maqrīzī, al-Mawā'iq Wal-I'tibār, vol.1/14-18, 50-72
51- : Ibid, vol.1/50-68, 100-111
52- : Ibid, vol.1/72-111
63- : Ibid, vol.1/297
64- : Al-Maqrīzī, indicated that the governor of Egypt `Amr
      Ibn al-ʾĀs, assigned four persons to arrange al-
      Khīṭaṭ : Muʿīwiya Ibn Khudīyj, Shurīq al-Ḡūṭiyfiy,
      ʿUmar al-Khūlānī and Ḥuwaiyīl al-Maghāfīrī.
      see: al-Maqrīzī, vol.1/297
68- : The founder was the 'Abbasid governor of Egypt, Ahmad Ibn Tülin. See: al-Maqrizi, vol.1/313
70- : Ibid, vol.1/316
72- see: Ibn Iyās, Badā‘i‘ az-Zuhūr, vol.1/188
73- see: Al-Maqrizi, vol.1/361
75- : Ibid, vol.1/361
76- : Ibid, vol.1/360-361
   Ibn Iyās , vol.1/186
77- see: Al-Maqrizi, vol.1/361
78- see: Ibn Iyās , vol.1/186
79- see: Al-Maqrizi , vol.1/361
80- : Ibid, vol.1/450
81- : Ibid, vol.1/403
84- : Ibid, vol.2/2
   'Alī Mubārak, al-Khiṭṭat at-Tawfīqiyya, vol.1/197
85- see: Al-Maqrizi, vol.2/23-37
87- : Ibid, vol.2/38
88- see: 'Alī Mubārak, vol.1/197
89- : Ibid, vol.1/197
90- see: Al-Maqrizi, vol.2/47
91- : Ibid, vol.2/47
92- see: Al-Maqrizi, vol.2/244-331, 408-413, 414-426, 427-430
   430-436, 445-452

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101- : Ibid, vol.2/405-408
105- : Ibid, vol.2/197-200
117- see: Al-Birūnī, Kitāb Fī Taḥqīq Mā līl-Hind
________ al-Athār al-Bāqiya
        Ibn Waṣīf, 'Ajā‘ib ad-Duniā
118- see: Al-Qazwini, Athār al-Bilād
        Al-Abshīhī, al-Muṣtaṣṭrif Fī Kuli Fīn Muṣtaṣṭrif
119- see: Al-Hamdāny, al-Aklīl, vol.8/3-104
120- : Ibid, vol.8/68
121- : Ibid, vol.8/115
124- : I have already indicated the techniques and principles
       of archaeological exploration and interpretation in
       the first chapter, in particular, in al-Jāhilīyya
       verse, geographical and historical sources.
125- see: Al-Baghdādī, al-Ifāda Wal-I’tibār, pp.: 35
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NOTES TO CHAPTER 3

1- see: Al-Mas'ūdī, Murūj adh-Dahab
    : Al-Hamdānī, al-Akhlīl, vol.8
    : Al-Abshīhī, al-Mustaṭṭrif
2- : All these books were indicated by Ibn an-Nadīm
    see: Ibn an-Nadīm, al-Fahrast, pp.: 142
3- : Although Judaism existed in Arabia before Islam, it
    did not maintain any architectural presence. The
    reason for this is, perhaps, because it is a closed
    religion. It is important to note that it was not in-
    dicated architecturally in al-Jāhiliyya verse, unlike
    Christianity, which was indicated by many poets.
4- : No date was set for this transfer.
5- : Al-Balqā' is now a county in Jordan, however, no city,
    at our time is known by this name. Most probably he
meant the city of Ammān, the capital of Jordan, because it is the only city in the county of al-Balqā' which has antiquities.

see: Ibn al-Kalbī, al-Aṣnām, pp.: 8

6- : Ibid, pp.: 8
7- : All these religious buildings were indicated by Ibn al-Kalbī.
see: Ibn al-Kalbī, al-Aṣnām, pp.: 1-64

8- : Ibid, pp.: 44
9- : Ibid, pp.: 46
10- : Ibid, pp.: 46
11- : Ibid, pp.: 46-47
12- : Ibid, pp.: 17-26
13- : Ibid, pp.: 20
14- see: Al-Azraqī, Akhbār Mecca, vol.2, pp.: 44
15- see: Ibn al-Kalbī, al-Aṣnām, pp.: 53
16- : Ibid, pp.: 27
17- : Ibid, pp.: 28

NOTES TO CHAPTER 4

1- see: Al-Azraqī, Akhbār Mecca vol.2/174-208
2- : Rub' is similar to al-khiṭṭa and al-mahala المحلة, it also means one house.
see: Al-Azraqī, vol.2/233-265
3- see: Al-Azraqī vol.1/109-110, vol.2/109-112
4- : Ibid, vol. 2/266
5- : Ibid, vol. 2/201, 244
12- : Ibid, vol. 2/90, 95, 101-104, 190, 197, 224, 299
14- : Ibid, vol. 2/131, 209, 229, 301
16- see: Al-Azraqī, vol. 2/131, 190, 214, 225, 289
17- see: Ibn Manẓūr, vol. 1/497-503
18- see: Al-Azraqī, vol. 2/78, 198, 234-5, 242, 255, 266
19- see: Ibn Manẓūr, vol.10/143-144
20- see: Al-Azraqī, vol. 2/84, 131, 157
24- : Ibid, vol. 2/266-302
25- see: Al-Qazwīnī, Athār al-Bilād, pp.: 115
26- : Al-Azraqī, vol. 1/33-34
27- : Ibid, vol. 1/34
28- : Ibid, vol. 1/34
29- : Ibid, vol. 1/34
30- : Ibid, vol. 1/34
31- : Ibid, vol. 1/34
32- : Ibid, vol. 1/34
34- : Ibid, vol. 1/36
36- : Ibid, vol. 1/37
41- : Ibid, vol. 1/61, 75-76
42- see: Al-Qurān, Sūra (3:96)
43- see: Al-Azraqī, vol. 1/76
44- see: Aṭ-Ṭabarī, Jāmiʿ al-Bayān, vol. 1/423-430 vol. 4/6-8
45- : Ibid, vol. 1/430
46- : Ibid, vol. 4/7
47- : Ibid, vol. 1/430
48- see: Shihāb ad-Dīn al-Ḥamawī, Tuḥfat al-Akyās Fī Tafsīr Ḍulḥ Taʿālā, pp.: 1
49- : Ibid, pp.: 4
50- : Ibid, pp.: 5
51- : Ibid, pp.: 5
52- : Ibid, pp.: 5
53- see: Al-Azraqī, vol. 1/66-157
55- : Ibid, vol. 1/64-65
56- : Ibid, vol. 1/64
57- : Ar-rukn al-Aswad also known as ar-rukn al-Īrāqī, because it faces Irāq.
     see: Al-Qazwīnī, Athār al-Bilād, pp.: 114-115
58- see: Al-Azraqī, vol. 1/62
63- see: Al-Azraqī, vol. 1/138
70- : Ibid, vol. 1/139
71- : Ibid, vol. 1/139
72- : Ibid, vol. 1/140
74- see: Al-Azraqī, vol. 1/136
75- see: Al-Masʿūdī, vol. 2/53
76- see: The first church was built in Tyre (AD 314-317), its plan was similar to the plan of basilica. It was followed by three "principal" churches: The Nativity
of Bethlehem, The holy Sepulchre at Jerusalem and the Eleona on the Mount of Olives. All these churches were influenced by the planning of the basilica.

see: Mango, C. Byzantine Architecture, pp.: 61-62, 74-75

77- : Ibid, pp.: 61-62, 74-75
78- see: Al-Azraqī, vol.1/158
83- : Ibid, vol. 1/161
84- : Ibid, vol. 1/163
87- : Ibid, vol. 1/164
89- : Ibid, vol. 1/164
91- : Ibid, vol. 1/162
95- see: Aṣ-Ṣunʿānī, al-Muṣannaf, vol. 5/57
96- see: Al-Azraqī, vol. 1/165
97- : Ibid, vol. 1/165
103- : One of the two manuscripts is kept in dar al-kutub in Cairo, where I had the chance to examine it and copy the plan that I referred to as (Figure-9b). The second is kept in al-Maktaba aẓ-Ẓāhiriyya in Damascus, under No. 441/24, I have a copy of it.
104- The annotator counted upon three manuscripts and the European edition that was edited by Westenfield (AD 1859). Two of the manuscripts were kept in al-Madīna and the third one belonged to a scholar from Mecca.
105- see: Al-Azraqī, vol. 1/280
106- Ibid, vol. 1/280
107- Ibid, vol. 1/281
109- see: At-Ṭabarī, Tārīkh at-Ṭabarī, vol. 5/338-499
110- see: Al-Azraqī, vol. 1/196-205
111- Ibid, vol. 1/204
112- Ibid, vol. 1/204
113- Ibid, vol. 1/204
114- Ibid, vol. 1/204
115- Ibid, vol. 1/204
116- Ibid, vol. 1/205
117- Ibid, vol. 1/206
118- Ibid, vol. 1/205
119- Ibid, vol. 1/207
120- Ibid, vol. 1/205
121- Ibid, vol. 1/205
122- Ibid, vol. 1/205
123- Ibid, vol. 1/205
124- This is the name of the sixth month of the Arabian moon calendar. The names of the other months are: Muḥarram, Ṣafar, Rabī' awal, Rabī' tānī, Jumādā al-awal, Jumādā al-akhirā, Rajab, Shībān, Ramadān, Shawāl, dhū‘l-Qu‘da, dhū‘l-Ḥijja.
For the sixth month see: al-Azraqī, vol.1/205. For the calendar see: al-Alūsī, Bulūg al-Arab vol. 3/78-80
125- see: Al-Azraqī, vol. 1/206
126- Ibid, vol. 1/206
127- Ibid, vol. 1/207
128- Ibid, vol. 1/207
129- Ibid, vol. 1/208
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130- Ibid, vol. 1/209
131- Ibid, vol. 1/209
133- Ibid, vol. 1/209
134- see: Az-Zarkashî, pp.: 57
135- see: Al-Azraqî, vol. 1/210
136- Ibid, vol. 1/210
137- see: Aţ-Ṭabarî, Tārīkh aţ-Ṭabarî, vol. 5/609-626, vol. 6/5-418
138- see: Al-Azraqî, vol. 1/211
139- Ibid, vol. 1/212
140- see: Az-Zarkashî, pp.: 48-49
141- Ibid, pp.: 48-49
142- Ibid, pp.: 48-49
143- see: Aţ-Ṭabarî, Tārīkh aţ-Ṭabarî, vol. 8/230-346
144- see: Az-Zarkashî
145- This extension was made by the Ottoman Sultan, Murâd
see: Bâsalâma, H. The History of al-Ka'ba, pp.: 92-114
146- see: Al-Azraqî, vol. 1/287-289
147- Ibid, vol. 1/289
148- Ibid, vol. 1/289
149- Ibid, vol. 1/286-288
152- Ibid, vol. 1/291-292
153- Ibid, vol. 1/254
154- Ibid, vol. 1/293-294
156- Ibid, vol. 1/224
157- Ibid, vol. 2/68
158- Ibid, vol. 2/68
159- see: Al-Azraqî, vol. 2/69, Az-Zarkashî, pp.: 57
160- see: Az-Zarkashî, pp.: 337

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161- see: Al-Azraqī, vol. 2/69
162- : Ibid, vol. 2/69
164- : Ibid, vol. 2/71
165- see: Az-Zarkashī, pp.: 57
166- see: Al-Azraqī, vol. 2/71
170- : Ibid, vol. 2/72
175- : Ibid, vol. 2/74
176- : The inscriptions illustrated two things, a verse of the Qurān and the name of the patron of the extension, namely, al-Manṣūr, as follows:

"بسم الله الرحمن الرحيم محمد رسول الله ارسله
بالهدي ودين الحق ليظهره على الدين كله ولو كره المشركون"  

"إن أول بيت وضع للناس للذى ببكة مباركا وودى
للعالمين فيه أيات بنبات مقام ابراهيم ومن
دخله كان آمنا ولله على الناس حج البيت من
استطاع إليه سبيل ومن كفر فان الله غني عن
العالمين"

"In the name of God, Most Gracious, Most
Merciful, Muhammad the Apostle of God, send
him with Guidance and the Religion of Truth,
that he may proclaim it over all religions,
even though the pagans may detest (it)".

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"The first house (of worship) Appointed for men was that at Bekka: Full of blessing, and of guidance, for all kinds of beings: In it are signs, Manifest; (for example), The station of Abraham, who ever enters it, attains security, pilgrimage thereto is a duty, Men owe to God. Those who can afford, the journey, but if any, deny faith, God stands not in need of any of his creatures."
Sūra (3:96) pp.:147-148

"امر امير المؤمنين اكرم الله بتوثعة المسجد الخرام وعمارته والزيادة فيه نظرا مند للمسلمين اهتماما بامورهم"

"‘Abdullāh, Amīr al-Mu’mīnīn (the prince of believers’ Khalīfa) God bless him, ordered to increase the area of the architecture of al-Masjid al-Ḥarām, as care from him for the affairs of Muslimīn (single Muslim).

see: Al-Azraqī, vol. 2/73

177- see: Ibid, vol. 2/74-81
178- see: Aṭ-Ṭabarī, Tārīkh aṭ-Ṭabarī, vol. 8/110-186
179- see: Al-Azraqī, vol. 2/81
180- see: Aṭ-Ṭabarī, Tārīkh aṭ-Ṭabarī, vol. 8/187-229
181- see: Al-Azraqī, vol. 2/74
182- A rock at the southern part of the eastern side of al-Masjid al-Ḥarām, it marks the southern end of the street of al-mas‘ā, which is close to ar-rukn al-Aswad of al-Ka‘ba.

see: Al-Azraqī, vol. 2/75

183- A rock at the northern part of the eastern side of al-Masjid al-Ḥarām, it marks the northern end of al-mas‘ā street.

see: Al-Azraqī, vol. 2/75

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This market is also known as the market of 'perfumes'. According to Ibn Manẓūr, Khulqān means old things and khulūq means perfumes. However, it seems likely to be al-khulūq and not al-khulqān.

Ibn Manẓūr, vol. 10/89, 91

Ibid, vol. 2/75, see also at-Ṭabarî, Tārīkh at-Ṭabarî, vol. 8/287-294
NOTES TO CHAPTER 5

1- see: Ash-Shābushtī, pp.: 36-44
2- : Ibid, pp.: 44-46
3- see: Ḥabīd Zayāt, pp.: 280-295
4- see: Ash-Shābushtī, pp.: 9-11
5- see: Yāqūt, vol. 2/495-542
6- see: Al-Maqrīzī, vol. 2/501-521
7- see: Ibn Baṭṭūṭa, pp.: 234-236
8- : Ibid, pp.: 235
9- see: Ash-Shābushtī, pp.: 204
10- : Ibid, pp.: 207
11- : Ibid, pp.: 244
12- : Ibid, pp.: 236
13- : Ibid, pp.: 204
14- : Ibid, pp.: 207
15- : Ibid, pp.: 244

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16- Ibid, pp.: 236-240
17- Ibid, pp.: 171, 302-303, 377
18- Ibid, pp.: 33, 54, 62, 93, 96, 107
19- Ibid, pp.: 93
20- Ibid, pp.: 46, 62
   Ḥabīb Zayāt, pp.: 350
21- see: Ash-Shābushtī, pp.: 176-177
   Ḥabīb Zayāt, pp.: 306
22- Ash-Shābushtī, pp.: 284
   Ḥabīb Zayāt, pp.: 318
23- Ash-Shābushtī, pp.: 284
24- Ibid, pp.: 171
25- see: Abī Yūsuf, al-Kharāj, pp.: 298
   Ḥabīb Zayāt, pp.: 346
26- see: Ḥabīb Zayāt, pp.: 346
27- see: Ash-Shābushtī, pp.: 184, 258, 265
28- Ibid, pp.: 171, 206, 284
29- Ibid, pp.: 310
30- Ibid, pp.: 171
31- Ibid, pp.: 303
32- Ibid, pp.: 49
33- Ibid, pp.: 176, 204

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CURRICULUM VITAE

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Nationality : Jordanian
Date & Place Of Birth : 7 May, 1947, Jafa
Academic Qualification : B Arch, 1972 al-Azhar University
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WRITING AND PUBLICATION

1- Contemporary Architecture In Kuwait, published in Arts & The
   Islamic World, London, spring 1985, & republished in:

   a) Cultural Life In Kuwait, 1986, published in Arabic and
      English by the Ministry of Information.
b) *Kuwait Times*, June 26, 1985, published in English


3- Arab Moslim Thought In Architecture - Roots & Dimensions. "The Historical Interpretation"

This paper was presented before, The Islamic Civilization Symposium, held in Kuwait, Dec. 17-20, 1984. It will be published in: Arabic, English & French, in the Symposium Preceding.

4- The School Of Archaeology ( The Archaeological Interpretation) accepted for publication in *The Arab City magazine*, Kuwait.

5- Interview with Kuwait daily Newspaper *al-Anha'*


6- Interview with *Al-Sharkieh* magazine, No. 163, 1988.

7- Interview with *Savidaty* magazine, No. 369, 1988.

8- Interview with *al-Bena'* architectural magazine, No. 43 Vol.8


10-Roots Of Arab Muslim Architectural Thought & Development,
Published in *The Arab City* magazine, The Arab Cities Organization, Kuwait, September, 1989.

11-Islamic Architecture In The Architectural Education In The Arab World, to be published in *The Arab City* magazine, The Arab Cities Organization, Kuwait.

12-Identity Of Arab Architecture In Thought & Form, presented before the SYMPOSIUM ON NATIONAL IDENTITY IN CONTEMPORARY ARAB ARCHITECTURE, held in BAGHDAD, Oct. 14-16, 1989.


**PROFESSIONAL AND ACADEMIC ACTIVITIES**


3- Consultant Architect for Dar al-Athar al-Islamiyyah and Lecturer on architecture in the cultural seasons 1984-1988, on the following subjects: Egypt (Tulunids & Fatimids Periods), Saljuk, Ottmans, Mogul India, The Historical Interpretation 198
of Muslim Architecture, The Archaeological Interpretation of Muslim Architecture and The Origin Arab Muslim Ornament.


7- Participated in The Graduate Program Of The Architectural Department, at the University of Jordan, as a visiting lecturer, in the academic years (1988-1989) & (1989-1990) where I delivered the following lectures:

a) Origin And Development Of Arabic Islamic Architecture
b) The Theory Of Beauty Of al-Hasan Ibn al-Haytham
c) Aspects Of Continuity In Arabic Islamic Architecture
d) The Arab And Arab Muslim School Of Archaeology; The Archaeological Interpretation In Architectural Thought
e) The Origin Of Islamic Ornament In Architecture
f) Planning And The Architectural Fabric Of Arabic Islamic Cities

8- External examiner for the term papers of the students of The Graduate Program of the Department of Architecture, University of Jordan Fall semester (1989-1990).

9- Participated in The Symposium Of The Architectural Week organized by The Architectural Committee & Sponsored by The Jordanian Engineers Guild, ( 23 - 29 March 1989 ), where I
delivered a lecture about: ENVIRONMENTAL FACTORS IN HOUSE DESIGN.

10-Participated in a TV Seminar about Types of Local Daily Life organized by the Jordanian TV, presented in Oct. 11, 1989.

11-Participated in The SYMPOSIUM ON NATIONAL IDENTITY IN CONTEMPORARY ARAB ARCHITECTURE, held in BAGHDAD, Oct. 14-16, 1989.

12-Speaker in Hasan Fathy day, organized by The Architectural Committee & sponsored by the by The Jordanian Engineers Guild held in Amman, Jan. 10, 1990.


14-Delivered a lecture about my work in the college of architecture, PENN STATE UNIVERSITY, 16, Oct. 1990.

15-Participated in The Symposium Of Culture As A National Heritage, organized by The Arab Organization For Education, Science And Culture, together with The Jordanian Society For Writers, held in Amman, Jordan, 7-9, May 1991.

16-Member of The BEAUTIFICATION COMMITTEE OF THE CITY OF AMMAN, organized by The Mayor Of The City, (1990-present).
SAMENVATTING

Aspecten van de Arabisch-Islamitisch architectonische verhandeling.

Deze studie heeft betrekking op de Arabisch-Islamitisch architectonische verhandeling welke nog niet ontdekt of herzien is vanuit eigen bron of binnen het eigen culturele verband.

Het doel van deze studie is een beeld te schetsen hoe Arabische moslims de architectuur beoefenden.

Het heeft eveneens tot doel principes, concepten en kennis uit te werken, welke als basis hebben gediend, en vermoedelijk nog steeds als basis dienen, van deze verhandeling. Het doel is ze opnieuw te gebruiken bij het samenstellen van de eigentijdse Islamitische architectuur.

Tijdens het uitwerken van deze verhandeling is een poging gedaan om de oorsprong en samenstelling te onderzoeken. Tijdens het onderzoek zijn de twee belangrijke keuze, te weten: periode en bron, in overweging genomen. Het eerste is gekozen in relatie tot het tweede.

De gekozen periode loopt van de 5e tot de 18e eeuw en verder. Deze keuze kan worden verklaard uit het feit dat de oorsprong van de Arabisch Islamitische architectuur is begonnen in het AL-JAHILIYYA (pré-Islam) en omdat de Islam in dezelfde geografische, sociale, en intellectuele periode van de AL-JAHILIYYA is geboren. Het einde van de gekozen periode wordt bepaald door de veranderingen welke plaatsvonden in de vormgeving binnen de Arabisch-Islamitische architectuur, een gevolg van studies in het westen en het declineren in de productie van architectonische literatuur in de Arabische wereld.

Dit onderzoek is verdeeld in drie fases, te weten: algemeen, specifiek, en aan de hand van praktijkgevallen.

De algemene fase geeft het begin van de Arabisch-Islamitisch architectonische verhandeling aan.

De tweede en de derde fase behandelen de vormgeving hiervan.

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Hoofdstuk één heeft betrekking op een algemene fase waarbij zes bronnen werden onderzocht, namelijk: AL-JAHILIYYA, het geloof, de literatuur, de wetenschap, de geografische en de historische disciplines.
Het resultaat van de onderzoeken in deze disciplines resulteert in de ontdekte principes, concepten en wetenswaardigheden. De uitkomst wijst ook aan dat er een verband bestaat tussen deze bronnen. De bijdragen van iedere discipline bevorderde de bijdragen van de andere disciplines.
Wat als ontdekt wordt beschouwd in AL-JAHILIYYA wordt nog eens benadrukt in religieuze bron. Wat hierin als ontdekt wordt beschouwd, wordt weer uitgewerkt in de vier andere disciplines.
Als losstaande praktijkgevallen, principes, techniek en de structuur van het schrijven van de geschiedenis met betrekking tot de architectuur worden de ontdekkingen in AL-JAHILIYYA benadrukt in de religieuze en literaire onderzoeken. Deze dienden als gereedschap met betrekking tot de geografische en historische disciplines.
Als men bijvoorbeeld het concept van gedachte neemt, heeft dit zich ontwikkeld uit de emotionele rol in AL-JAHILIYYA om een filosofische, religieuze en historische discipline.
De uitleg is ontstaan uit eigen ervaring en samengebracht tot een rationele eenheid. Dit heeft eveneens betrekking op het conceptfunctioneren welke zijn oorsprong had in AL-JAHILIYYA en benadrukt werd in de religieuze literatuur en wetenschap. Dit geldt ook voor de rest van de principes, concepten en wetenswaardigheden.

De intergratie binnen de uitkomst van deze disciplines benadrukt de eenheid in de manier van denken met betrekking tot de Arabisch-Islamitische architectuur. Deze manier van denken zet zich voort in zelfstandige onderzoeken naar architectuur.
Deze onderzoeken bevatten de tweede fase binnen het algemene onderzoek. Hoofdstuk twee heeft betrekking op deze fase.
Vijf soorten van onderzoek zijn samengesteld naar aanleiding van deze thema's, AHKAM AL-BUNYAN (bouwreglementen), zijn bouwstijlen, stedenbouwkundige planning, architectonische-, en historische onderzoeken bestudeerd.
Het resultaat van dit onderzoek heeft geleid tot het samenvoegen van deze met de bevindingen in hoofdstuk één. Dit alles biedt weer nieuwe principes in de architectuur, stedenbouwkundige planning en ontwerp. Tevens biedt het concepten als privacy en preventie, maar ook wetenswaardigheden als geschiedenis en statistieken.
Het resultaat van het onderzoek met betrekking tot dit hoofdstuk, in feite, benadrukt de Arabisch-Islamitische verhandeling.
Dit bestaat uit een vertakking en elementen als theorie en praktijk. Het eerste heeft betrekking op de theorieën binnen de architectuur, stedelijk ontwerp en planning.
Het tweede heeft betrekking op de documentatie met betrekking tot de architectuur.
Het eerste is beperkt tot de Arabisch-Islamitische architectuur, het bepaalt zijn gestalte en drukt zijn betekenis uit.
Bovengenoemde vindt plaats door middel van principes, concepten "AHKAM", ontwerp data, kennis van zaken met betrekking tot programmeren, doel en planning.
Het resultaat heeft geleid tot het product "de Arabisch-Islamitische architectuur", direct vanuit zijn oorsprong tot de verscheidenheid in ontwerpen en het doen vermijden in een verscheidenheid van tradities, gewoonten en immitaties te doen belanden.
De uitkomst van de eerste kant biedt de architecten een brede hoeveelheid aan informatie, wat hen de mogelijkheid biedt om hun ontwerpen functioneler en nuttiger te maken.
De uitkomst van de tweede kant is algemeen.
Het verdiept de uitleg met betrekking tot Arabisch-Islamitische architec
tuur tot de Non-Islamitische.
Deze kant benadrukt de uitgevoerde techniek en structuur van historische en archeologische onderzoeken.
Het onderzoek naar de positie en rol van de historie met betrekking tot de architectuur, is het doel van het doel van het derde deel. Hierin worden de drie volgende onderwerpen nader bekeken: pré-Islamitische-, Islamitische-, en Christelijke architectuur.
Hoofdstuk drie heeft betrekking op het onderzoek, niet-Islamitische architectuur.
Het onderzoek heeft als doel om de invloed van IBN AL-KALBI, AL-ASNAM (idolen) na te gaan.
Uit het resultaat van dit onderzoek blijkt, dat er is gekozen voor cul-
ruele-, en een afstandelijke religieuze kijk op het ontwerp.
Het mist de persoonlijke ervaring en de samenhang; het is dan ook in
een later stadium geschreven.
Het heeft geleid tot het concept van voorgaande historische basiserva-
ring en betekenis met betrekking tot de pré-Islamitische religieuze arch
ictuur, waarbij als conditie wordt gesteld dat de vorm heilig
is.

Hoofdstuk vier heeft betrekking op het onderzoek naar Islamitische ar-
chitectuur.
Het onderzocht de studie naar AL-AZRAQI, AKHBAR MECCA.
Als uitgangspunten zijn de Islamitische cultuur en geloof gebruikt.
Dit is een gevolg van persoonlijke levenservaring en alles wat hier-
mee samenhangt.
Het resultaat van dit onderzoek is een uitvoering van principes ge-
schreven historische feiten, gebaseerd op de architectuur.
Daarmee introduceert het als eerste het concept van beslissing is ge-
baseerd op ontwerpen en de kennis van publieke deelname, bij het maken
van een ontwerp en de eenheid binnen de architectonische manier van
denken voor diegene die de architectuur moet vertalen.

Hoofdstuk vijf houdt zich bezig met het onderzoek naar Christelijke arch
chitectuur. Het onderzocht de studie van ASH-SHABUSHTI AD-DIYARAT.
Deze studie werd benadert binnen het kader van de Arabisch-Islamiti-
sche cultuur, maar met weinig ervaring. De uitslag van dit onderzoek
resulteert in het benadrukken van het gebrek aan historische infor-
matie en principes van architectureel ontwerp. Het benadrukt de
principes van stedelijk ontwerp en verkleint de atmosfeer van isole-
ment van AD-DIYARAT en bracht hen tot het wereldje van de ruimtelijke,
sociale en culturele herkenning.
Samenvattend, de uitkomst van de studie naar de bronnen van Arabisch-

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Islamitisch architectonische verhandeling benadrukt, dat deze verhandeling is ontstaan in de context van Arabisch-Islamitische intellectuele disciplines en cultureel fenomeen.
De uitkomst van de bestudering van haar woorden benadrukt dat Arabisch-Islamitisch architectonische verhandelingen hun volwassenheid bereikten en hun positie als intellectuele discipline en cultureel fenomeen markeerden in de Arabisch-Islamitische cultuur.

De conclusie is dat de Arabisch-Islamitisch architectonische verhandeling een samengevatte en autonomische verhandeling is, welke immuun is voor kritiek van buitenaf door zijn eigen woorden en vermogen. Het bewijs zijn aanwezigheid als een intellectuele discipline en een cultureel fenomeen, ondanks pogingen om het links te laten liggen.
Ondanks dit alles mist het doeltreffende erkenning en moet dringend herzien worden om opgenomen te worden in de opleiding tot architect en binnen de onderwijsinstellingen van de Arabisch-Islamitische wereld.