A STUDY OF THE

INTERIORS AND THEIR DECORATION

IN THE

TRADITIONAL MUD-BRICK ARCHITECTURE OF THE NAJD REGION OF SAUDI ARABIA AND THE FACTORS THAT HAVE INFLUENCED THE DEVELOPMENT OF INTERIOR DECORATION AND SPATIAL ORGANIZATION

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THESIS SUBMITTED FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

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Towards the end of the 1980s an awareness of the need to preserve and promote elements of traditional culture developed, not only in the Najd but throughout the Kingdom of Sa'udi Arabia. This cultural re-evaluation has extended to traditional architecture and includes a re-appraisal of the traditional interiors and decoration of those mud-brick buildings that are still extant. This re-awakening can also be seen in the desire for modern concrete buildings to be redesigned so something of the traditions of interior decoration and design can be retrieved.

The new cultural re-evaluation of the traditional heritage poses three important questions. Firstly, what is the traditional mud-brick interior and what are its contexts ? Secondly, what are the cultural forces that have given rise to urban architectural development in the traditionally-built forms, interior spaces and decoration ? Thirdly, why have the people of the Najd *reverted*,

See reverse side for notes

even in their new concrete buildings, to the interiors and decoration of earlier times? This study was motivated by a desire answer these questions. This necessarily touches upon the changes in Sa'udi Arabia: social, political and economic.

This study is based on ethnographic, architectural and ethno-archaeological fieldwork relating to the ancient mud-brick buildings of the Najd. Data was collected from historical sources, *site information* as well as from interviews with people living in the region. All this is illustrated *by drawings and photographs.*

This thesis consists of three parts. The first part classifies the traditional building materials and techniques of building construction, the mud-brick settlement and its buildings types. The second part analyses the interior architectural features of a typical residential building, the decorative elements and techniques of ornamentation, the structural elements and their decoration, and the interior vocabulary. The third part analyses the factors affecting development of decoration and space organisation.

Notes

1. Three copies of the thesis, each with a copy of the Abstract (on this form or on plain A4 paper) bound into precede the thesis, must be lodged with the Postgraduate Officer, together with a completed Submission of Thesis form and an additional copy of the Abstract on this form.

2. The Abstract should not normally exceed 200 words and should set forth the main argument and conclusions of the thesis. The abstract must be typeset and written in English.

DEDICATION

Except where otherwise acknowledged this dissertation is entirely my own work.

All illustration including photographs and figures are the work of the author unless otherwise indicated.

Ali Saleh al-Anbar.

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INT.1. PREFACE

This study is an attempt to analyse the early traditional interiors and decoration of mud-brick buildings in the Najd region of Sa'udi Arabia. It also aims to discuss the factors which have had effect on the developments of both the interiors and types of decoration in these buildings. The focus of the study was on the political and socio-economic developments in the region following the establishment of the First Sa'udi State from 1745 until 1930s. Due to a combination of the centralisation of decision-making and the government's financial support for modernisation, most traditional mud-brick settlements fell into disrepair and were replaced by new modern concrete settlements, based on Western designs. However, these settlements, Western models of urban development, have proved inadequate and have failed to solve the local problems of urban design and planning. This is due to the fact that they are not tailored to the specific social and political environment of an 'Arab Muslim cultural system. So Najdians have begun to long for the traditional culture and early mud-brick interior forms and design.

Towards the end of the 1980s an awareness of the need to preserve and promote elements of traditional culture developed, not only in the Najd but throughout the Kingdom of Sa'udi Arabia. This cultural re-evaluation has extended to traditional architecture and includes a re-appraisal of the traditional interiors and decoration of those mud-brick buildings that are still extant. This re-awakening can also be seen in the desire for modern concrete buildings to be redesigned so something of the traditions of interior decoration and design can be retrieved.

The new cultural re-evaluation of the traditional heritage poses three important questions. Firstly, what is the traditional mud-brick interior and what are its contexts ? Secondly, what are the cultural forces that have given rise to urban architectural development in the traditionally-built forms, interior spaces and decoration ? Thirdly, why have the people of the Najd *reverted*, even in their new concrete buildings, to the interiors and decoration of earlier times? This study was motivated by a desire answer these questions. This necessarily touches upon the changes in Sa'udi Arabia: social, political and economic.

This study is based on ethnographic, architectural and ethno-archaeological fieldwork relating to the ancient mud-brick buildings of the Najd. Data was collected from historical sources, *site information* as well as from interviews with people living in the region. All this is illustrated *by drawings and photographs*.

This thesis consists of three parts. The first part classifies the traditional building materials and techniques of building construction, the mud-brick settlement and its buildings types. The second part analyses the interior architectural features of a typical residential building, the decorative elements and techniques of ornamentation, the structural elements and their decoration, and the interior vocabulary. The third part analyses the factors affecting development of decoration and space organisation.

INT.2. PROBLEM AND DEFINITION OF THESIS

Most mud-brick cities and villages in the Najd have been in existence for a very long time. However, there are a number of new concrete cities and villages created as modern settlements situated close to early mud-brick settlements. This was due to economic development after the discovery of oil in the country in the late 1930s. Due to this modernization, the use of non-traditional, urban building forms and constructional methods has largely displaced earlier practice. As a result, many mud-brick settlements (from 1745-1930) have been abandoned - settlements whose buildings displayed a rich variety of applied Najdian art. Only during the last part of the last decade has there been a renewed awareness of the need to promote and preserve different forms of traditional culture in all the provinces of the kingdom of Sa'udi Arabia, including Najd.

This effort at cultural revolution has been extended even to traditional architecture with a re-appraisal of traditional interior design in the old mud brick buildings that are still in existence. Such buildings include those which were built in the early days of the first epoch of the state of Sa'udi Arabia (1745-1818), and reflect aspects of traditional craftsmanship and architecture. This reawakening is also manifested in the wish of the people to use antique and building elements from such old, traditional buildings to decorate and furnish their current buildings. Such items include ornamental wooden doors,

windows, furniture and ceilings. In addition to the use of such ornamental items, Sa'udi Arabian architects are under pressure to use some of the old design techniques when decorating the interiors of modern buildings.

As a means of promoting a greater awareness and preserving this architectural tradition for future generation, and in order to encourage its spread, public and private museums have been built. Fairs and annual festivals are also held regularly, such as the traditional festival of al-Janadriya[1] which is held every year in al-Riyad and its suburbs. A lot of renovation has been taking place in palaces and mud houses in the province of Najd, as well as in several other regions of Sa'udi Arabia. For instance, there are renovations in the palaces of al-Masmak and, al-Muraba' in al-Riyad as well as in the old quarters of the city of al-Dir'iyya, and there are also plans to renovate the buildings in the historic city of Sadus. Furthermore, there is an increased demand for the integration of traditional and contemporary architecture, a situation which has now created a great demand for knowledge and skills in the various disciplines relating to traditional architecture. Because of this great demand, the kingdom of Sa'udi Arabia is encouraging its scholars in all fields and specialities related to architecture and interior design, to study and document, in a scientific way, the existing old traditional buildings

INT.3. OBJECTIVES, METHODOLOGY AND STRUCTURE OF THESIS

INT.3.a. OBJECTIVES

This study looks specifically at the interior design of the ancient, traditional, mud-brick buildings (dating from 1745-1930) of the Najd province of Sa'udi Arabia. It focuses on the value of traditional interior design and decoration and the need to preserve and develop what is left of our tradition and heritage

1- Al-Janadriya festival is one of the most important cultural and popular festivals in Sa'udi Arabia. It is held every year at the site of al-Janadriya, north-west of al-Riyad and relates to the national heritage of Sa'udi Arabia for example: in traditional manual crafts and their production; traditional music and dance; popular poetry; camel racing (*sibaq al-Hijn*); and cultural lectures concerned with the archaeology and ethno-archaeology of Sa'udi Arabia.

in this region. The factors that have affected the developments of interior space and decoration are herein studied and analysed. The study also tries to identify ways in which traditional interior design and architectural techniques can be incorporated into contemporary modern architecture. The rationale is to provide an understanding of the architectural concepts that the earlier architects used in building and decorating their ancient houses, as well as to provide a clear understanding of the different life-styles of those living in that epoch, from a social, economic and political perspective. This would, the study suggests increase our understanding of the early traditional art, interior design and architecture, which produced mud-brick buildings with such a high standard of functional and aesthetic suitability.

INT.3.b. METHODOLOGY

Due to the nature of the different elements to be considered, an historical approach was adopted for this study in order to achieve the set objectives. This involved the use of three strategies; visual description, analysis and comparison of relevant data. Required data was collected in four ways:

1- LITERATURE SURVEY

An exhaustive review of literature concerned with the region's history and geography, architecture, interior architecture design, and decorative elements were carried out.

2- FIELD STUDIES

The field studies consisted of stratified, selected sampling of appropriate buildings by means of six stages:

a) study of detailed maps of Najd to identify those settlements most likely to yield old, mud-brick buildings.

b) prioritisation of those places thus found.

c) preliminary surveys of all buildings in the selected areas that proved to be of possible interest. The surveys comprised general studies both of architectural form and applied decoration. They were designed to identify both significant differences and similarities within given areas.

d) where, within a particular area, buildings exhibited a high degree of internal similarity, all but the most typical were then eliminated from further

study. The purpose was to avoid repetition and to ensure breadth, i.e. that subsequent, closer study covered the widest possible range of examples. This would not have been possible either with strict or random sampling.

e) measurement of the principal dimensions of those buildings most central to the study, plus preparation of site sketches, orthographic drawing and perspectives.

f) interviewing of local, traditional builders of mud-brick buildings and craftsmen about their work and its application to buildings.

3- ANALYTICAL AND DESCRIPTIVE APPROACH

A descriptive and precise analytic method was also adopted to study decorated surfaces inside the buildings, and to analyse the different factors in traditional interior design so as to understand the ways in which earlier designers approached interior spaces.

4- THE COMPARATIVE APPROACH

A comparative analysis technique selected for this study which shows the similarities and differences between the interior designs of the buildings of the province of Najd and those in surrounding provinces.

INT.3.c. LITERATURE REVIEW

There has been within the past decade, an increased awareness for and concern with the need for the architectural heritage of the kingdom of Sa'udi Arabia to be conserved. Very few studies are known to have been conducted on the subject of traditional architecture in Sa'udi Arabia especially with respect to interior design. Some information which has been provided by these studies concerns only some of the interior architectural features of the traditional secular buildings in Saudia Arabia. Walter E. Dostal, in his book *Ethnographic Atlas of Asir* (1983), provided little information about the interior features of the traditional houses of Asir, compared with his rich analysis of the ethno-archaeological condition of Asiri man. G. King in his works, 'Some Observation on the Architecture of South-West Saudi Arabia' (1976), and 'Islamic Architecture in Eastern Arabia' (1978), indicated the interior architectural features of some traditional buildings in both of these regions.

Concerning the interior design of traditional mud-brick architecture of the Najd, there have been no scientific studies. In fact, the traditional interior design in the province of Najd has not had the serious and thorough investigation which it deserves. In the Arab world, when compared with studies of its modern architecture all that has been said about the interior design elements used in the province of Najd has been rather peripheral. Similar in nabporing countries in Arabian Peninsula, both architectural and historical studies concern only in studing some of the interior features and decorative elements of traditional architecture (see pp). However, there are many studies outside Sa'udi Arabia concerning development and change in the field of interior design.

In some Middle East countries, such as Jordan, Syria and Lebanon, there are many studies concern the modern interior design, however, few regard the interior design of traditional buildings. While, in European countries, works by various scholars in interior design and decoration could be cited to provide hundreds of examples from insights into the way architecture evolved in Western Europe; a few must suffice. Thus: C. Oglesby, in his book *French Provincial Art* (1951), described French interior decoration in the early eighteenth century as comprising oil paintings on walls, the use of carved wood panelling called "Boiseries" and plastered walls and ceilings richly decorated with colour. J. Whitehead, in his book *The French Interior in the Eighteenth Century* (1992), on the other hand, described late eighteenth century decoration: this involved the use of marble floors arranged to form geometrical patterns, as well as carved and painted wood panelling or the carved plaster and stucco which often adorned walls of important reception rooms.

A description of the historical evolution of interior design was provided by A. Tate and R. C. Smith in their book *Design in the 20th. Century* (1986). They undertook a comparative analysis between earlier and latter-day work involving ceiling decoration painting styles and wood carvings. A. Massey, in his book *Interiors of the 20th.* Century (1990), showed how historical socio-economic changes in Britain, such as the industrial revolution of the mid-eighteenth century, influenced 'art deco' and modern interior design. Patricia Bayer, in her book *Art Decor, Interior Decoration and Design Classics of the 1920s and 1930s* (1990), however described how the multifaceted design style termed "art deco", which was derived from oriental-style screens,

became fashionable in the period between 1910 and 1930, and how this led to the mixing of old and new design styles in the 1960s.

Both early and modern references have been used in this study according to the subject of the thesis. The discussion of early sources was as equally important as those of the more modern references. This is due to the fact that some of the modern references are no more than simple or, sometimes, approximate copies of earlier sources.

1- ANTHROPOLOGY

Early anthropological studies show us ways in which we can evaluate and analyse the work of Najdian craftsmen in comparison to other early human work. Edward B. Tylor, in his book *Primitive Culture* (1871), explained: the culture of civilization; the stages of culture; the development of culture from the Savage, Barbric and finally civilized; and the development of religions and myths. Tylor also, in his book *Anthropology* (1895), discussed in detail early human art and decoration and the importance of primitive tools. He also postulated the origin of ornaments and tattoo and provided some example of early carved ornaments in timber. E. Gordon Childe, in his book *Man Makes Himself* (1936) on the other hand, explained the effect of human thought and experiences on the invention of cultural materials as well as the influence of social traditions on human development.

2- ARCHITECTURE

Early studies undertaken by various researchers in Islamic architecture provide us with a clear picture of the nature of early traditional Islamic settlements in general, and their architecture in particular. For examples of this, see: K. A. C. Creswell, in his two books *The Muslim Architecture of* Egypt (1959), and *Early Muslim Architecture* (1969); Oleg Grabar, in his book *Islamic Architecture and its Decoration* (1967); and Farid Shafi'i in his book *Arabic Architecture in Islamic Egypt* (1970). By comparing early traditional Islamic architecture (al-Madina, Kufa and Basra) with the traditional mud-brick architecture of the Najd that still survives we can, to some extent, analyse the nature of Najdian mud-brick buildings and their interior space organization. We can also trace the origin of their interior decoration.

There are some modern studies interested in traditional mud-brick buildings, such as the research works of the The General Council of Ruins and Museums 'The Capital of al-Dir'iyya Glories in Innovation' (1987) and of A. Aba al-Khil 'Traditional Housing: Case Study Burayda' (1979). Even though both these studies looked at the architecture of these sites from historical perspective they are still useful to this study. However, the most important studies carried out on the mud-brick architecture of Najd have been written by Geoffrey King, Hassan Fathi,[1] Muhammad 'Abd al-Sattar 'Uthman and William Facey.

In fact, Geoffrey King concentrates not merely on the traditional architecture of Najd, but on that of Sa'udi Arabia as a whole. In 1977, King published 'Traditional Architecture in Najd in Sa'udi Arabia', in which he made an excellent comparative study of the traditional buildings in the cities of Najd; in 1982, his 'Some Examples of the Secular Architecture of Najd', contained a useful historical narration as well as structural information on this type of mud brick building in the province of Najd; and in 1986, he published *The Historical Mosques of Saudi Arabia*, which gave an interesting historical survey of the ancient traditional mosques of Sa'udi Arabia including those in the Najd region. Finally in 1998, Geoffrey King wrote his book *The Traditional Architecture of Saudi Arabia*, which is considered the best of its type in this field.

Fathi has carried out a number of useful studies. For instance, in 1964, he wrote his research 'Report on the General Outlines in Executing the First Stage of the Rural Housing Project in The Kingdom of Sa'udi Arabia' (in Arabic and unpublished). In 1986, he presented his book *Natural Energy and Vernacular Architecture*. Both these studies dealt with the effect of a hot, dry climate on architectural design and came up with suitable architectural solutions for mud-brick architecture. The first study analysed in detail the effect of climate on the mud-brick architecture of Najd, in general, and al-al-Dir'iyya in particular.

1- Hassan Fathi is one of the pioneers who have propagated the use of mud-brick construction and the revival of traditional architecture. His thinking about traditional style and vocabularies is, to a great extent, similar to that of Alberti (1404-72) who used the "triumphal arch" in his architecture during the Renaissance. Also, there is a similarity with Brunelleschi (1377-1446) in his use of Corinthian order or to Bramante (1444-1514) who established the bases for the language of Roman architecture and put it at the disposal of the Renaissance architects.-

'Uthman's studies are not that different from those of Fathi. In 1987, he wrote 'City of Sadus' and 'The effect of Islamic Law in the Traditional City. Both of these studies discussed the effect of Najdian climate and Islamic Law on traditional mud-brick buildings in Najd. In 1988, 'Uthman published his book *Islamic City*, in which he treated, in detail the nature of a traditional Islamic city and the impact of Islamic law on architecture.

3- COLOUR AND LIGHT

There are no relevant studies that discuss traditional Najdian interiors in terms of colour and light. Therefore a number of early European sources have been used. These helped in the analysis of interior colour and light in mud-brick buildings in Najd. J. Scott Taylor in his book *Colour Science* (1909), analysed in depth the impact of the colour white on vision. Helmuth Bossert in his book *An Encyclopaedia of Colour Decoration* (1928), provided historical information about the use of colour and decoration by early man in his primitive interiors, including paintings and decorative motifs. He also discussed the origin of the use of colour in early civilizations and its relationship with magic. T. Elder Dickson in his book *An Introduction to colour* (1932), referred to colour in general, and indicated those colours which were symbolic and their meanings. Maitland Graves, in his book *The Art of Color and Design* (1951), discussed the importance of interior elements (including line, direction, shape, size, texture, value and colour) and vision, and also investigated the relationship between them and their effect on one another.

Richard G. Ellinger, in his book *Color Structure and Design* (1963), analysed the influence of colour on interior design, and the relationship between colour and texture on the one hand, and the relationship between both colour and texture with light on the other. M. E. Chevreul, in his book *The Principles of Harmony and Contrast of Colors and Their Applications to the Arts* (1967), dealt comprehensively with both harmony and the use of contrasting colours and their application, including pure and mixed colours. Likewise, he explained the scientific relationship between daylight (white light) and colour (either light or dark) which is the absorption or reflection of light. However, Faber Birren, in his book *The Colour Primer* (1969), discussed the harmony colour and its effect on the human self. He also provided a historical background to the theories of colours .

Yves Le Grand, in his book *Light, Colour and Vision* (1957), studied the energy of light from the sun and its distribution in the sky and earth environments. He also analysed the effect of daylight on colour and the eye. John W. T. Walsh, in his book *The Science of Daylight* (1961), studied daylight and its reflection within interior and exterior environments. Likewise, R. G. Hopkinson, in his book *Architectural Physics Lighting* (1963), explained in detail some of the basic laws of psychophysics. These are concerned with the strong relationship between light and humans such as 'sensation', 'stimulus' and 'adaptation'. Derek Phillips, in his book *Lighting in Architecture Design* (1964), studied the brightness of natural lights and their effect on architecture design. While R. G. Hopkinson, in his book *Daylighting* (1966), explained, in depth, everything that is relevant to daylight and seeing, including: sources of daylight; methods of illumination and light spread over a surfaces; the effect of surfaces on light; sensation and the adaptation to lighting levels. Moreover, he analysed the impact of both the size and location of openings that received daylight on the illumination indoors.

4- DECORATIVE ELEMENTS

Only a few, simple unassessed articles have been written on the interior decorative elements and decoration in the traditional architecture of Sa'udi Arabia and other countries in the Arabian Peninsula. For instance, in Sa'udi Arabia, Sulayman M. Hassan in his research 'The Wooden Parts which Complete the Stone Houses in the Kingdom of Sa'udi Arabia' (1980) (in Arabic), discussed briefly the decorative elements of some wooden doors in the Southern province of Sa'udi Arabia and their symbolic importance. Likewise, he showed the effect that traditional artists have had on art production. In Qatar, M. A. 'Abd Allah in his book *Gypsum Ornaments in the Arabic Gulf* (1985), looked at stucco works in the Arabian Gulf and clarified the ways of making stucco ornaments and the tools used for decoration. G. Bonnefant, in her book *Les Viraux de Sanna* (1981), dealt with stucco ornaments on glass windows in the city of Sanna in Yemen. She concentrated on the history and design of this art, as well as on the technology and the symbols of decorative elements up to 20 years ago. In 1987, Bonnefant wrote her book *L'art du bois Sanna*, in which she analysed wooden decorative motifs on doors, windows, tombs and locks. She showed the role of the local craftsman and the traditional tools which he used, as well as the symbols and roots of some decorative elements in interior design.

Even though there is a shortage in the scientific methods of decorative analysis in all the above studies, they have been very useful to this thesis.

The comprehensive studies on decorative elements that have enriched this thesis were, in fact, provided by early European researchers. Lewis F. Day wrote two books on the subject, *Ornamental Design* (1890) and *Ornament and Its Application* (1904). In the former Day explained the importance of the techniques in the development of decorative elements. In the latter he provided extensive data on ornamentation and clarified the effect of both the ornament's style and design on the one hand, and the tools and material on the other on the production and development of the art. Francois Louis Schauermonn, in his book *Ornament, The Theory and Analysis* (1892), provided some theories on the development of decorative arts and studied the relationship between order, form and colour in decorative compositions. Henry Balfour, in his book *The Evolution of Decorative Art...* (1893), compiled an extensive amount of historical information on decorative development, which has been very useful to this study.

In part of Walter Crane's study, in his book *The Decorative Illustration of Books* (1901), he studied the social and physical effect of ornaments, showing that most early decorative motifs and arts were closely linked to human life and thought. H. T. Bossert, in his book *Ornament* (1924), provided more than two thousand coloured motifs and analysed each of them. Owen Jones, in his book *Grammar of Ornament* (1984), studied the effect of socio-economic and political factors in the development of art. John Evans, in his book *Style in Ornament* (1950), Alfred C. Haddon, in his book *Evolution in Arts* (1895), W. M. Flinders Petrie in his book *Egyptian Decorative Art*, and E. H. Gombrich, in his book *The Sense of Order* (1979), all analysed in depth the decorative elements of various types of ornament.

Augustus H. L. Fox Pitt Rivers, in his book *Antique Works of Art from Benin* (1900), gave some interesting examples of both metal and woodwork decorated with dense carved ornaments which were collected from West Africa.[1] In fact, by comparing the decorative elements made by the craftsmen of Najd with those of West Africa we can, to a degree, discover the origin of some Najdian decorative elements.

1- From Benin which is situated on the Guinea Coast, near the mouth of the Niger.-

5- GEOGRAPHY AND HISTORY

In order to be specific on the earlier borders of Najd which were known during both the pre- and during Islamic periods, and to identify its ancient roads and settlements, a large number of early Islamic geographical sources from the 8th., 9th. and 13th. centuries A.D. were used. These include: the study of Abi al-Qasim 'Ubayd Allah Bin 'Abd Allah bin Ahmad al-Khurassani, who was known as Ibn Khurdadhaba (d. 272 A.H.), in his book *Al-Masalik wa Al-Mamalic*; the study of Ahmad Bin abi Ya'qub Bin Ja'far Wahab Bin Wadh al-Katib al-'Abbassi, who was known as al-Ya'qubi (d. 278 A.H.), in his book *Kitab al-Bildan*; the study of Abi 'Ali Ahmad Bin 'Umar, who known as Ibn Rusta (d. 290 A.H.), in his book al-A'laq Al-Nafisa; and the study of Ahmad Bin Abi Ya'qub Bin Abi al-Farag Qudama Bin Ja'far al-katib al-Bughdadi, who was known as Ibn Qudama (d. 320 A.H.), in his book *Nabdha min Kitab al-Kharaj*.

In order to discover the identity of Najdian inhabitants from both pre and early Islamic times as well as famous historical events and their relationships with other people, a large number of other early and modern Islamic and non Islamic historian sources were employed. These include: the study of Abu Muhammad 'Abd al-Malik Bin Hisham Bin Ayub al-Humayri, who was known as Ibn Hisham (d. 218 A.H.) in his book *al-Sira Al-Nabawiya*; the study of Abu 'Abd Allah Muhammad Bin Sa'd Bin Muny' al-Zuhri, who was known as Ibn Sa'd (d. 230 A.H.), in his book *Kitab Al-Tabaqat Al-Kubra*; the study of Abi al-Walid Muhammad Bin 'Abd Allah Bin Ahmad al-Azraqi (d. 250 A.H.), in his book *Akhbar Makka wa Maja'a fiha min al-Athar*; and the study of Abi Hanifa Ahmad Bin Dawood Al-Daynuri, (d. 282 A.H.), in his book , *al-Akhbar al-Tiwal*. Other important early and modern geographical and historical studies are noted at the end of this thesis.

To recognise and examine the historical events and the nature of mud-brick settlements during the time of the Saudi States, native historical sources and the references of both early and modern European explorers were consulted. Hussain Ibn Ghanam (...-1811) and 'Uthman Bin Bishr (...-1873) were the most famous native historians, the former being a contemporary of Muhammad Ibn 'Abd al-Wahhab. He wrote his book *Ta'reikh Najd* (History of Najd). The latter documented the period between 1745-1851 in his book *'Unwan al-Majd fi Ta'reikh Najd* (Glory in the History of Najd). Both these books are the primary source for learning about the al-Sa'ud Family in the

18th. century. Unfortunately, both only covered civil wars incidents and only a few names of the palaces of al-Sa'ud are mentioned by them. There is no description of their architecture.

In fact, the best historical description of early mud-brick settlements and their architecture, with paticular reference to their interior architecture is provided by early European explorers who began visiting in 1799. The earliest traveller to reach Central Arabia was Reinaud, the assistant British consul in al-Basra who visited al-Dir'iyya, the former capital of the al-Sa'ud Family, in 1799. He was followed, in 1811, by the envoy of Napoleon, M. de Lascaris. Captain G. Forster Sadeir, an officer with the British army visited al-Dir'iyya and al-Riyad in 1819 and the account of his journey is heading *A Journey Across Arabia From el-Khatif in the Persian Gulf, to Yambo in the Red Sea, During the Year 1819.* William Gifford Palgrave visited al-Dir'iyya and al-Riyad during the reign of al-Imam Faisal Ibn Turki (...-1865) in 1862, and also visited other parts of Najd. His journey was documented in his book *Personal Narrative of A year's Journey through Central and Eastern Arabia (1862-1863).* Carlo Guarmani visited north Najd in 1864 and his visit is documented in his book *Northern Najd.* In 1865 the British political resident to the Arabian Gulf, Lewis Pelly, visited Imam Faisal Bin Turki in al-Riyad. He documented his visit in a report that was published later as a book titled *Report on a journey to Riyedh in Central Arabia.* Charles Doughty visited Najd in 1872, and wrote *Travels in Arabia Deserta.* Most of these early European sources provide a unique description of the cities, villages and life therein. Palgrave draw the first map of al-Riyad.

Amin al-Rihani (1876-1940) in his book *Ta'reikh Najd al-Hadith* (Modern History of Najd), W. E. Shakespeare (1879-1915), and H. St. J. Philby (1885-1960) in his several books about Arabia, all document the modern era of the Sa'udi State, and provide interesting historical descriptions of mud-brick architecture and interiors, as well as information about the urban, social and economic aspects of this period. Shakespeare, was the first to persevere to take photographs in Central Arabia, and Philby drew only the second plan of al-Riyad. H. R. P. Dickson, in his book *The Arab of the Desert* (1949), provided some interesting information about the plan of al-Riyad in the early 19th. century and he gave names of the districts. Dickson, in his book *Kuwait and Her Neighbours* (1956), described the main view of al-Riyad in general, and the palace of al-Badi'a in exquisite detail. In a way, his description may be considered as the best of the early European explorers .

6- SCALE AND TEXTURE

There are no extant studies concerned with in the scale and texture of traditional mud-brick architecture in Najd. Therefore, once again European sources were utilised in order to analyse the interior scale and texture of this type of buildings. A number of researchers wrote on this subject including P. H. Scholfield, in his book *The Theory of Proportion in Architecture* (1958), in which he investigated in detail the influence of both suitable and unsuitable proportions on interior design. He analysed the relationship between the shape of an interior and the sizes of the objects within it space on the one hand, and between the scale of interior and the objects to the scale of human on the other. Steen Eiler Rasmussen, in his book *Experiencing Architecture* (1964), provided extensive information on both scale and texture in architecture and analysed their effects upon other interior elements. Heath Licklider, in his book *Architectural Scale* (1965), carefully explained the importance of scale in architecture, especially human scale. He also dealt with the effect of distance and shape on scale. Pierre Von Meiss, in his book *Elements of Architecture, From Form to Place* (1990) showed the importance of both texture scale (softness and roughness) on interior surfaces and the relationship between light and the texture of surfaces. Francis D. K. Ching, in his book *Architecture Form, Space, and Order* (1996), gave the best and most comprehensive information on scale in architecture to date referring to human scale, industrial scale and natural scale.

INT.3.d STRUCTURE OF THE THESIS

The thesis consists of an introduction and three parts. The introduction provides geographical and historical information about early and contemporary settlements, people and events of the Najd region. It covers a long period of the history of Najd starting in pre-Islamic times (approximately 5th century B.C), and passing through Islamic ages until the setting up of the Third Sa'udi State (1932).

The first part of the main body of the thesis introduces and classifies the traditional architecture and decoration in Najd. It is divided into three chapters. The first chapter is mainly devoted to a classification and description of both the traditional building materials (used in both building and decoration) and the techniques of building construction (when used in mud-

brick architecture). The study of these traditional raw materials and techniques of construction will also contain a comparison with other traditional raw materials and construction techniques found in other countries, both near and far.

The second chapter discusses, in detail, the ancient roads and settlements of Najd according to information from early Islamic geographers and European explorers, who described the distribution of these settlements on the ancient roads. It also explores the evolution of the traditional Islamic settlement, the urban processes which created and shaped it, and the architectural features and environment which characterised it There is an attempt to understand the origin, nature and architectural features of the traditional mud-brick settlement of Najd.

The third chapter is an investigation of traditional mud-brick architecture and interiors, and why the traditional built environments of Najd have arrived at their present structure, form and design. It constitutes historical overview of the socio-economic, religious and political developments which influenced traditional mud-brick architecture and led to the recent classification of it into three main types; religious buildings, defensive buildings and secular buildings. In order to understand the architecture and interiors of these types of traditional mud-brick buildings, this chapter contains detailed classifications and analyse of the architectural forms of each type as well as a study of their interior architectural features and decoration.

The second part of this thesis is made up of four chapters. The first is an exploration of the interior architectural features and their elements in the typical residential mud-brick building in Najd. In order to understand the interior physical environment of the typical residential mud-brick building, it is essential to explore the influencing historical processes and climatic conditions. Socio-economic forces in the early 19th century were important factors in the form and decoration of this type of Najdian building. Therefore, a brief discussion of the origin and interior formation of such residential buildings is carried out in this chapter to help explain the departure from early traditional mud-brick forms. Many descriptions by early and contemporary European explorers of typical, residential mud-brick buildings are used in this chapter in order to create a realistic picture of their interior architectural features.

The second chapter categorizes and describes traditional decorative elements and their artistic composition when used in secular mud-brick buildings, in particular, and other mud-brick buildings in general. There is also a detailed study of the traditional methods of surface treatment and the techniques of ornamentation that are used to create decorative elements and their artistic formations. Likewise, the chapter classifies the origin of decorative elements and the techniques used in construction and ornamentation.

The third chapter is an investigation of the interior, structural, architectural elements of mud-brick architecture in Najd. It is devoted to a comprehensive analysis of the nature and decoration of each architectural element and tries to understand the origin of each and its decorative features.

The fourth chapter is an analysis of the interior vocabulary of the traditional mud-brick buildings in Najd and includes scale, texture, colour, light, and furniture. There is a detailed discussion of the nature of each factor and a clarification of interrelationships between these factors on the one hand, and with the architectural structural elements (both interior and exterior) on the other. It also clearly shows the impact of each factor upon the other and their influence on human life within the said interiors.

The third part is made up of two chapters. The first chapter is devoted to an analysis of the factors that have influenced the development of interior decoration. The second chapter concentrates on a comprehensive investigation of the factors that play a part in the development of interior spatial division and its arrangement.

Lastly, there is a conclusion which clarifies the forms and characteristics of the traditional mud-brick settlement, the types of mud-brick architecture and their interiors, the traditional building materials and techniques of building construction and the interior decorative elements and techniques of surface treatment and ornamentation. Likewise, it highlights the structural elements of mud-brick buildings and their decorative elements, the interior architectural features of the typical residential mud-brick building and the interior vocabulary of mud-brick buildings. Moreover, it presents the factors that have influenced the development of both interior spatial organization and decoration.

INT.4. GEOGRAPHICAL BACKGROUND

INT.4.a. THE BORDERS OF NAJD

Najd, the great wide central plateau which occupies the middle of the Arab peninsula, and the heart of the kingdom of Sa'udi Arabia (Fig.1 & 2), is a region whose real boundaries are difficult to define, since the accepted geographical and political limits of the territory have varied considerably through history.[4] The earlier Islamic geographers of the 8th and 9th century A.D., such as al-Istakhri, Ibn Hawqal, al-Bakri, Ibn Khurdadhaba, al-Humayri and others have differing opinions about the boundaries of the Najd. Al-Istakhri has defined the area of Najd:

> *The area which extended from the borders of al-Yamamah to the nearer place of al-Madina, [and from it] to Badiyat al-Basra [the desert of Basra] to al-Bahrain [he main to the settlements of the east region of S.A.K.] to the sea [Gulf sea], all of this is from Najd.* [5]

Ibn Hawqal endorsed this description, but at the same time added the Yamama area that was, he contended, the largest and most important place in the province of Najd.[6] Ibn Khurdadhaba[7] and al-Bakri agreed with him and give the same description, but al-Bakri defined the area of Najd in more detail:

> *Najd includes the deserts hills that are located close to the eastern border of those mountains [the Hijaz mountains] and the land that extends from it to the border of Iraq, to al-Samawah and the area beyond.*[8]

In fact, the definitions of Najd provided by these early geographers deal only with the east-west width of Najd; all of them omit any mention of its north-south length. They may have thought that Najd stretched from Badiyat al-Sham (in the north) to Yemen (in the south), as did most geographers of the time. Also, it is evident that all of them agreed on virtually the same eastern

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4. Marco Albini, *Traditional Architecture in Saudi Arabia. The Central Region*, Department of Antiquities and Museums, Ministry of Education, Riyadh, 1990, p8.
5. A bi Ishaq Ibrahim Bin Muhammad al-Faris al-Istakhri, *Masalik al-Mamalik*, Bril, Leyden 1927, pp14-15.
6. Abi al-Qasim al-Nasibi Ibn Hawqal (died 367 AH), *Kitab Surat al-Ard*, Maktabat al-Hayah, Beirut, 1979, p29.
7. Abi al-Qasim 'Ubayd Allah bin 'Abd Allah bin Ahmad al-Khurassani Ibn Khurdadhaba(died 272 AH), *al-Masalik wa al-Mamalik*, Maktabat al-Muthana, Baghdad, ND , pp136-138 & p147.
8. Abi 'Ubaid Al-Bakri, *Jazirat al-'Arab*, investigated by 'Abd Allah Yusif al-Ghunam, Maktabat Dhat al-Salasil, Kuwait, 1977, pp 22 & 50.

and western boundaries for the region of Najd, except al-Humayri (d. 866 A.H.) who, at a later date, added to the area of Najd the cities of Madina, al-Ta'if, Bahrain (meaning the settlements of the eastern region such as al-Qatif, Tarut, Darin and other cities and villages):

> *Najd (the area) extends from al-Hijaz to al-Sham [meaning the desert of Jordan] to al-'Uthaib [a site near Basra in the north-east S.A.K], and the al-Ta'if from Najd and al-Madina, including the land of Yamama and al-Bahrain up to 'U man and al-'Urud* [in the west].[9]

However, the boundaries mentioned by al-Istakhri, Ibn Hawqal and al-Bakri appear to be more realistic when compared to those existing today. During the Ottoman era a geographer from Turkey called Hajji Khalfah (also known as Kalib Chelebi) compiled a geographical encyclopaedia, dividing Najd into four parts; the first is the Nejd al-Yemen which included Najran (the city), al-Dawasir (the valley) and Yabrin (the oasis); the second is the Najd al-Ared which has numerous villages; the third consists of the low Wadis, including al-Qasim; and fourth is the plateau of Schemr with its ranges of hills (which today are known as the mountains of Shammar).[10]

With few exceptions, it is certain that most modern geographers and historians both Arab and non-Arab, including Bin Khamis, al-Baladi, Abu al-'Ula, al-Shirif, Salim, Rajab, G.J.L. Wermar, King and Kay,[11] are all influenced somewhat by the previous definition of the Turkish Khalifah. By analysing their definitions, we find that most of them divide Najd into three territories: southern Najd (al-Riyad, previously known during the 8th and 9th centuries A.D as al-Yamamah), central Najd (al-Qasim) and northern Najd (Shammar).

9- Muhammad bin 'Abd al-Mun'im al-Humayri, *al-Rawd al-Mi'tar fi Khabr al-Aqtar*, investigated by Dr. Ihsan 'Abbass, Maktabat Libnan wa Dar al-Qalam lil- Tiba'ah, Beirut, 1975, p572.

10- D.G.Hogarth, *The Penetration of Arabia*, Lawrence and Bullen Publication, New York, 1904, pp98 & 99.

11- 'Abd Allah Muhammad Bin Khamis, *al-Majaz bina al-Yamama wa al-Hijaz*, Manshurat Dar al-Yamama, Riyadh, ND, pp12-13. See 'Atiq bin Ghaith al-Baladi, *al-Ruhla al-Najdia*, Dar al-Mujtam' al-'Ilmi, Jedda, ND , pp 96-97. See also , Muhammad Taha Abu al-'Ula, *Gughrafiyat Shibh Jazirat al-'Arab*, 2ed edition, part 1, Maktabat al-Anjlou al-Masriya Egypt, 1977, p 44. See also 'Abd al-Rahman Sadiq al-Shirif, *Gughrafiyat al-Mamlikat al-'Arabiyat al-Su'udiya*, part 1, Dar al-Marikh, Riyadh, 1977, p36. See also al-Said 'Abd al-'Aziz Salim, *Ta'reikh al-'Arab al-Hadith*, Dar al-Nahdah al-Arabiya, Beirut, 1970, p89. See also 'Umar al-Farouq al-Said Rajab, *Dirasat fi Gughraphiyat al-Mamlikat al-Arabiyat al-Su'udiya*, Dar al-Shuruq, Jedda, 1978 , pp 44-45. See also G.J Lewrmar, *al-Muajam al-Goughraphy fi al-Khalij al-Arabi*, part 5, published by the Prince of Qatar, Doha, ND, p352. See also G. R. D. King , 'Traditional Architecture in Najd Saudi Arabia', Proceeding of the 10th. Seminar for Arabian Studies, vol. 7, 1977, p90. See also Shirley Kay, *Saudi Arabia*, Thames and Hudson Ltd., London, 1979, pp 6-17.

However, according to the third Saudi State administration, the Najd (or what is sometimes called the central province) consists only of two territories: al-Riyad (the southern part), including the areas of al-'Arid, Mihmil, al-Huwta, al-Washi, al-Aflaj, al-Kharj, al-Shu'ayb, Fara and Sudayr;[12] and al-Qasim (the northern part) including the areas of Burayda and 'Unayza (both of them recently included in Najd) (Fig. 3). Shamr, however, was regarded as separate from Najd, now belonging to the northern region of Saudi Arabia.

Najd, for the purposes of this study, is bounded in the south by the great basin of the *al-Rab' al-Khali* (Empty Quarter), which is itself divided in the south by Oman, the southern Yemeni coast and various Arab desert settlements. In the north, it is bounded by the vast desert of al-Nufudh, that isolates Najd from the oasis of al-Jawf, and in the west, its border lies along the plateau which extends from the south to the north-east of the mountains of al-Hijaz, parallel to the Tihama coastal plain beside the al-Bahr al-Ahmr (Red Sea). To the east it is bounded by the al-Dahna desert of and the plateau of al-Summan, which divides the al-Hasa settlements of the east and the al-Khalij al-'Arabi (Gulf coast). So the province of Najd measures 800 kilometres north to south and 650 kilometres east to west, lying between the 20th and 28th parallels and between 43 and 47 degrees latitude (Fig. 3). The area of Najd is about 1.6 million square kilometres and contains 22.65% of the Sa'udi Arabian population (about 1,583,738 people according to the census of 1974.).[13]

INT.4.b. THE TOPOGRAPHY OF NAJD

The natural aspects of Najd can be divided into two parts; the eastern and western. [14]

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12. Bin.Khamis, op. cit., pp12-13. See also al-Baladi, op. cit., pp 96-97.
13. Rajab, op. cit., pp 44-45. See also Hussain Hamzah Bandaqj, *Atlas al-Mamlikat al-Arabiyat al-Su'udiya*, Maktabat al-Anjlou al-Masriya, Cairo, 1977, p13; Subhi Ahmad al-S'aid, *Namat al-Tawzi' al-Makani wa al-Tarkib al-Wazifi li-Marakiz al-Istitan al-Bashari fi Mantiqat Najd*, 'Imadat Shu'awn al-Maktabat, King Sa'ud University, Riyadh, 1986 , p48.
14. Al-Lijnat al-Su'udiya al-Amrikiya al-Mshtaraka, *Atlas al-Manakh fi al-Mamlikat al-' Arabiyat al-Su'udiya*, Wizarat al-Zira'ah wa al-Miyah, Matba'at al-Safir, Riyadh, 1988, p 4.

THE EASTERN PART

The eastern part of Najd extends from the mountains of al-Saq and Nufoudh al-Sir, al-Khouf, and Nufoudh al-Dahuw in the west, to the desert of al-Dahna in the east. Its height varies from 800 to 1096 metres above sea level. The distinguishing feature of this area is the al-'Arid mountain range which extends across the barren sands of al-Nufoudh and is in turn, divided into two parts: the eastern part of al-Fara and the western part of Tuwayq, lying adjacent to the east and west of the al-Dir' al-'Arabi (Arabian Shield) respectively, in the middle of the plateau.[15] Its northern edge touches and ends by disappearing under the sands of al-Thuwayrat at a place called Jazra. Its southern edge touches the al-Rab' al-Khali, and ends at al-Mundafin.[16]

The outer edge of the eastern part is about 1100 kilometres long and its average height is about 910 metres above sea level with variations of 50 to 500 metres.[17] Here there are many ancient villages, towns and cities grouped around the arc formed by the Tuwayq mountain. There are also various valleys in the vicinity, incluing Nisah, al-Dawasir, Hraimla, Hanifa, al-Aflaj and others. These fertile valleys and their villages extend from the west to east. The ancient peoples of the region built dams and villages here and worked the land using the plentiful underground water and the rich soil of the oasis.[18]

THE WESTERN PART

The western part has a semi-circular shape with its diameter in the west, extending across the hills and western plateau, and its arc to the east. This part contains what is known as the "Arabian shield" which passes to the west of Nufoudh al-Sir and al-Daho. This part has few permanent settlements and also contains many valleys, of which the most important are; al-Rumma, Rina, Bisha, Turba and the Tathlith, all of which are located in the south.[19] The geographical and meteorological conditions of this region have had a great

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15. Al-Bakri, op. cit., p112. See also Khair al-Din al-Zurkuli, *Shibih al-Jazira fi 'Ahd al-Malik 'Abd al-'Aziz*, 3ed edition, part 3, Dar al-'Ilm lil-Malayeen, Beirut, 1985 , p 30; al-S'aid, op. cit., 3ed edition, vol 3, p 870; al-Shirif, op. cit.; pp 54-55.
16. Ibn Khamis, op. cit., vol1, p 51.
17. Al-S'aid, op. cit., pp19-20. See also Al-Lijnat...., op. cit., p 4; Abu al-'Ula, op. cit., p32.
18. Rajab, op. cit., pp 49-51.
19. Abu al-'Ula, op. cit., p 32. See also Rajab, op. cit., p 44; al-Shirif, op. cit., part 1, pp 54-56.

influence on the form of local architectural structures and the raw materials used both for construction and ornamentation.

INT.4.c. THE CLIMATE OF NAJD

The climate of Najd is arid for most of the year and, the sky obove the Najd plateau is clear and cloudless. Changeable north-eastern and western winds blow across the plateau due to the Tropic of Cancer which passes through the central parts of the kingdom of Sa'udi Arabia, running from the city of Yanb' on the Red Sea, through to the south of al-Riyad then to the south of Masqt (Oman) on the Gulf of Oman.[20]

The dry winds cause the temperature to rise to as much as 36C in July. It falls to its lowest in January, when it varies between 8 and 24C during the day. Sometimes the temperature reaches freezing level at night in certain parts of the plateau. The level of solar radiation reaches 400 *Langly*[21] per day and even 650 in certain parts such as Salil where the sky is cloudless all year round.[22] Although rainfall in the Najd is scarce, there is some in Spring and Winter, when precipitation can be both abrupt and heavy (up to 125mm), causing floods and destroying crops and buildings. The humidity varies between December-February, when it reaches 40-70%, and its lowest at 20 - 25% in Summer (June to August), though there can sometimes be a 10-15% variation.[23] The cultivated areas in the plateau of Najd represent 10.69% of the cultivated land in the Kingdom of Sa'udi Arabia.. In this area, trees of all kinds grow (including fruit trees), as well as bushes, flowers, vegetables and legumes. Najd is also regarded as having the best grasslands in the Kingdom, their considerable area being suitable for large herds of cattle.[24]

INT.4.d. THE ADMINISTRATION OF NAJD

Najd is presently divided into two large administrative areas; the Emirate of al-Riyad and the Emirate of al-Qasim (Fig. 3).

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20. Abu al-'Ula, op. cit., p 49.
21. This is a type of measurement light in Arabic.
22. Wizart al-zira'ah Wa al-Miyah, *Atlas al-Manakh*, Sharikat al-Tiba'ah al-Arabiya al-Su'udiya, Riyadh, 1988, p 8.
23. Ibid., pp 7 & 9.
24. Abu al-Faraj 'Ali bin.al-Hassan al-Asfahani, *al-Aghani*, part 2, Dar al-Kutub al-Masriya, Egypt, 1930, p 199 onwards.

The Emirate of al-Riyad contains 112 populated sites which are attached to the valleys of Hanifa, al-Huwta and al-Dawasir. It also contains 14 divisions, namely: al-Zulfi; al-Ghat; Sudayr; al-'Arid; al-Kharj; Wadi Braik; Durma; al-Mihmal; al-Washim; al-Hariq; al-Huta; al-Aflaj; al-Sulil; and Wadi al-Dawasir. The Emirate of al-Riyad controls twenty-seven lesser emirates and 849 villages. The most important cities of the al-Riyad Emirate are: al-Riyad, the capital of Sa'udi Arabia; al-Dir'iyya, the ancient capital of the Sa'ud Family; al-Kharj; al-Hariq; Layla; Sadus; Huraymila; Shaqra; and al-Majma'a; while the Emirate of al-Qasim includes two large cities: Burayda and 'Unayza. Administratively, al-Qasim is divided into 81 smaller emirates and two hundred villages, the most important of them being, of course, the populous city groups of Burayda and 'Unayza (Fig. 2).[25]

25. Rajab, op. cit., pp 44-45. See also Al-Shirif, op. cit., part 1, p 131, G. King provided in his map (Fig. 2) most of the names of Najdian cities villages and Valleys.

INT.5. HISTORICAL BACKGROUND

INT.5.a. PRE-ISLAMIC NAJD

Najd is a land in which, among other areas in the present Kingdom of Sa'udi Arabia, very early humans settled (10,000 B.C.),[26] and was a place where different human civilizations met producing both a clash and a fusion of cultures.[27] It was known to the classical historian as the 'land of sand,'[28] or *Arabia Deserta*, and corresponding to the tripartite political division of the Arabian Peninsula in the first century A. D., the other parts are known as *Arabia Felix* and *Arabia Petra*. [29]

Throughout pre-Islamic history, many settlements in Najd, including the cities and villages of the al-Yamamah area, were centres of communication and influence in respect to various civilizations. Trade routes both long and short passed through Najd, covering its entire length and beyond; to the area known as Bilad al-Sham (Syria, Jordan, Palestine and Lebanon), and eventually to Anatolia in Turkey and other far countries (Fig. 28). They also stretched across the breadth of the region, reaching Iraq and Persia (Fig. 27), and thus enriched the great settlements in Najd through the numerous resulting city markets established for the exchange of both local and foreign products.[30]

The Arabian Peninsula in general was surrounded by early civilizations, such as those in Egypt, the Babylonians of Iraq and the Punjabis in India, moreover, it had a good relationship with the peoples of these countries, that

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26. There are many archaeological sites in Najd to indicate that the area was inhabited by early humans since 10,000 B.C., see Zarinis, Yuris and Norman Hillman, 'al-Taqreer al-Mab'da'ai 'an Masih al-Mantiqatin al-Wousta wa al-Janoubiya al-Gharbiya fi al-'Usour al-Qadima al-Istitaniaya fi Najd', Atlal, vol. 8, Department of Antiquities and Museums, Riyadh, 1984 , pp12-15. See also Andro Jararo and W.L.B. Harphy, 'Ahwal al-Biah wa al-Istitan fi al-'Asrin al-Blatyosini wa al-Houlosini fi Juba bi al-Nufudh al-Kabeer bi Shamal shibih Jazirat al-'Arab', Atlal, vol. 5, Department of Antiquities and Museums, Riyadh, 1981, pp110-113.

27. Joel Carmichael, *The Shaping of the Arabs*, George and Unwin Ltd., London, 1967, p 4.

28. M.A.Shaban, *Arabia and the Gulf. From Traditional Society to Modern States*, Groom Helm Ltd., London, Sydney 1986, p 3.

29. Philip K. Hitti, *History of The Arab. From the Earliest Times to the Present*, 10th. edition, The Macmillan Press Ltd., London, 1970, p 44.

30. M.A.Shaban, op. cit., p19. See also Sheikh Hafiz Wahba, *Arabian Days*, Arthur Barker Ltd., London, 1964, p 11.

was also enjoyed by the Najd.[31] Before 622 A.D., the northern border of Najd was a Roman province, and then a province of the Byzantines. The North-East belonged to the Babylonian Empire, and another area in the East to the Persian Empire.[32] Najd was a very important area of the Arabian Peninsula and its history is full of momentous events; however, the classical historians did not pay much attention to it in comparison to other parts, due to their concentration on the border regions. However, early Islamic historians did pay attention to the history of Najd and, the they provide an useful information upon various inhabitants.

Analysis of this information shows that Najd was occupied before Islam by a succession of great tribes, both urban and nomadic *(badu).* They came from different parts of Arabia bringing with them ethnic and cultural diversity, and, over centuries of shared history, have shaped Najd and made it the centre of power and influence it is today: a land of fascinating cultural diversity and one of the most interesting areas, not only in Sa'udi Arabia, but of the entire Arabian Peninsula.

These tribes can be divided into two groups. Firstly there are the *ba'idah*, or extinct tribes, including the tribes of 'Ad and Thamud known to the historians of the classical period as *Tamudaei*,[33] and referred to in the Holy Qur'an as Ashab al-Ras. This group also includes the tribes of Tasim, Judeice and Rabi'a, which, according to earlier Islamic historians, were probably the first nomadic tribes to settle in the Najd. In addition, there were the tribes of Hazzan, Aumim, and Hadura, together with the tribe of al-'Amaliq, of which the tribes of Badil, Rahil, and Ghufar were considered branches.[34] Also

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31. Philip Hitti, op. cit., pp 32-39.

32. Ernest Jackh (ed), *Background of the Middle East*, Cornell University Press, Ithaca, New York, 1952, pp 29 & 118. See also Hitti, op. cit., p 44.

33. Hitti, op. cit., p 30.

34 Abi Hanifa Ahmad bin Dawood al-Daynuri (d. 282 AH), *al-Akhbar al-Tiwal*, investigated by 'Abd al-Mun'im 'Umir, Maktabat al- Muthana, Baghdad, ND, p 15. See also al-Hassan Ahmad bin Ya'qub al-Hamadani (d. 334 AH), *Sifat Jazerat al-'Arab*, investigated by Muhammad bin al-Ak'wa' al-Hawali, published under the sponsorship of Hamad al-Jasir at Dar al-Yamama, Riyadh, 1984, p284; Abi al-Hassan bin al-Hussain bin 'Ali al-Mas'udi (died 346 AH), *Murwj al-Dhahab wa Ma'adin al-Jawhar*, investigated by Muhammad Muhyi al-Din 'Abd al-Haq, Dar al-Fiker, Beirut, 1973 , p53. See also Shams al-Din 'Abd Allah bin Ahmad bin Bakr al-Maqdisi (d. 380AH), *al-Bida wa al-Ta'reikh*, vol 3, Maktabat al-Khayat, Beirut, ND , p 28; 'Imad al-Din Isma'il bin Muhammad bin 'Umar Abi al-Fida (died 732 AH), *al-Mukhta◊ar fi Akhbar al-Bashar*, part 1, al-Matba'h al-Husainiya al-Masriya Eygept, ND, p 99. See also Abi al-Hassan 'Iz al-din Abi al-Hassan 'Ali bin Abi al-Karam Muhammad bin 'Abd al-Kareem bin 'Abd al-Wahb al-Shibani Ibn al-Athir (died 630 AH), *al-Kamil fi al-Ta'rikh*, vol 2 , Dar Sader, Beirut, 1965, p351; Muhammad bin 'Abd Allah Bin Blahid,

included are the tribes of 'Ubiel[35] and Kinda.[36]

Secondly, there are the *baqiah*, or surviving tribes, including Bani Hanifa and Bani Salim.[37] Most of these tribes dwelt in the al-Yamamah area of Najd, the capital of which was Hijr, the ancient site of al-Riyad. A few of them, such as the 'Ad and Thamud, lived also in al-Aflaj and the north of Najd. The Kinda tribe first inhabited al-Yamamah, then later established the city of Qurayat al-Fau in the South-West of Najd as the capital of its kingdom.[38]

According to both early and modern sources, Kinda was the most important Najdian tribe, and recent archaeological evidence from the Qurayat al-Fau site confirms this. It throws light upon the Kingdom of Kinda and the high level of culture and development that its people reached, hundreds of years before the Christians.[39] M. A. Shaban provides a description of Yamama that shows the importance of the Kinda kingdom in various respects, including the economical, political and religious, as compared with other tribes of the pre-Islamic Arabian Peninsula:

> *It was one of the areas which had formed the heart of the pre-Islamic Kingdom of Kinda, whose rulers had in the fifth and early sixth centuries, controlled much of the trade of central Arabia.....It seems that there was a haram or sanctuary, probably at Hajar, which is said by the early Islamic geographers to have been the fortified qasaba.* [40]

Sahih al-Akhbar 'ama fi Bilad al-'Arab mn al-Athar, part1, 2nd edition, investigated by Muhammad Muhi al-Din 'Abd al-Hameed, un-known the place of publishing, p195. See also Jawad 'Ali, al-Mufasal fi Ta'reikh al-'Arab Qabl al-Islam, part 8, 2nd. edition, Dar al-Nahdah, Beirut, 1978), pp 340-347; Hamad al-Jasir, Madinat al-Riyad. 'Ibra Atwar al-Tareikh, Dar al-Yamama, Riyadh, 1386 A.H. p34.

35. Al-Said 'Abd al-'Aziz Salim, Ta'reikh al-'Arab fi 'Asr al-Jahiliya, Dar al-Nahdah al-Arabiyat, Beirut, 1971, p79.

36. Ahmad bin Abi Ya'qub bin Ja'far Wahab bin Wahb bin Wadh al-Katib al-'Abbassi al-Ya'qubi (died 284 AH), Ta'reikh al-Ya'qubi, part1, Dar Beirut, Beirut, 1970 , p 216. See also Abi al-'Abbass Ahmad bin Yousif bin Ahmad al-Dimashqi al-Qarmani, Akhbar al-Duwal wa Athar al-Awal fi al-Ta'reikh, 'Alam al-Kutub, Beirut, ND, p 334; Idward Broy, Ta'reikh al-Hadarat al-'Am wa al-Qurun al-Wousta, vol. 3, 2nd edition, translated to Arabic by Yousif Asad Dagher and Fareed Dagher, 'Uwaydat, Paris and Beirut, 1986, p 111.

37. Al-Bakri, op. cit., p30. For more details and descriptions about these tribes see paragrapg1 in the notecs to this chapter.

38. 'Abd al-Rahman al-Taib al-Ansary, Quryat al-Fau. Aportrait of Pre-Islamic Civilisation in Saudi Arabia, University of Riyadh, Riyadh, 1957-1982 (in Arabic & English), p 14.

39. Ibid., pp20-60-. See also M. A. Shaban, Arabia and the Gulf. From Traditional Society to Modern States, Groom Helm Ltd., London and Sydney, 1986, p 28.

40. Shaban , op. cit., p 19.

INT.5.b. EARLY ISLAMIC NAJD

The Prophet took interest in Najd and its inhabitants, especially the Arabs of the desert, due to his knowledge of the importance of its site and inhabitants and of their great influence in supporting Islam politically and economically[41] His followers, the Rightly Guided Caliphs, did the same. During their respective Caliphates (632-661 A.D.), the inhabitants of Najd fought well and bravely, both in and beyond the 'Arab Peninsula, during the conquests of Islam, leading the Caliph 'Umar Bin al-Khattab (634-644 A.D.) to describe them as being the origin of the 'Arabs and the helpers of Islam.[42]

When the caliphate of Islam was transferred to Damascus by the Umayyad dynasty (*al-Aumawiyeen*) (661-750 A.D.), and then to Baghdad with the 'Abbasid dynasty (*al-'Abbasiyeen*) (750-833 A.D.), Najd was affected in various ways: firstly, this situation led to its being somewhat isolated, as well as being administered and ruled by foreign governors from Basra, Madinah and Makkah, so that the importance of Najd decreased greatly.[43] Secondly, this aroused the dissatisfaction of the inhabitants, leading to civil wars and the appearance of the custom of pillage and plunder.[44]

This dramatic situation in Najd was the reason for the prevalence of the al-Ashraf (s. Sharif) al-Aukhidiriyeen,[45] which began in 253 A.H., over al-Yamamah. They established security in some parts of the Najd during the long period in which they ruled, which lasted for nearly two hundred years.[46] However, they neglected some of the eastern areas, encouraging the al-Qarmita (s. Qurmuti) under the leadership of al-Hassan Bin Bihram al-Janabi to seize some territory there in 310 A.H. The al-Qarmita caused havoc in the

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41- Abu 'Abd Allah Muhammad bin Sa'd bin Muny' al-Zuhri Ibn Sa'd (died 230 AH), Kitab al-Tabaqat al-Kubrah, 2nd. edition, investigated by Dr. Ziyad Muhammad Mansur, Maktabat al-'Ulum wa al-Hukum, al-Madina al-Munawarrah, 1987, p p97. See also Shams al-Din Muhammad bin Ahmad bin 'Uthman al-Dhahabi (d. 748 AH), al-Maghazi. Ta'reikh al-Islam wa Wafiyat al-Mashahir wa al-A'lam, 2nd. edition, investigated by Dr. 'Umar 'Abd al-Salam Tudmuri, Dar al-Kitab, Beirut, 1990, p 477. For more details about al-Yamamah see paragraph2 in the notes to this chapter.

42- Nasir al-Din Sa'douni, 'al-futuhat al-Islamiya wa Atharuha fi Mujtam' al-Jazira al-Arabiyat', in the book of Dirasat Ta'reikh al-Jazira al-Arabiya, 3rd book, King Sa'ud University, Riyadh, 1989, p 2.

43- Al-Bakri, op. cit., p105.

44- Ibn al-Athir, op. cit., vol 4, pp 201-203, and vol 5, pp 298-301. For more about the situation of Najd in this period see paragraph 2 of the notes to this chapter.

45- The leader of al-Aukhidiriyyn was Muhammd bin Yusif who called al-Aukhidr.

46- Al-Shibl, 'Abd Allah, 'al-Dawlah al-Aukhaidariya', Majalat Kuliya al-Lughah al-'Arabiya wa al-'Ulum al-Ijtima'iya, vol. 6, University of al-Imam, Riyadh, 1396 A.H., pp 459-466. See also paragraph 2 in the notes to this chapter.

Arabian Peninsula in general, and in Najd in particular, where, at the end of the rule of the al-Aukhidiriyeen State, the towns and villages had suffered considerable damage and security had declined.[47] In 443 A.H.,\1051 A.D., the Persian Nasir Khusruw, during his return journey from Makka via Najd, described the extent of the damage in various areas of the Najd, such as al-Aflaj, noting the miserable situation in which its people lived. [48]

These factors, combined with quarrelling amongst the tribes of Najd and their general dissipation, gave the neighbouring Eastern states opportunities to seize Najdian territory, as did the State of al-'Uyuniyeen for example imposed its sovereignty on some of its eastern parts in 466 A. H., the State of al-'Isfuriyeen, and Bani 'Amir in 750 A. H. The State of al-Jabriyeen was also able in 820 A. H., to spread its sovereignty over many parts of Najd.[49] The al-Asharaf of Mecca were able, with the help of the Turks, to spread their sovereignty over Najd and to obtain considerable spoils as a result, and in 986 A. H., they were able to reach as far as Mi'kal, which is situated to the west of Riyadh.[50]

The most important event of this period was the coming of Mani' Bin Dir', the first founder of the Sa'udi Dynasty, to Najd on a visit to his relative who led the sub-tribe of al-Duru' from his village al-Mughira, located near al-Qatif in the east of Sa'udi Arabia. He offered Ma'ni' the site of two old villages, and he was able to establish, within eight years, the fortified town of al-Dir'iyya, which derived its name from that of his sub-tribe.[51] The sheikh Hafiz Wahba provides more detail about the origin of the al-Sa'ud Family:

> *The Saud family are part of the Masalikh Branch, now settled near Homs in Syria, of the Unaiza Tribe.....the tribe as a whole descend from Rabi'a Ibn Mani, who in the Moslem year 850 (1447 A. D.) left Dar'ya near Qatif to visit a relation Ibn Dir, ruler of*

47- Abi al-Faraj 'Abd al-Rahman bin 'Ali Ibn al-Jawzi (d. 597 AH), *al-Muntazim fi Ta'reikh al-Muluk wa al-Aumam*, vol. 6, Matba'at al-Ma'arif al-'Uthmaniaya, Hydar Abad, 1357 A.H., p18. See also al-Imam Abi Muhammad 'Ali bin Ahmad Ibn Hazm (d. 456 AH), *al-Musnad*, part 2, investigated by Dr. Muhammad Ibrahim Nusair and 'Abd al-Rahman 'Umaira, Maktabat 'Ukaz, Jidda, 1982 , p274. See also Ahmad bin 'Ali al-Qalqashandi (died 820 AH), *Ma'athir al-Anaqa fi Ma'alim al-Khilafa*, part 1, investigated by 'Abd al-Satar Ahmad Faraj, 'Alam al-Kutub, Beirut, 1964, pp 252-255.

48- Abi Mu'ain al-Din Nasir Khusruw al-Qabadani al-Maruzi, *Safr Namah*, translated to Arabic by Ahmad Khalid al-Badly, King Sa'ud University, Riyadh, 1983, p 164.

49- 'Abd Allah bin Salih Al-'Uthaimeen, *Ta'reikh al-Mamlikat al-'Arabiyat al-Su'udiya*, part 1, Dar al-Yamama, Riyadh, 1984, p 28.

50- 'Uthman bin 'Abd Allah Bin Bishr, *'Unwan al-Majd fi Ta'reikh Najd*, vol. 2, investigated by 'Abd al-Rahman bin 'Abd al-Latif bin 'Abd Allah al-Shaykh, published by Ministry of Education, Riyadh, 1391 A.H., pp 195-217 & pp 508-509.

51- Hamad al-Jasir, op. cit., p85. See also Amin al-Rihani, *Ta'reikh Najd al-Hadith*, Dar al-Jeel, Beirut, 1989, p 62.

Hajr and Aljizra, near Riyadh. Ibn Dir presented him with the villages of AlMolibeid and Ghoseiba,....which became known as Dar'iya. Rabi'a was succeeded by his son Mani, who made a great name for him self and continued to increase the family possessions, and his son Mosa in his turn became yet more famous. Mosa was succeeded by his son Ibrahim, grandfather of Mukharin and Saud, the latter of whom founded the Saud family proper. [52]

Najd, in 850 A.H., was divided into petty Emirates, with *shayukhs* that were in continual conflict with each other.[53] We can distinguish four main emirates: the Emirate of Al Mu'ammar at al-'Ayaina; the Emirate of Al Sa'ud at al-Dir'iyya; the Emirate of Diham Ibn Dawas at al-Riyad; the Emirate of Al al-Duliymi at al-Kharj; and the historian Amin Sa'eed adds the Emirate of Al Hijilan in the al-Qasim area.[54]

The al-Hijaz area was ruled by the Ottoman Turks in 923 A. H.,\1517 A. D., as was the al-Qatif area of the Arabian Gulf in 941 A. H.,\1534 A. D., while they took control of the al-Hasa area in 959 A. H.,\1552 A. D. where they stayed until 1090 A. H.,\1668 A. D.[55] The Ottomans at the beginning of their rule over these parts of the 'Arab Peninsula, were not interested in interfering in the affairs of inner parts of the Arabian Peninsula; but would sometimes extend protection to the caravans of pilgrims passing through Najd on the journey to Makka. Their interest increased later, when the power of al-Sa'ud dynasty grew in the mid 12th. AH / mid 18th. AD centuries, spreading the call of al-Sheikh Muhammad Bin 'Abd al-Wahhab, leader of the unitarian Islamic reform movement,[56] to the people of the Najd and the Arabian Peninsula in general. He urged a return to the true Islamic path since, he argued, they had fallen away from the practice of Islam as prescribed in the Holy Qur'an and the Hadith. However, compared with the Arabian Gulf, the British paid no attention to the interior affairs of Najd, and they were satisfied to send low-key representatives to investigate the situation after the emergence of al-Sheikh Muhammad Bin 'Abd al-Wahhab.

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52. Sheikh Hafiz Wahba, *Arabian Days*, Arthur Barker Ltd. , printed by Ebenezer Baylis and Son Ltd. the Teinilty Press, London, 1964, p 101.
53. Al-'Uthaimeen, op. cit., part1, p 35.
54. Amin Sa'eed, *Ta'reikh al-Dawla al-Su'udiya*, vol.1, Dar al-Katib al-'Arabi, Beirut, 1964, p 42. See also Darwish, Madihah Ahmad ,*Ta'reikh al-Dawlah al-Su'udiya hata al-Ruba' al-Awal min al-Qarn al-'Ishreen*, 2nd. edition, Jedda, 1983, p 14.
55. Geoffrey R. D. King, *The Historical Mosques of Saud Arabia*, Longman Group UK Limited, England, 1986,p 15.
56. Concerning Muhammad Bin Abd al-Wahhab Philby said: "Born of Tamimi parents at Huraimala in the district of Mahmal about the third decade of the eighteenth century, Muhammad Ibn Abdulwahhab had spert his youth studying at the Universities of Baghdad and Damascus." See H. St J. Philby, *The Heart of Arabia. A Record of Travel and Exploration*, vol. 1, London, 1922, p xvi & xvii.

INT.5.c. NAJD DURING THE SA'UDI STATES

The history of the Saudi region can be divided into three states: The First Sa'udi State (1745-1818 A.D./1157 - 1223 A.H.); The Second Sa'udi State (1824-1890 A.D./1240 - 1309 A.H.); and The Third Sa'udi State (1902 /1319 A.H.) (Fig. 4 & 5). These States, corresponding to three distinct historical periods, are dealt with abundantly in a number of specialised studies which will be deal with subsequently.

INT.5.c.1. THE FIRST SA'UDI STATE

The First Sa'udi State began with an agreement that took place in 1157 A.H.\1741 A.D. between the founder of this state, Sheikh Muhammad Ibn Sa'ud, and Sheikh Muhamad Ibn 'Abd al-Wahhab (1703-92) (Fig. 4, 5 & 6).[57] They wished to purify the country of the superstitions and innovations that prevailed in most of its towns and villages.[58] Ira M. Lapidus described the religious aims of Muhammad Bin Abd al-Wahhab and the situation of inhabitants of the Najd during this period:

> *Ibn Abd al-Wahhab...He proposed to abolish the medieval accretions to the pure faith and to return to the fundamental principles embodied in Muslim scripture. He was therefore opposed to the customary practices of Arabian Islam, which included Magical rituals, faith in holy-men, and the worship of saints.*[59]

To rectify the situation, Shaykh Ibn Sa'ud (who was given the title of al-Imam after this agreement) and Sheikh 'Abd al-Wahhab urged the people to follow the real principles of the religion, to act according to what was set down in the Holy Qur'an and the traditions of the Prophet Muhammad and to follow the religious opinion of the orthodox al-Imam Ahmad Ibn Hanbal.[60]

Their aims were not restricted to this, but included the unification of the various parts of the country after their earlier separation.[61] For the sake of

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57- Philip K. Hitti, *The History of the Arab. From the Earliest Times to the Present*, 10th edition, The Macmillan Press Ltd., London, 1970, p 74, about the history of Muhammad bin 'Abd al-Wahhab see paragraph3 in the notes to this chapter.

58- Hussain Ibn Ghanam, *Ta'reikh Najd*, 2nd edition, investigated by Nasir al-Din al-Assad, Dar al-Shuruq, Beirut, 1985, p 13 & pp 81-84. See also bin Bishr, op. cit., part1,p 19; Hafiz Wahba, op. cit., p 87.

59- Ira M. Lapidus, *A History of Islamic Societies*, Cambridge University Press, Cambridge, New York, 1988, p 673.

60- Al-'Uthaimeen, op. cit., part1, pp 50-52.

61- Ibid.,p 35.

these goals, the al-Imam and the Sheikh waged the first wars for the belief in the unity of God, both inside and outside the Najd region. In 1179 A. H., the al-Imam Muhammad Ibn Sa'ud, the founder of this state, died after a series of victories, and the al-Imam 'Abd al-'Aziz Bin Muhammad (who ruled from 1179-1218 A.H.\1765-1803 A.D.) succeeded him, and deserves full credit for the establishment of the state when al-Riyad gave up its struggle against Sa'udi forces in 1773 A.D.[62] He went on to strengthen it after waging numerous wars against *Um al-Qura* (the Metropolis or Mekka). In 1218 A. H., he was assassinated in the al-Tarif Mosque in al-Dir'yya.[63]

Sa'ud al-Kabir was the son of 'Abd al-'Aziz and ruled after him, during which time the Sa'udi State reached its zenith. His acuity, shrewdness and wisdom enabled him to conquer his enemies, defeating the Turks and the Egyptians, and annexing the Hijaz to his territories in 1218 A. H.\1803 A.D.[64] They extended from the threshold of al-Sham (Syria) in the north to the edges of 'Asir, Najran, Yemen and Oman in the south and from Iraq in the east to the Red Sea in the west.[65] During these great victories of the Sa'udi dynasty, the Ottoman Sultan Mahmoud sent a decree to the Albanian Governor of Egypt, Muhamad 'Ali Pasha in 1222 A. H.\1807 A.D. ordering him to interfere quickly in the affairs of Najd and to quash what he referred to as sedition, which he feared would result in a calamity befalling the Muslims.[66]

In 1226 A.H.\1810 A.D., following this instruction, Muhammad 'Ali sent his son, Ahmad Tusun to al-Hijaz at the head of a large campaign, with the aim of driving the Sa'udis out, which he did once his supplies had reached him from Egypt.[67] He then concluded a truce agreement with his foes, dying on his return to Egypt at Alexandria.[68] In 1229 A.H.\1814 A.D., Sa'ud al-Kabir died, leaving behind him a political vacuum that led to the disruption of the ruling Sa'udi House and its eventual disintegration due to the emergence of internal disputes among its basic elements during the rule of 'Abd Allah Bin Sa'ud al-Kabir, and the dispersion of the citizens' unity. Muhammad 'Ali Pasha, during

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62. Derek Hopwood (ed.), *The Arabian Peninsula. Society and Politics*, George Allen and Unwin Ltd., London, 1972, p 57.
63. Ibn Ghanam, op. cit., pp 179-188.
64. Ibid., pp 126-127 & pp 170-172. See also bin Bishr, op. cit., part1, p 63.
65. Ibn Ghanam, op. cit., pp 179-188. See also G. King, op. cit.,1986, p 15; J. B. Kelly, *Eastern Arabian Frontiers*, Faber and Faber, London, 1964, p 54.
66. Muhammad Fareed Bik al-Muhami, *Ta'rikh al-Dawlah al-'Uliah al-'Uthmani'ya*, investigated by Ihsan Haqi, Dar al-Nafa'is, Beirut, 1988, p 406.
67. Philby, op. cit., 1922, vol. 1, p xviii.
68. Ahmad 'Abd al-Ghafur 'Atar, *Saqr al-Jazira*, vol.1, 5th. edition, Makka al-Mukarama, 1979, pp 189-191.

this dramatic period - which he considered a suitable climate for interference in the affairs of Najd - sent a great military expedition towards Najd under the leadership of his son Ibrahim, who was able, with his army and the aid of large numbers of Najdi nomads, to penetrate the central region from the north-west. Passing through its towns and villages, he reached the town of al-Dir'iyya which fell in 1233 A. H.\1818 A.D.,[69] but only after a siege that lasted for six months, resulting in the destruction of most of its buildings. The captives included many princes of the House of Sa'ud, some of whom were taken to Cairo, or Istanbul in the case of al-Imam 'Abd Allah, where they were executed.[70]

The invasion of the land of Najd by Ibrahim Pasha, which ended with the occupation of al-Dir'iyya town and the stronghold of al-Sa'ud, affected many aspects of society. It resulted in the dispersion and deportation of the House of Sa'ud, along with many of the areas citizens, and also the ruination of numerous towns and villages. Captain G. F. Sadleir who arrived to al-Dir'iyya in 1862 A.D. describe the miserable situation that the people of Najd lived in after the Egyptian military expedition.[71]

INT.5.c.2. THE SECOND SA'UDI STATE

The al-Imam Turki Bin 'Abd Allah Bin Muhammad Bin Sa'ud was able, with the help of his son, the al-Imam Faysal, to return from his exile in Cairo to Najd (Fig. 3, 4 & 5). On returning he united the tribes and citizens that were dispersed inside and outside Najd, and in 1824 A.D. /1238 A.H. he formed the Second Sa'udi State. In 1240 A.H.\1824 A.D. he drove the Ottoman Turks from al-Riyad and various other towns and villages, and established the new capital of the Sa'ud House there.[72] During the era of al-Imam Turki, the Sa'udi force reached as far as Oman and also penetrated the east, until the British Government in the Gulf asked them to turn back. The al-Imam Turki subsequently made a treaty in 1831 A.D., agreeing not to attack Eastern parts already controlled by the British.[73]

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69. 'Atar, op. cit., p 10. See also Francesco Gabrielle, *A Short History of the Arabs*, translated by Salvator Attanasio, Robert Hale, London, 1965, p 164.
70. King, loc. cit., See also Hopwood, op. cit., pp 61-62.
71. G. Forster Sadleir, *Diary of a Journey Across Arabia. From El-Khatiff im the Persiam Gulf, to Yambo in the Red Sea. During the Year 1819.* By Ryam Eso, Printed at the Education Society's Press, Byculla, Bombay, 1866, pp 62 & 65.
72. George Lipsky, *Saudi Arabia*, Haraf Press, New Haven, Poland, Jordan and Iraq, 1959, p 10-11.
73. Gerald De Gallry, *Faisal, King of Saudi Arabia*, Arthur Barker Ltd., London, 1966, p 13.

In 1249 A.H., al-Imam Turki was killed by a servant of Prince Mshari upon his leaving the mosque. Consequently, Prince Mshari was killed by his father, Turki's brother. The death of Prince Turki had negative results for the country, again leading to the disintegration of the Sa'udi house, and to the eventual attack by northern and eastern tribes, together with the House of al-Rashid, against al-Sa'ud. Nevertheless, these events, which dominated al-Riyad and its surrounds after the death of al-Imam Turki, did not deter al-Imam Faysal (ruled in 1249 A.H.\1834 A.D.) from continuing Sa'udi conquests in various parts of the Arabian Peninsula. Because of this, in 1862 A.D., Napoleon III of France sent the Briton William G. Palgrave to central Arabia. in order to spy on the activities of Faysal against the British Government in the Gulf.

Palgrave, during his visit, recorded some of the Saudi activities and also described the ruins of the damaged buildings in some settlements such as al-Dir'iyya, Manfuha, and al-Riyad. In 1865 A.D., the British themselves sent Colonel Lewis Pelly to the al-Imam Faysal, warning him to stop any fresh Sa'udi adventures into the territories that were controlled by the British in the Gulf. This resulted in another new treaty being made, similar to that agreed between al-Imam Turki and Britain in 1843 A.D. Pelly also visited the area and described some Najdi towns and villages, but his account was thin compared with those of both Sadleir and Palgrave. [74]

The quarrel between the urban and bedouin peoples of the Najd increased in intensity with the encouragement and financial support of the Turks, leading to the occupation of al-Riyad by the House of al-Rashid in 1309 A.H., with the appointment of Salim Bin Sabhan as Prince. This resulted in the banishment of supporters of the House of Sa'ud to various parts of the country.

INT.5.c.3. THE THIRD SAUDI STATE

After the occupation of al-Riyad by the House of al-Rashid, the al-Sa'ud Family, including the young Prince 'Abd al-'Aziz,[75] with his father and some

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74. David Holden and Richard Johns, *The House of Saud*, Sidgwick and Jackson, London, 1981, p 24. See also Gerald De Gallry, loc. cit.,; G. King, 'Some European Travellers in Najd in the19th. and Early 20th. Centuries A.D.', in the book of *Sources for the History of Arabia. Studies in the History of Arabia*, vol. 1, part 2, Riyadh, 1979, p 259.

75. 'Abd al-'Aziz born on the 29th. of Dhi al-Hija 1297 A. H., at al-Riyad.

other princes of the ruling family, moved to Qatar and then to al-Hasa, where they settled in Kuwait. In Kuwait, political events enabled the young Prince 'Abd al-'Aziz, when he was only fifteen years old, to attend important negotiations between his father and the Turks on one hand, and witness the competition among the powerful states of the Arabian Gulf on the other.

In 1902 A.D.\ 1318 A.H., the al-Imam 'Abd al-'Aziz, at the age of twenty, led a force of fifty strugglers *mujahideen* to al-Riyad which he successfully conquered, executing its Prince, 'Ajlan.[76] He also ousted the Turks of al-Riyad from some Najdian towns and villages, though they remained in Ha'il. Due to his successes, in 1319 A.H. he was proclaimed a prince of al-Riyad and a governor of Najd, as well as the chief of its tribes (historians consider this year as being the beginning and key to the rise of the Third Sa'udi State).

In 1324 A.H., 'Abd al-'Aziz formed, with the exercising of acute diplomacy, groups known as al-Ikhwan (the Brothers),[77] who aimed to rely on the Qur'an and the traditions of the Prophet in the management of their affairs. They built small settlements called *Hijar* (s. *Hijra*), where they began to plant crops and to recite the Holy Qur'an in their mosques following the pattern of the first emigrants, (the Prophets followers who emigrated from Makka to al-Madina). He encouraged religious men and preachers to teach the *al-Ikhwan* , and urged them to settle and be volunteers, fighting for Islam. One of the results of this was that 'Abd al-'Aziz was able to control a section of the nomadic tribes by encouraging them to settle. As a result, they experienced the stability brought by the ownership of land for the first time, and the defence of that land against the Turks became incumbent on them. So, with the help of the bedouins and *al-Ikhwan*, 'Abd al-'Aziz was able to drive away the Turks from al-Ihsa in 1331 A. H.

'Abd al-'Aziz saw himself in a precarious position, his domain was restricted to the city of al-Riyad and the surrounding area, and his enemies enclosed him on all sides. Due to this situation, 'Abd al-'Aziz deemed it necessary to establish a strong, unified Islamic state based on the Qur'an and the traditions of the Prophet. To this end, he made a treaty of protection with the British in 1915 A.D. The British perceived his importance, and also the capabilities and

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76- Lipsky, op. cit.,.p11. See also Robert Lacey, *The Kingdom*, Hutchinson and Co. Ltd., London, 1981, p 39.

77- Ibid., p 12.

enmity of the Turks, and they acknowledged 'Abd al-'Aziz as the ruler of Najd and chief of its tribes.[78]

The great conquests of 'Abd al-'Aziz included the expulsion of the Turks from Ha'il and al-Ihsa in 1336 A. H.; his forces reaching as far as al-Ta'if in 1337 A. H., and also the occupation of Shamar's mountain and the dispersal of the al-Rashid Family in 1339 A. H. As a result, the heads of the Najdian tribes also acknowledged him as a sultan of Najd and its environs in 1339 A. Hl 1921 A. D.[79] 'Abd al-'Aziz entered Jeddah victoriously on the 8th of Jumada (October)/ 2nd 1340 A. H., after long negotiations with Sharif 'Ali, the son of al-Hussain. The notables of the town pledged allegiance to him, and he signed a new treaty with the British at the Hijaz in 1927 A.D. The Hijaz region retained autonomy for six years, until the issue of a royal decree on the 21st of *Jumad* (October)/ 1st 1349 A. H.\1932 A.D. which unified all the regions under the banner of the Kingdom of Sa'udi Arabia (Fig. 4, 5 & 6). [80]

In 1373 A. H.\1953 A.D., King 'Abd al-'Aziz died.[81] After a long struggle that was crowned with victory, he presided over one of the countries most prosperous periods. During his lifetime he unified the country; security and stability prevailed; oases and deserts were urbanized and income increased, with building taking place all over the Kingdom of Sa'udi Arabia.

Due to what Najd regions suffered during this period, in particular the changes resulting from the incursions of neighbouring states, the inhabitants of Najd had developed a relatively eclectic culture. The sequence of conquests over their land had left its mark on Najdian thought and customs.

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78. Joel Carmichael, *The Shaping of the Arabs*, George Allen and Unwin Ltd., London, 1967, p 327. See also Richard B. Morris and Graham W. Irwin (ed.), *An Encyclopaedia of Modern World*, Weidenfeld and Nicolson, London, 1970, p 228.
79. Derek Hopwood said: *" In 1921 Abd al-Aziz took the secular title of Sultan in place of the religious title of Imam borne by all his predecessors, and after the conquest of the Hijaz he took in 1926 the even more secular title of King."*, op. cit., p 64.
80. Carmichael, op. cit., p328.
81. G. E. Moloney, *A Doctor in Saudia Arabia*, Buckland Press Ltd., Great Britain, 1985, p 55.

INT.6. NOTES ON THE GEOGRAPHICAL AND HISTORICAL BACKGROUND

1- Al-Daynuri considers that both the tribes of Tasim and Judais lived in Yamama and Bahrain. They are thought to belong to the extinct 'Arabs, and their king was a man from Judiece called 'Amliq:

> *Their were many peoples in al-Yamamah and al-Bahrain from Tasim and Judais, the sons of Iram, son of Sam, and they were 'Arab, their king was from the tribe Tasim and was called 'Amliq.....*[82]

He also mentions that the tribe of Rabi'a came to al-Yamamah, which was at that time highly urbanised and full of good quality palaces and houses:

> *...the numbers of the tribe of Rabia grew, and it spread to al-Bilad [Arabian Peninsula], and with their leader 'Itra [the son of Asad who was the son of Rabi'a] they walked to al-Yamamah and grew in number there.* 82

Al-Hamadani shares al-Daynuri's opinion about the tribes of Tasim and Judais and their inhabiting of Yamama at *Khadra Hijr*, the ancient capital of Najd, and probably the early site of al-Riyad city:

> *Khadra Hijir was the capital of Tasim and Judais, in it are their ruins, forts, and towers.* [83]

Likewise, al-Ma'sudi indicates the tribe of Judais's leader and their location, which was Jawi [0r Juw], the other name for Yamama.

> *Judais son of 'Amar came to Jawi, which was in the area of al-Yamamah; located between Bahrain and the Hijaz.* [84]

Other early Islamic historians such as al-Maqdisi and Abi al-Fida emphasise that all the tribes mentioned above lived in the al-Yamamah area which was sometimes called Jawi.[85] Ibn al-Athir gives more details about the leaders of both the tribes of Tasim and Judais, as well as referring to the earlier name of al-Yamamah:

> *The tribe of Tasim was related to Tasim, son of Lut, who was the son of Azhar, who was the son of Sam, who was the son of Nuh. Judais was son of 'Amr, who was the son of Azhar, who was the son of Sam. Both were related, and were located in al-Yamamah which was at that time known as Jawi and it was a fruitful land.* [86]

Modern historians trace the path of their predecessors, including Bin Blihid, Jawad 'Ali and Hamad Al-Jasir all of them indicate that both the tribes of Tasim and Judais inhabited Najd.[87] Al-Jasir also mentions that both these

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82- Al-Daynuri, op. cit., p 15

83- Al-Hamadani, op. cit., p284.

84- Al-Mas'udi, op. cit., p53.

85- Al-Maqdisi, op. cit., vol.3, p28. See also Abi al-Fida, op. cit., p 99.

86- Ibn al-Athir, op. cit., p 351.

87- Bin Blihid , op. cit., part1, p 195. See also Jawad 'Ali, op. cit., pp 340-347; Hamad al-Jasir, op. cit., p 34.

tribes existed until the advent of the Islam, and were known as al-Sa'afiqa.[88] It is clear from the references above that both the tribes of Tasim and Judais were urban tribes, and this was affirmed by Greek documents dating from 322 A.D , found at Salkhad in Syria, which Jawad Ali quotes as referring to Tasim; the phrase, "The graces of Tasim", indicating the civilized state of this tribe.[89]

Al-Hamadani (in the book of Hamad al-Jasir) considered the tribe of Hazzan to be one of the extinct Arabian tribes which had dwelt in the Najd, preceding the tribes of Bani-Hanifa, Aumim and Hadoura, whose domain extended from Iraq to Sham and the Hijaz.[90] Al-Mas'udi also points out that the tribe of Aumim was the first tribe to build houses with raised walls and ceilings.[91] Jawad 'Ali placed the tribe of Aumim, the offspring of Lawidh, son of 'Amliq, in the same category as those of Tasim and Judais. It was located between al-Yamamah and al-Shahr.[92]

It should be noted that the pagan tribe of Hadura had been dwelling at al-Ras in Najd. Jawad 'Ali also adds the tribe of al-'Amaliq; indicating that the tribes of Badil, Rahil and Ghafar are all branches,[93] while the tribe of 'Ubil was located in Najd between al-Shahr and al-Yamamah.[94] Al-Ya'qubi refers to the Kinda tribe, which is considered to be one of the most famous tribes that dwelt in the Najd area during the 5th century B.C.:

> *Kinda marched to the land of Ma'd and dwelt in it, becoming rulers; the first of their kings was called Mirt', the son of Mu'awiya, who was the son of Thur. He reigned for twenty years... after him Hajr, son of 'Umar Akil al-Marar, made an alliance between Kinda and Rabi'a.* [95]

Al-Qarmani.also mentioned the Kinda:

> *the first king of Kinda was Hajr; Kinda was a tribe without a king, he snatched the land of bin Wa'il from the Lakhmeans, then a king came after him; his son 'Amru, then al-Harith son of Assad, son of Hazima, son of Mudrka.* [96]

During the Islamic era Bani Salim dwelt in Najd; Al-Samhudi mentions that Hijr was the home land of this tribe, possessing an abundance of palm trees, wells and springs.[97]

2- Al-Yamamah was the rural land of Makka and al-Madina. A delay in its alms and products used to perplex the inhabitants of Makka; making it the focus of greedy neighbours and causing the imposition of numerous taxes.[98]

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88. Bin Blihid , loc. cit.; see also Jawad 'Ali, loc. cit.; Hamad Al-Jasir, loc. cit.
89. Jawad Ali, op. cit., pp 341.
90. Hamad Al-Jasr, loc. cit.
91. Al-Mas'udi, op. cit., p 144 & pp 150-152.
92. Jawad 'Ali, loc. cit.
93. Ibid., loc. cit.
94. Salim, Al-Said 'Abd al-'Aziz , op. cit., p 79.
95. Al-Ya'qubi, op. cit., part 1, p 216.
96. Al-Qarmani, op. cit., p 334. See also Edward Broy, op. cit., vol.3, p 111.
97. Al-Bakri, op. cit., p 30.
98. Ibn Sa'd, op. cit., p97; al-Dhahabi, al-Maghazi, op. cit., p 477. See also Sa'doumi, Nasir al-Din, op. cit., p 2; al-Bakri, op. cit., p 105.

In 66 A.H., Najdat Ibn 'Amr, the son of 'Abd Allah al-Mufarih al-Hanafi, marched towards al-Yamamah and its capital, al-Hadarim, plundering it, and making himself governor. In 77 A.H., with the Najdat's help, he attacked the Haji caravans, and some of the eastern countries and towns including al-Bahrain, al-Qatif and Oman. When Najdat died 'Ali al-Muhajir inherited rulership of al-Yamamah.

The situation in Najd deteriorated during the reign of al-Walid, the son of Yazid, who was the son of Mu'awiyya. However, his death led al-Muhir Ibn Hilal, a leader from the tribe of Bani Hanifa to kill Ali al-Muhajir, the governor of al-Yamamah, in order to take control himself. After him came 'Abd Allah Ibn alNu'man from the tribe of Bani Qiss Bin Tha'luba Ibn al-Daual, who in his turn made al-Mudalith Ibn Idris al-Hanafi a governor of al-Filj in Yamama, which was the cause of fierce wars among the *bani* 'Aqil, Qushir, Ju'da and Numir on the one hand, and *bani* Hanifa on the other. This civil war raged until the governorship of al-Yamamah passed to al-Muthana *bin* Yazid bin 'Umar *bin* Hubaira al-Ghazari who fought *bani* Hanifa for many years.[99]

The al-Aukhidiriyeen State was raised over Yamamah under the leadership of Muhammed Ibn Yusuf, also known as al-Aukhidr.[100]

3- Philip Hitti provides an account about the modern history of the Arabian Peninsula:

> *The modern history of Arabia does not begin until the rise of the Muwahhidun (Unitarians) in the mid-eighteen century. This was a puritan revival inaugurated by a Najdian from Uyaynah named Muhammad ibn Abd al-Wahhab (+1792) his idea was that Islam, as practised by his contemporaries, had deviated widely from the Orthodox practice and theory as prescribed by the Prophet and Koran.* [101]

J. B. Kelly says that Muhammad Ibn 'Abd al-Wahhab was *"an eighteenth-century religious reformer in central Arabia."*[102] 'Abd al-Wahhab was born in the town of al-Uyainah in the Najd, and then went to Ibn Sa'ud in al-Dir'iyya who protected him. Richard Morris refers in his account to the Shaykh Muhammad Ibn 'Abd al-Wahhab:

> *.....the founder of a rigid, puritan religious revival movement.....Highly critical of contemporary beliefs and rituals of Islam, and inspired by teachings of Ibn Hanbal (Hanbal) (the founder of one of 4 orthodox schools of Islamic law), Ibn Abdul-Wahab was determined to restore Islam to its primitive strictness .* [103]

99- Ibn al-Athir, op. cit., vol.4, pp 201-203. See also vol.5, pp 298-301.
100- Al-Shibl, op. cit., pp 459-466.
101- Philip Hitti, loc. cit.
102- J. B. Kelly, op. cit., p 53.
103- Richard Morris & other, op. cit., p 115. See also Derek Hopwood , op. cit.,p 55.

PART 1.

CHAPTER 1.

CLASSIFICATION OF TRADITIONAL BUILDING MATERIALS AND TECHNIQUES OF BUILDING CONSTRUCTION

PREFACE

This chapter describes the traditional building materials such as earth, stucco, wood and stone. It examines also the traditional techniques of building construction used in mud-brick buildings of the Najd, including those for: foundations; walls; columns; and ceilings.

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1.1.1. BUILDING RAW MATERIALS

INTRODUCTION

The climate of the Najd naturally affects the availability of building materials such as earth, stucco, wood, stone, and colourants, so too did the cultural heritage handed down from the various nations who had occupied the Najd since pre-Islamic times. Climate and heritage together brought about buildings and decoration of different types exhibiting a variety of techniques.

1.1.1.a. RAW EARTH

Earth is one of the most commonly used raw materials in building construction and decoration in the Najd region and has been used since ancient times until some 20 to 40 years ago.[1] Traditional builders and artists used it to produce thick mud, which in turn was set into various sizes of sun-dried brick, as well as different styles of interior and exterior architectural elements. It was these which usually lent Najd buildings their distinctive traditional character.[2]

Builders also used mud to cover every available surface of their houses, including floors, roofs and walls, both interior and exterior.[3] However, the use of this natural raw material was not restricted to Najd by any means. It was found in many of the cities of the ancient and modern world. Primitive peoples, such as the Tardenosians, used sods covered with branches in the construction of their huts, [4] and later earth and mud alone came into use. In fact, earth was regarded, along with fire, air and water, as being the very essence of material creation. Rene Dubois wrote:

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1. Geoffrey King, 'Traditional Architecture in Najd, Saudi Arabia', Proceedings of the 10th Seminar for Arabian Studies, pp 90-100, vol. 7, C/O Institute of Archaeology 13-34, Gordon Square, London, 1977, p 92.
2. Geoffrey King, *The Traditional Architecture of Saudi Arabia*, I.B. Tauris & Co Ltd, London, 1998, p 12. See also 'Abd al-Rahman Sadiq al-Shirif, *Madinat al-Riyad*, Darat al-Malik 'Abd al-'Aziz, Riyadh, ND, p 94.
3. Muhammad S. al-'Abd Allah al-Rabadi, *Burayda. Dirasa fi al-Khasais al-Tabi'i'ya wa al-Sukani'ya*, vol. 1, Dar al-Kitab al-Su'udi, Riyadh, 1986, p 175. See also Ibrahim bin Sulayman Al-Auhaydib, *Jalajil*, Wika'lat Shu'awn al-Shabab, al-Ri'asa al-'Ama li-Ri'ayat al-Shabab, Silsilat Hadhihi Biladuna, Riyadh, 1989, pp 60-61.
4. James Stewart, *Archaeological. Guide and Glossary*, Titus Wilson and Son Ltd. Kendal, 1958, p 53.

Through the ages, and in all climes, man has expressed a reverence for nature and acknowledged his dependence on air, water and earth. [5]

In the Middle East, where the world's first farming villages were located, the primitive people of the pre-historic age, such as those of the villages of Beidha in Jordan,[6] and Jericho in Palestine (during the Neolithic period around 10,000 B.C.),[7] used earth to build their round houses of sun dried mud-brick.

Likewise, around 7000 B.C., the nomadic hunter gatherer people developed their round houses into rectangular forms using mud-brick structures.[8] In Anatolia, in the villages of Hacilar dating from 7000 B.C. and Catal Hüyük dating from between 5500 B.C. and 6500 B.C., walls consisted of mud and mud-brick on a stone foundations and floors were covered with mud plaster. Also, in Northern Mesopotamia, there is evidence of earth being used (mud-brick settlements dating from 6500 B.C) in the village sites of Shanidar, Zawi Chemi and Karim Shahir. Also, in Mesopotamia, during the Hassuna culture (c. 5500 B.C.), the Halaf culture (4500 - 5500 B.C.) and the Ubaid culture (3800 - 4500 B.C.), both mud and sun dried mud-brick were frequently used in some of their cities, such as Hassuna, Halaf, Samarra, Sahrain, Ur, Tep Gawra, Uruk, Mari and Nimrud. This could be clearly observed in the construction of buildings, monuments and various types of artistic artifacts.[9] The people of Persia also used this kind of material in their buildings, such as the palace of Kysar which was built in al-Madain.[10]

In Egypt, around 4500 B.C., some of its buildings were built of wood plastered with clay,[11] while the city site at Tell al-Amarna from 1370 B.C., was built almost entirely of mud-brick. Also, the Ziggurat of the Choga Zanbil holy city (c. 1640 - 1350 B.C.), the city site of Hasanlu, and the walls of the Royal

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5. Rene Dubois quoted by Thomas R. Detwyler, *Man's Impact on Environment*, Mc Crawhill Book Inc. Company, New York, 1971, p 685.
6. Jonathan Norton Leonard, *The Emergence of Man. The First Formers*, Time Life International Books Inc., New York,1973, p 97.
7. Andrew Sherratt (ed.), *The Cambridge Encyclopedia of Archaeology*, Cambridge University Press, London, 1980, p105.
8. J. N. Leonard, loc. cit.
9. J. Forde Johnston, *History from the Earth. An Introduction to Archaeology*, Phaidon Press Ltd., London, 1974, pp 82-85.
10. 'Abd al-Qader al-Rihawi, *al-'Amara al-'Arabiayt al-Islamiya. Khasa'isouhah wa Atharuhah fi Suriya*, Manshurat Wizarat al-Thaqafah wa al-Irshad al-Qawmi, Damascus, 1979, p 10-14.
11. Robert Wernick, *The Emergence of Man. The Monument Builders*, Time Life Books Inc., United States, p 33.

Palaces in the city of Pasargadae (c. 500 - 550 B.C.), were all built of sun-dried mud-brick.[12] Then, from the earliest period of Islam onwards, the Arab builders continued to use earth in most of their urban construction, for houses, palaces, mosques, and defensive buildings.[13]

Even now, there remain buildings in some Gulf cities, such as the houses of al-Jahra in Kuwait,[14] and Yahili fort in the city of al-'Ain in Abu Dhabi, that were built of mud brick,[15] while the walls of summer houses in the city of Suwaihiliyah in Qatar are cemented and plastered with mud.[16] In the Yemen, most of the old villages, like the small settlements of Wadi Dhar, were mud walled.[17] However, the most important cities built of mud are Shiban in Yemen, Marrakech in Morocco, Timbuktu in Mali, and Riyadh in Sa'udi Arabia.[18]

Mud is made by mixing earth with water typically. It may be one of many colours ranging from brown to red and grey, and contains either aluminium silicate or magnesium silicate.[19] From mud, the most commonly used building material in the Najd region sun dried mud-bricks or adobes were produced (Plate 4). Two different and integral operations were used in the production of mud-brick. First, mud was produced. Usually, the labourers would obtain earth, either from a derelict building or from a pit dug nearby, and this was carried away to the designated site by donkeys, camels or with wooden chariots pulled by donkeys (Fig. 7). At the site the earth would be heaped into a low mound with a large base. Then the brickmaker spread small pieces of straw on it, which were then mixed thoroughly with the earth (Fig. 8). A large hole was then made in this mound and water was poured into it until it spread throughout (Plate 3), then the workers, and sometimes the women,

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12. Jacguetta Hawkes, *Atlas of Ancient Archaeology*, Rainbird Reference Book Ltd., London, 1974, pp 157, 189, 191.
13. 'Abd al-Rahman al-Mughrabi Ibn Khaldoun (died 808 AH), *al-'Ibar wa Diwan al-Mubtada wa al-Khabar fi Ayam al-'Arab wa al-'Ajam wa al-Barbar wa mn 'Asarahum mn Dhawi al-Sultan al-Akbar*, vol.1, Dar al-Kitab al-Libnani, Beirut, 1981, p 725. See also 'Abd al-Quddus al-Ansari, *Athar al-Madina al-Munawarra*, 3rd. edition, al-Maktaba al-Salafiya bi al-Madina, Madina, 1973, pp 57 & 104.
14. Jennefer Scarce, *The Evolving Culture of Kuwatt*, Royal Scottish Musem Edinburgh, Crown Copyright, ISBN, 1985, p 26.
15. John Daniels, *Abu Dhabi. A Portrait*, Longman Group Ltd., London, 1974, p 25.
16. Klaus Ferdinand, *Bedowns of Qatar*, Thames and Hudson Ltd., London, 1993, p182.
17. Petti Hamalainen, *Yemen. A Travel Survival Kit*, 2ed. edition, Lonely Planet Publications PTY Ltd., U.S.A., 1991, p 119.
18. John Donyar, 'Madi wa Hader wa Moustakbal', al-Bina', year 7, vol. 40, Ibrahim Al al-Sheikh, Riyadh, 1988, March, p 42.
19. Farhat Tashqandi , 'Hiwar wa Dwrus Mi'mariya min 'Amara bi Dwn Mi'mari', al-Bina, year 7, vol. 40, Ibrahim Al al-Shaykh, Riyadh, March, 1988, p 40.

mixed it using their feet. Sometimes shovels were used and when the builder was satisfied, it was left for a day or two, or more until it " ripened." After that, the heap was pressed by foot again, or using camels if the volume of mixture was large.[20] It was then divided into lumps of the desired size.

Second came the production of the bricks. The brickmaker chose an area of flat ground and covered it with a thin layer of dry soil or of chaff on which he placed the mould (Plate 1). This was nothing more than a wooden frame used in the Arab peninsula since ancient times, known as al-malban.[21] After that the builder filled the mould with the mud-straw mixture which he flattened and compacted using his bare hands or a small piece of straight-edged wood. With a swift movement, he would lift the wooden mould leaving the fresh brick on the ground, and then place the frame next to the brick. Traditional moulders would make row after row of bricks in this way. After two or three days, when the bricks had dried, they would be used immediately and, for this reason, the bricks were usually moulded near to the construction site. Mud-bricks usually measured 25 x 10 x 20 cms, or alternatively 30 x 20 x 15 cms (Plates 3 & 4).

1.1.1.b. RAW STUCCO

Stucco is known in Arabic as *Jus* (originally a Persian word) and the men who work with it are called *Jasasin* (s. *Jasas*).[22]. Stucco has played a central role in the ornamentation of buildings and as a mortar being regarded as indispensable by many civilizations. Its ease of preparation and its strength are among the reasons for this, as is its ability to absorb humidity,[23] and to retain it, a useful environmental quality in hot regions.[24] As a major element in decoration, it was used since ancient times in Mesopotamia, Egypt, and by

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20. 'Abd al-Rahman bin Zaid al-Suwaida', *Najd fi al-Ams al-Qarib*, Dar al-'Uluwm lil-Tiba'ah wa al-Nashir, Riyadh, 1982, p 142.
21. 'Abd al-'Aziz al-'Amari, *al-Hiraf wa al-Sinat fi al-Hijaz fi 'Asr al-Rasul* , Matba'at Makka al-Mukarama, Makka, 1985, p 321.
22. Hassan al-Basha, *al-Funon al-Islamiya wa al-Wazaif 'ala al-Athar al-Arabiya*, vol.1, Dar al-Nahdah al-Arabiyat, Cairo, 1965, p 353.
23. Muhammad 'Ali 'Abd Allah, *al-Zakhrif al-Jibsiaya fi al-Khalij*, Markaz al-Turath al-Sha'bi li-Duwal al-Khalij al-'Arabi Doha, 1985, p 137.
24. Jasim Muhammad Shafij, 'al-'Amara al-Sha'biya fi al-Samawah Matla' al- Qarn al-'Ishreen', al-Turath al-Sha'bi, vol. 16, year 5, al-Markz al-Fouloklori fi Wizarat al-I'lam al-'Iraqiya, Dar al-Jahiz, Baghdad, 1973, p 193.

the Greeks and Romans in ornamentation and as a wall-coating.[25] It was used by the Parathions and Sassanians in their ornamentation, which in turn influenced Coptic art in Egypt.[26]

During Islamic periods stucco also featured in early Islamic architecture, whether religious or domestic buildings. Examples of the use of stucco in religious buildings appear in the mosques of the Prophet Muhammad in al-Madina (649 A.D),[27] the Dome of the Rock in Jerusalem (691 A.D) and the Ummayyad in Damascus (706-714 A.D);[28] while in residential buildings it is seen in the palaces of the al-Hir al-Gharbi and al-Sharqi in Syria;[29] likewise, at the Khrana and 'Amrae in Jordan.[30]

In Najd, evidence from the Qurayat al-Fau excavations indicates that the people of Najd used stucco as early as 500 B.C., employed it in detailed ornamental engravings of hunting scenes and the like.[31] In general, the citizens of Najd of all periods loved stucco and used it in all kinds of buildings.

Raw stucco usually needed many operations before it became ready for use either in decoration or as a mortar. The process started with the collection of raw stucco (a type of soft stone) from around the settlement by special labourers who carried it back using primitive methods of transportation, similar to those used for moving earth. However, the loads of stucco were not brought inside the city or village, but instead were gathered outside at special locations where they would be traditionaly prepared for use by other

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25- Muhammad Fu'ad Murabit, *al-Funon al-Jamila 'ind Al-Qudama*, Matba'at al-I'timad bi-Masr, Egypt, 1953, p 53. See also Muhammad 'Ali 'Abd Allah, op. cit., p 137.

26- Ni'mat E. 'Alam, *Funon al-Sharq al-Awsat fi al-'Usur al-Islamiya*, Dar al-Ma'arif, Egypt, ND, pp 34 & 62.

27- The columns of the mosque were covered with a plain coat of stucco during the Caliphate 'Uthman Ibn 'Affan, see al-Rihawi, op. cit., p39.

28- The stucco work appears in grille-work of inner windows of both mosques, see Taqi al-Din Ahmad bin 'Ali bin 'Abd al-Qadr Muhammad al-Maqrizi (died 845 AH), *al-Khitat al-Maqrizi'ya. al-Musamat al-Mawa'iz wa al-I'tibar bi Dhikr al-Khitat wa al-Athar*, vol. 4, Matba'at al-Nil, Masr, 1326 A.H, p 7.

29- The stucco work appears in the applied art of the main facade of Qasr al-Hir al-Gharbi and in the grille-work of inner windows of both palaces Qasr al-Hir al-Gharbi and al-Sharqi, see Creswell, *Early Muslim Architecture.....*,vol 1, part 2, 1969; pp 509& 510.

30- The stucco was used as a background for painting views (fresco) in the rooms of both palaces, see Stephen K. Urice, *Qasr Kharana in the Trans Jordan*, American Schools of Oriental Research, U.S.A. ISBN, 1987, pp 3 & 71-73. See also Martin al-Magro & other, *Qusayr 'Amra. Residnciay Banos Omeyas ENEL Desierto DE Jordania*, Instituto Hispano-Arabe De Cultura, Madrid, 1975, pp 176-196.

31- 'Abd al-Rahman al-Taib al-Ansary, *Qurayat Al-Fau. A Portrait of Pre-Islamic Civilisation in Saudi Arabia*, University of Riyadh, Riyadh, 1957-1982, p56.

specialised artisans. Then, foreign bodies (e.g. stones) which were of no use to the builders, were removed from these piles. The stucco was arranged in pyramidic stacks on wooden platforms consisting of tree branches over pieces of wood (Figs. 9 & 10). Thick wooden logs were also laid on the surfaces of the pile, which was then set on fire. This had the effect of driving off moisture from the stone. The baked stones crumbled into a heap of powder during this process, and this was sprinkled with water. The craftsman then mixed the wet powder using iron spoons and shovels, until he had an almost solid lump of clay which was ready for use.

Raw stucco is regarded as a type of stone, consisting of calcium carbonate which erodes, losing 75% of its moisture, when it is burnt at temperatures of up to 190 degrees Fahrenheit. If the temperature exceeds this level, then the stone loses all its water and becomes completely useless. Sprinkling with water, on the other hand, increases its strength and resistance to pressure, due to the chemical reaction that takes place which alters its composition to: calcium carbonate (32.6 %); sulphur dioxide (46.5 %) and water (20.9 %). [32]

1.1.1.c. RAW WOOD

People of the Arabian Peninsula, whether before the Islam or during Islamic periods all used wood for building construction and other requirements, as had most civilizations throughout history.[33] In some of countries of the Arabian Gulf people in the period 1700-1950 A.D., also used wood at earlier mud-brick buildings such as Qasr al-Hukum al-Qadeem (the Old Ruler's Palace) in Qatar,[34] also at the houses of al-Khikh Aisa al-Kabir and Ahmad Syadi at al-Maharaq in Bahrain.[35]

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32. Muhammad A. al-'Abd Allah, op. cit., pp 37 & 139.
33. Jawad 'Ali, op. cit., vol 7, p 582. See also Geoffrey King, 1998, p 15-16; James Stewart, op. cit., p 53 and; Muhammad 'Abd al-'Aziz Marzuq, *al-Funon al-Zukhrufiya al-Islamiya fi Masr Qabla al-Fa'timi'youn*, Dar al-Thaqafa, Maktabat al-Anjlou al-Masriya, Cairo, 1974, p 87. See also al-Imam al-'Alama Abi al-Fazl Jamal al-Din bin Mukaram Ibn Manzur, *Lisan al-'Arab*, vol. 1, prepared by Yousif Khayat, Dar Lisan al-Muhit, Beirut, ND, p 10. For more details see the paragraphs 1 & 2 in the notes to this chapter.
34. G. R. H. Right, *Qasr al-Houkom al-Kadim li-Dawlat Qatar*, French Institute of Archaeology in Beirut, Mathaf Qatar al-Watani, Qatar, 1975, p 75.
35. Rasheed Al-'Arifi , *al-'Amara al-Bahraniya*, Ma'rad al-'Arifi, Silsilat al-Turath al-Bahrani, no. 22, Bahrain, 1989, p 8.

Most people throughout Sa'udi Arabia built partly or entirely in wood. Along the Tihama coast, the native inhabitants of an early period built their simple huts completely of local timber in a pointed-dome form. These wooden huts are very attractive due to their shape and interior elevations, which are fully decorated with various geometrical, floral and symbolic ornaments.[36] It undoubtedly represented the highest developmental stage of early primitive cottages in Sa'udi Arabia. Huts similar to those of the Tihama are still in use in some villages of Southern Iraq. Another style of wooden hut may be seen in continued use in the cities of al-Qatif, Tarrut and al-Ihsa, east of Sa'udi Arabia, together with other cities in the Arabian Gulf.

The peasants who lived around various cities of the al-Hijaz mountains, such as Asir and Abha, and also those in the south-west areas including Jezan and Najrah, used wood extensively and skillfully in the flat roofs of their mud and stone buildings, employing techniques handed down from previous generations.[37] These techniques, which shall discuss later, were also used by traditional builders in the Najd, and were applied in the mud-brick buildings of the Sa'udi States, until as recently as thirty years ago. In fact, these common techniques were used in many important traditional buildings such as the houses of Sheikh 'Issa al-Kabir and Ahmad Sayyidi at al-Muharaq in al-Bahrain, the palace of al-Hokum in Qatar, and in some other houses in the U. A. Emirates.[38]

In the Najd, wood has always enjoyed a great deal of popularity now and in the past. This confirms that wood was very important, and was one of the earliest materials to be used with earth in building construction in this region. Al-Daynuri and Al-Mas'udi both show that earlier local inhabitants belonging to the Tassim and Judais tribes used wood in their mud-brick buildings.[39] Evidence from the excavation of Qurayat al-Fau confirmed the use of wood in Najdi buildings from 500 B.C., while the al-Rabadhah's excavation has also indicated its use during the Ummayyad and 'Abbassid periods.

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36. Sulayman Mahmoud Hassan, 'al-Bait al-Sha'bi al-Taqlidi fi Tihama fi al-Mamlikat al-'Arabiyat al-Su'udiya', al-Ma'thurat al-Sha'bia, year 8, vol. 29, Markaz al-Turath al-Sha'bi li-Duwal al-Khalij al-Arabiyat, Doha, July, 1993, pp 8-15.
37. Sulayman Mahmoud Hassan, 'al-Ajza al-Khashabiya al-Mukamila lil-Biyut al-Hajariya fi al-Mamlikat al-Arabiyat al-Su'udiya', al-Ma'thurat al-Sha'biya, year 4, vol. 13, Markaz al-Turath al-Sha'bi li-Duwal al-Khalij al-Arabiyat, Doha, October, 1989, pp 68-72.
38. Khalfan Jasim al-'Abdwli, *Tatwir al-Itijah al-Mi'mari li-Dawlat al-Imarat al-'Arabiayat al-Mutahida*, Mu'sasit al-Itihad lil-Sahafah wa al-Nashir wa al-Tawzia Abu Dhabi, 1989, pp 59-62.
39. Al-Daynuri, op. cit., p15. See also al-Mas'udi, op. cit., pp144 & 150-152.

Archaeological evidence from mud-brick buildings of the period 1700-1900 indicates the high level of refinement of which early Najdian wood craftsmen were capable. They had acquired a comprehensive knowledge of wood types, their value and their application.

The most common timber used in building construction and for artefacts in the Najd were palm, tamarisk, juniper and others (such as *nabq* and *al-Ibraq*). Other high quality woods (such as *al-'Uroorq, al-Salam, al-Dom and al-Salq*) were imported from cities and villages in the Hijaz and Tihama.[40] Likewise, other kinds (such as *Shizer, Bomto and Danyle*) were sometimes brought from the old settlement of al-Sharqiya, east of Sa'udi Arabia, specifically from al-Qatif, Tarrat and Darin.[41] Originally these were imported from settlements in Iraq and Iran.[42] Small pieces of various sorts of wood were imported from Bilad al-Sham, used by local craftsmen for various sizes of ornamental jewellery boxes. Palm and tamarisk wood were commonly used in roof construction, as were juniper and nabk in very rare cases, testifying to the social status of the inhabitants. Tamarisk wood was also used in the manufacture of simple furniture, including seats and pieces known locally as *masanid*, as well as kitchen tools including dishes and spoons.

Other types of wood were used for doors, windows and various styles and sizes of artefact. However, earlier doors and windows, such as those found at the houses of al-Tuwayjari and al-Rabi'a in al-Majma'a, were made of palm and tamarisk wood. The majority of wood-work in the domestic Najdi building, including ceilings, doors and windows, as well as artefacts such as jewellery boxes, were ornamented in various styles, which could be carved, painted and burned.[43]

1.1.1.d. RAW STONE

> *In central Najd, the use of stone is generally confined to foundations and columns....In central Arabia, stone plays a much less prominent role. It is used for foundations and is recorded in places and periods as widely separated as Umayyad I*

40. I have provided the local names for these kinds of timber because I haven't been able to identify their Latin or English names.
41. Older people everywhere (for example, Ali al-Sulayman and Hamad al-Tuwayjari from al-Majm'a) told Me this during field survey (oral evidence).
42. Sa'd al-Mhanadi Rashid, 'al-Bina' al-Qadim fi al-Bahrin', Markaz al-Turath, al-Bahrin, 1995,pp 11-12.
43. From the field survey.

early 'Abbasid al-Rabadha, near the Hijaz / Najd border and nineteenth and twentieth-century al-Riyad. [44]

As Geoffrey King stated above, the use of stone in Najd region was only as a secondary building material in residential buildings until the end of 1950 A. D., after which some people (especially the rich) began to build houses completely in stone e.g. many palaces in al-Riyad, Burayda and Shaqra. Regarding the use of stone in Najd. However, stone was used in Najdian defensive buildings such as towers and walls.

In the past stone was commonly used as a foundation for mud and mud-brick walls and columns; for column shafts and small dwellings or rooms (used as stores or stables), and in very rare cases in construction of ceilings and as facing material for fortified mud-brick walls. Examples of this technique appear in the ruins of some mud-brick settlements such as those of al-Dir'iyya which were noted by Sadleir in 1819 A.D:

These ruins are very extensive, and the remains of walls formed of yellow earth and partially faced with stone, cemented by this earth. [45]

Geoffrey King, has also reported many fortified buildings built with this technique, such as the defensive towers of al-Hayr, south of al-Riyad and near al-Jubayla, north of al-Riyad:

While much of al-Dir'iyya is built of unfired mud-brick, many buildings in Najd, as I said, are mainly stone-built: there are also towers with a core of mud with stone.....Such fortifications [towers of stone-faces] are not confined to al-Dir'iyya: similar towers of stone-faced mud are encountered at al-Hayer, south of al-Riyad, and near al-Jubayla, north of al-Riyad. [46]

44- Geoffrey King, op. cit.,1998, pp 11 & 12.
45- G. Forster Sadleir, op. cit., p 65.
46- G.R.D. King, 'Some European Travellers...', 1979, p 256.

1.4.2. BUILDING CONSTRUCTION TECHNIQUES

INTRODUCTION

The existing buildings of the Najd have a very simple structure, probably employing the primitive techniques of Mesopotamian building. It is based on load-bearing walls and columns, usually erected on a stone foundation, with load bearing arches found only occasionally. Such elements would support floors or flat roofs or both. Beams for floors would be tailed into the supporting wall. The techniques used in their construction can be clearly perceived on examining extant walls, columns, ceilings and the junctions of the walls and columns with roofs and floors. The walls externally expose their structural elements and only in very rare cases are they supported by inner piers of stone and pieces of wood. Such piers and wood helped to give the wall more stability and strength and, indirectly, to support the floors and roofs.

1.1.2.a. FOUNDATION TECHNIQUES

The foundations of Najdi buildings consisted of stone, in various forms and sizes, tightly packed (with or without mortar), in trenches. Where the stone was un-mortared, trenches were filled up to ground level with stone, and finished with a layer of mud (Fig. 11). By contrast, a mortared stone foundation would be raised above ground level by approximately 0.5m to 1m depending on the building style (Plates 5 & 6, Fig. 12). Generally, employees, young men from neighbouring houses, or the owner himself would dig the trenches for the foundations of the walls and columns. These trenches would be about 0.5m to 1m deep, sometimes extending down to rock level,[47] and were usually dug wider than the planned thickness of wall or column. A 10cm deep layer of mud mixture was placed at the bottom of the trench, followed by a band of stones strongly cemented into that layer. A second layer of the mud mixture was then added and worked on to the stones. This operation was repeated up to the required height. Within two to

47- H. ST. J. B. Philby, *The Heart of Arabia. A Record of Travel and Exploration*, vol 1, London, 1922, p 73.

three weeks, the mud/stone would be dry and work could begin on the walls or columns (Fig. 13).

In 1819 A. D., Sadleir gave a good description of building foundation technique, as well as the materials usually employed by local builders at certain mud-brick settlements in the Najd:

> *The foundation of the walls was apparently built with large flat stones which are found in abundance in the hills to the north; these were strongly cemented with yellow earth, of which latter material the upper part of the wall was composed: this earth is very adhesive, and found in abundance all over this part of Arabia; the greater part of the house are usually built of it.* [48]

Geoffrery King also described the technique of building foundation in Najd:

> *The process of constructing mud walls varies. In most areas in central Arabia, limestone is used fill a foundation trench and form a stone footing to two or three courses- a metre or less above ground level. Above this, the wall is made of mud as either bricks or coursing.* [49]

However, sometimes adobes were used as a raw material for the foundations, instead of stone, especially along the bottom of trenches and for inner walls. On the mud layer, the builder placed a double row of adobes, followed by another layer of mud on which rested a second row of adobes. This consisted of one complete adobe flanked with two half adobes, one in each side. This operation was repeated until the foundation extended to the ground level (Fig. 14). Builders sometimes used single large stones, resting on a layer of small stones, as the foundation of a column (Fig. 15).

1.1.2.b. FLOOR TECHNIQUES

The floors of mud-brick buildings of the Najd were made using various natural materials including mud, stone and stucco. The floors of open courtyards, roofs and staircases were often covered with a very hard coat of dark-brown mud which usually included a substantial amount of straw, or sometimes animal hair, in order to withstand the rigorous Najdian climate and heavy-duty use by people. The floors of courtyards in wealthy houses and palaces were sometimes covered with a layer of either small, soft stones, or clean white

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48. Sadleir, op. cit., p 65.
49. Geoffrey King, op. cit., 1998, p 13.

sand which were sometimes topped with gravel.[50] The floors of rooms and corridors were sometimes covered with a layer of small stones and followed with a hard coating of mud, while a layer of white stucco was often used in wealthy houses and palaces, particularly in men's and women's sitting rooms.

Bathroom floors and some sections of kitchen floors and the women's open courtyard, particularly the areas where women would clean clothes, were commonly covered with small, hard, stone slabs that were cemented with stucco. The edges of stair-cases and ceilings were covered with a hard coat of stucco, while the floors of roofs themselves were often coated with a fresh layer of mud every year prior to the winter season.

1.1.2.c. WALL TECHNIQUES

Four different techniques were used across Najd for the construction of walls: in the first technique, adobes (sun dried mud-bricks), were employed. Commonly, the traditional builder in this technique first defined the precise location of the wall and whether it was to be with or without foundations. After this, with the help of labourers, the builder spread a layer of mud mixture over the location of the wall. On it would be placed the first layer of adobes, and a small space would be left between each that would be filled with mud (as a mortar) to cement the vertical surfaces of the adobes together; then another layer of mud mixture was placed on top. This operation would be repeated until the required height was reached (Plate 2 & 4, Fig. 16). When a wall was finished, the builder usually covered the adobes with a thin layer of mud-mixture. This type of wall is prone to weathering; the mud coating dries and shrinks, sometimes causing rapid cracking if the size of straw in the mud mixture is not suitable, thereby allowing rain water to seep into the adobes. Because of this, the builder would usually re-plaster the facades with a light coat of mud annually.

The second technique is sub-divided into two methods, and in both of them the traditional builder used only a mud mixture. The first method was known locally as *al-Binah bi al-Madamic* (building by *al-madamic*- n.s *midmac*) or

50. H. R. P. Dickson, *Kuwait and Her Neighbours*, G. A. and UN Ltd., London, 1956, p 381.

al-'Uruq (n.s *'Irq*) (Fig. 17).[51] Walls of this type were generally used to enclose gardens or houses and, as such were low in height (typically 2m. to 2.5m.). Sometimes, walls of this technique were also used in inner construction and defensive external walls, in which the height might reach 6m. Its structure is raised by the successive compaction of courses of mud mixture, each course being clearly defined by a horizontal concave line. The courses were erected vertically, one on top of the other, up to the required height. However, this technique could only be used for walls no less than 40cm thick. There was no fixed dimension for each course but commonly they measured from 40 - 80cm in width and 50 - 80cm in height . The wall was often built on a foundation of un-mortared stone. Examples of walls built with this technique are still found in the cities of Sadus (Plate 7), Shaqra and al-Majma'a, and in the old traditional defensive walls of both the palaces and cities, for example in the walls of al-Riyad's city (Plate 8) and the palace of 'Abd al-'Aziz Ibn Musa'id Bin Jiluwi at Ha'il.[52]

To build this style of wall, the builder usually used two parallel shutters of wood that were fixed vertically on the ground and followed the course of the wall. These shutters formed an open mould that was then filled with the mud mixture. This was pressed down by hand, filling the mould. After a couple of hours, the mould would be moved along the line of the wall to build an adjacent course. When the first horizontal course was completed around the selected circumference of the wall, it was left for two days in order to dry somewhat. This was then followed with another vertical course, and then the operation was repeated until the wall reached its required height. Concerning this technique of wall construction Geoffrey King said:

> *The alternative was to build in continuos mud layers* ('uruq). *At Hail, if the wall was to be built in layers, then a complete layer would be finished and left for a day before the next was added. Layers, rather than bricks, were preferable as they were thought to be stronger and more enduring as well as better looking.* [53]

This type of wall construction also appears in European buildings, and it was known as "Pisé",[54] or "rammed earth"[55]

51- Al-Shirif, 'Abd al-Rahman Sadiq , *Mantiqat 'Unayza. Dirasa Iqlimiya*, Matba'at al-Nahdah al-Arabiyat, Cairo, 1969, p 209.

52- G.R.D. King, *The Traditional Architecture of Saudi Arabia*, I.B. Tauris and Co. Ltd. Victoria House, London, 1998, pp 9 & 137.

53- G King, op. cit., 1998, p 14.

54- Michael Stuart Green (interview in 27- 4- 1996.

55- Hugo Houben and Hubert Guillaud, *Earth Construction. A comprehensive Guide*, Intermediate Technology Publications, London, 1994, p 4.

When a building of this type fell into ruin, the earth would be re-used: consequently few buildings of this type are now found in Najd. Also, rain and wind eroded the structure, especially the upper areas if they were not protected with a stucco layer, and the lower sections too sometimes suffered from rain and floods. With regard this technique of traditional building technique, Sadleir recorded an excellent description in 1819 A. D.:

> *The process of building is very simple. A pit is dug where earth is expected to be found, and water poured in to mix it into mortar, layers of which are formed of the breadth of the wall by means of a few planks made into the form of a long box; when one layer is completed and dry, another is added, and thus a house is constructed of three or even four stories, the walls of which are one solid mass of this earth, which requires only the labour of the father and his children.* [56]

The second method is very rare in Najd, found mostly in low gardens walls. It is not so different from the first method; in both the builder uses thick mud. However, in this second method the mud tended to be denser. This allowed the builder to finish a building in a couple of days, because there was less need for drying time. The wooden mould could also be done away with, thanks to the consistency of the mud. Labourers made the thick mud mixture, forming it into small lumps before the builder received it. He would then layer the lumps on the ground floor or stone foundation up to the required height. This wall was typically about 60cm width, sometimes a little more.[57]

The third technique is well known in Najd, and is not so different from the previous method, except that small stones of various shapes were also used, cemented with thick lumps of mud (Plate 9 & 10, Fig. 18).[58] The stones were sometimes laid in the mud so as to slope outwards. Sometimes, when a wall was finished it would be covered with a layer of mud plaster. The width of a wall commonly measured from 40cm. to 80cm., and a wall of this type say 4m. long by 3m. high was usually finished within two hours by one builder with the help of three labourers. Some earlier buildings of al-Dir'iyya were built in this way while others were mainly stone-built or mud faced with stone (Fig. 19).[59] Geoffrey King gives a detailed description:

> *The building material of old al-Dir'iya was to a large extent unfired clay.....However, al-Dir'iya is remarkable among the towns and villages of Najd inasmuch as it also*

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56. Sadleir, op. cit., p 65.
57. This type also appears in Europe, being termed "Cob", M. S. Green (inter view in 27 - 4 - 1996).
58. There are similarities with the archaic Scottish building technique termed "clay and boules", M.S. Green, (interview in 10-11-1998).
59. G. King, op. cit.,1979, p 256.

uses a great deal of stone. This was sometimes employed to construct entire walls and was not confined to providing a footing as elsewhere in Najd. In some instances, courses of stone alternate with courses of mud brick. The stone courses in walls were constructed in a curious manner. Rough-cut, flat limestone blocks were used to form courses, the stones laid sloping, at an angle of about 45 degrees, and fixed with mud mortar. After a levelling course of stone was set horizontally, another course of stones was laid at an angle, either in the same direction as the first, or running in the opposite direction....The curious herringbone effect created by the stone courses was later concealed by a coat of thick mud plaster, giving the impression that the walls were of the same construction as ordinary clay walls. [60]

Such a technique is still in use in some cities and villages of Hauran in Syria, such as Shikh-Miskin, Dar'a and Nawa.

The fourth technique is also well known in Najd, and is similar in appearance to the previous one. However, small pieces of broken mud-brick replaced the stones and the binding mud mix was softer (Plate 11).

1.1.2.c. COLUMN TECHNIQUES

The people of the Arabian Peninsula used columns in building construction in a variety of materials and techniques.[61] In early periods of Islam, many mosques and domestic buildings were also constructed with the help of inner columns made of palm trunks, mud-brick (libn), and stone. The mosque of the Prophet in al-Madina was built using all these techniques. At the time of the Prophet builders used columns of palm trunks, and during the era of Rightly Guided Caliph 'Umar Bin al-Khatab they used columns of mud-brick (libn), while at the time of Caliph 'Uthman Bin 'Afan stone columns were used.[62] However, even in recent times some mud-brick buildings in al-Riyad and other cities were built with wooden columns made of palm trunk or other kinds of timber.[63] Geoffrey King emphasizes the use of stone columns in mud-brick buildings of al-Dir'iyya in addition to the use of wooden columns:

Stone was also used in al-Dir'iya just as in the rest of Najd for the construction of columns, which were always made up of several stone cylinders and plastered.

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60. King, op. cit., 1998, pp 159 & 161.
61. Jawad 'Ali, op. cit., vol 8, p 37.
62. Nur al-Din 'Ali bin Jamal al-Din Abu al-Mahassin 'Abd Alla bin Shihab al-Din bin al-'Abbass Ahmad al-Hussaini al-Shafi'i al-Samhudi (died 911 AH), *Wafa al-Wafa bi Akhbar Dar al-Mustafa*, 2ed. edition, vol 7, investigated by Muhammad Muhi al-Din 'Abd al-Hamid, Matba'at al-Sa'adah, Egypt, 1954, pp 439-443.
63. During field survey in Najd I saw in the kitchen of al-'rafi's mud-brick house at 'Unayza (recently inhabited by workmen from Pakistan) an wooden column supporting the main ceiling beam.

However, at al-Dir'iya there is also an instance of an ithal trunk used as a column to support roofing beams, although this was a repair. [64]

The construction, proportions and manufacturing accuracy of Najdian columns differ between urban settlements. Some columns were constructed of a body, neck and capital (Plates 213 & 216, Figs. 210, 216 & 217); others of a body and a capital only (Plates 217-225, Figs. 208-209, 211-214, & 218-223).

The body of Najdian columns consist of pieces of stone (called locally *Kharazat,* s. *kharaza*, Plates 12, 13 & 14),[65]which the builder stacks on top of each other. They are either circular or square in cross-section. These were cemented horizontally with mud or stucco mortar, and then covered with two or three layers of mud or stucco. The shaft was commonly crowned with a geometrical capital formed from one to three pieces of round, square or rectangular stone all of them together called locally *Al-Janaya.* These were also cemented together (the biggest stone usually fixed on top of the smaller ones) with mud or stucco employed in the same way as in the column's shaft itself (Figs. 15, 20, 221, & 224-236). Typically, therefore, capitals usually appear in one of three forms: the simplest consists of one stone piece (Figs. 20, 228 & 236,d); the others of two (Figs. 20, 226-227, 229, 230 & 235)or three pieces (Figs. 20, 224, 234 & 236, a,b,c)

Commonly columns were spaced at centres of about 150cm. to 230cm., their capitals supporting triads of wooden beams (ithil or tamarisk) which, in turn supported the joists that carried the roof (Figs. 24 & 84). This technique is called, locally *al-Sawakif.* On the 29 July, 1918 Philby saw the new constructions in the palace of Ibn Sa'ud at al-Riyad, and provided a description of the raw materials and methods employed in this style of Najdian column, as well as the way that traditional builders dealt with them during building construction:

> *At this time a great deal of work was being done in connection with structural alteration in the palace. The courtyard...was apparently to be covered over to form a pillared hall, and the whole groung space was now dotted with incipient pillars in various stages of construction. For these rounded blocks of limestone were laid one on top of another with mud to cement them together up to the required height, the foundations penetrating the mud floor of the courtyard to the underlying rock. As the pillars and connecting walls rose beyond human height the mason climbed up on to them to continue the work, a boy below throwing up the rock slabs and great*

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64. G. King, op. cit., 1998, p161.
65. 'Abd al-Rahman Sadiq al-Shirif, op. cit., 1969, p 210.

clumps of semi-liquid mud, half of which generally fell away before it reach the hands awaiting it above. [66]

1.1.2.e. CEILING AND ROOF TECHNIQUES

Ceilings in Najdian mud-brick architecture were flat, constructed by using one of two techniques, although there is little difference between them. In the first, the builder used large, strong beams (often they were three beams adjacent to each other) which carried all the secondary beams (joists) and the ceiling materials (Plates 16 &18, Figs. 21, 23 & 24); in the second he would use only joists (Plate 15 & 17, Fig. 22), a technique still applied in some villages of south-west Sa'udi Arabia.[67] Generally, if the building was two to three storeys in height, the builder would use a large joist fashioned from a palm trunk or other type of wood, which penetrated the two facing walls. Thinner joists would rest across this, spaced close together, these usually being made of tamarisk wood. This operation is known locally as *al-Tahneek.*

The joists were covered with dried palm branches, or sometimes straw matting, which was then covered with a layer of green palm leaves to lend the mortar solidity.[68] A soft mixture of mud and straw, or occasionally well worked lime or stucco, was spread over the ceiling boards in many layers. Each layer was given some time to dry, after which the ceiling was levelled with lengths of heavy stone or wood. This layering process was continued until the roof reached a thickness of about 20-30cm. (Figs. 21 & 22).

Structurally, a ceiling's design depended on the type of building and the social and economic status of the owner. It might be expressed as one area (this is when a ceiling is built with joists only, plates 15 & 17) or divided into two areas, or many more in some cases, for example, the ceilings at the houses of both al-Tuwayjari (Plates 102, 108 & 220) and al-Rabi'a in al-Majma'a (Plate 18), likewise, al-Suba'i in Shaqra (plate 16). The arrangement of the ceiling depends on the number of main projecting beams, which are the principal structural elements and which divide the ceiling into equal parallel

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66- Philby, *Arabia of the Wahhabis*, Constable & Co ltd, london, 1928, p 57. See also Philby, op. cit., 1922, p 111.

67- Sulayman Mahmoud Hassan, op. cit., 1989, p 56.

68- Ahmad Bin Musah al-Washmi, *Madinat al-Riyad*..Wika'lat Shu'awn al-Shabab, al-Ri'asah al-'Amah li-Ri'ayat al-Shabab, Silsilat Hadhihi Biladuna, Riyadh, 1988, p28.

areas. These areas can be decorated, left plain, covered with large white canvases or decorated cloth, or, in some areas, might be coated with stucco or mud.

The ceilings in poorer houses of the 17th Century A.D. were usually of palm-timber, such as those still found in the houses of al-'Atiq and al-Dulami in 'Unayza and al-'Ajlan in Shaqra', or of tamarisk timber such as the ceilings in the house al-Qadi in Burayda. The tamarisk ceilings being the more popular choice in Najdian houses due to its affordability. The width of the ceiling was always in proportion to the length of the timbers, which varied between 250cm. and 300cm.

In wealthier houses, the ceiling was generally divided into four or more areas, according to the desire of the owner (Figs. 25 & 26). Traditionally, the ceiling of the sitting room was often designed with 2-6 areas, created by resting crossed beams on columns; each beam consisting of three tamarisk trunks. This design originated in order to provide more interior space for the seating of both male and female visitors, the dimensions of the ceiling being no longer dictated by the maximum length of single timbers.

The Najdian residantial roof was constructed with a slight slope outwards towards the neighbouring street and, at the bottom of the parapet wall overlooking the street, there were semi-circular holes linking to a horizontal stuccoed channel which, in turn, connected with a vertical, stuccoed pipe leading to ground level. Rain water falling on the roof flowed easily towards these holes and reached ground level outside via these conduits. Sometimes the roofs were provided with wooden water-spouts instead of the stuccoed pipes.

1.1.3. CONCLUSION

The most common raw materials used in the construction of traditional buildings in Najd were earth, stucco, timber, stone and colourants. Only a few raw materials were imported from the western or eastern areas of Sa'udi Arabia. By mixing the earth with straw and water workers produced the mud and various sizes of adobe used for building. Builders prepared the available

internal and external surfaces and artists created various types of decorative motifs using a mixture of mud or stucco.

Traditional architects of Najd used a variety of construction techniques when using these local materials. With mud and adobe they constructed walls and foundations; with timber from tamarisk and palm trees they created the ceilings, lintels, doors and windows; and stone was used to construct floors, foundations, walls and columns and, occasionally, ceilings.

1.1.4. CHAPTER NOTES

1- Since circa 3000 B.C, the Pharaohs of Egypt used various kinds of local wood such as the Sant, Dom, Sycamore, Willow and Palm. They also imported other species such as Cedar, Pine, Oak, Beech, and Ebony.[69].

2- During Islamic ages people of the Arabian Peninsula continued using wood as a raw material in building construction,[70] as did other Islamic people of various countries. From the Ummayyad period there are examples of the earliest Islamic woodwork, such as the carved beams of al-Aqsa mosque in Jerusalem and the painted wood of Ummayyad mosque in Damascus.[71] From the Abassid era we have the carved door from Baghdad that has been preserved recently in Banaky Museum.[72]

69- Muhammad 'Abd al-'Aziz Marzuq, op. cit., p 87.

70- Ibn Manzur, op. cit., vol 11, p 10.

71- M. S. Dyamond, *al-Funon al-Islamiya*, 3rd. edition, translated to Arabic by Muhammad 'Issa, Dar al-Ma'arif al-Masriya lil-Nashir, Cairo, 1982, p 115.,

72- Zaki Muhammad Hassan, *Funon al-Islam*, vol 3, Dar al-Ra'id al-'Arabi, Beirut, 1981, p 443.

PART 1.

CHAPTER 2.

CLASSIFICATION OF TRADITIONAL MUD-BRICK SETTLEMENTS OF THE NAJD

PREFACE

This chapter looks at the ancient settlements and roads of Najd and gives brief information as to their nature according to the opinions of early Islamic geographers and European explorers. It discusses also the evolution of the traditional Islamic city, and classifies the forms of traditional mud-brick settlements of the Najd as (1) compact (2) semi-compact and (3) scattered.

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1.2.1. ANCIENT NAJDIAN ROADS AND SETTLEMENTS

Unfortunately most of the classical geographers in earlier times were not interested in the central areas of the Arab Peninsula. Consequently, they tended to look inwards from the coast, and to view the Arabian Peninsula as a border region of Babylon and Bilad al-Sham. This tendency limited their knowledge of the interior. The result is that only those places in Inner the Arab Peninsula, that can be connected with specific historical events, or great figures in history are mentioned. Although Arabian poets of the pre-Islamic period provide some information, including the names and locations of some Najdi towns and villages before Islam, and though this data is but limited and simple, it is both very important and useful.[1]

In the late ninth century A.D., other brief information about Najdi roads and settlements was given by the earliest Islamic geographers. Al-Ya'ubi (d. 284 A.H) who visited Najd during this century identified those settlements, which were located on the route north which runs from the city of Kufa (north-east Najd) to Hafr *abu* Mousa town (today called Hafr al-Batin), through the al-Qasim area , then to the cities of al-Madina and Makka.[2] In addition, Ibn Qudama (d. 320 A.H) refers to some towns and villages situated on three particular central, main roads, running from the al-Yamamah area towards the cities of Makka, San'a, and al-Basra.[3] At the same time, al-Mas'udi (d. 346 A.H) recorded the towns which lay on twelve of the roads passing through the Najd area: nine running from north to south; and three crossing the area from east to west.[4] A similar description, but more detailed in its information, has been given by al-Hamadani (d. 334 A.H) covering the location and nature of Najdi settlements in the areas of both al-Qasim and al-Yamamah (Fig. 27 & 28).[5]

From these slight references we know that the earliest Islamic geographic sources refer to many ancient sites in the Najd region. Some of them were to

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1- Bin Blihid, op. cit., pp 9-16 &152.
2- Al-Ya'oubi, *Kitab al-Bildan*, part7, pp 311, 312.
3- Abi al-Farag Qudama bin Ja'far al-Katib al-Bughdadi Ibn Qudama (died 320 AH), *Nabdha mn Kitab al-Kharaj*, Maktabat al-Muthana, Baghdad, ND, pp 191 & 193.
4- Al-Mas'udi, op. cit., p 349.
5- Al-Hamadani, op. cit., pp 282-283.

be obliterated; others still exist. In addition, these sources provide an interesting description of the al-Yamamah area (sometime named "*al-Quraiya* or *al-Aroud*[6] which occupied the largest part of the Najd region.[7] Its capital could have been *al-Khadrama*,[8] sometimes known as *Hijr* or *Khadra Hijr*, which is considered to be the original site of al-Riyad city[9]). As mentioned above, its inhabitants originally came from the tribes of the Tasim, and Judais, and these were later followed by the famous tribes of Rabi'a and Kinda.[10] Also, the al-Yamamah is a most prolific land, and most fertile: it is abundant with palm trees and farms. Settlements and fortresses are also to be found.[11]

From the distribution of towns and villages along these roads we know that the original settlements of the Najd region started with a movement from north to south. This was follow by another from west to east, parallel to the flow of the *wadis* and their main branches. The distribution of settlements was, of course, locally determined by the geography of the region. In the north, west, and south of Najd only scattered settlement are found. However, people of mud-brick settlements north and south have strong socio-economic relationships with those in the interior, and with the nomads in the deserts both of the Rub al-Khali and Nufudh.

The heart of the Arab Peninsula (Najd) was still practically untouched during the travels of Ibn Batuta in the 15th century AD.[12] However, in the middle of the eighteenth century A.D, after the successful unification movement in Najd, serious exploration eventually began. Most of these journeys have been studied by authors such as D. G. Hogarth, Bidwell, Freeth and Winstone. Philby recorded in his account the names of the explorers who had visited the Arabian Peninsula.[13]

Explorers who had reached the Najd region included: Sadleir (Fig. 29), W. G. Palgrave (Fig. 30), L. Pelly (Fig. 31), C. Guarmani (Fig. 32), C. M. Doughty

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6. Bin Khamis, op. cit., p 11.
7. Al-Mas'udi, op. cit., p 53.
8. Ibn Hawqal, op. cit., p 29.
9. Al-Hamadani, loc. cit.
10. Al-daynuri, op. cit., p15. See also al-Mas'udi, op. cit., pp 144 & 150-152.
11. Al-Daynori, loc. cit. See also al-Hamadani, op. cit., p 284.
12. Carlo Guarmani, *Northern Najd. A Journey from Jerusalem to Anaiza in Qasim*, translated into English from the Italian by Lady Capel-Cure, the Argnaut Press Ltd., London, 1938, p xii.
13. H.St.J.B. Philby, op. cit., 1922, vol. 1, p vii.

(Fig. 33), W. Shakespeare, and H. St. J. B. Philby. Most of these explorers followed the ancient Najdi roads during their journeys, roads which had already been mentioned by the earlier Islamic geographers. However, a few of them chose then contemporary Bedouin roads through the desert.[14] All of them left interesting notes on the geographical features and the location of settlements in the Najd. The notes on settlements include architectural arrangements, building materials and peoples life styles. Only a few were also concerned with archaeology and for that reason, little information about the ancient sites was acquired during these journeys.

1.2.2. THE EVOLUTION OF THE TRADITIONAL ISLAMIC CITY

The Middle East is well known as the birthplace of civilization.[15] Mesopotamia saw the birth of the first social organization of man; the Sumerians, Akkadians, Assyrians, Hittites and others were the forebears from which future civilization evolved. These early empires had agricultural settlements and some of the first cities in the world. Around 6000 BC individual settlements developed out of scattered, loose settlements in certain Mediterranean lands. By 5000 B.C., more elaborate architecture appeared in the city sites of Tal Hasouna, Tal Ras Shamarra and Tal Halaf. Nucleated cities had appeared by 3000 BC.[16] As the centuries passed, other rose civilizations and larger and more significant cities developed. These included Babylon, Damascus, Jericus, Cairo, Antioch, Jerusalem and Istanbul.

Pre-Islamic Arab cities were characterized by a lack of discipline and planning. In fact the pre-planned examples of these settlements borrowed their form from the social organization of smaller settlements. Redfield's folk concept could be applied to these early towns and cities; in that they were still based on the traditional rural values, including kinship, obligations and institutions, and family group and unit action.[17] However, the addition of

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14. Robin Bidwell, *Travellers in Arabia*, Hanlyn Group Ltd., London, 1976, p 20.
15. E. Y. Galantay, 'Islamic Identity and Metropolis. Continuity and Conflict', in the book of Abd al-Aziz Saqqaf (ed.), *The Middle East City*, 1987, p 7.
16. Lucienne Laroche , *Monuments of Civilization. The Middle East*, The Reader's Digest Assocition Ltd., London, 1974, p 15.
17. Robert, Redfield, *The folk Culture of Yucatan Town*, Chicago Illinois: the University of Chicago Press, 1949, p 293.

merchants and workers in order to provide labour, tools, materials, trade goods, transport and markets for the sale of agricultural and finished products, caused agricultural villages to grow into towns, and towns into cities.[18] In reality, cities grew up in the places where there was access to human requirements such as water, food, transport and communication. For example, Istanbul developed from the modest Greek trading colony of Byzantium which was founded in the 7th century B.C. Cairo also developed from early settlement beginning with the Pharaonic sites of Memphis and Giza.[19] Cities grew in size depending on their population:

> *Perhaps the most dynamic resource of the great cities was their populations, formed of both long-established and immigrant. A cosmopolitan society evolved.* [20]

Also, cities were limited in size and capacity by the tolerance of the population to the difficulties and distance from extended families, the availability of food and water resources, business opportunities, and the discomfort of close sharing of confined spaces. J. Scarce describes the important requirements and problems which affected early settlements and limited their sizes:

> *One of the continuing problems of the cities concerned the accommodation of their inhabitants. Public requirements demanded administrative and religious buildings, communication networks, commercial areas, water and bathing facilities, while there was a need for private housing at all levels.*[21]

The form of pre-Islamic Arab settlements still followed that of the early civilizations' settlements. However, the change in the character of Arab settlements appeared in the middle of the 7th century A.D. Early Islamic settlements varied in formation from the decentralized to the extensively planned. They can be classified into the *spontaneous* and the *created* forms.[22] Every settlement captured by holy Islamic war (known as *Jihad:* the propagation of the faith) and subsequently drawn under the Islamic hegemony, can be considered as a spontaneous settlement, as were the cities of Karbala in Iraq and Mashad in Iran. This is because Muslims had no

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18. According to John Alexander Smith, the important factor in early Islamic settlements is the concept of the market as the focus of the towns and the generator of wealth.
19. "Istanbul has been occupied since its foundation in the 7th century B.C.," and, "Cairo is is equally remarkable for its continuity of occupation which can be traced from the Pharaonic settlements of Memphis and Giza," see Jennifer Scarce, Domestic Culture In The Middle East. An Exploration of the Household Interior, National Museums of Scotland, Edinburgh, 1996, p 10.
20. Ibid., p11.
21. Ibid, same page.
22. Jamel Akbar, 'Responsibility and the Traditional Muslim Built Environment', Ph.D. Dissertation, M.I.T., Cambridge, Mass, 1984, pp 149-150.

influence on the location and organization of the settlements which had already been established.

At the beginning of the *jihad*, Muslims had no need to create large, new cities, but in the later years of the Holy War, Islamic conquerors founded, resettled and remodelled cities. However, most of the settlements which were founded by Muslims, fall into the 'created' form.[23] Muslim architects created many cities, including Marrakesh, al-Basra, al-Fustat (Cairo), Fez, al-Musil, Tahran and Baghdad. In the western regions of Islamic control, new capitals were established in existing cities such as *al-Qayrawan* (al-Kairowan) in the Maghreb, and moreover, *Ishbiliyah* (Seville) and *Qurtuba* (Cordoba) in *al-Andalus.* In eastern regions other cities which appeared at the same time or experienced growth included Kashan (*Qashan*), Isfahan (*Asfahan*), Nishapour (*Naisabur*), Bukhara, Tashkent (*Tashqand*)and Samarkand (*Samaqand* or *Sura'man'raah*). All of these settlements were highly developed between the 9th and 13th Centuries A.D., and often the urban culture of these cities reflected the historical, economical, social, religious and ethnic aspects of their inhabitants.[24] Ibn Khaldun, the Arab Muslim social scholar (from the 14th century A.D.) was interested in examining the social and ecological structures of the city, and their effect on the life and organization of individuals and groups:

> *As the city develops and becomes more and more prosperous, a new social structure, radically different from that of the primitive cultures, emerges. The most important characteristic of the new social structure is the relative decline with it of the power and importance of natural solidarity based on common ancestry and common experience of life.....which had prevailed in small, closely knit and relatively isolated communities. This type of solidarity tends to disappear as the state, city and urban mode of economic life cooperate to destroy it .....The city tends to isolate the various families comprising the tribes. Individual families live in isolated residences and become strangers to each other. The highly differentiated demand for specialized goods and skills tends to create specialized groups of artisans and traders. The various classes comprising the city, the rulers, the artisans, traders and the learned tend to group themselves according to their political and economic interests rather than blood relations.* [25]

Due to religious factors, the Islamic city was divided into private and public spaces. The physical organization of the city grew from the private domestic

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23. These include: 1) the military garrisor town-camps, such as al-Kufah and al-Basra in Iraq, al-Fustat in Egypt and al-Qayrawan in Tunisia; 2) the fortress towns such as al-Rabat in Morocco; 3) the capital or political towns like Baghdad, and Fez in Morocco.
24. J. Scarce, op. cit., p 8. See also J. Akbar, loc. cit.
25. Muhsin Mahdi, *Ibn Khaldun's Philosophy of History. A Study in the Philosophic Foundation of the Science and Culture,* G. Allen and Unwin, London, 1957, p 36.

space to the public urban space by the process of development and by the separation of residential neighbourhoods from the main commercial quarter.[26] Although the traditional Islamic city resulted in a close relationship between the various aspects of urban life, internal divisions did exist, with various ethnic and religious groups gathering together to form quarters which allowed them to follow their own way of life and establish relatively self-sufficient units, similar to the situation prevalent in many European cities.

The Muslim desire for privacy in residential quarters and a clear division between the public and private spaces never resulted in a rupture of the urban fabric because of their unique approach design and use of interior space. Compartments of private space were enclosed within a comprehensive architectural system, composed of complex cellular structures. Smaller elements were contained within larger units, with the whole joined by a system of interior passages, which could easily be blocked for purposes of subdivision into separate attached units. Within an otherwise continuous urban structure, it was possible to create various levels of privacy and enable residential and public spaces to be 'back-to-back' without intrusion by the outside world. As a whole the cellular structure allowed for the integration of extended family houses into residential units, and of residential units into the entire urban system, while granting maximum privacy and protection.

The architectural soundness of traditional residential units was usually supported by strong communities, representing complete social units rather than isolated classes of society. It was possible for rich and poor families to live side by side without discrimination, in a relationship of economic and social interdependence, often reinforced by common tribal bonds and religious values. The autonomous social unit was further enhanced through the collective use of shared facilities, such as the mosque, the *al-hammam* (public bath), the bakery, the fountains and the *al-suq* (market). Integration was thus achieved by decentralized urban structures.

The central areas of traditional Islamic cities express a full range of human activities and close interaction between religious, educational, commercial, industrial and recreational spaces. The streets lead off the central *al-suq* to

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26. Saleh A. al-Hathloul, 'Tradition. Continuity and Change in the Physical Environment. The Arab-Muslim City', unpublished Ph.D Dissertation, M.I.T., Cambridge, Mass, 1981, p 40.

the sanctuaries, *al-madrasa* (schools), hotel and specialized markets. The Friday mosque *al-Masjid al-Jami'* is considered to be a multi-functional space, serving for prayers, congregation, as a centre for adjudication, an auditorium for lectures and as a place of rest (Fig. 34).

1.2.3. THE FORMS OF THE NAJDI MUD-BRICK SETTLEMENT

Recent surveys and digging at the ancient sites of al-Qasim support the view that Najd is one of the earliest regions of human settlement in the Kingdom of Sa'udi Arabia. Though it is a region of mud-brick cities and villages, it is not here that the city originated: earlier models as mentioned above are to be found around the Mediterranean.[27] Except for the ancient Najdi city site of Qurayat al-Faw (excavation south-west of Najd *'Aliyat Najd*), dating from the 5th century BC,[28] we know of no other complete early city site in the Najd region. However, we may discover a little from religious sources, namely the Holy Qur'an and the Torah. We can gather details of the lifestyles of ancient cities, together with indications of the level of culture and civilization enjoyed by their inhabitants a thousand years ago. Recent archaeological findings confirm ancient references to sites in the Najd region, and other parts of Sa'udi Arabia. The land is not that different from Iraq or Syria, but we need new archaeological excavation is needed to reveal more about the forms of these ancient cities.

The form of Najdi mud-brick settlements differs little from the form of the earlier Islamic settlements, having the appearance of the Eastern Islamic settlement in its overall shape, its building arrangement and even in its physical characteristics. Naturally, the old Najdi mud-brick settlements are spread along the banks of *wadis*. Their buildings are enclosed by a thick, high defensive wall, with large gates and towers. The wall was further enclosed by a deep trench, and spacious green planted areas with deep wells. These important elements form the usual external land-marks of every Najdi town and village. Sadleir, in 1819 AD noticed this style of Najdi architectural composition and provides a description of the exterior surrounding plantation:

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27. Laroche, loc. cit.
28. Al-Ansary, *Quryat al-Fou...*, 1983, p 34.

Each village is surrounded by extensive date palm plantations , well supplied with water from deep wells. [29]

Further more Sadleir, in his account, points to the real purpose of the external enclosing walls of central Najdi towns and to the walls and towers of Manfuha town as they appeared in 1819 :

Their walls , (form) *the chief security for their property" ..... "August 3rd-we pursued our route to Munfooah,.....which is surrounded with extensive ruins of walls and boorjes.* [30]

However Palgrave, who visited the Najd region in 1862 AD, has left good descriptions of the external walls, trenches, and gardens of the towns of Jalajil and al-Tuwaym. Regarding Jalajil he wrote:

The city wall is high, that is of about thirty feet.....the outer bulwarks are girdled by a very deep trench partly full of water ; the plantations are, in Nejdean fashion, all without the walls. [31]

Describing al-Tuwaym. He noted:

Toweym is unusually large,.....the wall is in tolerably good repair, and surrounded with a deep outer trench, but no water. [32]

Again, Philby gives a more detailed description of the gardens surrounding the old town of al-Riyad city as they appeared in 1917 AD. He wrote:

The city itself, closely invested by dense palm-groves on all sides except the north-east, where only a few scattered groves break the view towards the Abu Makhrug. [33]

The number of gates in the defensive walls of Najdi settlements varies depending on the number of interior districts in the town or the village. The biggest gate of all usually made a direct link between the exterior and the commercial and political centres inside the settlement. Both this and the other gates were usually closed during the night and on Fridays during the midday prayers. Philby, in his account refers to this security situation, having reached al-Riyad for the first time:

29- Sadleir, op. cit., p 62.
30- Sadleir, op. cit., pp 62 & 60.
31- William G. Palgrave, *Narrative of a Year's Journey Through Central and Eastern Arabia (1862-63)*, Mac Millon and Co., London, 1946, p 348.
32- Ibid., p 354.
33- Philby, op. cit., 1922, vol 1, p 69.

.....where a halt was called to await the opening of the city gates, f or the day was Friday and the hour noon ; the whole male population high and low, was gathered in the Great Mosque for the weekly public prayer and all the gates were shut against ingress and egress. [34]

A similar observation was made by Palgrave when he visited al-Tuwaym town, and saw its gate.

The gates are strong for the country, guarded by day and shut by night. [35]

Within the enclosing walls of Najdi mud-brick settlements we usually find the main street, running approximately north-south and dividing the settlement into two parts. Several other irregular open-and close-ended streets branch out and help demarcate the settlement's different districts. The centre of the settlement usually includes the main buildings: the *al-Imarah* (governor's building), the Friday Mosque (*al-Masjid al-Jami'* or Great Mosque), as well as the market (*al-suq*), which consists of the *al-Qisarriya* (closed market), the *suq waqif* and *al-manakha*, which were the open markets. All of these architecturally important buildings were usually located beside each other, on one or both sides of the main road. The Qisarriya consists of shops and workshops, forming the bulk of the town - centre, and is usually found near the Friday Mosque. The majority of these shops have extended roofs, made of wood covered by thin layers of mud, which are supported by pointed arcades on columns with decorated capitals.

In Najdi settlements the street pattern and distribution of buildings usually conform to one of three different types of plan: nuclear, symmetrical, or irregular plans. A settlement's street-plan always reflects its state of development, though only in very rare cases were we able to find the whole plans of one settlement, such a case being the town of Huraymila. A further classification of a Najdi settlement can be identified which depends on whether its buildings are grouped in a compact, semi-compact, or scattered manner. Occasionally a settlement may be found to exhibit all three types of grouping.

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34. Ibid., p 63.
35. Palgrave, op. cit., p 354.

1.2.3.a. COMPACT SETTLEMENTS

This describes the arrangement of the older towns, which consist of closely built, partially curved, cubical and polygonal buildings, as are found in the towns of 'Unayza, al-Majma'a (Fig. 35) and Huraymila (Fig. 36 & 37), and in the villages of al-Tuwaym and Rughba. It is usual in such places for the buildings to be joined together to form a continuous abstract elevation, so as to make individual buildings indistinguishable from each other. The buildings are constructed from unfired mud-brick and a few rough stones. Compact settlements have often produced complex architecture and are characterized by closely clustered buildings, with residences occupying most, if not all of, the land. In compact settlements the two- and three- storey houses are as a rule built with continuous, high external walls. This type of architectural arrangement reflected the need to use every enclused area, and these walls were also defensive. The two-or three-storey houses are typically curved in shape, and possess a minimum of interior space. Light and air are received by way of small holes or windows from the neighbouring lanes or roads. However, a few houses, which belonged to wealthy people, princes and the like, were usually rectangular in shape, and had large open courtyards. In other cases, blocks of between two and five houses shared a common yard which was situated in the centre of the block. In turn, the yard was divided into smaller yards by high walls, so that several of the houses were deprived of light and ventilation. This architectural arrangement, reflected the tribal character of the society.

Privacy is also ensured in the buildings through the construction of high walls and closed balconies on the first floor. These, together with windows and doors that usually opened inwards,[36] meant that it was not possible to see into the house. Nor could you position your windows or doors to face those of your neighbour. Do so would have been contrary to social habits, traditions, and religious beliefs. The purposes of the rooms in the houses also precluded this. In compact settlements generally, most of the streets are narrow and meandering. Palgrave, visited al-Tuwaym village, and describes its houses and streets as they appeared in 1862 AD, and said:

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36. External windows of buildings from the late 18th. and early 19th. centuries were usually designed at the upper parts of the walls to the privacy of the occupants, see King, op. cit.,1998, p 143.

The houses are here built compactly, of two storeys in general, sometimes three .....the streets are narrow and tortuous- mere lanes. [37]

The main street is open to the sky, and near the public compound area (ordinarily found in the centre of the settlement, or close to the main gate) becomes very wide. In some parts of the residential districts however, the street becomes very narrow, leading the inhabitants to habitually join the upper storeys of opposite houses together. This was especially true of those houses belonging to a single family. Similar bridging storeys were sometimes built over the narrow streets that branched off the main street. The spaces thus gained were used either as guest rooms, or literally as bridges between two families. This old style of architecture is called *al-Sabatt.* [38]

More recently (1972-1977), Geoffrey King saw further examples of this type of architecture, in the old towns of al-Riyad, Milhim, and al-Qatif.[39] Najdi settlements of this type always possessed a main street, Friday Mosque (*al-Masjid al-Jami'*), small mosques (*masajid al-khams*) and a market. In addition, there were small shops in the different districts that usually reflected the inhabitants' activities in the settlement as a whole. In these Najdi settlements it is interesting to note the orientation of the main street, and also that the external windows and doors commonly face north or south. Of course, this was in response to the high temperatures, and the houses always face towards the shade. The principal side streets, which ran from east to west, were narrower, were for the most part bridged over by the upper stories of their houses (*al-sabatt*). From these side streets even smaller lanes branched off, oriented north-south. The facades of the buildings were characterized by partly-coloured mud carvings in some areas, and by clay-stucco decoration and moulding of varying quantities in other towns. They were further embellished by openings of different shapes, overlooking the street below.

1.2.3.b. SEMI-COMPACT SETTLEMENTS

Here, buildings are distributed in a less compact way. They are often distinguishable as distinct structures, and are separated by a network of

37- Palgrave , op. cit., p 354.
38- Muhammad 'Abd al-Sattar 'Uthman, *al-Madina al-Islamiya*, Silsilat 'Alam al-Ma'rifa, Kuwait, 1988, p 87.
39- King, op. cit.,1979, p 261.

shaded, pedestrian pathways. The lower part of most buildings is made of stone, while the upper parts consist of unbaked mud-brick, stone and wood. However, in some cases inhabitants have constructed their buildings mainly from stone and wood, which were plastered both externally and internally with mud. The majority of the dwellings are large, and may include several palaces.

This kind of Najdi settlement is almost the opposite of those described above. Most of its buildings are of one or two storeys, with large courtyards (with either plain or decorated facades), with the inner rooms (with more complex decorations on either wood or mud surfaces) having doors which open on to the portico overlooking the courtyard. The form of the buildings is usually rectangular, and the streets are more organized and less winding, making transport easier. There are main streets and side streets, as well as cul-de-sacs, which serve the surrounding residents. Palgrave proffers an interesting description of the arrangement of the houses and streets of Burayda (which could be considered to be a semi-compact settlement), comparing its architectural arrangements with that of the old towns of al-Jawf and Ha'il:

> *The town itself is composed exclusively of streets, houses, and a market-place and bears in consequence a more regular appearance than the recent and village-like arrangement of the Djowf and even of Hayal. We passed a few streets, tolerably large but crooked.* [40]

As is customary, the residents, meeting and activity points are the main street, Friday Mosque and the market, together with the streets that constitute the different residential areas, which differ in size and character, as do the streets that separate them. Each area consists of five or six groups of houses and one or two small mosques. Some houses are connected by bridges, that are about three metres above the street. This form of Najdi settlement also has different types of shop, with small, narrow windows opening onto the street. There are many Najdi towns and villages built in this style. However, the best and most important example is the old town of al-Riyad city. This is not only because of its organisation, but also due to its great historical importance.

We do not, in fact, have any firm idea of the original layout of al-Riyad town. Palgrave's plan was drawn by him in 1862, and Philby's in 1917, and those

40. Palgrave, op. cit., p 280.

both refer to the new town of al-Riyad city, which was built on the site of the earlier one. This new settlement was seen by Sadleir in 1819 AD, and his references to it indicate that al-Riyad was no more than a small village. He also mentions indirectly the ruins of the houses and walls of the earlier town, which still surrounded the new town of al-Riyad at that time:

> *The village of Riad is situated to the north, [north Manfuha] about a mile distant, and separated by the ruins of the walls and houses.* [41]

Palgrave also mentions, that al-Riyad was, in 1862 AD, a little smaller and famous than Manfuha, the latter which is today a small district of al-Riyad:

> *The large town of Manfoohah, hardly inferior in size to Riad itself, might be clearly distinguished.* [42]

Nevertheless, most historical references maintain that al-Riyad was, in 1799, the biggest and most flourishing settlement in the central area of Najd region.[43] It was, perhaps, for this reason that the old town was destroyed during the civil war (1800 -1818) in central Najd . From Sadleir's account we can infer how much political factors affected the development of any settlement and, indeed inhibited its architectural growth. However, Philby was not interested in Palgrave's plan, and described it as a rough sketch:

> *Palgrave's plan of the Wahhabi capital is a plan which apparently does not pretend to be anything but a rough sketch from memory.* [44]

On the other hand, Captain William Shakespear, who visited the city in 1914 thought well of it:

> Palgrave's plan of Riyadh is exceedingly good. [45]

In point of fact, Palgrave's plan would appear to be a fair reflection of the architectural arrangement of the old town of al-Riyad as it appeared in 1862, which also gives us a partial picture of earlier Eastern Islamic settlements. In general, there is not much difference between the two plans. The illustration (Fig. 38) shows the main plan of the old town of al-Riyad city as it appeared around 1862-1863. Its main enclosing walls follow a irregularly curved

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41- Sadleir, op. cit., p 62.
42- Palgrave, op. cit., p390.
43- Ibn Ghanam, op. cit., p 156.
44- Philby op. cit.,1922, vol1, p70.
45- H.V.F. Winston, *Captain Shakespear. A Portrait,* Jonathan Cape Ltd., London, p 159.

course, and are penetrated by twelve gateways. The inner streets run in curved courses and, in the town centre, there was an open space surrounded by many small shops on the north and west sides, overlooked by the palace of Faysal Ibn Turki. The Great Mosque stood on the north side, very close to the shops and the main fort was situated to the right of the main street, about halfway between the centre and the main gate to the north.

A quick comparison between Palgrave's plan (Fig. 38), and Philby's plan of 1917 (Fig. 39), shows little difference between them. Only a few architectural changes occurred during the 55 years after Palgrave's visit. Those few changes included: the construction of a multi-faceted enclosing wall. Inner streets had also been straightened. In the town's centre, the Friday Mosque, the Palace of Faysal and the fort had all been enlarged. The number of the gateways, however, had been decreased to nine. So, Philby provides a description of al-Riyad city, when it was still a small, walled town. Starting with its general layout he described the shape of the enclosing wall, its size and the circulation pattern of the streets:

> *The Wahhabi capital is an irregular many-sided figure, which with the help of a little imagination may be regarded as an equilateral spherical triangle with a base-line of rather more than 600 yards to the north and its apex to the south, with a superficial area of about 100 acres and with streets radiating in every direction towards the circumference from a central and roughly circular enclave dominated by* the palace.

> *The internal arrangement of the street is without symmetry except for the natural convergence already mentioned of all main traffic lines on the central enclave. The chief street is that which leads in a straight line from the Thumairi gate to the palace and thence through the market-place to the Budai'a outlet, with a branch going off from it at right angles from the western end of the Sug to the Dhuairi gate.* [46]

He mentions the names, the numbers, and the locations of the gateways of the old town of al-Riyad city:

> *The perimeter of the wall is pierced in nine places by gateways,...the most important are the Thumairi and Dhhairi gates, the first situate on the east side of the city...while the other at the north-west corner.....the Budai'a gate, which leads out toward the Batin ; and final the Shamsiyya gate.* [47]

Recently, most of the districts of the old town have been pulled down, and only a few parts still remain, surrounded by extensive areas of new building.

46- Philby, op. cit.,1922, vol1, pp 70-72.

47- Ibid., p73.

1.2.3.c. SCATTERED SETTLEMENTS

Scattered settlements are usually found in the southern, eastern and northern areas of the Najd including: the Badia village to the south of Riyad; the villages of al-Asyah to the north-east of Burayda; and the villages of al-Aflaj and al-Kharj to the east of al-Riyad. In 1864, Carlo Guarmani visited some scattered settlements in the al-Asyah area.[48] Also, Captain Shakespeare refers to the scattered villages of the Nufudh al-Sir desert during his visit to Najd in 1917.[49] Likewise, Philby observed some scattered settlements during his visit to the al-Kharj area in 1919:

> *Here and there scattered about the oasis are small groups of houses scarce worthy the name of hamlets, and isolated Qasrs.* [50]

Buildings in scattered settlements are separate from each other, and are widely dispersed. Each building is usually in total isolation from the other buildings in the settlement. Many of these buildings are palaces or large houses, usually belonging to princes, rich farmers or traders. Almost all of these houses, are to be found surrounded by palm tree gardens, though sometimes several houses (as many as 5 or 6) are built together. These are all surrounded by a large garden which is enclosed with a wall of up to two metres high. Mostly, these groups of houses belong to a single, extended family, which consists of brothers and their families, and their father with more than one wife. Each brother occupies a single house with his wife and children. Often the houses are separated by a distance of between 2 and 3 metres, while at others appear almost to touch.

The architectural characteristics of scattered buildings look somewhat similar to those in other types of settlement. The public compound area appears in the centre of the settlement consisting of a Friday Mosque, *al-Imarah, Masajid al-Khams* (s. *Masjid al-Khams*), and a small market.

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48. Guarmani, op. cit., pp 101-102.
49. Winston, op. cit., p 163.
50. Philby, op. cit.,1922, vol. 2, p 44.

1.2.4. CONCLUSION

The three main points discussed in this chapter are the evolution of traditional Islamic settlements, forms of Najdian mud-brick settlement and the differences and similarities between them. In summary:

a) Although early Islamic geographers of the 8th. and 9th. centuries gave little information about early Najdian mud-brick settlements, their accounts are still useful.

b) Better accounts of Najdian settlements are provided by early European explorers who reached Najd in the mid 18th. and early 19th centuries.

c) By puting together the accounts of all past visitors we can begin to picture the early forms of Najdian mud-brick settlements and how they relate to the forms still existing today. Settlements may be classified as: compact; semi-compact; and scattered.

d) Comparison of early, traditional, Islamic settlements with Najdian mud-brick settlements shows little difference, with many physical similarities. However, some architectural features which existed in early Islamic settlements, were lost in their Najdian counterparts, for example al-Hamam al-Sha'bi, al-Muristan, al-Fundoq and al-Madrasa.[51]

51- See Fig. 34.

PART 1

CHAPTER 1.3

CLASSIFICATION OF MUD-BRICK ARCHITECTURE OF THE NAJD

PREFACE

Geographically, the region of Najd can be divided into a northern area (al-Qasim), a central area (Sudayr), and a southern area (al-'Arid, al-Yamamah, al-Huwta and al-Aaflaj). In these areas of the Najd the traditional buildings are of a similar style. Functionally, they can be classified into three main types: religious buildings, defensive buildings and secular buildings. So, in this chapter the architecture and interiors of these buildings will be described and analysed accordingly.

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1.3.1. RELIGIOUS TRADITIONAL MUD-BRICK BUILDINGS AND THEIR INTERIORS

INTRODUCTION

A field survey will show that the mosque is the most common form of religious architecture found in the Najdi towns and villages. The mosque, known locally as *al-masjid,* can be subcategorised into two types. Firstly, the *Masjid al-Jami'* (p. *Jawami'*), translated as the congregation mosque, which is common to most parts of the Islamic world and is also known as the Friday mosque and sometimes the Central or Great mosque.[1] It is used for the Friday noon prayer and sermon, which is attended by all the inhabitants of a Najdi settlement. Secondly, the *Masjid al-Khams,* is used for the five daily prayers through the week.

1.3.1.a. THE EVOLUTION OF THE MOSQUE'S INTERIOR

Since ancient times, human beings have built religious buildings for the worship of various deities and these buildings were affected, directly or indirectly by the ongoing life of the community, and were influenced also by the distribution of both private and public spaces.[2] All great religions have their own religious interiors, each designed and organised with distinct forms to suit the worship and prayer of their members e g. the Jewish synagogue, the Christian church and the Buddhist temple.[3] The Muslim, at the beginning of Islam, did not possess or require a holy interior for worship and prayer, but did use the exterior places around the Ka'ba building in Makka. Nevertheless, the Prophet Muhammed and other Islamic people were ordered by God through the Holy Qur'an to build *al-masajid* (s. *masjid*), a place for prayer and the worship of God.[4]

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1. John D. Hoag, *Islamic Architecture,* Harry N. Abrams Incorporated, New York, 1977, p 13.
2. M.'A.A. 'Uthman, op. cit., p 23.
3. Amjad Bohumil Prochazka, *Mosques*, M.A.R.P. Publisher, Switzerland, 1986, p 7.
4. The Holy Qur'an, Surat al-Towbah, Ayat 9 : 18, al-Madina, 1413.

In 622 A.D., after the emigration of the Prophet Muhammad and Abu Bakr al-Sidiq, his closest companion, from Makka to al-Madina, the first stage in the interior architectural development of the mosque had begun with the Prophet Muhammad's house in al-Madina having become the centre of the Muslim community,[5] its inner open courtyard being the al-Musalla[6] (literally the place for prayer).[7] Later, the Prophet's followers built a shaded area, on the qibla[8] side of al-Musalla, supported by a palm trunk, and called it al-Masjid (Fig. 40).

R.A. Jairazbhoy mentions two other mosques which he believes were probably built before, or at the same time as the Prophet's mosque, namely the mosques of 'Umar Bin Yasir near al-Madina (622 A.D.), and another in al-Madina itself, possibly next to the Prophet's mosque.[9] R. Nath however, locates the first mosque at Quba, near al-Madina.[10] Unfortunately we have no information about the interiors of either of these early mosques. A good description of early Islamic religious interiors is provided by Oleg Garbar:

> *Early Islam did not, therefore, require a holy place in which to worship .According to a celebrated tradition, wherever a Muslim is found, there is a masjid.the very first Muslim community gathered for most occasions in the private house of the Prophet in Madina.* [11]

Creswell draws on the earliest description of the interior of the Prophet's mosque at Madinah, that of Ibn Hisham:

> *It consisted of an enclosure of mud-brick about 100 cubits (c. 56 yds) square, with a wall 7 cubits high and a portico on the south side made of palm-trunks used as columns to support a roof of palm-leaves and mud. Against the outer side of the east wall were built small huts (hujra) for the Prophet wives. All opened into the courtyards.* [12]

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5. Barbara Brend, *Islamic Art*, British Museum Press Ltd., London, 1991, p 16 .
6. K.A.C. Creswell, *A Short Account of Early Muslim Architecture*, Lebanon Book Shop, Beirut, 1958, p 4. The word of al-Musala comes to light at the first time in the Holy Qur'an in Surat al-Baqara, 125.
7. As to the location of the Prophet Muhammad's house, some sources state that it was chosen by the Prophet, others that it was chosen by his camel, see Creswell, *Early Muslim Architecture, Umayyads, A.D. 622-750*, 2ed. edition, vol. 1, part 1, Oxford Clarendon Press, 1969, p 6.
8. Qibla = the side facing Makka.
9. R. A. Jairazbhoy, *Islamic Architecture*, Asia Publishing House, Bombay, London and New York, 1972, p 8.
10. R. Nath, *The Baburi Masjid of Ayodhya*, published by The Historical Research Documentation Programs Jaipur, India, 1991, p 45. Geoffrey King suggests that the Quba mousque was the first mousque where the Prophet (s) praye before reaching al-Madina, King, op. cit., 1986, p 27.
11. Oleg Garbar, John S. Badeau et. al. (eds.), *The Genius of Arab Civilazation*, 2nd edition , Eurabia Publishing Ltd., London, 1983, p 82.
12. K. A. C. Creswell, op. cit.,1958, p 3.

God also makes more specific references in the Holy Qur'an to various mosques such as al-Masjid al-Haram in Makka,[13] Masjid al-Qudus in Jerusalem[14] and al-Masjid al-Nabawi in al-Madina.[15] There are various opinions that have come to light relating to both the interior architectural design and orientation of the al-Masjid al-Nabawi (the Prophet's mosque). We discover from Creswell's drawing of the Prophet's mosque that its interior represented the early hypostyle Islamic religious building. However, Oleg Garbar dates the real Islamic interior of hypostyle form to the 7th Century as part of *al-Amsar* settlements (early Islamic military camps), including early mosques in Iraq and buildings in Egypt:

> *To define hypostyle system as appeared in early mosques....In its simplest fashion it existed in the earliest Iraqi mosques, in most of the later ones in Iraq, and in most Egyptian buildings.* [16]

Hoag considers the interior of the prayer hall (portico or *riwaq*) of the Prophet's mosque as a development stage of Greek *stoa* (a building, with columns, used for prayer),[17] implying that the interior of the Prophet's mosque was in fact to follow a hypostyle form.

The orientation of the Prophet's mosque was originally towards Jerusalem, but was changed to Makka.[18] According to Oleg Grabar, the change of the orientation to Makka happened for the first time at the mosque of Qoba:

> *The change of the direction of prayer from Jerusalem to Mekkah that occurred at the small village of Qoba.* [19]

In connection with this, R. A. Jairazbhoy gives a historical description covering the orientation of earlier religious buildings:

> *The Greeks, for instance, generally faced their temple East, the Giza pyramid is oriented to the true east, the Nabatean shrines oriented towards the West, the Christians had actually faced their basilicas West until the 4th Century; thereafter they turned them towards the Holy Land after the fashion of the Jews, who had themselves been bidden to pray toward the temple in Jerusalem. Muhammed himself changed the orientation (qibla) of his Madinah mosque from Jerusalem to Makkah after the second year of the Hijra (624) on the basis of a revelation in the Qu'ran.* [20]

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13. The Holy Qur'an, Surat al-Baqarah, Ayat 2 : 144, al-Madina, 1413.
14. The Holy Qur'an, Surat Al-Isra, Ayaht1, al-Madina, 1413.
15. Ibid.
16. Oleg Grabar, *The Formation of Islamic Art*, YalUniversity Press, New Haven and London, 1977, p 115.
17. Joan D. Hoag , op. cit., p 13.
18. The Holy Qur'an, Surat al-Baqara, Ayaht144, al-Madina, 1413.
19. Oleg Garbar, 1977, op. cit., p 107.
20. R.A. Jairazbhoy, op. cit.,p 6.

1.3.1.b. NAJDIAN FRIDAY MOSQUE

Following the rise of Islam around 622 AD, in common with other communities in the Arabian peninsula, the inhabitants of Najd began to build mosques for worship and prayer within their cities and villages. In this early era of Islam, we cannot pinpoint precisely the interior features and locations of the mosques within the Najdi settlement (which were contemporary with those found in the East and West of the Arabian peninsula), but It is likely that the interiors were very simple and built near an area of public gathering, such as a market.[21]

Early Najdi historians, like Ibn Ghanam and Bin Bishr, mention that the mosque was at the centre of any Najd city or village and recent archaeological evidence from some traditional mud-brick settlements confirms this writer has observed this. Likewise, as during field surveys, most of the Friday mosques in cities and villages of the Najd were located at the centre beside other important buildings such as al-Imara and the market.

The Najdi Friday mosque played a central role in the Najdi community, architecturally, socially and spiritually. It was, as were other Islamic central mosques, a natural expression of Islamic society.[22] It was the central building for religious activities, and dominated the other urban architectural features of the Najdi cities and villages. The Friday mosque provided a large meeting place capable of holding the entire male population at Friday noon, when they listened to a sermon *(khutba)* delivered by the Imam (religious leader) and prayed. This building represented the most distinguished Najdi religious

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21. The earliest mosque was built with simple interior features and outside al-Madina. but gradually its interior became the centre of a new settlement called al- Madina al-Munawarah (the City of Light). This (location of the mosque and its interior features) became the model for new Islamic settlements built after 622 AD, such as al-Basra (635 A.D) and al-Kufa (638-9 A.D) in Iraq and al-Fustat (641 A.D.) such as in Egypt. The majority of early Islamic historians, such as Ibn Hisham and al-Mas'udi, and also western writers and historians K.A.C. Cresswell, Oleg Graber and John Hoag, agree that the mosque was usually the first building to be designed and built at the centre of all these early Islamic cities (from the 7th Century AD onward). See K. A. C.Creswell, op. cit.,1958, p 4, and Creswell, op. cit.,1969, vol. 1, part 1, pp 22, 24 & 37. See also Faisal al-Mubarak, 'Urbanization, Urban Policy and City Form. Urban Development in Saudi Arabia', Unpublished Ph.D.dissertation, University of Washington, 1992, p 28.

22. Concerning this observation John D. Hoag says: "The great court of the Islamic mosque was also a place of public assembly. It served as a law court and debating hall and, most important for later architectural history, it was the place where the Caliph or his appointed governor was acclaimed and accepted by the community", see Hoag, *Islamic Architecture*, Harry N. Abram Inc., New York, 1977, p 13. See also Sherban Cantacuzino (ed.), *Architecture In Continuity Building in the Islamic world Today*, Published by A Perture Ltd., Pan-American, 1985, p 33.

architecture and was to give Saudi Islamic architecture some of its most characteristic and enduring forms.

Most of traditional Najdian mosques of this style pulled down to be replaced by new concrete mosques. Some of these new mosques still followed the interior design of the traditional type, while others did not.

1.3.1.c. NAJDIAN SMALL MOSQUES

In addition to the Friday mosque, additional small mosques were built at strategic points among the housing districts of cities and villages of the Najd called *masajid al-khams.* Their interiors served as places of worship (the five daily prayers were said there during the week) and as a meeting place for local family heads. We do not know at what time this kind of mosque appeared in the Najd settlements, but we believe that it emerged as a natural result of increasing population and the resultant growth in the size of the settlements. In addition, the prayer area in the Friday mosque would become too small, encouraging residents to build other Friday mosques, as well as *masajid al-khams.*[23]

1.3.1.d. INTERIORS OF NAJDIAN MOSQUES

Structurally, the Friday mosque and small Najdi mosque share the same basic exterior and interior form and are built of typical local materials (Plates 19-21). However, some of the interior architectural elements that are always found in the early Islamic Friday mosque disappear in the later Najdian Friday mosque, such as a private door in the *qibla* wall for the use of the Imam and a large wooden pulpit *(al-minbar)* located on the right side of the niche *(mihrab)* within the prayer hall, where the Imam stood and delivered his Friday sermons. The Najdian Friday mosque was distinguished from the Najdian small mosque by the existence of a large prayer hall and a low mud pulpit, which subsequently was replaced by high wooden one. However, the interiors of both these styles

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23. John D. Hoag states that these small mosques could be found in some earlier Islamic settlements (military camps) such as Basra, Kufa and Fustat, but very little is known about their interiors and also exteriors features. However, Garber states that these types of mosque appeared in districts of some Arab cities such as Cairo during the 10th and 11th Centuries, e.g. the mosques of 'Amar and Bab Mardum. See John D. Hoag, op. cit., p 13, and John S. Badeau et al, op. cit., p 84.

of Najdi mosque look somewhat similar to those found earlier, such as the Prophet's mosque, and the mosques of al-Basra and al-Kufa.[24]

This agrees with the goals of the Unitarianism religious movement, which sought to follow the example (interior) of the Prophet and his followers, even in the design and decoration of the mosque. Thus the structure and interior style of these early mosques, including those in the Najd probably followed primitive Mesopotamian techniques.[25] Only in very rare cases were some of the Najdi mosques built of two stories, such as those found in the cities of al-Majma'a (Fig. 41-44), Shaqra, Ushaqer and Burayda. These had basements to be used in extreme weather, in winter or summer. The basic interior architectural elements of the Najdi mosque are the courtyard *(al-sahin)* (Plate 21), prayer hall *(riwaq)* (Plates 22 & 23), ablution room *(mutaah),* minaret (*miadhana*) and enclosure wall (Fig. 41).

As in other Islamic countries,[26] all the mosques of the Najd belong to one of two major structural classes: either open or closed plan. In the first case, the interior of mosque includes a single space of which one part is open and the others are covered, while in the second case, the interior consisted only of a single covered space.

INTERIOR OF OPEN PLAN

For at least 300 years (1650-1950) this design of traditional mosque dominated the skyline of the towns and villages (Plate 21, 22, 23 & 26, Figs. 41-44): it was really the most famous style of religious architecture in the Najd. Its interior usually takes a rectangular or semi-rectangular form consisting of three main sections, one of them open, the others covered by low roofs. These are enclosed by a massive outer wall, 2m. to 3m. high and 40cm. to 80cm. thick, pierced by one or two rectangular, strong wooden doors. Each gives access through a small lobby to a staircase leading on to the mosque roof and sometimes to the basement.

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24. For this observation see the reconstructed form of the mosque of the Prophet in Grabar's recent book, op. cit., 1973, (Fig. 40 in this Thesis).
25. Antoine Fattal, *Ibn Tulun's Mosque in Cairo,* Imprimerie Catholique, Beirut, 1960, p 29.
26. J.G. Davies, *Temples, Churches, and Mosques*, Basil Book Publication Ltd., England, 1982, pp 121-122.

In the centre there is an open courtyard *(al-sahin)* , which usually occupies about a quarter of the entire floor-space. On the Qibla side of the courtyard is a hypostyle hall covered by a flat roof of palm leaves layered thickly with mud which is supported by strong wooden beams (palm trunks) penetrating the outer wall. The beams are carried either on rows of pointed arches or columns resting on primitive, geometrical stone capitals which in turn rest on massive round stone columns (Plates 22 & 23). The rows of columns usually form three or four cloisters *(riwaq)* which are oriented longitudinally towards Makka for the purposes of prayer. The direction is identified by a niche *(mihrab)* in the Qibla wall. Facing the hypostyle hall, on the other side of the courtyard, the second covered section is found, containing a small ablution room, bath room and well. The small mosque at the Mirqab quarter in al-Majma'a, the Friday mosques of Shaqra and 'Unayza, together with some earlier mosques such as al-Basra, al-Kufa (7th century) and others from later periods (Fig. 45),[27] all represent good examples of this design of Najdi mosque.

However, the best example of the interior of this style is small mosque in al-Dir'iyya (Plates 19, 20 & 21) and the Friday Mosque of al-Riyad (Plates 27 & 28, now reconstructed) previously described in 1919 A.D., by Philby when it was still of mud-brick:

> *The Great Mosque or Jami'a of Riyadh is a spacious rectangular enclosure about sixty yards by fifty in area, whose main entrance faces the Sug through a gap in the row of shops lining its Southern wall.....The internal space is divided into three sections, of which the central one forms an open court occupying about a quarter of the whole building, while the other two are covered over by low flat roofs supported on several rows of massive stone pillars to form Liwans or cloisters for the convenience of worship during the hot hours of day ; the inward faces of these cloisters towards the central open court form colonnades of pointed arches of typical Wahhabi architecture and of considerable merit,.....the roofs are without ornamentation, being encircled by a low parapet with a low stepped structure.* [28]

INTERIOR OF CLOSED PLAN

This design was once well known throughout the Najd region, but is now very rare, even though it is a later development than the open plan type (Fig. 46). According to historians of the Najd such as Ibn Khamis, closed plan mosques could have appeared during the middle of the 18th Century, their emergence corresponding to the appearance of other mosques of similar form in

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27- Cresswell, op. cit.,1969, vol. 1, part 1, pp 22-23

28- Philby, op. cit.,1922, vol 1, pp 73-74.

Damascus, Aleppo and Cairo in the 17th and 18th Centuries. Cresswell mentions that the mosque of 'Umar at al-Fustat of Cairo, which dates from 21H., (641 A.D.) was completely covered:

> *The roof was low and there was an interior court ; in other words it was entirely roofed over.* [29]

The interior of a closed plan mosque has one or two main doors and usually consists of a single covered space divided into three parts. Both doors give access to a small lobby used for storing shoes, which links directly through two facing inner doors respectively to the prayer hall and ablution room. The structure is of no great difference to the above: its roof consists of strong wooden beams and rafters supported by rows of columns and the outer walls.

The interiors of both open and closed plan designs are very simple: no colour, painted ornaments or any other decoration such as sculpture, or carved stucco can be found. Only architectural elements such as arches, columns, capitals and solid stucco frames around the small, high windows contribute decorative elements (Plates 19 & 20). However, the upper parts of inner facades overlooking open courtyards of some mosques of the central Najd were sometimes decorated with projecting rectangular or square mud shapes (dentils), named locally *al-Dalayatt* (Plates 21, 24-26). and crenelations *al-Shurofatt* (Plate 20 & 21). The former style of decoration was known and employed in Greek and Roman ornaments and also used as part of the decoration of temple facades of the Yemen. The beauty of the interiors of these mosques lies in the distribution of space and the arrangement of the columns, with their various arches and capitals: this will be discussed in greater detail in the final chapters.

The most striking interior architectural feature found in both designs is a minaret, which often provided the distinguishing landmark for each quarter of the Najdi settlement.[30] Its form was distinct from that of minarets found in other

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29. Creswell, op. cit., p 37. See also R. Nath, op. cit., p 45.

30. However, there were many mosques built without minarets. Examples can be seen in the southern area of Najd, the call for prayer being made from the enclosed roof. This is due to the Islamic law, the minaret might allow the *muadhen* to see directly into the houses and because of this, the religious men *shuyoukh* in Najd disallowed proscribed the constructing the building minarets. G. King suggested this and mentioned that these types of mosques (without minarets) may be an early Najdian design. See G. King, 'Traditional Architecture in Najd, Saudi Arabia', Proceedings of the Seminar for Arabian Studies, vol. 7, Institute of Archaeology 13-34, London, 1977, p 95. Palgrave in indicated indirectly to the impact of religious men on the building of mosque. During his visit to Najd. He saw many mosques, including the

parts of Sa'udi Arabia, various designs resulting from the tastes and traditions of the builders.

Najdi minarets were usually built in one of three forms:

1) truncated cones (tapering minaret, circular in plan - this form was usually found in central area of Najd - Sudayr)[31] such as those found at some mosques in the villages of Rawdatt Sudayr (Plate 29) and al-Tuwaym (Plate 30).
2) rectangular towers short or high, (formed on square plans, this form was commonly found in both southern -al-Riyad- and northern - al-Qasim- areas of Najd) as in the minaret of the mosques of al-Mirqab at al-Majma'a (Plate 33), Rughba (Plate 32), al-Dir'iyya (Plate 20), al-Riyad (Plate 28)
3) or sometimes with both of these forms together, the tapering cone form usually being placed on top of the rectangular form, as in the minaret of the small mosque of 'Unayza (Plate 31).

Minarets of the first and third kinds were usually built from ground-level, either contiguous or free standing from the mosque structure, with massive inclined walls of 10-12m. in height, with a thickness of 60cm. to 100cm. in the lower band, decreasing to 30-40cm at the top. The entrance to the minaret is usually found at the ground floor level. In the case of contiguous minarets, such as those found in the cities of Shaqra, 'Unayza, and al-Tuwaym, the entrance is located within the enclosure wall of the mosque, while with separate minarets it is found near the main door of the mosque , as is the case with most of the mosques in the area of Rawdatt Sudayr (Plate 29) and some mosques in al-Qasim.

Friday mosque of al-Tuwaim. Regarding this, he said: "Here are several shops and warehouses, and a large mosque; but the want of minarets and cupolas deprives religious construction in Nejed of the outward advantages of appearance they possess elsewhere". Palgrave, op. cit., p 354. It seems that most of the early Najdian mosques were built without minarets and domes, the impact of religion in Najd was very strong on religious buildings. The religious men preferred the buildings of abstract mosques, void of any additional structural elements such as minarets and domes.

31. However, in the time of Philby this form of tapering minaret was also found in some cities of the northern area of Najd, such as Burayda and 'Unayza. About the minaret of the Friday mosque in Burayda Philby said: "In any case the 'square minaret' which Doughty mentions could not have been the minaret as it now is- tapering to a slender point from a broad circular base- and it is clear that some changes have taken place in the building of Buraida since these days". Philpy, op. cit., 1928, p 198.

The entrance opens on to a small lobby and a stairway leading directly to the highest level of the minaret, where a *muadhin* gives the call to prayer *(adhan).* The dark inner spaces of the minaret were lit by one or two rows of holes, which were usually located above eye level. The external facades are usually decorated with incised bands forming many attractive rings, and by chains of protruding triangles, their peaks crowned by various styles of traditional crenelations, such as those found on the minarets of the Friday mosque at al-Mishqab in Burayda and at 'Unayza mosque.[32] Geoffery King provides an interesting description of the minaret of the Friday Mosque of Jalajil which is represented this design of Najdian Minarets:

> *A most striking feature of the old Jami at Jalajil was the minaret, the base of the minaret was circular in plan and projected into the street somewhat. In its position within the mosque as a whole, the minaret recalls that of the old Jami of Huraymila, although the shapes differ overall. The minaret at Jalajil was a curiously flimsy-looking structure, a series of elongated segments each overlapping slightly the one beneath and together forming a tapering shaft. Although this minaret was related to others in Sudayr and in al Qasim to the north-west its particular form was nonetheless unusual.*[33]

Minarets of the second form were commonly smaller, with low tapering walls decorated with crenelations and built at one corner of a mosque's roof. This design of minaret was the typical style of the mosques of cities and villages in western and northern Najd, e.g. at the mosques of al-Batra, al-Rawda, al-Awiyya, Uqlat al-Sugur, Sadus and al-Riyad Friday Mosque (Plate 27 & 28). However, it also appeared in some mosques in the central Najd with very low walls and without crenelations, such as the minarets of the mosques of al-Mirqab at al-Majma'a, which resemble the minaret of al-Awiyya mosque in al-Zilfi.[34]

Originally, minarets represented a stage in the development of ancient towers which were built for a variety of purposes. The architectural evolution of the minaret began with the northern, square minaret of the Umayyad Great Mosque of Damascus, called *Miadhant al-'Arus*;[35] and was one of four corners towers of the Great Temenos.[36].Minarets with a square plan became the norm in North Africa and Spain as in the mosques of Qurtwba (332 A.H.) and al-

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32. King, op. cit.,1986, pp 123-125. See also 'Ali S. Al-Muqawashi, *al-Bukari'ya*, Published by Wicalat Shu'awn al-Shabab, al-Ri'asa al-'Ama li-Ri'ayat al-Shabab, Silsilat Hadhihi Biladouna, Riyadh, 1988, p 99.
33. King, op. cit., 19p 137.
34. King, op. cit.,1986, pp 132-148.
35. Al-Said 'Abd al-'Aziz Salim, *al-Ma'adhin al-Masriya*, Muasasat Shabab al-Jami'a lil-Tiba'ah, al-Iskandariya, ND, pp 8-9.
36. Creswell, op. cit.,1969, volum 1, part 1, p 491.

Zahrah (329 A.H.). [37] A spiral form of the minaret was popular in Iraq mosques although first seen in the mosque of Ibn Tulun in Cairo (876-9 A.D), while a cylindrical form appeared in Iran and minarets in the form of a needle in Turkey.[38]

37- Salim, loc. cit.
38- Davies, op. cit., pp 120-121.

1.3.2. DEFENSIVE TRADITIONAL MUD-BRICK BUILDINGS AND THEIR INTERIORS

INTRODUCTION

Fortified buildings of traditional design were built throughout the Arabian Peninsula, including Yemen, Oman, and the countries of the Arabian Gulf.[39] In other lands more complex and attractive fortified buildings were found, such as those in Mesopotamia, Persia, Egypt, and those of *Bilad al-Sham* (Syria, Jordan, Palestine and Lebanon).[40] The earlier fortified buildings in these countries, of course varied in character and design from those found in Najdian settlements. But, to some extent, some of the defensive elements that are found in the Najdian fortified buildings were a natural result the influence of fortified buildings in these close countries.

In Sa'udi Arabia, fortified buildings, such as forts, towers and the enclosing walls of cities and villages were built from pre-Islamic times. Al-Daynuri (d. 282 A.H.), in his book *al-Akhbar al-Tiwal*, in mentioning the various styles of forts and towers built in the al-Yamamah area of the Najd confirms this.[41] Also al-Mas'udi (d. 346 A.H.) indicates that the Aumaim tribe, which lived in the Najd before Islam, was very famous for it forts and fortified cities.[42] However, from the earliest period of Islam, the inhabitants of al-Madina al-Munawarah began to build different forms of fortified towers and forts, as in the case of the fort of Ka'b Bin Ashraf al-Nabhani.[43] The fortified buildings of Mesopotamia and Persia possessed similarities of appearance to those found in Sa'udi Arabia, including those of the Najd region, so it may be that early Najdian fortified buildings were influenced by them.[44]

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39. Jawad 'Ali, op. cit., part 5, p 19.
40. Fortified architecture appeared in Mesopotamia in the cities of Akad (the capital of Babylon) and Assure (the capital of Assyrian), and in Egypt at Thebes, and in most cities and villages of Persia and Bilad al-Sham.
41. Al-Daynuri, op. cit., p 15.
42. Al-Mas'udi, op. cit., p 144 & pp 150-152.
43. Al-Hamadani, op. cit., p 282.
44. 'Uqab Sa'ud al-Shuwaysh, 'Ba'd al-Mabani al-Muhasana fi al-Mamlikat al-Arabiyat al-Su'udiya', Unpublished study, Department of Archaeology and Museums, King Sa'ud University, Riyadh, 1995, p 60.

Originally, all fortified buildings were built not only for military and defensive purposes,[45] but also as residences, e.g. the fortified Ummayyad desert palaces of Qasr al-Hir al-Ghirbi and al-Sharqi, Qusayr Amra and Qasr Ibn Wardan; and also Qusayr al-Hallabat, (a former Roman fortress).[46] The excavation at Qurayat al-Faw, south of the Najd, revealed evidence of early fortified buildings that were part of a Najdi mud-brick settlement dating from 500 B.C., incorporating forts, towers and defensive walls. Additional light was thrown on the nature of early Islamic fortified buildings dating from the 9th Century A.D. by a recent excavation at al-Rabadha. Comparison of this example with existing buildings in other parts of the Arab peninsula, suggests that very few aspects changed from the earlier Najdi fortified buildings to those belonging to the Sa'udi states (c. 1700-1900).

The more recent remains of fortified buildings in the Najd region, built during the 1st and 2nd Sa'udi regencies, and which were gradually destroyed during the reign of King 'Abd al-'Aziz, can be classified into three different types: the defensive wall; towers; forts and citadels. With few exceptions, while enclosing outer walls equipped with towers protected entire settlements from outside invasion, forts protected governors not only from outside invasion but also from insurgency. In some places high, free standing towers were built for purposes of observation (watch towers).

1.3.2.a. DEFENSIVE WALLS

The majority of early Arab settlements, such as the cities of al-Madina, al-Kufa, al-Basra, Baghdad and al-Fustat were considered as fortified settlements, and all of them were enclosed by high defensive walls.[47] In fact, this was the case with almost all early human settlements across the world.[48] However, the fortified architecture walls of the Arab has not been so well preserved and only a few ruins of walls are still to be seen such as those of the desert fortified palaces of the Umayyad caliphates at Badiyat al-Sham, parts of the enclosing walls of Cairo and Jerusalem, and the citadel of Allepo.

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45. Arnold Taylor, *The Welsh Castle of Edward I*, The Hambledon Press, London, 1986, pp 1 & 3.
46. Danyal Schlimberger, *Qasr al-Hir al-Gharbi*, Translated from French to Arabic by al-Yass Abu Shabaka, Dar al-Makshuf, Beirut, 1945, pp 12 & 71. See also Creswell, op. cit.,1969, volum 1, part 2, pp 396, 442 & 502.
47. For more details see Besim S. Hakim, *Arab Islamic Cities*, 1988, p154.
48. Philip Worner, *The Medieval Castle*, Arthur Barker Ltd., London, 1971, pp 15 & 29.

In the Najd, most earlier cities and villages were also considered to be fortified settlements, and were usually enclosed with high walls as in al-Dir'iyya and al-Jawf.[49] Other examples include al-'Uyoun, 'Unayza, Jalajil, and al-Tuwaym together with Burayda.[50] Doughty described the walls of Burayda in 1865 A.D., as been "fine" and "strong".[51]

It is unfortunate that all of these walls were destroyed by civil war or by foreign invasion, (e.g. the Egyptian expedition of 1818 A.D).[52] Nonetheless, the accounts of European explorers who visited Najd, provide many detailed descriptions and pictures of these walls. From *A Journey Across Arabia* by Sadleir, we learn not only that al-Dir'iyya was surrounded with massive defensive walls, but also the nature of this materials used, and something of the construction techniques employed by the traditional Najdi builders:

> *On the morning of the 13th August we marched at 5.....we reached the site of ruins of Deriah at 11 A. M. to the west an extensive range of hills extends north-west and south-east, and another range is seen to the north.....these ruins are very extensive, and the remains of walls formed of yellow earth and partially faced with stone, cemented by this earth, mark the site of a principal city.* [53]

Recently, archaeologists have been easily able to trace the remains of early Najdi fortified walls, which used to surround Najdi mud-brick settlements such as those at Sadus and al-Majma'a. At al-Dir'iyya the enclosing wall was nearly 7 Km. in length and enclosed buildings that are considered to have been fortified.[54]

The defensive walls of the Najdi mud-brick settlement can be classified formally as either curved or straight. Examples of these types my be found either protecting dwellings (including houses and gardens) or dividing areas within a settlement (each area had its own wall) as at al-Shmasia, al-Majma'a (Plate 34), Shaqra, and at Sadus.[55] Al-Dir'iyya was surrounded with a bulky

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49. Sadleir, op. cit., p 62. See also Guarmani, op. cit., p 101.
50. Palgrave, op. cit., pp 267, 280, 348 & 354.
51. Charles M. Doughty, *Travels In Arabia Deserta*, Jonathan Cape Ltd., London, 1936, vol. 2, p 339.
52. Clifford Edmund Bosworth, *The Islamic Dynasties*, Edinburgh University Press, Edinburgh, 1967, p 82.
53. Sadleir, op. cit., p 65.
54. Basil al-Ayati, *Process and Pattern*, Arrp, Basil, London, 1981, p 46. See also Muhammad Sa'id Mousalli, Fareed Shaker and 'Umar 'Abd Allah Mindili, *al-Ta'aruf 'ala al-Namat al-'Umrani fi al-Mamlikat al-Arabiyat al-Su'udiya. al-Iqlim al-Awsat*, London, 1977, p 15.
55. 'Abd Allah Nasir al-Walay'i, *al-Shmasiyah*, Wika'lat Shu'awn al-Shabab, al-Ri'asah al-'Amah li-Ri'ayat al-Shabab, Silsilat Hadhihi Biladuna, Riyadh, 1989, p 73.

defensive wall, and internally its area was designed with four fortified parts, each one of them had its own surrounding defensive wall and one large main entrance (Plate 35).[56] The town-quarters of both 'Unayza and al-Jawf are also surrounded by massive, high walls, and were visited and described by Carlo Guarmani as they appeared in 1864 A.D:

> *The city wall, originally enclosing its fourteen quarters, having been destroyed, each quarter now possesses its own wall, like Aneizah in Cassim so that it might be said that Giof consists of thirteen villages (since El-Delhamie has been ruined), each one being united to the next by continuous groves of palm trees. But it is less confusing to call it a town, for there are plenty of villages in the vicinity.* [57]

In 1865 A.D., William G. Palgrave gave more details of the defensive walls of houses and gardens of the old towns of Burayda and 'Unayza:

> *Here, and this is generally the case in the larger Arab towns of old date, the fortifications surround houses alone, and the gardens all lie without, sometimes defended - at, Oneyzah, for example - by a second outer girdle of walls and towers, but sometimes, as at Berydah, devoid of any mural protection .* [58]

However, both the curved and straight forms of wall enclose the settlement itself, such as the curved wall of Burayda, and the straight wall of al-Riyad.[59]

The outer defensive walls were built of mud, mud-brick and rough stone, and, in very rare cases, only with stone and mud. They were probably 5m. to 8m. in height, and ranged from 80cm. to 150cm. thick at the lowest band of a mud-brick wall and 50cm. to 100cm. thick at the lowest band of a stone wall. In both materials thickness was reduced to approximately 40cm at the highest course. However, in all walls, whether mud-brick or stone, the lowest band consisted of mud and rough stone covered with thick mud layers, which were sometimes left raw and uncoated. The upper band of mud-brick walls was commonly provided with different styles of crenellation, in addition to small defensive galleries known as *al-masalit,* [60] together with a number of large and

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See also Muhammad Ibrahim al-'Umar, *Shaqra*, Wika'lat Shu'awn al-Shabab, al-Ri'asah al-'Amah li-Ri'ayat al-Shabab, Silsilat Hadhihi Biladuna, Riyadh, 1988, pp 30 & 40.

56. 'Abd al-Rahim 'Abd al-Rhman 'Abd al-Rahim, *al-Dawla al-Su'udiya al-Awla*, 2ed. edition, part 1, Dar al-Kitab al-Jami'y, 1979, pp 31 & 343.
57. Guarmani, op. cit., p 101.
58. Palgrave, op. cit., p 280.
59. Palgrave, loc. cit. See also H.ST.J.B. Philby, *Arabia of the Wahhabis*, Constable and Company Ltd., London, 1928, pp 70-71.
60. The earliest Islamic trace of this kind of defensive element was found at Qasr al-Hir al-Gharbi, see Fareed SHafi'i, *al-'Amara al-Arabiya al-Islamiya. Madiha wa Hadiraha wa Mustaqbalaha*, 'Imadat Shu'awn al-Maktabat, King Sa'ud University, Riyadh, 1982, p 195.

small holes of different forms,[61] all performing defensive functions. The best preserved mud-brick defensive walls are those found in the old village of Sadus (Plate 36),[62] and also in the old town of al-Dir'iyya, which has been restored in the last ten years (Plate 38), while stone walls can be found at al-Majma'a at al-Mirgab district (Plate 37).

The internal defensive walls of domestic buildings did not differ from those above in terms of the materials used, but they were more complex in their construction and decoration. Most of them are provided with a large number of geometrical holes and windows of various sizes, such as those seen in al-Riyad, al-Dir'iyya, Shaqra, Aushaqer and al-Majma'a, which, together with various methods of construction, lend them a fine appearance, making them unique, not only in Najd, but in all of Sa'udi Arabia.

1.3.2.b. TOWERS

The inhabitants of the Arab Peninsula in pre-Islamic times built towers as one of the architectural elements of their buildings, such as those found in the religious temples of Yemen and at the site of Qurayat al-Faw.[63] Al-Hamadani, (one of the earlier Islamic geographers),in his book*Sifat Jazirat Al-'Arab* , mentions that the residents of the Yemen built two large and high palaces in pre-Islamic times, the first was called Raghadan, and the second, Ghamadan.[64] However, if these palaces did actually exist, it is likely that both were types of tower-house, similar to those of three to six storeys that are still found in many places in the west and south-west of the Arab Peninsula. Also, he indicates that the people of the Kinda Kingdom of the Najd constructed fortified buildings, including a tower, at Hijr al-Yamamah.

The Arabs, after Islam, with the help of non-Muslims, began to build various forms of tower that served different purposes, such as the towers in the desert palaces of the Umayyad Caliphates, and also those found in the palaces of al-Hir al-Gharbi and al-Sharqi (both dating from 728 A.D).[65]

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61. This style of defensive element was used in defensive walls of earlier pre-Islamic settlements of the Arab Peninsula , see Jawad 'Ali, op. cit., vol. 5, p19.
62. M. Albini, op. cit., p 20.
63. 'Abd al-Rahman al-Ansary, Qurayat al-Fau...,1983p40.
64. Al-Hamadani, op. cit., p 282.
65. Creswell, op. cit.,1969, pp 508 & 528.

Throughout the Najd, a large number of fortified towers were built within and without mud-brick settlements, which can be classified either as defensive towers or watch-towers, depending on their functional purpose. However, they all vary in size, form and interior design according to the preferences of the traditional builders, which varied from one settlement to another.

Most were built in the reign of Muhammad Ibn Sa'ud (1745 A.D. \ 1159 A.H.), Sa'ud al-Kabir (1803 A.D. \ 1218 A.H.), Turki Bin 'Abd Allah Ibn Sa'ud (1824 A.D. \ 1238 A.H.) and a few of them during the era of King 'Abd al-'Aziz (1902 A.D. / 1319 A.H.). others were built during the foreign expeditions. Very few still survive in the Najd region, compared to those surviving in the west and south-west of Sa'udi Arabia. However, they were clearly visible to European explorers even at long distances. Those of the al-Qasim area were mentioned by Barclay in his account.[66]

The towers usually ranged from 6m. to 12m. in height, though they could reach as high as 14m. or more as watch-towers. They were crowned with a low wall, provided with embattled crenellations, and in many cases the upper storey was prominent above the level of the wall itself, forming a crown shape with small defensive galleries in their sides *(al-masaleet).* Also, they were supplied with large numbers of geometrical opening holes, lighting inner spaces which helped the defenders to observe their assailants.

Generally, these towers took one of two forms: either a truncated 4-sided pyramid form, (known as a square tower) and marked by a square plan (Fig. 47 & 48,a-b); or a truncated cone, (usually called a round tower), which resembles a chimney and was circular in plan (Fig. 49) (However, in very rare cases the inhabitants of Najd built these towers with cubical and cylindrical forms). The first form is found througout Najd: in the high towers of al-Dawadmi's fort; the three-storey towers of the palace of King 'Abd al-'Aziz's eldest brother at al-Riyad's oasis;[67] the three storey tower of the defensive wall of al-Riyad (plate 8); the square tower of the fortress of al-Masmak in al-Riyad (Plates 40); and also the three storey tower of al-Muraba' area (Plate 41). Examples of the second type were found in the form of defensive towers at the

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66. Raunkiaer Barclay, *Through Wahhabi Land on Camel Back,* Rouiledge and Kegan Paul Ltd., London, 1969, p 87.

67. H.St.J.B. Philby, *A Pilgrim In Arabia*, Robert Hale Ltd., London, 1946, from the plates between p 96 and p 79.

Qasr of Marid in Dawmat al-Jandal south-west of Diret Cattab,[68] the watch-towers at al-'Uyoon in the al-Qasim area,[69] the towers in the defensive wall of the old al-Riyad (Plates 8 & 42), and also the towers of the fortress (or recently the palace) of al- Masmak in al-Riyad that was reconstructed ten years ago (Plate 39). In west and east areas of Sa'udi Arabia and some Arabian Peninsula and Mediterranean countries, one can still find many good examples of both square defensive and watch-towers.[70]

1.3.2.b.1. DEFENSIVE TOWERS AND THEIR INTERIORS

Two types of traditional defensive tower were to be found in mud-brick settlements of the Najd. Towers of the first type was generally built attached to the outer defensive wall of the settlement, while towers of the second were built separate from it. In the first category, the towers supported the enclosing wall itself while serving to protect the settlement from invaders. Towers of this type still exist in some Najdi cities, such as the round towers on the walls of old Sadus (Plate 36),[71] and the square towers on the old walls of the al-Mirqab quarter in al-Majma'a (Plate 37).

In the second category, the defensive towers were built with no additional outer defence, but were free-standing either inside or outside the settlement. These were used for observation and other defensive purposes. Within the settlement, towers were found in each of the residential quarters (the towers here were often built within the area of the private houses and palaces which belonged to tribal leaders), reflecting the tradition and customs of the Najdian tribes. One example of this type is still to be seen within the fortress of al-

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68. Guarmani, op. cit., p 39.

69. Palgrave, op. cit., pp 268 & 390.

70. For example, in the countries of Yemen, Oman, Qatar and al-Bahrain, as well as Syria and Jordan. Examples of this type in Syria are the square tower of Umm al-Jimal church and the four storey high, square tower at the great temenos in Damascus (the capital of Syria) from the first century A.D. This tower served as the minaret of the Umayyad Great Mosque after Damascus was conquered by the Arabs. From the fifth century we have many examples of the square tower, such as the six storey tower of at Qasr al-Banat from 390-418 A.D., the tower in the barracks from 412 A.D., the tower of Umm as-Surab in southern Hauran, the tower of Halban from 543 A.D., as well as that of Qasr al-Milh. See Creswell, Early Islamic...,1969, vol 1, part 2, p 491.

71. Ibid., pp 19 & 30.

Masmak in the al-Riyad city (Plate 40).[72] Similar examples were found in the private houses of Huwran in Syria.[73]

Even though most towers of this kind were destroyed during the civil war, their ruins are still found in some cities and villages. There are also early accounts and photographs provided by European explorers which cover the general design of these defensive towers, although their descriptions were brief and described the exteriors only.[74]

INTERIORS OF THE FIRST TYPE

Structurally, both round and square defensive towers looked alike (Fig. 47 & 48,a-b) (Fig 49). The interior was usually divided into three or four floors including the projecting roof. Each floor was carried by strong and thick wooden beams and thin branches of either tamarisk or palm tree or both together.

The walls were built from local materials such as mud, mud-brick and stones. At times, they were built only in mud with many courses, and the extent of each course can be seen clearly in the outside facades forming sunken or projecting lines. The lower course was from 80cm. to 1m. deep, reducing to 40cm. in the top course. However, in very rare cases they would build only in stone, as in the walls of the towers of al-Dir'iyya (Plate 38) and the towers of the defensive wall of al-Majma'a (Plate 37).

The walls were bulky and each tapered inwards to prevent it from collapsing under the pressure of its own weight. Their internal surfaces were plain and coarse, with no coating in some places and the floor surfaces were rough in texture. The walls of the ground floor of both tower types were always solid without openings, while the those at the upper floors were usually punctuated with apertures. These either consisted of square or triangular openings, located at the centre of each wall of the floor and which were designed to be always open, without shutters, so as to provide ventilation and light for the dark interior spaces.

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72. M. Albini, op. cit., p 19.
73. Cresswell, op. cit., 1969, p 491.
74. For more information about the descriptions by early European explorers see paragraph 1 in the notes to this chapter.

The entrance leading to the tower was small and always opened towards the settlement. It was found either on the ground floor or first storey, which, I was told by the people I interviewed during fieldwork, was reached by means of a rope. In this case the ground floor was used for storage, and had an outer door which was not connected with the storeys above. Sometimes, as at Sadus, where the entrance is on the first storey, the ground floor was filled with earth for defensive purposes. The entrance was also provided with a wooden shutter made of hard, thick panels joined by thick rails and fixed with iron nails.

The roof and other storeys were usually reached by spiral or straight staircases, and sometimes by wooden ladder (Fig. 47 & 48) or via small inner lanes built over streets connected between close buildings and the storeys of the tower as in the towers of Sadus.[75] The staircases led to an aperture typically 1m. x 1.5m opened at the corner in each floor.

INTERIORS OF THE SECOND TYPE

Structurally, this type of tower (either round or square) was similar to the first one, dissimilarities occuring only in size, finishing, lighting and sometimes in function (Fig. 49). Some towers of this type were large and much wider at their bases. The base of a round tower ranged between 6m. to 8m. (i. e. between 28 and 50 sq.m.) in diameter and the bases of square ones ranged between 24 sq.m. and 36 sq.m. The walls were also bulky and leant inward, the round tower producing a truncated conical form, while the square tower showing an uncompleted pyramid form.

The interior space of the tower was usually divided into two or three floors crowned with a projecting, walled, flat roof. The internal surfaces, including walls and floors were all plain, but they were often covered with fine coat of mud. Large numbers of square and triangular openings punctured the walls and consequently the interior lighting of all storeys was better than that of the first type. The entrance of the tower was small in scale about 1.20cm in height, 80cm in breadth and located 50cm., above ground level. It was always provided with a hard, thick panelled wooden shutter braced with steel or thick wooden horizontal rails. The door was often closed by a large wooden lock, (*Daba*), consisting of a thick wooden bar behind the shutter that slid into the

75. M. Albini, op. cit., p 30.

door-post. The door could usually be opened from outside by a large metal key.

All the above mentioned physical characteristics of this type of Najdian defensive tower - its large interior spaces, good illumination and finishing - indicates their variety of function. Not only could they be used for defensive and protective purposes, their large size allowed them to be used as refuges for large numbers of local residents during times of trouble and, in normal times for such things as storage or temporary occupation.[76]

1.3.2.b.2. WATCH TOWERS AND THEIR INTERIORS

Watch-towers were built across the entire Najd region. They were usually found around the settlements upon rocky prominences and, from which oases in the area could be observed. Doughty saw watch-towers in both the al-Qasim area and al-Nufudh desert and provides a brief description:

> *Upon a cliff by the Nefud..... a clay-built, lighthouse-like watch-tower [the watch-tower is found in all the villages of Kasim area].* [77]

As well as such towers being situated outside the settlement, they were also placed at strategic points inside, these being selected with great care and accuracy, sometimes as separate structures and usually in high places (e. g. the tower in the al-Mirqab quarter at al-Majma'a). Such as this type of watch-tower recorded by Philby at the village of al-Hayer, south of al-Riyad:

> *Under it nestles the little village of Haïr in two unequal sections separated by a narrow strip of bare ground. Four watch-towers crown the summit, three immediately above the village and the other above the angle formed by the left bank of the Haïr and the right bank of the* Wadi *at their confluence.* [78]

It was also built either within or near the main citadel or fortress, as was the case with the watch-tower of al-'Uyun citadel which was described first-hand by Palgrave in 1862:

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76. Some older people of Najd said: that the defensive towers of this type which were found within the residential districts, especially of tribes were used as a refuge for children and women during any wrangle or fighting, which tended to happen when two tribes lived together in the settlement.
77. Doughty, op. cit., p 336.
78. Philby, op. cit.,1922, vol. 2, p 11.

Eyoon a good-sized town... furnished with a watch-tower, much resembling a manufacturing chimney in size and shape, besides a massive and capacious citadel.[79]

SEPARATED EXTERNAL WATCH TOWERS

Structurally this type of watch-tower did not differ from defensive towers but they were usually narrow and higher to enable watchmen to observe a greater area (Plate 45). It sometimes played a military role and was an extremely important and effective line of defence in any Najdi settlement. Because of this walls were bulky and strong of mud-brick or rough stone, crowned by large crenellations, to shield against attack.

INTERIOR OF EXTERNAL SQUARE WATCH-TOWER

Interiors consisted of three storeys (sometimes four), all square in plan, the lowest from 4m. to 6m. in height, the second from 3m. to 4m., and the third about 3m. The total height without the crenellations was between 10m. and 13m. or 14m. Plan sites also varied: at ground level sides averages 4m.; at 1st floor level 3m.; and at the upmost level 2.5m. The entrance was always created about 1.5m. above ground level. It was small in scale about 1m. wide and 1.20m. height, formed by two jambs and a lintel all of hard wood. Likewise, it was always provided with a hard, heavy wooden shutter. The entrance lead to the staircase (if there was one, for some of watch-towers had them and others did not),[80] which was no more than 1m. wide.

The walls of the first storey were solid, as opposed to those of the upper two storeys which were usually punctuated with small rectangules and loopholes on all sides. The floors of first and second storeyes were also provided, at one corner, with an aperture 1m. wide 1.5m long, from which watch-men could go up and down. The surfaces of walls and floors were plain with no finishes. The lighting inside was very poor especially on the ground floor. Staircases and upper spaces were usually day-lit by means of narrow openings.[81]

In the case of round external watch-towers, only their plan shape distinguished them from the square towers; they were otherwise similar.

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79. Palgrave, op. cit., p 268.
80. If the tower was built without a staircase, the watch-men used a moveable wooden ladder for reaching the upper floors.
81. Al-Shuwaysh, op. cit., p 23.

INTERIOR OF *AL-MIRGAB* (INTERNAL WATCH-TOWER)

This style of Najdian watch-tower also had both round and square forms, the first as a truncated cone, the second as a truncated pyramid (unusually, round towers sometimes evolved as a funnel form). Interiors of both conical and pyramidical forms differed little from those of the external watch-tower. However, the interior of the funnel form watch-tower was somewhat different from either the round or square truncated forms.

These styles of towers usually had thick walls and an enclosed roof, and they could probably have reached 14m. in height. But, in very rare cases, a funnel form watch-tower was built with thinner walls and a greater height, as at the villages of Rughba (Plates 43 & 44) and Sadus. This type of tower was known locally as *al-Mirgab* or *al-Manara,* and was usually manned by one or two watchmen. In 1886, Doughty saw towers of this type at al-'Uyun village in the al-Qasim area and used their two local names, while describing their materials and location:

> *Their watch-tower - Mergab or Garra- is found upon a rock above the village. The base is of rude stones laid in clay, the upper work built of clay-brick.* [82]

In 1917, Philby also saw one example of this type of watch-tower in the old town of Sadus, where they were called *al-Manara.*[83]

The tower was circular in plan, broader at the base than at the top, the lower part ranging from 3m. to 6m. in diameter while at the roof the diameter ranged from 1.5m. to 2m. The appearance of such towers is reminiscent of an inverted telescope, except that it is the upper segment in each case that overlaps, slightly, the lower, curving out slightly to do so - giving an impression of a series of tapering, overlapping funnels. The entrance of this type of tower was small, and usually formed 50cm. to 150 cm. above ground level by way of a short external staircase and provided with a normal wooden shutter (Plate 44). The entrance leads to the interior of the tower which was one clear space, without storeys.

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82. Charles M. Doughty, *Wanderings In Arabia. An Abridgement of Travels in Arabia Deserta*, made with the author's sanction by Edward Garnett, Duckworth, Thomas Nelson and Sons Ltd., London, 1926, p 448.

83. Albini, op. cit., p 30.

The interior of the tower was very dark, the only light source being occasional circular or square apertures in the body of the tower. Access to the roof was by a very narrow staircase as at Rughba (Plate 44) or by use of ropes and small pieces of tamarisk trunk projecting from the inside walls and leading to a small aperture in the roof. The ropes were usually secured to the beams of the roof and hung to floor level. To reach the roof, the watchman placed his feet on the wooden projections, one after another, while using his hands to pull himself upwards using the ropes.

1.3.2.c. FORTRESS

Besides the previously mentioned fortified buildings, the traditional Najdi fortresses were the chief defensive buildings of the mud-brick settlement. Their locations were of key importance to the early Najdi people, in common with other ancient civilizations, such as the Babylonians, Assyrians, Romans, Byzantines, Christians and Sassanians, most of whom constructed their forts and citadels at strategic points, as was the case with the Roman hill forts and citadels.[84] They chose their locations, whether inside or outside the settlement, with great care, sometimes taking advantage of geographical features.[85]

Early inhabitants of the Najd had their own traditional styles of fortified architecture. However, the archaeological evidence suggests that some of the defensive architectural elements that were used in Najdi forts, such as *al-masaleet* among others, were influenced by the Romans.[86] Historically, forts or citadels were not built only for military purposes, but as residences for lords and their families, as seats of justice, and also as prisons and hospitals.[87] M.W. Thompson writes in his book *The Decline of the Castle* about the origin of the fortified castle:

> *A castle is a fortified residence in which the fortifications predominate over the domestic aspect of the structure, and the occupant normally owns or controls a large territory around it. This cuts out tribal hill-forts, Roman forts, Tudor and later coastal*

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84. Sidney F. S. A. Toy, *The Castles of Great Britain*, William Heinemann Ltd., London, 1953, pp 3 & 4.
85. Anne Johnson, *Roman Forts*, Adam and Charles Black Ltd., London, 1983, p 27.
86. It is one of the most important defensive elements that appears at Roman forts and citadels in all Middle East countries, for example Jordan and Syria which are both close to Najd area
87. M. W. Thompson, *The Decline of the Castle*, Cambridge University Press, Cambridge, 1987, p 12. See also Royal Commission on Historical Monuments, England: *York Castle. An Illustrated History*, Her Majesty's Stationery Office, London, 1973, p 59.

forts... Castles had their origin in a society where land was held by military service and a fortified residence was a privilege accorded to great land owners. Only a very restricted social level was entitled to construct them, and normally they served as the administrative centre for a large area. [88]

The Najdi fortress was commonly built at the centre of the settlement, with other important buildings situated near the main gateway, as in the case of al-Masmak's fort which dominated the old town of Riyad (Plate 39 & Fig. 50) and was described by Philby as it appeared in 1917 A.D.:

Besides the Great Mosque and the palace itself, the only building of any architectural distinction in the city is the fort; a great, square building with massive wall and ponderous bastions at the four corners, situated slightly to the north of the main street about midway between the palace and the Thumairi gate. [89]

They could also be built in an elevated location within the settlement, from which they controlled other domestic buildings, as was the case with the old Huriyoumla fortress which appeared to Palgrave more as a citadel, possibly because of its size compared to others. Palgrave's description demonstrates the defensive level of Najdi architecture:

What surprised me on our first entrance here, was the view of the large citadel, placed on rising ground within the town itself, and announcing in symmetrical construction a degree of architectural and defensive science unusual in these countries. [90]

Fortresses were also built outside Najdi settlements. They usually had large gardens and were inhabited by wealthy men, eg. Marid's fort, located in northern Najd near Duwmat al-Jandal village. Germani visited Duwmat al-Jandal village in 1864 A.D., saw the fortress, and gave a good description of its location, construction design and raw materials:

The fort of Mared stands on a sandstone hill to the south-west of Diret- Kattab, butting on to its houses, and to the south-south-west of el-Dera, to which it is joined by a high wall. It is very ancient and very roughly built. Mared must have been re-built several times; the upper part is of baked earth, while the lower two-thirds are of stone. The original shape was rectangular, flanked by four towers, with a higher tower in the centre from which the surrounding plains could easily be searched. [91]

88- Thompson, op. cit., pp 1 & 2.
89- Philby, op. cit.,1945, p 74.
90- Palgrave , op. cit., p 362.
91- Guarmani, op. cit., p 102.

1.3.2.c.1. FORTRESS INTERIORS

Fortresses in Najd were built with local materials consisting of mud-brick and rough stone. The structure of the fortress was usually of two or three storeys, square in plan and enclosed by massive, sloping walls measuring from 5m. to 7m. in height. These walls were usually flanked by four bulky, truncated conical towers some 8m to 10m in height. A typical fort comprised a combination of gateway, large open courtyard, a number of rooms, porches and one or more high watch-towers.

The gateway was secured by a heavy, wooden door with another small door within its body, as it is seen at al-Masmak's fortress. Cross-passages often lead to the main courtyard and, narrow, winding corridors connected the main courtyard with other smaller courtyards and rooms. The main courtyard was usually provided with a high watch-tower such as the truncated 4-sided pyramid tower of the al-Masmak fort. The other courtyards were usually surrounded by rooms both small and large, sometimes protected by fine porches.

The interior of the fortress was often very attractive in appearance not unlike Najdian houses and palaces. This demonstrates the high level of architectural culture of the early Najdi designer. Consequently, the interior is more beautiful than the exterior, the most striking and important architectural elements being the porches both at ground floor and above. They were defined by symmetrical rows of columns adorned with pointed arches and capitals of varied styles overlooking the courtyards. Their wooden beams were painted with both geometrical and botanical ornamentation. The walls of the inner rooms were also decorated with engraved friezes and stucco reliefs and by rows of apertures of different sizes and forms. They were also provided with decorated doors and with windows overlooking the courtyards.

1.3.3. SECULAR TRADITIONAL MUD-BRICK BUILDINGS AND THEIR INTERIORS

INTRODUCTION

Field surveys of the traditional secular architecture of the Najd region, with analysis of existing buildings in some cities and villages, helped in constructing a picture of the range and changing form of Najdi secular architecture over the past 300 years. Traditional secular buildings of the Najd can be understood to comprise administrative, commercial and residential buildings.

1.3.3.a. ADMINISTRATIVE BUILDINGS

Administrative buildings (govenors residences), as a feature of secular architecture, appeared in most mud-brick settlements of the Najd, either those established before or during Islamic periods. Excavations of Qurayat al-Faw in Southern Najd, revealed examples of the administrative buildings used by the kings of Kinda Kingdom dating from the 5th century B.C. These also indicate that the location of the administrative building of a pre-Islamic settlement could be in a variety of strategic places. In the settlements of the Islamic ages, by contrast, the government building usually occupied a central location, adjacent to the Masjid al-Jamai'.

The governor's building in Najd was known locally as *Dar al-Imara* (pl. *Dur al Imarat*) or *Dar al-Hukm* (pl. *Dur al-Hukm*). The word *dar* means 'house,' *Imara* meaning a place of prince, and *hukm* (v. to rule) is derived from the word *hakim* (ruler). During the Islamic ages this was both the residential and adminstrative building of the governor, as the *Dar al-Imara* of al-Kufa.[92]

Very early Imarats appeared in Najd before the Saudi States in the form of residences and administrative buildings for Shiekhs or Amirs, including the *Dar al-Imara* of the Sa'ud family in al-Dir'iyya, that of the Dham Bin Dawas in al-Riyad, also those of the Mu'amr in al-'Iyana and the 'Ulayan in al-Qasim.

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92. For more details see paragraph 2 in the notes to this chapter.

During the first and second Sa'udi states the Imarats served also as administrative and residental buildings. Some provided extensive accommodation (as at Dar al-Imarat al-Sa'ud in al-Riyad and Dar al-Imarat al-'Askar in al-Majma'a) for the Amir and his officials. However, during the third Sa'udi State the Imarats were used as adminstrative buildings only; from which the Shiekh (noble man) or Amir (prince) could rule the people of the settlement and control the surrounding residential districts.

The Dar al-Imara was not always built adjacent to the central mosque. It could be located close to a small mosque, as with the Imarat al-'Askar (the prince was Ibrahim al-'Askar) in al-Majmaa'a which dates from, before the Sa'ud Family came into power of al-Majma'a. However, the Imarates of the Sa'udi States reflected the requirements of early Islamic leaders, and because of that most of these Imarates were built close to the central mosques. For instance, the Dar al-Imara of al-Riyad was connected to the mosque by a wide bridge protected by a low wall and carried on two rows of circular stone columns (Plates 46 & 47). The function of this passage may have been to protect the Amir from others when he want to pray. Palgrave described the area around the Dar al-Imara in al-Riyad and its passage which connected the building of al-Imara with the Friday mosque:

> *At last we reached a great open square: its right side, the northern, consists of shops and warehouses; while the left is entirely absorbed by the huge abode of Nejden royalty; in front of us, and consequently to the west, a long covered passage, uphold high on a clumsy colonnade, crossed the breadth of the square, and reached from the palace to the great mosque, which it thus joins directly with the interior of the castle, and affords old Feysal a private and the Friday prayers, without exposing him on his way to vulgar curiosity, or perhaps to the dangers of treachery.* [93]

1.3.3.a.1. INTERIORS OF DAR AL-IMARA

The Najdian Dar al-Imara was usually built with two or three lofty storeys and open courtyards, both inside and outside similar to large places or houses. Its main form differ little from those of early Islamic ages. It was usually divided into two parts, one used as a living area for the prince and his family, the other as a reception or a residence for local people and princely visitors as appropriate. Consequently, it was typically provided with many rooms: some as offices of the Amir; bedrooms and bath-rooms, two or three kitchens, stables and watch-towers; and included a very large decorated majlis-halls

93- Palgrave, op. cit., p 393.

provided with fire-places, fitted cupboards and good furnishing, in which the prince usually received people. Examples of good Najdian ancient mud-brick imarates were found in the cities of al-Majma'a and al-Riyad.

THE INTERIORS OF AL-ASKAR'S IMARAT IN AL-MAJMA'A

The interior of Dar al-Imarat of Ibrahim al-Askr (Fig. 51 & 52) consisted of two facing parts separated by a street 2m. wide, each part having two storeys, and joined at first floor level by a closed bridge 2.80m. above the street. These were the living areas for the Amir and his family. Both parts look similar to other residential buildings which will be examined later in this chapter.

Both east and west facing parts of the ground floor (Fig. 51) contained administrative areas (al-Imara), places from which the prince ruled. The east part has four entrances were the main ones in the middle (D). It was very simple, without decoration, leading to an L-shaped passage (no. 1). To the right there was the Amir's office (no. 2), a simple room without any kind of decoration, grating or closets. According to older accounts, this room was furnished only with rugs on which there were mattresses and cushions, the coffee and tea usually being prepared in other rooms and served by slaves. To the left there was a door leading to a large hall (no. 4) and two rooms (no. 5 & 6) all poorly lit by means of three small windows in the hall. This area was built as a private place for the Amir and his visitors, in which to discuss their problems. The northernmost entrance (A) led to the prison area, consisting of three rooms (nos. 20-22) and an open courtyard (no. 19), another entrance, a little further south (B) gave access to a large hall (no. 16) and two small rooms (no. 17 & 18), used by the Amir's guards. The southernmost entrance (E) led to accommodation areas that included an open courtyard (no. 13), bedrooms and bath-rooms for slaves, kitchen and stable (no. 14).

The west part had one entrance in the middle (C). Its interior consisted of an open courtyard (no. 35) enclused by a portico and rooms, in addition to two staircases and an entrance-hall (no. 23) separating the two main rooms (no. 24 & 34). This part was for the Amir's guests and visitors and was, consequently, of greater architectural interest than the east part. Its entrance was surrounded with engraved stucco friezes and led to the large entrance-

hall. To the right of the entrance-hall there was the reception room (no. 24) (*al-Diwaniyya, Majlis* or *al-Qahwa*), reached by either of two doors. It was free of any decoration, there being only the wall-cupboard *al-Kumer* and the fire-place *al-Wijar.* To the left there was the dining-room (no. 34) (*al-Muqalat*).

THE INTERIORS OF AL-SA'UD'S IMARATE IN AL-RIYAD

According to Philby, the interior of Dar al-Hukum (the Imarat or ruler's palace) of the al-Sa'ud Family in al-Riyad was unusual (Plates 46 & 47), being distinguished from all other interiors either by its various types of decoration or its interior architectural features. Existing photographs of this building reveal just how important it was in the early history of Sa'udi Arabian architecture and what, therefore, of Sa'udi heritage has now been lost. Whether from the functional or aesthetic stand-point, the Dar al-hukum of al-Sa'ud represented the typical, mud-brick, governor's building in the Najd. Structurally, it was of three storeys, square in plan, and measuring between 15m. and 18m. overall in height. The ground floor had no windows to the exterior, but looked inwards into open courtyards. The main entrance was large in size, and the entrance-hall was provided with a long, earthern platform used as seating for the visitors.[94] Philby's description (AD. 1919) is as follows and gives a clear idea of the building's decoration and spatial organisation:

> *...no building in all his territories so splendid in its proportions, so beautiful and so representative of all that is best in modern Arabian architecture as the royal palace Ibn Sa'ud. Its merit lies in its superb simplicity of design and in an almost complete absence of ornament so appropriate to an edifice intended to provide not only comfort but security for those dwelling within its walls....internal accommodation for the growing family and household staff of Ibn Sa'ud, whose own private apartments occupy a central position adjoining the southern wall and are connected by passages with a corresponding edifice in the middle northern wall, in which are the audience-chambers and offices of the central administration. To these the main doorway facing eastward from a projecting machicolated structure gives direct access to the throngs which at all times besiege the entrance and which can be conveniently overlooked from a number of latticed windows in Ibn Sa'ud's private sanctum on the first floor of the projecting portion immediately above the door. The eastern section of the building is for the most part relegated to the domestic staff, the slaves and servants of both sexes, who occupy a courtyard in the north-east corner, and to the kitchens and stables which spread over the south-eastern portion; to these two separated doors gives access on the east side.....the projecting tower and the raised central portion extending inwards from the latter and at the same level as its summit.* [95]

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94. This information provided from the information office of the recent Imarate of al-Riyad city.

95. Philby, op. cit., 1922, vol. 1, pp 74-75.

1.3.3.b. COMMERCIAL BUILDINGS

Most large mud brick settlements in the Najd contain three types of commercial architecture: covered markets *al-Qisariya* or *suq al-Dira*;[96] open markets *suq Waqif*; and detached, district shops. These traditional commercial buildings have been very active places for hundreds of years, proving central to the economy of every settlement. They also acted as meeting places for all, the gathering-point for circles of acquaintances of all kinds. In fact, they were considered as the representation of Najdian culture, as social institutions and their economic elements. Some of these buildings still survive, serving both the people of the settlements and visitors, including the market shops of Shaqra (Plate 48, Fig. 55),[97] al-Majma'a (Plates 49 & 50) (Figs. 53 & 54), Aushaqer and al-Riyad. Unfortunately, a great number of these traditional commercial buildings have now been removed, modern buildings being put in their place.

1.3.3.b.1. INTERIORS OF COVERED MARKETS

The form of this style of commercial building usually consisted of a covered L, I I or plan with a single storey structure (Figs. 45 & 46), surrounded by low walls ranging from 2.5m. to 3m. in height. It contained a large number of small shops opening on to arched, columned porticos, which in turn enclused an inner, open courtyard. Small narrow streets usually led to the market. The shops were known in Najd as *dakakeen* (s. *dukan*), and sometimes as *mahalat tijaria* (s. *mahal tijari*). In these shops, owners would usually sell hardware and foods, including kitchen utensils, dates, cardamom and yogurt etc.

The remaining examples of this type in al-Majma'a, and Shaqra indicate that the interior of the building was very simple and covered with a single flat roof, supported by parallel rows of mud-brick walls (defining the shops) and pointed arches resting on rows of columns provided with geometrical capitals.[98] The

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96. This type of covered market was usually built in the centre of a settlement, but it could be found at any other strategic place such as the market of al-Tuwaim, which was situated close to the inner side of the town enclosure. Ssee Palgrave, op. cit., p 354.

97. This figure shows the original ground-floor plan of the market before it was pulled down.

98. The roof was made of tamarisk wood, palm leaves and mud mixed with straw.

shops were arranged in straight lines facing the open court. Each shop occupied a rectangular area measuring 3m in height, 3.5m in length and 2.5m. to 3m. in width and was provided with one or two decorated wooden shutters opening toward the porticos. It interior was separated into two parts by a wooden table 1m. in height and 80cm.in width, provided with drawers opening towards the rear where the shop-keeper usually sat on a wooden chair. The shop walls were fitted with raised shelves and recessed wall cupboards made of wood and mud, sometimes covered by layers of stucco. Here the shop-keepers stored their products (Fig. 54 no. 1) although some larger items were sometimes stored in the front shop, under the portico roof. Perhaps the best example of this type of Najdian covered market was the *suq al-Dira* in al-Riyad. This market was much more open to the external environment than other Najdian markets. Situated in the open square next to the *Dar al-Imara* (Ruler Palace) is an open square from the south, a double colonnade, *misbah* (Plate 47) and the *Masjid al-Jami* from the North-west. The *suq* consisted of a series of clustered small shops (Plate 28), each measuring about 2m. wide by 2.5m. to 3m. in length. In 1919, Philby stated:

> *The market-place, which occupies the whole of the open space to the north of the palace, slopes westward down a sharp incline and is divided into two sections by a partition wall, the section between this wall and the wall of the palace being reserved exclusively for the use of women-vegetable-sellers, purveyors of domestic necessaries and like-while the other and larger section comprises about 120 unpretentious shops ranged partly along either side of a bored thoroughfare and partly back to back on a narrow island of no great length in the midst thereof.* [99]

Geoffrey King compares the traditional commercial markets of Sa'udi Arabia, showing that the covered market of Dumat al-Jandal (close to Skaka al-Jawf city -North), was similar in form and architectural features to those found in both the cities of al-Majma'a and Shaqra (both located in the Sudayr area):

> *The Sug al-Dira' at the foot of the Qasr Marid was still standing in 1975, though it was demolished soon after. It displayed parallels with commercial architecture elsewhere, including Tabuk in the northern Hijaz and the sugs at Majma'a in Sudayr to the south, of al-Riyad, recorded in early photographs, and also of Dilam, south of al-Riyad. Sug al-Dira' comprised rows of low, single-storey stone lock-up shops, each with a single entrance closed by a rectangular wooden door.* [100]

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99. Philby, op. cit.,1922, vol. 1, p 72.
100. King, op. cit.,1998, p 131

1.3.3.b.2. OPEN MARKETS

These types of traditional markets were found in pre-Islamic settlements and also in Islamic settlements throughout the Arabian Peninsula, and constituted the distinguishing social features of these settlements.[101] In large Najdian settlements there were two kinds of open market: the *suq waqif*, and the *suq al-manakha*. The first can be classified into two types: the mixed markets for the use of both sexes, in which both buyers and sellers could be male or female;[102] and the single-sex markets which were excessively for the use of women *aswaq al-harim* (s. *suq al-harim*).

The mixed market usually occupied the central open area of a covered market, however, they could also be found occuping any empty space within a settlement. In this type of open market, tradesmen and women from different ethnic groups would occupy the central area of the market. They used to sit either on the floor or on low wooden benches close to their merchandise, which was also displayed on the floor, thereby allowing the customers to have a good view of their goods. The sellers would sometimes protect themselves and their goods from the sun using primitive shades made of canvas and tied to low wooden columns. At the sides of the market, the bedouin women would sell whatever they had made in their tents brought from the desert including butter, fat, cheese, yoghurt, poultry etc. Today, bedouin women no longer sell goods in most of the open markets in settlements of central Najd, although some of them can still be seen in the Northern and Southern covered markets of the Najd, such as at the old markets of al-Riyad and Dumat al-Jandal and in some markets of the eastern region, e.g. the ancient market of al-Ihsa, which is called *Qisariya*, the Islamic name given to similar markets commonly found in earlier Islamic settlements.

The single-sex markets *aswaq al-harim* were located either in the vicinity of the central, covered markets or adjacent to them, as with the women's open market in al-Riyad city of which Philby was able to provide a limited account since local custom at that time disallowed men from entering the women's open markets. This market was separated from the *suq al-Dira* (the covered market) by a high wall in order to offer both saleswomen and women buyers

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101. See paragraph 3 in the notes to this chapter.
102. Locally, salesmen were known as *al-basateen* (s. *basat* or *basit*), while saleswomen called *al-basatat* (s. *basatah* or *basitah*).

their privacy.[103] Until 1950, some of the women's open markets were still used exclusively by women, including the *suq* al-Riyad, the *suq* Burayda and the *suq* 'Unayza. Subsequently, the religious scholars decreed that men could enter this type of open market accompanied by their close female relatives.[104] However, in recent times, in most Najdian cities and villages men, with or without their female relatives, can easily enter these markets and buy from saleswomen, but they must respect local traditions during their dealings with the saleswomen or other females in these markets. This change in local traditions and customs, in fact, demonstrates a change in Najdian culture in recent history.

The *suq al-manakha* (pl. *al-manakhat*) was one of the more important markets that was found in Najdian settlements. It was established for trade in industrial and agricultural products such as tents, leather, carpentry products, animals, small palm trees, rugs and carpets etc. Because of this, it often occupied a large area and was located near to the edges of settlements, close to the main gates. Originally, it was created for use by men, but this did not prevent women from entering this type of open market. Both urban and bedouin women would sell their products and could buy whatever they wanted. These types of open market usually opened twice a week, on Mondays and Fridays. Today, they open seven days a week. During his visit to Najd in 1819 A.D., Sadleir saw the open market of al-Dir'iyya where camel meat was for sale:

> *...Camel's flesh....was exposed for sale in an open space near the village, where there was a kind of market.* [105]

1.3.3.b.3. INTERIORS OF SEPARATED SHOPS

A number of small shops are also found in the districts of any Najdian settlement: Some of them face small streets; the others face open spaces which are usually considered to be the central meeting point of the district,

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103. However, in the time of Palgrave, this market was represented as a mixed market, there was no partition between the covered shops and the open area of saleswomen. It seems that this partition was build later. Palgrave said: "In the midst of this space, and under the far-reaching shadow of the castle walls, are seated some fifty or sixty women, each with a stock of bread, dates, milk, vegetables, or firewood before her for sale; around are crowds of loiterers, camels, dromedaries sacks piled up, and all the wonted accompaniments of an Arab market", see Palgrave, op. cit., p 393.

104. The information provided by my uncle Ibrahim 'Atala al-'Anbar in 1984 in 'Ain bin Fihaid in al-Asiah area (al-Qasim).

105. Sadleir, op. cit., p 62. See also Philby, *Arabia of the Wahhabis*, 1928, p 198.

where a small mosque is usually found. Originally, the interiors of these shops were parts of the shop-keepers, homes: They would commonly convert any interior space (large or small in size) of their homes closest to the neighbouring street into shops provided with wooden doors and mud-benches nearby, on which the shopkeepers and their customers could sit drinking coffee and eating dates. The interior and space organization of each shop were usually dependant on the original size of the house, on the function of the shop, and on the kind and size of its merchandise.

Today these shop are outmoded and redundant; their owners having moved to other places. According to the accounts of older residents, most of these shopkeepers worked at various crafts inside their homes. Some of them cleaned and tanned leather, others were carpenters and weavers etc., and they displayed and sold their wares in their shops. Consequently, the interiors of both their houses and shops were organized according to what was being produced.[106]

1.3.3.c. RESIDENTIAL BUILDINGS AND THEIR INTERIORS

Traditional residential buildings of the Najd, whether houses or palaces belong to two groups; the first were built during the 17th and early 18th Centuries, (during the first and second Sa'udi states), the second were built in the late 19th and early 20th Centuries (during the third Sa'udi state).

THE FIRST GROUP

The first group comprises simple rectangular mud-brick houses and palaces of one to three storeys, having between four and fifteen rooms, with flat roofs and high walls, such as those found in the towns of al-Majma'a, al-Riyad, Burayda and 'Unayza. Documents of the early European explorers who visited the Najd region throughout the18th century provide incomplete descriptions of the interiors of Najdi domestic buildings, whether houses or palaces. Most of them simply describe the main forms of buildings and the

106. Before Islam there were many open and covered markets found in the Arabian Peninsula. See paragraph 3 in the notes to this chapter.

interiors of reception rooms together with other related areas such as entrance corridors and bathrooms.

There are three reasons for information being so limited : 1) the majority of 18th century explorers (such as Sadleir, Palgrave, Germani and perhaps Doughty) and also 19th century visitors (such as Shakespere and Philby) came to Najd for military and political purposes, not specifically to study its architecture, unlike historians, geographers or archaeologists. 2) some of them were not interested in, or familiar with, accurate architectural description (eg. Palgrave) whose account considers such matters as literary data. 3) even those whose backgrounds have enabled them to give good architectural descriptions (eg. Germani or Doughty) could not normally gain access to the innermost parts of domestic buildings: visitors' time was restricted to reception rooms. Such limitation stemmed from local customs, religious laws, traditions and habits which commonly compelled owners of buildings to prevent visitors, even close neighbours, from discovering the innermost parts of their houses or palaces.

However, even though the description by these early European explorers are incomplete, they are still useful for this area of the Arabian Peninsula. They mainly cover the smaller houses of this era, though some do mention the palaces.

In 1819 A.D.,Sadleir described the houses of Manfuha town which was at that time bigger and more flourishing than al-Riyad, but has since become only a small quarter al-Riyad city:

> *...Munfooah, which contains about two thousand families. In it there are some good houses built of mud and stone, some two storeys high with flat roof.* [107]

Sadleir indicates that the al-Dir'iyya quarters had also once had some good quality houses:

> *In each however, there are the remains of several good houses now in a state of dilapidation.* [108]

107- Sadleir, op. cit., p 75.
108- Ibid., p 66.

In 1862-63 Palgrave also gave a useful description of the Burayda peasant houses which represented a later stage of development from those found by Sadleir:

> *The house... its position was therefore good... it possessed two large rooms in the ground storey, and three small, besides a spacious court-yard surrounded by high walls. A winding stair of irregular steps and badly lighted, like all in the Nejad, led up to extent of flat roof.* [109]

As previously stated, we do not have any complete description of the palaces of this period. However, Palgrave mentions the Sa'ud family palace at al-Dir'iyya. While al-Dir'iyya had many palaces, only a few of them were entirely rebuilt, mainly in the al-Turayf quarter such as Qasr Sa'd and Qasr Nasr. [110] The only complete description was given by Guarmani during the late18th century A.D., of the palace of Marid in Duwmat al-Jandal, which is in fact a kind of fortress.[111]

Doughty was probably the European explorer who mentions traditional Najdi houses and palaces most; during his visit he recorded his observations of many houses in various Najdi cities and villages, such as 'Unayza, whose houses, as Doughty says, have fine interiors,[112]. He also saw some ancient palaces at Burayda, probably dating from the 17th Century, including the Hjallan palace *(Qasr Hjallan)* , which was built by a local builder called 'Abd-Allah Bin 'Abd al-'Aziz . In addition, he mentioned that the courtyard of the Burayda palaces was very large, probably like the traditional open market area.[113]

The local historians, such as Bin Bishr and Ibn Ghanam, provide an even less detailed description. They mention only the names of the palace and their owners, eg: al-'Thwanah palace, built for 'Abd al-'Aziz Bin Muhammed Bin Sa'ud in 1171 A.H.; al-Badi'a palace, built for Sa'ud Bin 'Abd al-'Aziz in 1195 A.H.; and Rina palace, built for 'Abd al-'Aziz in 1211 A.H.,.[114]

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109. Palgrave, op. cit., p 281.
110. Geoffrey King, op. cit.,1998, p 159.
111. Guarmani, op. cit., p 39.
112. Zahra Freeth and Victor Winstone, *Explorers of Arabia*, George Allan and Unwin Ltd., London, 1978, p 256.
113. Doughty, op. cit.,1936, vol. 2, pp 345, 347 & 348.
114. Ibn Ghanam, op. cit., pp 110, 152 & 197.

THE SECOND GROUP

The second group includes the houses and palaces built in the late 19th and early 20th Centuries during the third Sa'udi state. In this era, the interiors of these buildings show a greater degree of influence from countries both East and West of the Arab peninsula, which were themself affected by Iraqi, Egyptian, Turkish and Persian architecture, and also by that of Bilad al-Sham.

These latter, but still traditional residential buildings, were more complex than those previously mentioned. They displayed a greater diversity of architectural elements and a greater complexity of spaces, as well as having more attractive exterior facades and interior decoration. There was a great deal of overlap between the two groups, since they share obvious influences. This is apparent in their style of ornament and their decoration techniques; it is particularily clear within the domestic buildings of the reigon of King 'Abd al-'Aziz Bin 'Abd al-Rahman.

The European explorers who visited the Najd in the early part of this century, such as Captain William Shakespear, H. St .J. Philby and H. R. P. Dickson provided good descriptions of the main forms of the houses and palaces, and Philby and Dickson in particular both described the interior features of the palaces of al-Sa'ud Family in al-Riyad, and especially their reception rooms which they delineate in more detail than earlier explorers. In A.D., 1914, Shakespear visited the town of al-Zilfi, producing a good description of the location of the guest room, known locally as *al-diwaniyah,* in some traditional houses in the town.[115]

Philby also gives a similar description of an upper guest-room at Uthaythiyyah village north-west of al-Riyad. In addition, he mentions in his account many houses and palaces, including: the palace of Hjallan at Burayda, seen by Doughty, later pulled down with a mosque then built in its place during Philby's time; the palace of 'Abd Allah Ibn Bazi at al-Qasim; Ibn Sa'ud's palace at al-Riyad; as well as the palace of Ibn Dayil in the al-Washim area. The most important houses that Philby observed and described were those of: 'Abd Allah al-Suba'i at Shaqra; the house of the head of Qahtan at Marrat; and some houses of 'Irqa village.[116] Dickson is regarded as the only

115. King , op. cit.,1979, p 261.
116. Philby, op. cit.,1928, pp 107, 197,199 & 328.

European explorer who was able to define the parts of the palace of al-Badi'a at al-Riyad city in general and the men's section in particular, especially its courtyard and guest room as they appeared in 1940 A.D.[117]

1.3.3.c.1. FORMS OF RESIDENTIAL BUILDINGS

According to the extent and manner of their attachment to others traditional residential buildings may be termed "surrounded", "attached" and "free-standing".

1- SURROUNDED DWELLINGS

Generally, this type was commonly found in both small and large houses, whether urban or rural, and particularly in buildings that had smaller interior areas. The buildings of this type were always built so as to be coterminous with other neighbouring buildings on three sides.

The interior spaces of this type of buildings were often organized vertically one above the other to form two or three clear storeys. The rooms (4 to 5) were built randomly around a small open or covered courtyard and because of this, the spaces on the upper floor often did not correspond to those on the lower floor. Examples of this type are still seen in the remains of many mud-brick quarters in Najdian cities and villages.

2- ATTACHED DWELLINGS

Such an arrangement is found mainly in large houses and palace complexes in large urban settlements. These buildings were always isolated from other neighbouring buildings on at least two sides, while attached to them on the remaining. Magnificent examples are still seen throughout the Najd region. The old mud-brick quarters in al-Majma'a, north of al-Riyad city, showing very good examples of attached houses as at al-Tuwayjari and al-Rabi'a and those attached to them. Further north, in the cities of Burayda, 'Unayza and al-Asyah (especially at 'Ain Bin Fihaid town) further interesting examples of

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117- H. R. P. Dickson, op. cit.,1956, pp380-383. For more details about his description see chapter 4.

houses and palaces of this type are also still found, but in poor condition, because their owners were moved to the new concrete buildings. However, in al-Riyad city, are to be found the best and most important examples of buildings of this type still in good condition, for instance the palaces of al-Sa'ud Family at al-Futa and al-Muraba'.

The buildings here represent a kind of massive complex of attached blocks.[118] Each block consists of three to four grouped, mud-brick palaces, one beside the other, forming unique, linear buildings on one or two parallel streets, thereby expressing a new form of traditional Najdi settlement during the early 19th century A.D.,.

3- FREE-STANDING DWELLINGS

Free-standing or detached dwellings were more common in larger settlements than those above. They were to be found particularly in al-Riyad, Burrayda, Shaqra and al-Kharj. The buildings were distinguished by the arrangement of their interior spaces and architectural features, including large, central open courtyards, porches and gardens. Buildings of the middle class were usually designed with internal gardens, while buildings belonging to wealthy people were often planned with both interior and external gardens. They were located in extensive plantation, thereby buildings appearing could be completely isolated from other buildings. Distances between 100m. to 1000m. The interior organization in these types of Najdian buildings shows a strong relationship between the spaces on the one hand, and between the spaces and exterior environments on the other. They also indicate how much traditional architects of Najd were interested in the interior architecture. However, this type of interior design was originally employed in most buildings of both Mediterranean and Middle East countries. Jennifer Scarce states:

> *Characteristic of Turkish domestic architecture was the imaginative treatment of space and the creation of gardens which indicated a close relationship between internal and external environments. In Istanbul itself homes were enclosed within gardens, while the shores of the Bosphorus provided panoramic views.* [119]

Both Burayda and 'Unayza possessed important examples of large houses of this type e.g. those of al-Basam, al-'Aqil and al-Sulayman. While al-Kharj

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118- Marco Albini, op. cit., p 17.

119- Scarce, op. cit., p 25. For more details see also pp 26-43.

ited other significant examples of detached palaces, some of those, for nce of the al-Sa'ud Family. In al-Riyad city, there are some of the best ıples of detached palaces, such as those of King 'Abd al-'Aziz Ibn Sa'ud i'a) and of King Faysal. Both were visited In 1980 A.D., by Marco Albini, st of which was in good condition up to 1977 A.D.:

.....the Badia palace which located south of Riyadh along Makkah road. The name means "magnificent" palace built by King Abd al-Aziz as a quest palace and summer retreat. The Badi'a palm grove was a favourite spot of the King Abd al-Aziz and other members of the royal family from the beginning of the twentieth century. In 1918, one European visitor describe it as the best garden in the whole area, having grapes, peaches and other fruits in abundance. [120]

erning the second palace he says:

In the centre of Riyadh, we can also find an example of large farm palaces surrounded by agricultural land and palm trees such as the well-maintained palace on King Faisal road, still inhabited by a Faisal family, with large decorated reception room on ground floor furnished in the Arab style with sitting places around the walls and Kitchen place in a corner. Few year ago, the top roof crenellation of the palace appeared painted white emphasizing the horizontal lines, The palm trees surrounding it were flourishing due a well-located in the garden which used to be agricultural land and now being right in the centre of the city. [121]

.c.2. INTERIOR FEATURES OF RESIDENTIAL BUILDINGS

ally, the Najdi houses or palaces were built to two or three storeys, had valls to ensure complete privacy, and had their interior architectural nts distributed horizontally. Each building had two distinct sections: the and the female. Two entrances were provided with wooden doors at the d floor level: one for males, next to the main entrance; the other for e visitors and family members only.[122] Some narrow, internal winding or corridors both separated and connected each section simultaneously. inner corridors formed a central circulation network between the male male sections (Fig. 56 & 57).

ling to Albini, the interior of Najdian house and palaces consisted of one e courtyards surrounded by large numbers of rooms. The ground floor olid external facades, while the first and second floors had small es in the exterior walls for ventilation and light, and doors and windows

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Albini, loc. cit..
Ibid., p18. Probably the Euuropean visitor who saw the palace was either Shakespear or Philby.
Sometimes the building was provided with four to five entrance doors.

ruined, defensive buildings surviving today as most of them were destroyed during various periods of the Sa'udi States. Both the defensive and watch towers were commonly created with either a circular or square plan and were built next to the defensive walls or on strategic high places inside or near the settlement.

More secular mud-brick buildings have survived than any other kind. There were three types: the administrative; the commercial; and the residential, more particularly imarats, markets and separated shops and houses and palaces. Houses and palaces often looked a like, and often shared similar interior architectural designs. However, they differed in the size, quality of finishing and furniture. These features usually reflected the socio-economic status of the owner.

1.3.4. CHAPTER NOTES

1- As early as 1819 A.D., Captain Sadleir saw the ruins of both defensive towers and walls of Manfuha and the palace of Burra (located near al-Dawadmi town).[124] Palgrave also viewed the defensive wall and towers of the old town of al-Riyad city and provides a description of the external view of the town as it appeared in 1865 A.D:

> *Before us stretched a wild, open valley, and in its foreground, immediately below the pebbly slope on whose summit we stood, lay the capital , large and square, crowned by high towers, and strong walls of defence.* [125]

After Palgrave's visit, Captain Shakespear visited al-Riyad and gave an identical description:

> *Before us.....lay the capital, large and square, crowned by high towers and strong walls of defence.* [126]

In A. D. 1917, Philby also described the defensive walls of al-Riyad and their towers.[127] Moreover, he presents an interesting photograph of the round and square towers of the old southern wall at al-Riyad, much of which has already been destroyed.[128] As with al-Riyad, Burayda was also surrounded by defensive walls and towers, described by Doughty in 1872 A.D:

> *And from hence appeared a dream - like spectacle ! - a great clay town built in this waste sand with enclosing walls and towers and streets and houses! and there beside abluish dark wood of ethel trees upon high dunes! this is Boreyda! and that square minaret, in the town, is of their great mesjid. I saw, as it were Jerusalem in the desert!.*[129]

2- At the beginning of the Islamic conquests, the military leaders were used to choosing places within army camps or in new or conquered cities to serve as their residences and administrative centres, from which they would control the surrounding districts. However, from 17 A.H./ 638 A.D., the administrative building was built in the centre of the settlement, adjacent to the central mosque. This planning approach appeared as a definite result of the theft of money from the treasury of the central mosque in Kufa in 638 A.D. Cresswell, drawing on al-Azraqi account, describes in his book *Early Islamic Architecture* how the second Caliph 'Umar Ibn al-Khattab ordered the governor of Kufa, Sa'd Bin Abi Waqas, to transfer the position of the Central Mosque to be adjacent with his residence, in order to safeguard the treasure of the Mosque. According to Cresswell, 'Umar's instructions to Sa'd were as follows:

124- Sadleir, op. cit., pp 60 & 67.
125- Palgrave, op. cit., p 390.
126- H. V. F. Winstone, op. cit., p 58.
127- Philby, op. cit.,1922, vol 1, p 69.
128- Philby, op. cit.,1928, p 35.
129- Doughty, op. cit., vol. 2, p 339.

Shift the mosque and put it at the side of the Dar, and let the Dar be in front of it, for the mosque has people [in it] both day and night; they are the best safeguard for their treasure. [130]

As a result, Sa'd, the governor of Kufa, ordered the construction of a new palace (*qasr*) in the center of Kufa, adjacent to the Jumi' Mosque, with the treasury rooms of the mosque positioned on the right side of Qibla. From that time (638 A.D.), the governor's residence has been known as the *Dar,* and the governor as *Hakim* (ruler) or *Amir* (prince). These Arabic words were connected together generating the official name for the governor's residence; either Dar al-Hakim (*lit.* ruler's house) or Dar al-Imara (*lit.* prince's house).

The Dar al-Imara organized by Sa'd in Kufa contained two parts; one being used as a residence for him and his family; the other as a reception area where he would carry out his duties as ruler and arbiter, and where problems could be discussed. Archaeological excavations began in the Kufa site in 1936, and continued during the seasons of 1938, 1953 and 1956. The third season revealed a number of successive buildings including a square mosque and adjacent governors' residences constructed one above the other; the top one being an Abbasid building, including a mosque and Qasr- like dwelling house or *dar* similar to those that are found in the Najd.[131]

3- Historically, several types of open and covered markets were found in different places in the Arabian Peninsula before Islam; such as the open market (*suq*) of 'Ukaz and the Makka, likewise the open and covered markets which were recently discovered in Qurayat al-Faw. They included many small shops resembling those which are still found in mud-brick settlements in the Najd. Some of the open pre-Islamic markets were still in use after Islam. The first Islamic, open market established by the Prophet Muhammad was in al-Madina next to his mosque and this market was named al-manakha, a place where camels unloaded. However, according to the traditions of the Prophet Muhammad, al-Madina al-Munawara had only open markets and so his followers used to follow the same custom in new Islamic settlements, where open markets only were found. During the epochs of the Caliphs, the suq al-Madina was still open with no permanent structures. Historical evidences indicated that the governor Sa'd Bin Abi Waqas, was ordered by 'Umar to leave the suq al-manakha, with no permanent structures. However, in the time of Mu'awiya Bin Abi Sufyan (41\|661-60\|680) the suq was constructed and, still until this day carries the same historical name. The Umayyed Caliphs used also to follow the same custom in new Islamic settlements, where were found open markets, until 105 A.H./ 724 A.D., when the Caliph Hisham ordered the governor of Kufa to construct an open market.[132]

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130. Creswell, *Early Muslim Architecture. Umayyads A.D. 622-750,* vol. 1, part 1, Oxford, at the Clarendon Press, London,1969, p 26.

131. Creswell, *Early Muslim Architecture. Umayyads A.D. 622-750,* vol. 1, part 1, 1969 p 48.

132. Al-Mubarak, op. cit., p 27.

PART 2.

CHAPTER 2.1

INTERIOR ARCHITECTURAL FEATURES OF A TYPICAL NAJDIAN RESIDENTIAL BUILDING

PREFACE

This chapter analyses in comprehensive detail the interior architectural features of the typical Najdian residential building. These include entrance door and entrance hall; courtyards and staircases; kitchens and dining rooms; toilets and bathrooms, store rooms; reception halls and sitting rooms (living rooms); and sleeping rooms, as well as gardens, and roofs. In addition, analyses of spatial relationships and functions of these spaces will be provided.

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2.1. INTERIOR ARCHITECTURAL FEATURES OF A TYPICAL NAJDIAN RESIDENTIAL BUILDING

INTRODUCTION

As a result of social and religious factors, it can be said that traditional Najdian residential buildings utilise a distinct group of major interior architectural features and components that are seen continuously in houses and palaces, but are not present together in any one building. In practice, these architectural elements were employed selectively according to the specific family's needs or wishes. However, though, there are similarities in the form and decoration of these elements, the ways in which they are implemented are, of course, different from one building to another. Naturally, such differences depend on many secondary factors, but are mostly related to the social and economic status of the building's owner.

As for the planning of traditional Najdian residences, it is very difficult to define anything so distinctive as to be called Najdian design, since the plans in general in the period examined varied widely according to human activities and other aspects affecting spatial organisation. A typical traditional Najdi residence would consist (as stated earlier) of a number of floors, depending on its location and the family's status. While in practice there was a degree of flexibility of use to which most parts of these floors could be put, each nevertheless was intended for specific purposes, according to the owner's socio-cultural status, and was appointed accordingly. Each commonly included several interior architectural features. These various features could be found on any floor of a Najdian domestic building such as the houses of al-'Ajeel at Burayda (Figs. 58 & 59) and al-Dikheel at 'Unayza (Fig. 60 & 61) which have both been demolished. The first house was rebuilt within a European style using concrete. The second was in a ruined state when the writer visited 'Unayza in 1984. Its interior architectural features and its physical location were recorded by survey. The resulting plan of the building show some of its interior details.[1]

1- This plan provided by the Municipality of Unayza, was drawn when the building was still in partial use by its occupants.

2.1.1. ENTRANCE-DOOR

A typical Najdian residential building was usually provided with two or three entrances (Fig. 58 & 60), and sometimes more, depending on the building's extent, the number of inhabitants and the presence of domestic animals such as horses, camels, sheep etc. The entrance, locally termed *al-madkhal* (pl. *madhkil*) and its door, known as *al-bab* (pl. *abwab*), often denoted the status of a building, whether house or palace and also the social and economic levels of the inhabitants according to its form, shape, materials, and the methods and styles used in its decoration. This, however, was not always the case. Where, for instance, a building belonged to a man of religion, known as *al-shaykh* (pl. *shuyukh*), decoration was spurned as ostentatious, even though the owner possessed ample wealth..

In general, there were two main entrances, one for men (usually on the right hand) and the other for women (on the left hand) (Plates 51-53). However, there were sometimes another two entrances into the men's section. One was a side entrance, known as *al-madkhal al-janibi* (semi-private side-entrance), which was usually situated in one of the side façades facing onto a narrow street. It was used only by the owner of the house and his male relations. The other was large, located at the back of the house and led to the inner courtyard and stables (Plate 52 & 57).

Each of the main entrances for both men (*madkhal al-rjal*) and women (*madkhal al-harim*), were provided with large, decorated wooden doors (*bab khashabi*), while other entrances (if they were found) were also equipped with wooden doors, but which were usually unadorned. However, some of these doors were decorated, especially those of wealthy households. In fact, the decoration of the secondary doors was an indication of the wealth of the residents (Plates 54-56). The main entrance doors of both women and men's sections were the main external, decorated woodwork features of the typical Najdi domestic building. They were commonly carved, painted and incised with various geometrical and floral ornaments, and also provided with many small and large engraved pieces of wood and iron that lent them both beauty and strength (Plates 156-160) (Fig. 53). Sometimes the doorway would be surrounded with fine architraves and a raised V-shaped frieze of carved stucco which shaded the wooden door.

Where, in rare cases, ground floor level was a little above street level, both main entrances were provided with their own external staircases. In addition, adjacent to the men's entrance, there might be found a raised platform known as *al-mastaba* (pl. *masateb*)[2].It served as a sitting area for social gatherings of men (typically consisting of neighbours and various tradesmen)[3].

The areas over-head were generally decorated with geometrical apertures of various sizes and forms (Plates 54 & 55). Their function was to supply internal spaces with daylight and fresh air. The upper part was also provided with a distinctive projecting enclosure that covered the area of a small window (n° 12 in Fig. 61). This feature was usually made as either a wooden, decorated box such as those found in a number of houses in Riyadh, (Plates 62 & 63) or as a raised half dome made from stucco and mud, like those in the houses and palaces of Shaqra and al-Majma'a (Plates 64 & 65). Both these shapes were locally known as al-turam (s. tarma). Sometimes, this feature appeared as a polygonal shape of decorated mud, and was called *al-masalit*, as in some houses at Burayda, 'Unayza and al-Riyad (Plates 317 & 326-328). Originally, this feature was used on Najdian defensive buildings and also on early Islamic fortress buildings, such as the desert palaces of the Ummayyed Caliphs. The builders used to build this feature with many perforated geometrical shapes, through which a man or woman could observe who was outside, while a person who was outside could not see inside. Socially, this feature was created for the use of women, simply to enable her to know who was knocking on the door, but local habits decreed that she was not allowed to talk to them. Geoffrey King saw such an example decorating the upper part of doorway of an unknown mud-brick house at Burayda. He described this form and named it *katula*:

> *A simple V-motif decoration in relief formed a pediment above the plain wooden door. This was surrounded by a plastered aperture reminiscent of embrasures found on Najdi fortifications. It enabled the occupants to see and speak with those outside the house door without being seen themselves and it was called a* katula. [4]

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2. It was raised up to between 60 to 80cm, was built of a variety of materials including mud, stone and stucco, and was usually finished with two or three layers of pure mud or stucco.

3 Seating platforms such as these were built in the area between the men's entrance and that of a small shop, such as might be found in side streets where the shop occupies a small part of a domestic house.

4. King, op.cit.,1998, p 144.

2.1.2. ENTRANCE HALL

The entance hall was usually desinged with either an L- or T-shaped plan, its inner part (hall or lobby) positioned next to the main entrances, whether in the men's or women's sections (Plates 58-61, 83 & 87) (no. 5 &18 in Fig. 58) (no. 1, 13 & 26 in Fig. 60) (no. 1, 21 & 26 in Fig. 68).[5] Names for the entrance hall can vary locally. In the Najd, it is called *al-mijbab,* while in the cities and villages of Hijaz and Bilad al-Sham the word *al-dahliz* is used. In Arabic there are also terms *al-baho* and *radha* meaning vestibule. In earlier periods of Islam, this style of entrance hall was called *al-madkhal al-muncasir* (pl. *al-madakhil al-muncasirah*), which means cross, or winding, entrance. This type of entrance hall was very important in both Najdian and early Islamic houses and palaces for two reasons: firstly, it was the first internal space, serving to separate public (outside) and private (inside) areas; secondly it admitted daylight and ventilation from outside to inside by way of horizontally and vertically arranged, geometrical, holes carefully located in the top part of the main door *Bab al-Madkhal.* Such perforations were especially important in those houses that did not have inner, open courtyards.

The earliest examples of these entrances (either L - or T - shaped) were found in various domestic houses in the cities of Baghdad and Samarra (Samura') in Iraq, dating from the 9th century A.D. Other important examples, from the eras of Attabican (*al-Atabica*) and Ayyobid (*al-Ayubiyeen*) have been found in houses both in Egypt and Syria. Some of these entrances, such as those of Samarra, were fully decorated with fine geometric and floral ornaments. Similar L - or T - shaped entrances in Najdian domestic buildings belonging to wealthy households had large areas and were decorated with various styles of ornamentation, together with many different internal architectural elements, including apertures known locally as *al-taqat al-maftuha,* and small wall reccesses and niches. The entrance floor was commonly paved with fine, hard layers of mud or stucco mixture. In contrast the entrance areas in poorer houses were very narrow, their mud floors were rough and walls were plastered with undecorated mud , few being finished with stucco.

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5. The entrance corridors to both sections lay beyond the main doors and usually had a 90 degree bend so that nothing further could be seen from the street.

In these small houses, belonging to the poor, there was only one main entrance and the *mijbab'* gave access to the inner spaces of both the men's and women's sections. It also led directly to the men's sitting room and men's staircase which, in turn ascended to another, upper, men's sitting room on the first floor (no. 1 in Fig. 64).

2.1.3. STAIRCASE

Staircases were to be found in most traditional, Najdian houses, their number depending on the size of the building. In the small houses of the poor there might be only one staircase; while in large houses and in palaces there might well be four or more (Plates 66 & 67, Figs. 58-61) The staircase is known locally as *al-silam* or *al-daraj*, and was constructed for use by both guests and members of a house in order to connect areas on different floors.

In smaller houses, at least one staircase was usually found in the *mijbab* located very close to the main entrance in order to conduct male guests to upper sitting rooms on the first floor level and sometimes to other areas of the upper floors (Fig. 64). This type of entrance staircase was also common in many houses and palaces of the wealthy, the design of which dates back to the Najdian residential buildings of the 17th and 18th century A.D. In fact, this arrangment was very well suited to Najdian society of the 17th, 18th and early 19th centuries A.D. serving, as it did, their customs and traditions which were originally based on Islamic laws. Its location gave a guest full freedom to reach the upper sitting-rooms without any kind of contact with female inhabitants and prevented them from observing the inner, private spaces, which were indeed designed to be used only by family members.

Additionally, staircases in other buildings from the 18th and 19th century were sometimes found in the privacy of the inner places of both the men's and women's sections. Some of them were located in the middle, inner areas close to the open or covered courtyards, while others were found at the furthest part of the house and were separated by either enclosed or open corridors or lobbies. The middle staircases of the women's section provided access to all the rooms on both the first and second floors (Plate 68), while those of the men's section led to upper sitting rooms and *rawshan* area on the first floor (Plate 69).

2.1.4. COURTYARD

The interior space of a typical residental building in Najd, whether house or palace, is generally provided with different forms of courtyards, all of which are found originally in the earliest Najdian houses and palaces of large and middling size, and sometimes even in smaller houses (Plates 70 & 71). Archaeological evidence from a site at Qurayat al-Faw shows that most of the Najdian houses from the 5th Century B.C. were supplied with these important interior elements:

> *The discovery of a number of rest-house or hotels. This is best demonstrated by the unit which is situated on the north-eastern part of the southern sector. The dimensions of this rest-house, or caravanserai, are 28 metres by 18 metres. It has a large courtyard surrounded by rooms on all sides.* [6]

Data from the excavations at Rabadha city reveals the continuing use of the courtyards fifteen hundred years later in the buildings of Najd during the 9th and 10th Century A.D. Originally, the appearance of the courtyard was not limited to Arabic and Islamic architecture: its roots go back to earlier human civilizations in Syria, Babylon and Assyria. This element, which is a natural feature of most earlier buildings, appeared as the result of many social and environmental factors. In Najd, as with other Islamic countries, this factor affected the uses and lay-out of the interior spaces of the building leading to the creation of those elements which offer residents privacy, freedom and comfort.

Unfortunately, not all such features have survived. A field survey has shown that many of the remaining central, small houses (compact style) in various mud-brick settlements have, for instance, lost their interior courtyards. Few of the central houses in places such as Tuwayjari, Rabi'a in Majm'a and Suba'i in Shaqra are now furnished with these elements. However, the surrounding attached and free-standing houses and palaces are still provided with these features. From the accounts of both European explorers and geographers it is clear that the internal courtyards with their gardens were the hallmarks of Najdian mud-brick architecture which answered the needs of the inhabitants of this part of Sa'udi Arabia.

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6. Al-Ansary, Qurayat al-Fou..., 1982, p21.

The Najdian house is commonly equipped with two types of interior centralized courtyard, one covered, the other open. Each one has been traditionally situated in a suitable position with regard to its role in the house, and was equipped with the traditional utensils and artefacts of the culture. According to the oral tradition of older people in Najd, interior courtyards of both types performed special functions. Some of them were built for use by women, and others for men. However, even if there was first-hand information from older people, knowledge concerning the courtyards' functions, and whether the users were male or female, from analysis of the organisation of space and the type and distribution of cultural artefacts could be established.

2.1.4.a. COVERED COURTYARD

This type of interior covered courtyard is found in both the men's and women's sections. The men's courtyard was relatively unimportant, consisting of a small covered lobby, connecting two other places. It sometimes overlooked the open central courtyard, and was known in Syria as *al-liwan* or *iwan* while in Najd *al-kashif* (no. 31 in Fig. 58). The women's covered courtyard, on the other hand, was very significant. According to the accounts of older locals, it was the heart of the women's section and the central arena for those activities performed by women within the closed area. It was, also, the first place to be designed and the other interior spaces took their forms from, and were organized around, it. The women's section ordinarily included two covered courtyards; one located on ground floor; the other on the first floor.

THE WOMEN'S COVERED COURTYARD, GROUND FLOOR

The common local name for this style of courtyard is *al-Quba*, and sometimes *Majma al-Nisa* (pl. *Majama al-Nisa*) or *Majlis al-Harim* (pl. *Majalis al-Harim*) which means 'a place where women gather together' (lit. sitting together) (Plate 68) (no. 9 in Fig. 58) (no. 16 in Fig. 60) (no. 6 in Fig. 64) (Fig. 66). As mentioned previously, it was usually located in the centre of the women's section, designed in a square or rectangular form covering a large area in both large and small houses.

Rooms of different sizes and forms were ordinarily built around it, such as: reception rooms, a kitchen, storage rooms and, in very rare cases, a bedroom. Their façades, windows and doors overlooked this courtyard, providing more privacy and isolation from other inner places. The roof of this courtyard was made of strong wooden beams and thinner joists, which rested on the thick walls of neighbouring rooms. In some houses with wealthy owners, it was also carried by two or four central columns, thus helping the surrounding walls to support the heavy structure of the large roof (Plate 72). In the central area of this roof traditional builders used to make a square or rectangular aperture, through which the roof of first floor was visible.

This courtyard received natural light and air through the surrounding opening windows, doors and other entrances, while light was provided at night by oil and kerosene lanterns, which were usually placed in niches in the surrounding wall.

From this courtyard the other areas of the women's section could be reached, such as the entrance hall and open courtyards; and by the inner staircase the upper floor and walled roof could be also reached. Sometimes other houses could be reached via a small cross-passage connecting the central, inner corridors which themselves in turn connected the men's and women's sections of a Najdian house.

THE WOMEN'S COVERED COURTYARD, FIRST FLOOR

This courtyard was usually built above the previous one and resembled it in most respects. Only a few differences could be noted: such as the decoration and the beautiful, three-dimensional, low, mud-brick wall which commonly surrounds the central opening (this is the aperture which appears in the ceiling of the covered courtyard). The surrounding rooms of this courtyard were mostly bedrooms and, because of this, it was called *rawshan* or *al-Misbah* (pl. *Masabih*) which means 'morning'. This was when women of the house could be found with neighbours drinking tea and coffee and eating dates (Plates 73-75) (no. 1 in Fig. 59) (no. 1 in Fig. 61) (no. 4 in Fig. 65) (Fig. 66). In very rare cases a small kitchen was associated with the bedrooms around this courtyard.

Structurally, this courtyard does not differ from the previous one; its ceiling rested on the walls surrounding it and was also carried by central columns on occasion, which enclosed a central opening joined together by a low mud-brick wall.

As mentioned above, their dissimilarities are signalled by differences in their interior decoration, even if, to the eye of a casual visitor, they might appear alike. That is because the traditional artist used the same decorations and the same raw materials in both places. Where the distinction really lies is in the styles used in the decoration, the quality of the raw materials and the formation of the ornaments. The interior decoration used in both closed courtyards also appeared in the wood-work; including roofs, windows and doors, as well as in the low walls of the central opening overlooking the courtyard. The decoration of the woodwork consists of carved, pointed and burnt ornamentation, which varied in size and form, including geometrical, floral and symbolic elements.[7]

2.1.4.b. OPEN COURTYARDS

The Najdian typical house was usually provided with this type of courtyard in both the men's and women's sections, and, due to its functional diversity, was a very important interior feature (no. 22 & 2 in Fig. 58) (no. 30 in Fig. 60). It was also considered as being very necessary, and its importance clearly appeared in houses lacking both covered and open interior courtyards, where residents would be compelled to use empty, walled spaces on the roof instead. Such cases can be seen in some central compact houses of various Najdi mud-brick settlements.

With few exceptions, a typical Najdi domestic building was commonly supplied with three open courtyards, one located in the men's section, the other two in the women's section. Each one of them was well designed in a distinctive form, was provided with varied elements to best serve its different functions and usually occupied a prime location within the building. The men's open courtyard was usually centralized within the men's section, while the women's open courtyards were not.[8]

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7. According to the opinion of older people in al-Majma'a and Shaqra.
8. Women's sections in wealthy houses were usually designed with central, open courtyards similar to those found in men's sections, that in addition to two or three

MEN'S OPEN COURTYARD

This courtyard usually occupied the centre space of the men's section and was surrounded by one or two magnificent rows of colonnaded open porticoes (Plates 76, 77, 79 & 80) (Fig. 67), or by two rows of colonnaded arched open porches (Plates 78 & 81-82). These features (porticoes) were usually built with an L, I I, or ❑ plan overlooking the open courtyard, one above the other - the lower row located on the ground floor, while the second one was at first floor level. Their roofs were usually supported by round or square stone columns, and were enclosed by low decorated mud-brick walls. The common name of this courtyard was *Housh al-Rijal* (pl. *Ahwash al-Rijal*) or *Fina al-Rijal* (pl. *Fina'at al-Rijal*). In the northern area of the Najd, it was sometimes named *Bahit al-Rijal* (pl. *Bahat al-Rijal*), which means 'the place of men'. It was ordinarily built with a large square or rectangular plan and its floor consisted of very fine, dense layers of mud mixture. In large houses, the central area of this courtyard is generally provided with a small garden (Plate 77).

In 1937, during the visit of Dame Violet Dickson to al-Riyad, she provided an interesting description of the main architectural and decorative features of the men's open central courtyards of the al-Badi'a guest palace:

> *The palaces and gardens occupy about two-thirds of the area,...the palace for which we were bound,...It is a fairly building...It consists of two courtyards with rooms around each, both upstairs and down, and a smaller courtyard for the servants....An upstairs veranda about twelve feet wide runs round the whole courtyard [the porticoes]. It is supported by stone pillars covered with white plaster (juss)....The veranda is enclosed by a wall made of mud and juss. This is about six feet high, the top of it being shaped rather like the heads and shoulders of a long line of men, each over a small triangular opening between high, round pillars of stone and juss, which in their turn support the roof of the veranda.* [9]

The functions of this courtyard were diverse. As shown by historical documents and confirmed by the accounts of older men, this courtyard was used as a sitting area (open reception place) for male family members and visitors during fine weather in the morning, afternoon and at night. Philby refers in his account to the open-air sitting place of the Imam 'Abd al-'Aziz and called it *Majlis* as it is known in Arabic:

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open courtyards located at the back of houses, see Geoffrey King, op.cit.,1998, p 144.

9- Dickson, op.cit.,1956, p 380.

The meal was served in a portico adjoining the open-air Majlis, the tray being brought in and spread before us. [10]

Its interior was pleasant and well designed, its beauty clearly apparent in the pleasing organisation of its space and those adjacent, together with the textures and decorations used on the façades overlooking its interior, which in this courtyard can vary considerably. For example: the abstract mud, high reliefs on the façades of the porticoes; the stucco reliefs of the façades of portico-rooms; and the adorned woodwork of porticoes and their rooms.

Certain features and decorative fine art elements of this courtyard will be analysed and discussed in the next chapter. But in general, from the artistic point of view, these fine art features enhance the interiors by their harmonious colours (either self or applied colours); and by their projected and hollow areas, creating shadow and light on the façades by making them visually distinguishable. At the same time, by means of just a few natural, raw materials used to produce all these various features, the creative abilities of the traditional designer were no batter exemplified.

THE FIRST WOMEN'S OPEN COURTYARD

This courtyard was usually located right at the back of the women's section, separated from the rear, neighbouring lane by a high mud-brick wall (Plate 84) (Fig 60). Through this back wall opened a large, high entrance which was provided with a wooden door, allowing access for loaded camels, and other animals such as horses, sheep and goats, directly into the courtyard. In larger mud-brick houses this courtyard consisted of a large square or rectangular area, divided by its owner into many small spaces, each one of them with a specific function.

At the very rear of the courtyard, close to the entrance, there was usually a pound, located in an appropriately large area, for keeping animals. This pen was partially covered with by a low, flat, wooden roof coated by layers of mud-mixture and surrounded by a low, mud-brick wall (Plate 83). Mangers were sometimes built close to the main, high wall where animals fed on hay and straw, and copper feeding troughs were usually distributed around the enclosure .

10- Philby, op.cit.,1928, p 243.

Near the pound was a small, mud-brick coop with a latticed covering for poultry and there was also a water well (*haser)* located in another area. Water was drawn by traditional methods using a wooden pulley called *mahalah* and a thick rope called *rashaa* which was attached to a leather water-bucket or *dalu.* Close to the well there were two large stone basins, more usually found in large houses, used for washing clothes, and a large storage room used for wood and animal food.[11]

THE SECOND WOMEN'S OPEN COURTYARD

This courtyard was generally located in the middle area, between the first courtyard and living area of the women's section, generally occupying a small square or rectangular space (Plates 86 & 87, Fig. 60). It was surrounded by a high, solid wall and those parts of the house which overlooked this area. Occasionally, however, in houses belonging to wealthy people or to artisans, it occupied a larger area and could be bigger even than the first courtyard . In Najd, rich people usually preferred to build large courtyards within their houses as a matter of prestige, as well as to afford them a fine climate, fresh air and natural light. Artisans favoured large courtyards, too, so as to be spacious enough for keeping the raw materials they used. This space could be accessed in two ways: either through the first courtyard: or, across the closed living area of the women's section via a small entrance hall leading to a wooden door which opened towards the courtyard. In some houses it could also be reached through a small wooden door which opened on to the neighbouring main street.

Various architectural features were distributed within the courtyard, such as the storage area, kitchen, washing area and water-well, in addition to some open spaces used by women for various purposes. The storage area consisted of two large, mud-brick rooms separated by a small hall connecting this courtyard and the first. One was used for the storage of dry wood, and the other for stocking various foodstuffs such as wheat, corn, dates etc.

A kitchen was usually built close to the wood store, surrounded by two facing, low mud-brick walls in addition to a third, high, main wall, partly covered by a low, flat, wooden roof (Plate 85). Three fire-places were distributed within,

11- This information was provided by the local inhabitants of al-Qasim.

each one consisting of a small pit, with its rim surrounded by three stones on which food vessels and baking tins were placed. In rich houses, this kitchen was usually built in circular plan, created with a tapering form of mud-brick construction. One fire-place was commonly built within and provided with a mud-brick venial duct (Plates 90 & 91). Close to the kitchen was a water well and a washing area (for example, for wool, rugs, cloths, cooking vessels). Neighbouring the well was a washing area consisting of two stone basins of different sizes, each of which had one or two openings at the bottom for drainage, equipped with cloth-covered, conical wooden bungs. In some houses, near the washing area, there was a bathing room. In another corner of the courtyard, close to the wall overlooking the main street, there was also a very small basin planted between two or three palms trees, where usually women sat in the afternoon weaving wool and making carpets, rugs etc.

2.1.5. GARDENS

The most common interior features which distinguished and complemented the typical houses and palaces from the 18th and 19th centuries, were the open gardens. These were the most significant feature used in mud-brick buildings for reducing the air temperature of the interiors. The majority of the mud-brick building design of Najd were provided with this necessary interior feature, especially the wealthy houses and palaces. These buildings were supplied with not only one centralised garden, but with two or three, in which the living area appeared as only a small feature within a large green area. In 1919, Philby visited two gardens of this type in al-Riyad city. From his long description one can sense how beautiful and wonderful these gardens were in the past. The first was the garden of al-Badi'a, which belonged to the palace of Sa'ud Bin 'Abd al-'Aziz. About this garden he said:

> *Of all the groves none can beat the Badi'a garden, which was being planted with palms when I was there fourteen year. It appeared to belong to the Amir Sa'ud, who claimed to have 1,200 palm-stems all in their very prime of fertility. At the further end of the garden from the palms was the well...A part of the garden is shut off from the main section as a fruit orchard where vines, peach-trees, etc....The door of the garden was always kept locked as it was a retreat for the ladies of the palace and their hand-maidens.* [12]

The second was the garden of *al-Masani*. It was located in the south of al-Riyad and surrounded a large palace also belonging to the al-Sa'ud family. In

12- Philby, op.cit.,1946, p117.

the early 19th century, this garden was considered one of the largest and most beautiful gardens in the city and in the whole Najd region. Philby said about this garden:

> *It was indeed a lovely garden with it trellised vines and massed peach-trees in the shade of the tall palm rising out of a veritable riot of grass and weeds, on which the sumptuous banquet was spread out a huge white cloth...'Masani' is a large area of palms at southern extreme of the Riyadh Oasis.* [13]

Najdian interior gardens played an effective role in the early mud-brick buildings. Apart from the aesthetic aspect, giving the interior an attractive appearance, they helped decrease the air temperature, purifying it from the dust and sand, and providing shade and coolness for the interior spaces. Gideon S. Golany notes the significant environmental role of a green area within the interiors:

> *....the addition of trees within the arid urban space improves ambient air temperature because vegetation absorbs radiation and converts it to chemical energy through the photosynthetic process.* [14]

2.1.6. STORAGE AREA

The storage dedicated was a place known locally as *al-makhzan* (pl. *al-makhazen*) and was the interior area most commonly found in virtually all styles of traditional domestic building in the Najd. It served for storage of various kinds of traditional product, whether of food such as dates, wheat, and barley, or artefacts such as tools for tillage and other simple, manufactured goods. Because it was a very important and necessary facility for the people of Najd, a large space would commonly be allocated to it within a single house. This was especially true of farmers' houses and of those who either dealt in or manufactured simple goods, the latter commonly using much of the house's ground floor area for such activities - which might include tanning and the manufacture of leather goods; the dyeing of wool and weaving; or sometimes carpentry and the manufacture of architectural wood-work.

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13. Ibid., p119.
14. Gideon S. Golany (ed.), *Design for Arid Regions*, Van Nostrand Reinhold Co. Inc., New York and London, 1983, p 11.

The inhabitants of Najd, whether rich or poor, would build at least two large rooms to serve as storage areas for foodstuffs for both humans and animals and this was the case in both small and large residential buildings (no. 4 & 14 in Fig. 58) (no. 6 & 7 in Fig. 60). The family storage room was known as *makhzan al-aila* (*lit.* family storage), within which there was a small building known as *al-jassa*, which was the most important storage area for every Najdian family of the time. The fodder storage room was named *makhzan aHayawanat* (*lit.* animal storage) or *al-safa*..

1- Al-JASSA

The interior space known as *makhzan al-aila* (no. 6 in Fig. 60) was usually sub-divided into many areas in which dry foods for human consumption were commonly stored and in one of these areas the *al-jassa* was ordinarily built. The *al-jassa* was a small rectangular stone building (approximately 1.30m. high, 1.50-2m. in length and 80cm wide), and was used for the storage of palm-dates for at least seven months of the year. The building was usually roofed with long, thin slices of stone with a small opening in the middle of the roof itself or at the front of the building (Plates 88 & 89). Through this opening, the building was gradually filled with layers of dates which were then pressed with a large piece of stone in order to protect them from spoiling. The opening itself was often covered with either a piece of stone or heavy wood. At the base of the building, in its middle section, there was a circular opening, which ranged in size from 10cm. to 15cm., from which family members would collect molasses that would come from the pressed dates.

AL-SAFFA

This was a large room, measuring approximately 3m. high, 4-12m.long and 2.5-3.5m. in width (no. 7 in Fig. 60). Sometimes it would be larger than this, while its roof typically rested on two or three columns. The *al-Saffa* was always located at the far end of a house, close to the secondary back-entrance and next to the stable. It was used for storage of different kinds of animal food, including barley, straw, hay, chaff, and millet. In poorer houses, it was also served as a store for basic human foods, such as wheat, lentils and beans.

2.1.7. KITCHEN

The kitchen is an important and distinguished interior architectural feature of the Najdi mud-brick house (Plates 91-91, e). In fact, its arrival represented the second developmental stage of the type of kitchen found in the Najdi tent. This fact is clearly demonstrated by the materials and their employment in its construction, which are alike in both the tent and the mud-brick house. The difference between both interiors amounts to no more than a few variations in the raw materials used and their structural form.

Even though the interior space of the kitchen was very important in the small mud-brick houses which were built without an inner open courtyard, it was unnecessary in those larger houses who had sufficient open areas. Women living in large houses preferred to occupy a strategic place in their open courtyard, setting up an open kitchen, where smoke from the fireplace was free to escape and did not harm their eyes.

In Najd and other areas of the Arabian peninsula, indeed in most cities and villages of the Arab countries, the kitchen was known as *al-matbakh* (pl. *matabikh*). In small mud-brick houses, only one kitchen was found, while up to three could be located in large houses and palaces. The main one was always located close to the women's sitting room in the women's section. One of the other secondary kitchens was an open kitchen occupying a strategic place in the open, inner courtyard (as mentioned previously). The third could be open or covered and was usually located in a prime position on the roof of a house. Sometimes, a fourth kitchen could be found in large, important houses or palaces, such as those belonging to princes and high status merchants. In this case the kitchen was built in an appropriate part of the men's section and was used by slaves who, commonly, were the cooks on important occasions.

The main women's kitchen usually occupied a large square or rectangular area of the house, though its size and form varied (normally about 3m. high, 5m. long and 3m. in width) and was built with high walls that were provided with many niches and holes. It was supplied with recessed cupboards containing wooden shelves (Plates 91, e) and with small pieces of wood fixed into the walls. From wooden roof-beams, which were of different shapes and sizes, ropes of various lengths were dangled. These were used to carry and

store various items, including storage containers such as woven woollen bags and leather bottles in which special foods were kept.

Near the door, a large open square or rectangular recess was usually formed in the wall for the storage of firewood and the dried livestock droppings (*jalah*) that were used as fuel. Close to it small niches (Plate 91, d), and a store area were also built, with two decorated wooden shutters and higher shelves for storage of the dried food such as rice etc. Away from this storage area, in one corner, a fireplace was built. In Najdian kitchens from both the 17th. and 18th. centuries, this fire-place was built without any kind of chimney or flue; smoke was commonly released through a hole in the roof. Moreover, early 19th. century kitchen fire-places were provided with mud-brick ducts connected to an upper hole where the smoke was directed (Plates 91 & 91, c). Semi-modern, mud-brick houses that were built later were provided with an iron rack to cook from. Another two fire-places, consisting of sunken stoves with three cooking stones on which baking tins were placed, were used by the women when baking flat loaves of bread.

2.1.8. TOILET AND BATH

Locally, the toilet and bathroom were known as *al-kanif* at al-Riyad and Burayda,[15] while in some cities, such as 'Unayza, al-Majma'a, Shaqra and Aushaqer (genarally in all Sudayr area) , the term *al-burg* (pl. *abrag*) (mean a tower) was used. In all the Najdi cities and villages, in common with other Sa'udi Arabian settlements in both the Western or Eastern regions, it was also known as *al-hamam* (pl. *hamamat*). It might rarely be called *al-mirhad* (pl. *marahid*) by the inhabitants of the north-west of Najd, particularily those who had contact with peoples from al-Hijaz and al-Sham where this was the name used, in addition to *bait al-mi* (pl. *biyout al-miyah*) meaning water closet.

According to the accounts of some older Najdian people, dry toilets, presumably, were not put into use in Najdian houses before 1900 A.D. [16] Most people were accustomed to using areas away from residential living places, for example: shallow pits or trenches; or sometimes an enclosed area

15- The toilet was also known as *al-Kanif*.in some northern cities and villiges in Najd such as al-Jawf and Skaka.

16- Accourting to 'Abd Allah Su'ud al-Falaji in 1996.

in a nearby garden or field. Inhabitants of large houses or palaces would most often use their large garden, which was some distance from the living area. From about 1910 A.D., residents began to choose small, neglected areas within their houses, commonly at the far end of the courtyard, as a location for a toilet. This area was of course usually surrounded by high walls and was partly covered by a low wooden roof, giving a person greater isolation and privacy. When the excrement was dry, the owner of the house, or special labourers, collected it and took it to the field to be used as fertilizer.

However, archaeological evidence from the city site of Qaryat al-Faw indicates that dry toilets as such were used in various Najdian houses and public places from the 5th century B.C:

> *The market has two storeys and is topped by the roof. It appears that cubicles were built on the outer edge of the roof. It seems that these cubicles were used as Lavatories particularly in the eastern and southern sectors, as we found many Lavatory seats and human refuse along the exterior face of the ramparts.* [17]

But unfortunately, from that time until the 17th Century A.D., we have little historical and archaeological data indicating that the people of Najd were accustomed to using special places within their houses as toilets during. Moreover, we have no archaeological evidence from the 18th. and early 19th. Century. However, the plans of some ruined houses, which could date from the mid 18th Century, in al-Dir'iyya, al-Majma'a and 'Unayza, suggest that the inhabitants of Najd used a dry toilet in their residential houses. Philby, saw the bathroom of the King 'Abd al-'Aziz in the al-Riyad and described its form and furniture as appeared in 1917A.D.:

> *The bathroom consists of a small vestibule, giving access to the bathing apartment, beyond which is the privy, the latter a small room without other furniture than a pile of stones for an obvious purpose and a slightly raised platform of clay with a runnel sloping down to a hole in the centre; the bathroom furniture consists of water vessels of brass or pewter....*[18]

A toilet could be found anywhere within the house, but in general, it was usually located in a neglected area or either at one corner or under a staircase. In the Sudayr area, and some mud-brick settlements of north-west Najd, the toilet was built so that its form protruded from the main building in a rectangular or conical tower (square or circular in plan), and because of this was called al-burj (Plates 92 & 93). In other settlements it was organized in

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17. 'A. A.. al-Ansary, *Qaryat al-Fau....*,1982, p18.
18. Philby, op.cit.,1922, vol. 1, p 66.

the same way as other interior spaces, without any unusual exterior architectural features. In both cases, it usually occupied a small area off the house and its floor was provided with a stone basin, or even a small circular hole, covered with a layer of stucco. The toilet walls (interior elevations) of some houses were provided with small niches where oil lanterns and soap were usually kept and their upper parts terminated in fine crenellations of various shapes (Plates 94 & 95), thereby ventilating the space.

The floor of the toilet was commonly coated with very fine, strong, layered, mud mixture which was sometimes covered with additional layers of stucco. In large houses and palaces such as the guest place of the king 'Abd al-'Aziz in al-Kharj, the floors of toilets used to be finished with a special, structured treatment starting with a layer of small stones covered by another layer of mud mixture, and finished with fine layers of stucco, and their walls used to be highly decorated (Plates 96 & 97). These toilets were closed with wooden decorated doors; unlike the toilets of poor houses in earlier versions where a piece of cloth was commonly used.

In all these cases builders contrived to tilt the floor surfaces towards the basin hole which was itself close to the back wall, this was because a toilet area was also used for bathing and this let water flow easily towards the hole. Larger toilets were supplied with water by means of metal storage tanks, which were used with various utensils, such as ceramic jars and copper or aluminium kettles; small toilets were at least provided with an iron pitcher, known locally as *ibriq al-mai* (pl. *abariq*).

Ground floor toilets emptied waste directly into an unplastered depository, while those on upper floors were usually connected with a plastered duct giving access to the depository. Waste was removed from time to time by designated workers.

2.1.9. BEDROOMS

The bedroom was a very important feature in mud-brick buildings of the Najd. It was a fairly old custom in wealthy houses and palaces for it to be a separate room used only for sleeping. However, it was often a multifunction space in poorer houses, being used for sleeping during the night and as a

sitting and reception place in the course of the day. However, in the poorest houses it was further used as a work area in addition to those other functions noted above. Because of their multiplicity of function, the bedrooms in poorer houses were relatively large in comparision with those in the houses of the rich, thereby accommodating a large family at night and a variety of activities by day (Plate 101). The height of bedroom commonly ranged between 2.5m to 4m, the length from 6m to 13m. and the width from 3m. to 5m. Its furnishing was nominal but could be crowded depending on the size of the family and the status of the owner. Their walls were always provided with niches and generous wall-recesses, sufficient to store the large furnishing objects and various items used during other times of the day (Plate 238).

Yielding to the desire of the princes, shaikhs and traders (rich people or those of high status) architects designed guest areas in the houses and palaces in both men's and women's sections with spacious bedrooms. Some of these rooms were built on the ground floor, the other important rooms always being erected at first floor. The latter were usually built in both the men's and women's sections around the *rawshan* area (known the women's section as *al-Misbah*), over the lower main reception room at ground floor. Locally, these rooms were known as *rawashen* or *ghuraf al-rawshan* (the rooms of the rawshan). Interesting examples of this style of bedroom are still to be seen in some mud brick houses such as: al-Rabi'a in al-Majma'a; and al-Basam, al-'Ajeel in Burayda (Fig. 59); and also al-Dikheel in Unayza (Fig. 60).

In some wealthy houses and palaces, the main bedroom on the ground floor in the men's section was sometimes adjacent on one side to a separate bathroom and, on the other, to a reception room or bedroom. This kind of interior architectural arrangement, in association with the open courtyard and other rooms within Najdian residential buildings, all combine to provide comfortable accommodation areas. The interior spaces of the palaces of the Sa'ud Family such as al-Badi'a, al-Muraba', al-Futa and al-Masmak in al-Riyad city, as well as those in al-Kharj, are all notable for their architectural composition. The size and style of interior features (including the furnishings) of each bedroom vary from one building to another depending on the volume of the building and status of its owner. Generally, the dimensions of the bedrooms ranged from 4m to 5.5 in height, 5m to 7m in length and 3.5 to 6m in width. They were often provided with exterior windows in addition to the interior windows, a number of high, side-apertures (created in the wall that

overlooks the side-street or the interior garden) together with niches both large and small in addition to wall-cupboards. Walls and ceilings of some bedrooms were adorned with fine multi-coloured motifs. Examples of these bedrooms can be found in the palaces of the King 'Abd al-'Aziz in al-Kharj city (Plates 98-100).

Furnishings usually consisted of a number of floor-mattresses, pillows, quilts and carpets or rugs, in addition to items such as chairs, boxes and mirrors. The women's bedrooms look like those of the men, although their decoration and accommodation differed somewhat. These were well provided with good furnishings, including mattresses, quilts, pillows, carpets, rugs and boxes of various sizes. In addition, their walls were often supplied with niches, mural cupboards and projecting cupboards, while a display of ornaments would reveal the taste of the occupant. Competition among the women would result in a great deal of ornamentation, reminding us of the rooms assigned to women in Samarra (in Iraq) houses which were exceedingly beautified in comparison with the men's quarters.

2.1.10. RECEPTION ROOMS

Najdian traditions and custom held foreign people in high regard and compelled the inhabitants of Najd to honour guests and visitors. This led them to build large guest areas and to include a number of reception rooms (ghuraf al-istiqbal) in both the men's and women's sections. In addition, particularly in the men's section, toilets and baths, sleeping rooms, a dining room and open sitting places etc. were also provided, where visitors were served, rested and were offered the generosity of Najdian hospitality. In the poorer houses, typically belonging to labourers, the residents were commonly satisfied with a small reception room which was located close to the main entrance, either on the ground or the first floor; while in rich houses and palaces, the number of reception rooms ranged from two to four in each part of a house. Their sizes and locations were diverse: some were found close to the main entrance on both ground and first floors; while others were located in the depths of the men's and women's sections and could be found on any floor.

Whether reception rooms were built close to the entrance hall, or in the depths of the house, they, in general, had somewhat the same fundamental and necessary interior elements. Such differences as there were between them usually appeared in their size, form and decoration and corresponded to the social and economic status of the owner, the house's location and the size of family. Rich people from the upper classes, such as princes, Sheikhs (though not of religion) and traders, usually built large reception rooms with high ceilings (these reception rooms were about 5m high, ranged in length from 8m to 10m, and measured between 3.5m and 7m in width) and featured various styles of furnishing and architecture, richly decorated with different types of carving, painted stucco and wood. Palgrave describes the dimensions of the reception room of Qasr al-Hukm (the ruler's palace) in al-Riyad as it appeared in 1886 A.D:

> *The K'hawah itself is sufficiently large, about forty feet in length and of nearly equal width, but low and ill-lighted.....But in ornament the Parisian pile has the better of it, for there is small pretension to architectural embellishment in his Wahhabi Louvre.*[19]

Poorer people of various classes commonly provided their reception rooms with very simple, basic furnishing and rough architectural features and decorations (Plates 127 & 128). The rooms were about 3m. high and ranged in length from 3m. to 5m. and in width from 2.5m. to 3m. The reception room of 'Abd Allah al-Kenneyny in Unayza is described by Doughty:

> *.....He led me to his house gate not far distant; and entering himself by a side door he came round to open for me: I found within a large coffee-hall spread with well-wrought grass matting, which is fetched hither from el-Hasa. The walls were porgetted with fretwork of jis, such as I have seen at Boreyda. A Persian carpet spread before his fire-pit, was the guests' sitting place; and he sat down himself behind the hearth to make me coffee. This was Abdullah el-Kenneyny, the fortunate son of a good but poor house.* [20]

On the ground floor, the reception room, which was located off the entrance hall, usually occupied a small area of the house and was built with a low, flat, wooden roof and two doors: one for visitors, opening from the entrance hall; and the other for residents, which opened on to the inner rooms and courtyards of the house. In the upper part of the wall which overlooked the adjacent street, small openings were made, allowing fresh air to enter and smoke to leave. Inner reception rooms, on this floor, were usually larger than those previously mentioned and were designed and built with high quality

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19- Palgrave, op. cit., p 397.

20- Doughty, op. cit., pp 367, 369.

materials. They had high, flat, wooden roofs, with some windows which all opened towards the portico which overlooked the open courtyards. The doors, windows and ceilings were either of tamarisk or palm timber and were decorated in many colours. Visitors usually crossed the entrance hall and entered the courtyard through a small hall and then reached the reception room, which, with its neighbouring room, was usually surrounded by fine porticos.

On the first floor, a reception room was either built close to the main entrance or, conversely, far away from it. In the first case, it was located near the top of the staircase ascending from the entrance hall and its main door opened on to a very small area (approximately 150 cm by 150 cm). This type of reception room, was not all that different from the one below (i.e. the entrance hall reception room on the ground floor) except that, instead of a row of mural ventilation holes, it sometimes had a single, large hole in the ceiling, known as *al-samawah* or *al-bagadir*, which let in light and provided ventilation for the smoke generated by coffee making. In the second case, the reception room could be located anywhere on this floor, or even on other upper floors, and was reached by means of a long corridor. However, it was most commonly found above the ground floor reception room, known as a *rawshan* (pl. *rawashin*) as in al-Tuwayjari house. Interestingly, the term *rawshan* is not mentioned by any of the European explorers. This type of reception room (i.e. *rawshan*) in addition to that built in the depths of a building on the ground floor, was the best and they both, in reality, represented the typical Najdian reception rooms in mud-brick buildings of the Najd.

1- *AL-RAWSHAN*

On the first floor of some residential buildings belonging to wealthy households, designed a special gallery (hall) planned by rooms in both the women's and the men's sections called *rawshan* or *rawashin* (or sometimes called *al-Misbah* in women's section for the use of each.[21] The *rawshan* in the men's section was used for entertaining or accommodation for male guests only.[22] The other *rawshan,* in the women's section, served as sitting and sleeping accommodation for members of the family and female guests.

21- See nos. 1 & 13 in Fig. 59, nos.1 & 19 in Fig. 61, and no. 4 in Fig. 65.
22- See plates 102-104 and no. 5 in Fig. 69, no. 1 in Fig. 70, no. 3 in Fig. 71 & Fig. 72.

Where a *rawshan* is built in the section assigned to men, it is sited exactly above the lower story in such a way that it overlooks the salon. A person sitting in the *rawshan* can hear and see the people in the salon below over low, enclosing parapets (Plates 105-108). The opening, or void, above the salon is either a broad rectangle or a square. Usually, the *rawshan* in the men's section has three walls which support the ceiling with the assistance of pillars, the fourth wall being either left out or built low (approx. 1m. in height). This facilitates the entry of air through the *rawshan* into other parts of the building, as well as allowing smoke and hot air to escape. In front of this wall there is a large, open sitting area (Plate 104).

During the summer, the owner of the house and his close guests and relatives move from the lower reception room to the *rawshan* where they enjoy cool air and daylight. For this reason people paid close attention to its mud and stucco ornamentation and the results are remarkable, almost rivalling the salon. The *rawshan* is usually provided with a fireplace and , windows and decorated with columns ornamented with capitals and with raised and engraved circular, botanical and geometrical decorative motifs. *Rawashin* may also be decorated with vertical and horizontal carved ornamental friezes of stucco (Plates 109-115).

2- A TYPICAL GROUND FLOOR RECEPTION ROOM

A typical Najdian reception room was large in area and was referred to by many local names, depending on the area of Najd that the building was found in. Generally, it was known as *al-majlis* (pl. *al-majalis*); *al-diwania* (pl. *diwaniyat*); *al-qahwa* (pl. *qahawi*); *al-mqualat* ((s.) a name that can be used to refer to a dining room); or *al-wijar* (pl. *wijarat*). Each name describes an aspect of the functions of the reception room.

Its interior consisted of a selection of architectural elements formed in various sizes. Each element had its own definite form and one or more functions. Its floor plan was rectangular and it was about 5m high; the length ranged from 8m to 10m, the width from 3.5m to 7m. Its roof commonly rested on a row of stone columns with geometrical capitals, circular or square in plan. The walls and columns were either covered by a plain or ornamented coat of mud or with white stucco (Plates 116-120) .

In the lower third of the reception room walls, a number of shallow niches of different sizes were usually found, with carved friezes and arches (sometimes niches were erected without arches) (Plates 121, 122, 124, 127 & 128, Figs. 70 & 73-83). In the middle third of the wall which overlooked the courtyard were two to four small windows with decorated wooden shutters, some 90cm. high and 50cm. wide (or 90cm. high x 80cm. wide where a window has two shutters) (Plates 118 & 119). In the top-most third of the walls were found a number of parallel, horizontal rows of triangular openings overlooking either the courtyard or the neighbouring street, which provide light and fresh air (Fig. 84). In the ceiling (over the fire-place), there was sometimes a circular aperture provided with a wooden shutter, worked by rope, which also let in light and ventilation for the smoke generated by coffee making. Philby records these features on the interior of 'Abd Allah al-Suba'i's reception room in Shaqra:

> *....A simple Gypsum-plastered pillar with a plain capital and a thin band of the usual decorative design supported the roof, in which over the fire-place a trap-door, worked by rope and pulley, was fixed to let out the smoke and keep out the rain as required. High up on the walls a number of openings provided with shutters appeared to be meant for ventilation or the reverse. Shaqra houses appeared to me for the most part to cater more generously for light and air than those of Riyadh.* [23]

In the lower part of one of the longer walls (Fig. 85), on the left hand near to the secondary door (no. 3 in Fig. 85) which was used only by the owner, there was a deep recess (known locally as *al-taq* (pl. *tuq*), forming a rectangular, open space about 80cm. high, 90cm. long and 40cm. deep, used as a storage place for small pieces of chopped wood (Plate 131, no. 5 in Fig. 85). This was sometimes sealed with a fine, decorated shutter of painted and carved woodwork and surrounded with simple, carved, stucco friezes. Close to the *al-taq*, there was another rectangular storage cupboard measuring about 100cm. high, 80cm. broad and 40cm.deep, known as *makhzan al-shai wa al-qhwa wa al-tamur* (the storage place for tea, coffee and dates) (no. 7 in Fig. 85). This was usually provided with a number of wooden shelves and two, small, decorated wooden shutters (Plate 131).

On the floor, to the far left corner of a reception room, *al-majlis,* was a place for the owner (no. 11 in Fig. 85). Beside the owner's place, to the left hand, there was a wall-cupboard measuring about 230cm. high, 150cm. wide and 30cm. deep, known locally as *kamar* (pl. *kumor*) (Plates 128 & 131, no. 13 in

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23. Philby, op. cit.,1928, p 107.

Fig. 85). It was commonly provided either with wooden shelves or thin wooden slats which were covered with layers of mud and stucco. The fronts of these shelves, the cupboard head and the surrounding areas were usually decorated with carved stucco ornaments. The upper part of the cupboard sometimes had two small shutters consisting of decorative woodwork. This cupboard served as a storage space for various tea and coffee utensils, such as teapots (*abariq al-shai* or *chaidan al-shai*), coffee kettles (*dylal al - qahwah*), tea cups (*kasat al-shai*), coffee cups (*fanajeen al-qahwah*) and many types of metal and wooden spoons and other related items.

On the floor, to the front of the wall-cupboard and the owner's customary place was a fireplace (*garter*) which was also known as *al-wijar* (Plate 131) (no. 10 in Fig. 85). It was commonly built with a low wall of mud-brick, either on floor level to a height of about 25cm, or sunk into the floor to a depth of approximately 20cm. In the latter case, the part of the wall extended about 15cm above floor level, was 120cm. long and 80cm. broad. The exterior faces of its low walls were usually first covered with a coat of mud and then another coat of stucco which was sometimes decorated with fine, engraved ornaments. Raunkiaer Barclay gives a good description of the Emir or Burayda's guest room and the arrangement of people around the fireplace, where coffee was usually made:

> *We pass into cool half-light, where another door is opened into the audience hall of the Emir. It is a large rectanqular room, lit only by an ill light from triangular holes. The floor is covered with mats and carpets and on the walls, hanging here and there, are scimitars and carbines taken off and hooked up by the Emir's people as they enter. On the floor at the far end sits the ruler of Bereidah, the Emir Fahad Ibn Ma'amar, leaning on some cushions. Before him is a hollow in the floor and in the hollow a fire, beside which a negro slave is busy preparing coffee. Along the side walls squat is a row the Emir's men and followers, ...*[24]

At the beginning of the 19th Century some Najdian people replaced the mud-brick fireplace with a metal *garter*, which was also richly engraved. On the ground floor, in front of this cupboard, a moveable, carved, wooden basin with long wooden handles was usually found, in which coffee beans were crushed using a wooden pestle.

Even in partial descriptions of typical Najdian houses, European explorers tended to give thorough descriptions of reception rooms, including size, form, architectural features and decoration, as in the case of Philby who described

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24. Raunkiaer Barclay ,op. cit., p98.

the reception room of Suba'i house in Shaqra as it appeared in 1917 A.D. On the same journey he visited a man called Muhammad in 'Unayza and described his reception room:

> *.....The main room or parlour was about 25 feet long, 10 broad and 18 high,with a plain white gypsum frieze, picked out at the top in a stepped pinnacle-pattern, reaching up about two-third of the height of the wall. In the latter were numerous shallow niches with simple moulding and pointed arches, while in the west wall were two windows, five feet high and three wide, with shutters of decorative woodwork and of course, without glass. The door was of plain Ithil timber ochre-coloured, and the coffee-hearth in the north-west corner of the room near the entrance was of plain gypsum, raised obove the floor level...It was a comfortable room though airless.* [25]

Doughty also delineates a reception room in the ruined palace of the prince of Burayda:

> *....The palace court, large as a market place.....within the ruinous Ksr I found a coffee-hall having all the height of the one-storied building with galleries above - in such resembling the halls of ancient England, and goodly proportion: the walls of sandy clay were adorned with pargetting of Jis.....I admired the gypsum fretwork of their clay walls.* [26]

Geoffrey King also recorded the local names and interior architectural features of the reception room of the 'Unayza house (including the *rawshan* hall, which he terms "upper gallery"), this seems to be much like other reception rooms in the area and also reflect the authentic picture of a typical reception room:

> *A majlis, or diwaniya, was still partly intact in one of the houses I visited in 1975....The majlis of the Unayza house was approximately 3.5 metres by 6 metres; the width being determined by the span of the roofing beams in the local ithal timber. There were two doorways still intact and that at the extreme east end of the north wall had an especially fine wooden door. An upper gallery overlooked the majlis with finely constructed crenellation forming a parapet in a manner identical to the gallery of the Tuwajari majlis at Burayda.* [27]

2.2.11. DINING ROOMS

The dining room *al-muqalt*, usually occupied a separate place in buildings from the early 19th century, and it was located either close to the reception-room or far away from it. In the first case, only a low mud-brick wall separated the space of the reception room from that of the dining-room. In

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25. Philby, op. cit.,1928, p 237.
26. Doughty, op. cit., vol II, p 348.
27. Geoffrey King, op. cit.,1998, p 148.

the second, the dining room was located either on the ground or the first floor close to the intermediate entrance corridor which linked the men's section and the women's section together. The latter location tended to give more freedom to the servants and members of the family and allowed them to move easily between the kitchen (which was located within the women's section) and the dining room. It also gave them time to prepare the food before calling the guests in to eat. Dining rooms in the houses of princes or *shayukhs* were usually located on the first floor in the gallery or the veranda, which was known in Najd as *al-Rawshan.* In 1919, Philby visited the guest room of the *Amir* of al-Quai'iyya in the highlands of Najd, but dined in a separate dining-room on the first floor. He described it as follows:

> *....the Amir's house. His coffee-parlour was a small dark room with a floor of sand without mats or carpets, and we ranged ourselves along the walls on either side of the hearth at which our host sat to prepare coffee and tea for his guests...the Amir, disappearing for a moment, returned to announce that dinner was ready for us. 'Sammu', he said, as he led the way up a narrow dingy flight of steps to an open upper-storey veranda facing the inner court. Here coffee and tea were served again as we took our places along the walls, and in a few minutes a number of servants appeared, some bearing large round mats which they placed in the centre of the veranda, and others raised platters of metal piled high with a wheaten mess called Qaimi and mutton.* [28]

2.1.12. OPEN AND ENCLOSED BRIDGES

These elements were both considered important features of the typical residential buildings of Najd. Enclosed bridges were known locally as *al-sabatat* or *al-asbita* (s. *al-sabat*), and often appeared in early traditional Islamic cities, for instance in al-Madina, al-Basra and Baghdad. Open bridges were known locally as *al-ma'abir* (s. *al-mi'bar*). Both features were usually built approximately 2.5m. to 3m. above the neighbouring streets to 3m. to extend the area of the original house.

These features were originally built to connect two buildings belonging to two relatives. However, the enclosed bridge had many functions. It could be used as a guest room; an intermediate passage area; and for watching, observing and identifying the unwelcome.[29] Open bridges were used as elevated passages, especially for women, to give more privacy when they moved, for instance, from their father's house to their brother's house.

28- Philby, op. cit.,1922, vol. 1, pp135-136.

29- Mousalli, op. cit., p 20.

Geoffrey King provides an interesting description of these two traditional architectural features and shows where they were used, not only in Najd, but also in other regions of Sa'udi Arabia. He also clarifies the physical and social functions of these features:

> *A number of houses had either bridges to the neighbouring house or upper-storey rooms built to bridge the street to the house opposite. This system of direct communication between houses also implied that the owners were linked in close familial relationships. Such 'bridges' are found extensively in Najd and beyond, with example at al-Ula' in the Hijaz, al-Riyad and in al-Qatif in the Eastern Province. Jalajil was remarkable for the number of its houses built with such rooms and passages over thoroughfares. In addition to the advantages these provided in terms of easy family communication, the passages also helped to shade the streets below from the intense sunlight.* [30]

2.1.13. WINDCATCHERS

One of the most intelligent interior architectural features in typical Najdian mud-brick buildings was the windcatcher. This feature had two forms, the air-shaft and the perforated-wall. These features appeared as high, projecting obstructive features for catching the cool, clean, high-up, northern breezes and channelling them to the ground floors. In fact, there was no real need for wind-towers, like those found in residential buildings in the eastern areas of Sa'udi Arabia or in other neighbouring countries such as al-Bahrain and Iraq, to be developed in Najd. A few high apertures in walls facing north were enough to catch cool air and carry it down to the lower parts of a building. Geoffrey King describes these important types of Najdian windcatchers and calls the second one a mid-wall. He also clarifies the other function of these elements, which was to allow daylight to enter through their high openings, reflect on their surfaces and then spread into the interior spaces:

> *The use of mid-wall windcatchers gives them a striking aspect. The windcatchers formed banks of inverted V-shaped openings, or more rarely, slender openings shaped like spear-shafts, Just as at Jalajil. These allowed for ventilation of the interior, and diminished the light entering the building. At the same time, the privacy of the interior was maintained, especially as the windcatchers were on upper floors.*[31]

For more natural ventilation, the traditional architects of Najd used to follow two scientific methods for catching the air flow patterns. The first depended on the law of pressure differences on the windward (outside) and leeward

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30- Geoffery King, op. cit.,1998, p 152.

31- Ibid., p 162.

(inside) sides; the second relied on the difference between the air temperature inside and outside.

1- AIR-SHAFT

Originally, the air-shaft (*Malqaf al-Hawa* or *Burj al-Hawa*) was created in the northern area of Najd (al-Qasim) (Fig 271). Only a few of them were found in early buildings from the 17th century in this area. Most were built and developed for the wealthy houses and palaces from the late 18th and 19th centuries.[32] This may be due to the influence of traditional Iraqi architecture. That is to say, the architects of al-Qasim may, to some extent, have been affected by traditional Iraqi architects, as the form of the Najdian air-shaft was somewhat similar to that of the Iraqi wind-tower.

The form of the Najdian air-shaft was very simple. It was a built up mud-brick duct, square in plan, and clearly visible on the roof of a building. Its upper part, which faced North, was often provided with a large number of small openings of various shapes.

Its duct was usually connected directly to the lower porches and rooms on the ground floor, and was contained between the two outer layers of a party wall. Because of the thickness of the duct's walls which, naturally, were not exposed to solar radiation during the daytime, but were exposed to cool air movement by night, their surfaces remained at a lower temperature than the rest of the interior during the course of the day.

After passing through the interior sequence of rooms, the air would flow into the spaces of the lower porches and open courtyard touching and cooling the surfaces of floors and those parts of the walls adjacent to them. It would then gradually rise up through the branches and leaves of the trees and shrubs of the inner open garden, in the central courtyard. This style of interior air circulation was used to help cool both the closed interior spaces and the open ones in Najdian mud-brick buildings during even the hottest day. However, during the winter season, the air-shafts were usually closed.

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32. Most Wind-catchers of this type had been demolished, by the time of my field survey. This was confined by staff at the Department of Archaeology, King sa'ud University, at al-Riyad in early 1999..

2- PERFORATED WALL

In both the southern and central areas of Najd (especially in the cities of al-Dir'iyya, Shaqra and Ishaqer), traditional architects created a very complex air circulation system within the interiors of their buildings. This act often provided a movement of cool air inside the buildings, which may be even greater than that provided by the air-shafts. In this type of air-catcher, the architects usually designed high North-facing walls, which were embellished with small openings of various shapes (plates 201, 227-232, Fig. 165). These walls were often connected directly to the interior spaces of the rooms. Thus air entered the system via the inlets in the north wall, where pressure was relatively high, and was drawn through the interior spaces by the relatively low pressure in the open courtyards, porches and verandas. In fact ratio of air change was governed by three criteria, which were: 1) the pressure and temperature differences between indoors and outdoors; 2) the sizes, number and placement of the openings; and 3) the interior space division and organisation.

2.1.14. WALLED ROOF

Flat roofs appear throughout Sa'udi Arabia, and particularly in Najd. They are typical of Najdian mud-brick buildings, whether domestic, defensive or religious in nature.

The open space provided by the roof of the Najdian mud-brick house was a very important and necessary architectural feature for residents of Najd. Its importance increased in houses which were built on small plots, without any kind of open courtyard. In Najd, like other regions of Sa'udi Arabia, people used roof-spaces for various purposes: as gathering place for family members in the evening and for sleeping at night; cooking food; eating; and washing and drying clothes (Fig. 69). Because of this, they built it well and provided it with facilities for these purposes: such as a small kitchen; a room where bedding was stored during the daytime; and also a bathroom and a large jar for water.

The typical roof in Najd was often surrounded with a mud-brick wall approximately 2.5m. in height, and which was commonly provided with

geometrical crenellations of various shapes and sizes to beautify the spaces and exterior façades. The area of the roof was in some houses divided into small spaces used for sleeping at night, some of them to be used by girls, and others by boys, while the largest was usually to be used by the owner and his wife. These spaces were surrounded by walls which provided the family members with privacy. Gurmany provides a description of the roofs of the houses in Tuwaim, showing the form and the height of the surrounding wall and the decoration as it appeared in 1862 A.D:

> *.....The roof itself is frequently surrounded by a blind wall of six feet or more, till the whole attains an altitude equal to that of many London domiciles, and is not altogether unimposing. Little or no attempt is, however, made at domestic ornament, and hardly any symmetry is observed between house and house except what mere chance circumstances may have determined.* [33]

Aesthetically, there is little comparison between the featureless Najdian flat roof and stepped and domed roofs. We can enjoy the features of the latter as an addition to the elevations of the building, whereas the former adds nothing to the existing elevations. While the stepped and domed roofs can perhaps be more readily appreciated aesthetically, the Najdian roof, when viewed from any high vantage point (bird eye perspective), comes into its own and can be seen to be divided by low walls into small areas which are characterised by the beautiful shadows cast on the natural brown of the mud coat. Functionally, they are far superior to empty flat roofs, in providing significant additional designed space, which can be comfortably used by the inhabitants as a consequence of the climate.

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33. Gurmany, op. cit., p 329.

2.1.15. SPACE FUNCTION AND SPATIAL RELATIONSHIPS.

INTRODUCTION

Function dose not necessarily lead to an ideal, standard or inevitable solution. Isma'ail Muhammad Zakari suggests that, the different parts of a social framework support each other and depend on one another, and this net of social relations is revealed through the distribution of interior spaces. Therefore, to define the social relations of a society in a particular time and place , we must look at the functions of people or places so as to lead us to discover the rules and customs that order and govern social life.[34] The mud-brick buildings in the Najd region have been influenced by at least three factors:

1) The material from which it was made and by whom.
2) The tools and methods used in the construction.
3) The reasons and functions for which a building was built.

The way that interior areas in a typical mud-brick building in the Najd were distributed show that every space had a particular, indispensable use. However, in poorer buildings, every interior place had to be multi-functional (as mentioned previously). Originally, the functions to which Najdian interior spaces were put came as a result of various factors including social, economic and religious considerations. The social factors led to the division of the interior into private spaces and public spaces. [35]

The economic factors defined the functions and organisation of some of these interior architectural features. This in turn led to areas being set aside for varied and productive use.[36]

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34. Isma'il Muhammad Zakari, *al-Inthroupologiya wa al-Fikr al-Islami,* Sharikat 'Ukaz lil-Nashir wa al-Tawzi', Riyadh,1982; p231.
35. The private places were represented by the women's section and included the open and closed courtyards, roofs, bedrooms and kitchen. The general areas were represented by the men's section and included the *majlis* and its extensions (as well as the *Majlis* of the women's section).
36. Storage and work areas, such as date storage, wheat grinding, seed crushing, spinning, weaving. Stables were set aside and the roof was used as a place for drying corn. These ranges would be also seen in the other cities and villages of West region of Sa'udi Arabia, see Dostal, op. cit., p 83.

The influence of Islamic law and the principle of social integration on the construction of these interiors was obvious. It is the philosophy of an Islamic economy that is concerned with quality and not quantity, with function and not appearance. [37] Therefore, this kind of view directed the personal life of the Muslim indoors. There he would assimilate the economic functional activities by creating many areas, each of which fulfills its intended function.

2.1.15.a. FUNCTIONS OF INTERIOR SPACES

Early mud-brick buildings from both the 17th and 18th centuries were characterized by the non-specialisation of their spaces. However, there is more specialization present in some wealthy palaces and houses from the early 19th century.

The open courtyards in the men's section were used for various social functions such as obsequies, weddings, birthdays and peace-making. The position of an open courtyard in the women's section, in addition to its various architectural features and functional diversity, made it of great importance in the Najdian house in general. Also, like the men's open courtyard, this courtyard was created for social and economic functions. Females gathered together there and practised various traditional skills such as: washing wool and the hair of camels and goats, then spinning, dyeing, and weaving it by means of a wooden loom on the ground floor. Likewise, they tanned leather and made miscellaneous types of tool. Again, like the men's open courtyard, it was also used for various important occasions such as obsequies, weddings, birthdays and peace-making.[38] Similarly the areas of both *al-quba* and *al-misbah* (women's covered courtyards) were used for a variety functions, including livelihood and work.

The sleeping places in poorer residential buildings were completely different from those in the buildings of the wealthy. In such houses, any room would be used as a bedroom or even as a kitchen; thus, to find a bedroom as a separate room dedicated only for sleeping was very unusual. In general, if it is accepted that, in a particular house, there was a space defined as a bedroom, it was also usual for it to be defined as a room for other functions

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37- Ahmad Hamid, 'Tasmim al-Dakhil', al-Bina", year 7, vol. 45, Ibrahim 'Abd Allah Al al-Shaykh, Riyadh, Febrayer, 1989, p 56.

38- This information confirmed by local people of the Najd.

too. According to Muhammad Shubana from al-Majma'a, the bedroom in poor houses was used during the night for sleeping, while in the course of the day it was used as a sitting and reception room and sometimes also as work room, especially in the poorest houses.[39] Other rooms were used as bedrooms and storage facilites at the same time, and sometimes the functions for which the areas were designed would change according to the contents of the rooms. This sometimes happened in the case of storage areas and stables. Some rooms, especially those adjoing the open courtyard of the women's section, were usually used for storage and as a stable at the same time. Consequently, their shape and design took account of that. Similarly the interior spaces of some traditional houses in the southern part of Sa'udi Arabia were designed to perform a number of functions. [40]

The importance of the function to which a room is put now becomes clear. Traditional buildings were primarily built for their use, but some buildings, in addition to their being useful, also had an aesthetic value. The morphology of interiors including their space division, arrangement and decoration usually indicates their function and the social status of their residents.[41] But, the interiors of Najdian residential buildings sometimes give a different impression. For example, the interiors of some workshops were richly decorated with various styles of ornamentation and were fully arranged. However even though these interiors may be multi-functional, their owners were from the lower classes. Likewise, the interiors of the houses of religious men *shiyoukh* were usually quite simple without decoration, even though the owners belonged to a high class.

The primary function required of a kitchen is cooking, but in poorer houses kitchens were multi-functional places (sometimes used even for sleeping) and this led to a suitable division of its area. The spaces for porches in both the men's and women's sections exhibited a gradation in space which made them

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39- It was a bedroom during the night, and was used for sitting, eating and working during the day. Poor women sometimes even used the floor of this room for spinning the wool and weaving rugs and for grinding the wheat and drying the corn.

40- For example, the guest-room in traditional buildings of Assir was sometimes multi-purpose. It was used for receiving guests and also for drying the corn crop and threshing it with the help of an ox tied to the central column. The ox used to turn round and round dragging a stone disc. The column in the middle of the guest-room was primarily built for two functions: to support the roof and to decorate the room, but then it acquired a third function and became the axis about which the ox turned to thresh the corn, see Dostal, op. cit., pp 76 & 94.

41- From the point view of archaeology, the physical appearance of any site indicates the status of its residents.

useful at any time.[42] Therefore, the inhabitants of Najd planned and developed these features on a large scale and made them well.

The rooms of the upper floors served as sleeping quarters and as storage areas for furnishings and other tools. The functional purpose of a staircase was for gaining access to the upper storeys. However, here in Najdian buildings, as Geoffrey King indicates, it had other functions e.g. the central stair shaft was used as an air-tower. It also served as a very important source of daylight. [43]

As discussed in the last chapter, the traditional handicrafts of both men and women helped in shaping and developing the interior spaces of their houses. Each craft had its own functional discipline which affected the division of the space.

2.1.15.b. INTERIOR SPATIAL RELATIONSHIPS

The relationships between interior spaces usually depended on the function and value of each space. Consequently, there were strong and weak relationships between interior spaces. In other words, the relationship of a certain interior feature may be strong with one, two or three other features but weak with another. As in any other, there were two essential types of interior spaces in Najdian buildings, adjacent spaces and linking spaces.

1- ADJACENT SPACES

This type of interior space was the most common in mud-brick buildings of Najd. It was usually found in both large and small houses and was represented by two adjacent rooms, halls or rooms with courtyards (Fig. 266-268 & 280). The space was usually defined by walls, a floor and a ceiling and represented a kind of interior that could be used for more than one purpose. It could be used, for instance, for living, sleeping, storage or for work. However in some small buildings, as noted above, rooms were sometimes created to carry out all these functions together.

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42. For example, these spaces were used for various purposes by both the family members and their close neighbours, at all times of the day and night. These spaces were also used as open sitting areas for large gatherings of people during important occasions.

43. King, op. cit.,1998, p148.

The relationship between these spaces could be weak or strong, depending on the function of each space. For example, the relationship between the entrance hall and reception room was very strong, while it was somewhat weak between the reception room and kitchen. However, it was very strong between the kitchen and the women's open courtyard, the backyard and the storage areas. Moreover, the relationship between the stable and the women's backyard and open courtyard was very strong, but was much weaker with the men's open courtyard.

The space of the closed courtyards called *al-Mijbab* on the ground floor and *al-Misbah* on the first floor (both in the women's section) had an actual relationship with the spaces of the rooms that overlooked them. In the men's section, porches also had a very strong relationship with both the spaces of the open centralised courtyard and the surrounding rooms.

2- LINKING SPACES

These comprised three categories of interior space used as linking areas between other interior and exterior spaces; these were: interlocking spaces; space within another space; and intermediate spaces.

a)- INTERLOCKING SPACE

This was represented by the main entrance hall in buildings and also by the open space which appeared between a number of adjacent buildings (Fig. 278 & 279). The function of interlocking space was to overlap two or three other adjacent spaces. This space was heavily used by both residents and visitors, and was where most daily movement took place. It was one of the most important interior spaces in mud-brick buildings of Najd.

In small residential buildings (which consisted of two parts and an entrance), the space of the entrance hall had a strong relationship with both the men's and women's sections for both the men's and women's areas overlooked and overlapped this space. The daily movement of both residents and visitors in and out of the building clearly demonstrated its importance in terms of function. In very small houses (which were made with only one section for both the men and the women), the function of this space was very important

and it had usually a strong connection with the reception rooms (both the reception-room on the ground floor *al-Majlis* and the reception room on the first floor *al-Rawshan*) as well as with those spaces, located deep inside the house, where the women usually sat.

In all these cases, the entrance hall showed both vertical and horizontal functional relationships with the interior spaces of the building, in addition to its relationship with the exterior spaces.

b)- SPACE WITHIN ANOTHER SPACE

This design of interior space might also be planned in buildings as two spaces, one within the other, each with its own function, and each broken into smaller spaces with one or more functions (Figs. 269 & 270). This design can be traced in three forms. The first is represented by the space of the open centralized courtyard which was located within the closed space of the surrounding rooms (in the men's or women's section), the second by the space of the closed courtyard located within the closed space of the surrounding rooms (in the women's section), and the third by isolated large buildings located within the garden and enclosed by a high wall.

The size and form of the two spaces, one the enveloping space and the other the contained space, depend on the function of each and the activities of the residents, who, in turn, were conditioned by other environmental factors and by the nature of those very spaces. By analysing the above three examples of this design it can be established that the enveloping spaces (the surrounding rooms or the garden) were usually larger than the contained spaces (the open centralized courtyard, the closed courtyard or the building surrounded by garden). However, the size of the smaller, contained space is dependent on the size of the larger enveloping one, which in turn is regulated by its relationship with the exterior environment. In this case, if the functions of the contained space were very important and were absolutely necessary for occupants (such as those spaces found in buildings belonging to agricultural, nomadic or worker familes) and the functions to which the larger enveloping space were put were not so important, then the contained space would be increased in size and the larger space would be decreased. It would thus begin to lose its effect as an enveloping form. If the contained space continued to grow, as a result of extensive functions, the enveloping

space would become too weak and would be no more than a thin layer surrounding the contained space. If this were to occur it would lose its value as an encompassing space. On the other hand, if the functions of the larger enveloping space were more important than those of the contained space, the relationship between them would become very weak and the size of larger space would gradually increase, while the size of contained space would decrease and might then completely disappear (the building in this case will be completely enclosed).

c)- INTERMEDIATE SPACE

Originally, this type of interior space was created as a third area between two other interior spaces that were separated by distance (Fig. 280 & 281). Its functional purpose was to link these two spaces. The relationship between these two spaces usually depended on the nature of the intermediate space (its form, size, material and original function).

There were three types of interior intermediate spaces that appeared in the mud-brick buildings of Najd. The first was the winding corridor which linked the men's and women's sections. This space served some socio-economic functions. It helped to separate the men's area from the women's places (as a zigzag screen) but at the same time, allowed easy communication between both spaces. Through its space the servants could also easily carry food to the dining room. The second intermediate space was represented by the portico in the men's section. This space separated yet linked the spaces of the open courtyard and surrounding rooms at the same time. It was built so that the spaces of the open courtyard could have a strong relationship with the spaces of rooms through its intermediate space. Finally, the third type was represented by both the bridge-room and the open bridge-alleyway, both examples of important intermediate spaces in Najdian buildings. They were commonly built over streets linking two facing buildings belonging to members of the same family. The former one was usually straight (linear), while the latter was often straight but sometimes built as a winding corridor.

2.1.16. CONCLUSION

There is no specific internal architectural plan that can be ascribed exclusively as Najdian interior design. The development of internal architectural design

was influenced by climate and the social and economic activities of Najdian man. There are many residential mud-brick buildings with similar interior architectural features which can therefore be regarded as typical of the Najd. Any dissimilarities between the buildings, whether of internal or external architectural characteristics usually depended on the following: a) the scale and location of the building within the settlement; b) the social and economic status of family; and c) the degree of flexibility of the usage of one or more floors.

In general, Najdian mud-brick were distinguished by the non-specialisation of their interior spaces. Especially, poorer houses where any interior space might be used for sitting, eating, sleeping and working. However, there is a kind of specialization in space function which appear in wealthy houses and palaces from the early 19th Century.

PART 2

CHAPTER 2.2.

CLASSIFICATION OF INTERIOR DECORATIVE ELEMENTS, METHODS OF SURFACE TREATMENT AND TECHNIQUES OF ORNAMENTATION

PREFACE

This chapter studies the interior decorative elements of mud-brick buildings. Including motifs: botanical, geometric and symbolic. It also analyses the methods of surface treatment and techniques of ornamentation including: coating techniques; painting; carving; incision; pyrography; stamping; and modelling.

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2.2.1. INTERIOR DECORATIVE ELEMENTS

INTRODUCTION

The decorative elements employed by traditional artists of the Najd on the internal facades and elevations of their civil buildings were of three types: botanical; geometric; and symbolic. All three were used on the three most common surface materials: stucco; wood; and mud.

2.2.1.a. BOTANICAL DECORATIVE ELEMENTS

It is botanical decorative elements that are most commonly found on the interior surfaces (whether of stucco, wood or mud) in the mud-brick architecture of the Najd. Botanical decoration flourished during the First and Second Sa'udi States, becoming highly-developed from the beginning of the Third Sa'udi State. This is due to the fact that such decoration does not contradict those Islamic principles that urge artists to depart from representing living creatures (either human or animal) and instead, to devote themselves to imitating natural, botanical forms. Study of this kind of decorative element in Najdian civil buildings shows that artists executed their shapes by following two broad styles: the semi-realistic and the modified.

SEMI-REALISTIC STYLE

It is comparatively rare for this style of decoration to appear in applied art of mud-brick buildings. Even though local artists were familiar with it and employed it in executing botanical ornamentation in stucco only, they used to borrow their decorative forms from those found in the local environment (they tried to imitate the shapes of local trees and their leaves), or ones they were familiar with from elsewhere. Artists did not simply copy the particulars of those shapes but attempted to imitate them from nature with extreme precision, as was the case in the pre-Islamic arts. However an important role is played by the simplification of parts of the botanical form in nature, without

distorting the general shape.[1] A typical example of this style is a depiction of palm-trees view that painted on a stucco dado in the reception room of Hamad al-Sa'aid's house in Huraymila (plates 132 & 133).

MODIFIED STYLE

This style was much more widely used on both stucco and wood surfaces than the semi-realistic shapes. It was used in the interiors of mud-brick houses and palaces of the First and Second Sa'udi States, but was abandoned and forgotten during the Third Sa'udi State, when modified forms were little used. By working in this style, traditional artists avoid imitating natural elements by substituting abstract forms, while preserving the sense of beauty of these shapes.

Leaves are the most important modified botanical elements, and include:

1) Solid and punctured oblate leaves (Figs. 86 & 87) that taper on both sides.
2) Blade and needle leaves (Figs. 88 & 89).
3) Palm-tree shapes.
4) Flower shapes.

Leaves shapes are clearly distinguished by their simplicity; and sometimes it sufficed that the artist engraved only four or so blade shaped leaves, on stucco or wood, curving downwards to suggest the shape of a palm-tree (Plates 134 & 135, Figs. 94-103). Because of this, modified botanical elements of the Najd such as palm-trees and olive branches (Figs. 90-93, Plate 120), are considered to be similar to geometrical elements, and, as such, designs that are easily copied. Many examples of more complex modified palm-tree shapes are still found in some ruined mud-brick buildings, such as those that are found at al-Masmak palace in al-Riyad (Plates 136-138 & 140), as well as in houses of al-Suwayan in Rughba (plate 139), and al-'Ulayan in Rawdat Sudayr (Plate 141, Figs. 104-119). Studying these modified forms shows the extent of the artistic ability of the traditional artist, although this was dependent on a suitable choice of forms and geometrical elements.[2].

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1. For more information about semi-realistic style, see paragraph 1 in the notes to this chapter.
2. Concerning the origin of modified botanic elements, see paragraph 2 in the notes to this chapter.

In addition to palm-tree shapes, there are other modified botanical elements. Flowers for example of various shapes and sizes, having a single-petal shape (Plate 142, Fig. 120), or with four, five or six petals (Plates 114-116, 121, 124, 130, 142, 143, 164 & 206) (Figs. 121-137); 2) likewise, fruit shapes, such as: the pineapple (Plates 304 & 305, Figs. 138 & 140), pine cone (Plate 146, Fig. 139) and grapes (Plate 148 & 259, Figs. 141 & 142). These shapes whether of leaves or flowers, are usually found in Najdian decoration in a variety of compositions: each shape appearing singly; in pairs; in groups; or with other geometrical elements in various artistic compositions.[3]

1.5.1.b. GEOMETRICAL DECORATIVE ELEMENTS

Geometrical decorative elements have been used by man in many civilisations. He drew, engraved and coloured various shapes, including dots, polygons and circles,[4] on the facades and elevations of the places he inhabited more skilfully than he did botanical elements. The reason for this concerns their simplicity.[5]

Islamic civilisation, in common with other early cultures, followed this pattern. Its artists were familiar with many geometrical shapes,[6] and were able to innovate compositions of distinctive character that differ from the decorative concepts that prevailed in pre-Islamic civilisations, such as the abstract decoration of arabesques. Its development in this fashion was related to Islam's proscribing of representing living creatures.[7]

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3. For more details about these modified botanical shapes see paragraphs 3 to 6 in the notes to this chapter.
4. Zaki Muhammad Hassan, *Funon al-Islam*, 1981, p 249. See also Muhammad 'Abd al-'Aziz Marzuq, *al-Funon al-Zukhrufiya al-Islamiya fi al-Maghrib wa al-Andalus*, Dar al-Thaqafa, Beirut, N.D, p 71; Arnold Haward, *al-Fan wa al-Mujtama' 'Ibra al-Ta'riekh*, part 1, translated to Arabic by Fuad Zakariya, Dar al-Katib al-'Arabi lil-Tiba'ah wa al-Nashir, Beirut, 1969 , p 23.
5. Abu Salih al-Alfi, *al-Fan al-Islami. Ausulahu, Falsafatahu, Madarisahu*, 3rd. edition, Dar al-Ma'arif, Cairo, ND, p 113.
6. Such as the geometrical decoration found in Umyyad Mosque, Dome of the Rock, and in Fustat city, see Fareed Shafi'i, *al-'Amara al-Arabiya fi Masr al-Islamiya. Asr al-Wula*, vol. 1, al-Hayah al-Masriya lil-Talif wa al-Nashir, Egypt, 1970 , p 265. See also M. 'A. Marzuq, op. cit., 1974, pp 91 &157.
7. Alexander Papadopoulo, *Islam and Muslim Art*, Translated from French by Robert Erich Wolf, Thomas and Hudson, London, 1980, p 27. See also Muhammad Suwasi, 'Athr al-Handasa al-Nazariya fi al-Fan al-Mi'mari wa al-Nuqush al-Arabiya', Majalat Kuliyat al-Athar, al-Kitab al-Dhahabi, University of Cairo, Cairo, 1978, pp 5-8.

In Najd, both in pre-and post-Islamic periods (until 1960 A.D), traditional artists were familiar with various geometrical decorative elements, and used them frequently in the decoration of stucco, mud and woodwork of mud-brick buildings. For example, they used dots and lines, diamonds with circles and crosses (Fig. 143), squares with triangles and rectangles (Figs. 144, 164 & 165). They used also stars and crescents, circles, semi-circles, segments and other geometrical compositions (Figs. 145-154 & 166-175).[8] Examples of stucco decoration from mud-brick buildings of the late 18th century A.D., such as those found at the houses of al-Suba'i and Suwayan in Shaqra, al-Rabi'a and Tuwayjari in al-Majma'a, al-Suwalim in Burayda, and al-Fhaid in 'Ain Bin Fhaid reveal a greater use of various styles of geometrical element than that of either mud or wood-work. Yet mud, stucco and wood surfaces from this period were decorated with parallel, horizontal or vertical zigzag or wavy inscribed lines (Plates 149-151, Figs. 155-163). They were also decorated with projecting triangles (V shapes, Plates 153 & 155) and raised square or rectanguler shapes (Plates 24-26). Triangles, ribbing, dots and linear shapes were less used than botanical elements on the surfaces of woodwork from the same period.

The interest in using geometrical elements of different shapes and sizes in woodwork greatly increased in the early 19th century. Very early instances of their increased use in wood decoration, concern the beautiful, richly coloured and engraved wooden shutters of windows and doors, roofs and lintels. Such woodwork is usually found in buildings of wealthy people such as the houses of al-Suwayan and al-Basam in Shaqra. During the period up to 1930, the use of carved and painted geometrical elements in association with other botanical elements was wide-spread in the decoration of woodwork in general and particularly in small ornamental, wooden objects, which were usually fixed to the shutters of windows or doors. Wonderful examples of these pieces are still found on the doors and windows of various houses, the owners of which are not known (Plates 156-160).

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8. For more information of these elements see paragraphs 7 to 12 in the notes to this chapter.

2.2.1.c. SYMBOLIC DECORATIVE ELEMENTS

Historians interested in the Najd, such as Ibn Ghannam and Bin Bishir, indicate that magic (magic by drawings, maze shapes and others), superstitions and fables prevailed among the inhabitants prior to the unification movement in Najd, and one could expect manifestations of this belief, especially an considering that they were deeply rooted in earlier times. It can be deduced that the attractive technical shapes executed on the elevations of some rocks in the region, with recurring transformed and abstract geometrical shapes, are symbolic renderings of ideas and beliefs that the inhabitants had held very early in their history.[9] This kind of social phenomenon is not merely limited to the people of Najd but, it is also appeared everywhere in this world, especially among primitive societies. Franz Boas declared:

> *In primitive life the conditions are quite different. Extended investigations on decorative art in all continents have proved that every commonly the decorative design is readily given a symbolic significance...Among primitive people the aesthetic motive is combined with the symbolic...* [10]

Indeed, symbolic elements are very important sociocultural features, they act as communication elements between our past and present, to show us some of the knowledge of the early human mind. Raymond Firth defines the function of symbols:

> *A major function of symbols is in facilitating communication. Utterance of words allows us to dispense with many kinds of manual and bodily action in providing stimulus or conveying meanings.* [11]

Remains of symbolic decorative shapes in some mud-brick buildings, could sometimes indicate to symbolic meaning. It does not follow that all the inhabitants of the region had knowledge of their real significance, because these symbolic shapes usually pass through long periods where they are subjected to transformations and modifications which may increase their representational value, perhaps refining what began as an abstract geometrical shape, or transforming a representation in such a way that it can scarcely be identified with its original form, and thus cannot be related to its

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9. Al-Idara al-Ama lilathar wa al-Matahif,'Taqrir Mabda'i 'an al-Marhala al-Thaiya 'an al-Masih al-Shamil lil-Nuqush wa al-Rusum al-Sokhor....',1985, pp105-110.
10. Franz Boas, *The Mind of Primitive Man*, revised edition, The MacMillam Co., Ltd., New York, 1938, p 242.
11. Raymond Firth, *Symbols. Public and Private*, George Allen and Unwin Ltd., London, 1973, p 79.

original meaning. Loss of a generation which preserved the decorative form and its meaning would have a similar effect. In other cases the symbolic shape loses its social connotation entirely, and becomes simply decorative, persisting as such despite the developments and amendments that had occurred to it. Yet there remains for the decorative ornament a functional role and content that may be explained through the study and analysis of its shape.[12] Symbolic decorative elements of mud-brick buildings of the Najd region were of two types: geometric and object-related shapes.

GEOMETRIC SYMBOLIC SHAPES

The nature of Islamic art is often to incline intended to the geometrical, abstract decorative compositions, which are, indeed, to convey both aesthetic and symbolic meanings.[13] Oleg Grabar says:

> *With the Dome of the Rock and the mosque of Damascus...It was pointed out that a symbolic or iconography meaning could be given to some of the motifs found on the mosaics covering most of their walls.* [14]

The most important symbolic shapes used in the applied art of the mud-brick building of the Najd were probably: dots; triangles; diamonds; squares; circles; zigzag lines; and what is produced from the juxtapositioning, interference and interlocking of these shapes with each other. These geometrical shapes have limitless meanings and symbolic connotation.

It seems that one of the most important decorative formations with symbolic connotations that we come across, is a repeated matrix of regular engraved or painted dots. If the matrices were arranged in one horizontal row, it symbolised travel (Fig. 176). If they were arranged in two parallel lines it symbolised the community (Fig. 177), while three or five dots were used to protect residents from envy (Figs. 178 & 179), and a group of dots formed with a pyramid shape pointed to wealth and blessing (grape shape Fig. 142). Decoration in the form of a camel or a necklace (formed with many groups of dots and circles and usually adorning wooden shutters) has a similar meaning (Plates 258 & 259, Fig. 141).

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12. Abd al-Fatah al-Didi, *Ilm al-Jamal*, Maktabat al-Anglou al-Masri'ya, Cairo, 1981, p 43.
13. Titus Burckhardt, *Sacred Art in East and West. It Principles and Methods*, Translated by Lord Northbourne, Perennial Books Ltd., U.K., 1967, p 101.
14. Oleg Garbar, 1977, op. cit., p 195

The equilateral triangle is one of the forms that is widespread in the applied art of the Najd either alone or in compound formations, and it was considered a symbolic element. This style of triangle symbolises the eye of envy, and is a sign of conformity, integrity and equilibrium.[15] It also symbolises the sky when its head points upwards (Fig. 180), and the earth when its head points downwards (Fig. 181). Sometimes however, if its tip points downwards, it denotes the house and its residents.[16] Overlapping of two triangles to make a six point-star, which is considered to be among the most common decorative elements to appear on stucco and wood, is a symbol of the universe, or what was known in ancient creeds as the 'egg of life' (Fig. 182).[17] When it appears within circles this star is usually transformed into a six petal-flower - like that which appears in most of the stucco and wood decorative compositions within the region - and it is believed to be a symbol of life. This is especially so when it was formed within separated framed artistic compositions, such as those which are still found at some houses in both al-Majma'a and 'Unayza (Plates 315 & 316)

It was in this context that it was known by the Arabs who used it in the Islamic Arabesque, and it appears in several abstract forms in association with needle leafs, multi-petal flowers and unusual abstract forms (Fig. 171), such as those found in the centre of one of the panels linings in the *rawshan* elevation of an unknown's house in al-Majma'a (Plates 312, 313 &314). These unusual geometric forms are similar to some of the abstract formations appearing on African masks.[18] Likewise, it is thought that two overlapping triangles each losing their base symbolise the mind, power and energy (Fig. 183) (similar were the heads of triangles are facing each other, Fig. 169),[19] as the overlapping triangles found in Najd art with a dot in their midst, protect against the eye of envy.

The triangle is also one of the most frequently occurring geometrical forms in women's jewellery, representing the amulet (*hijab*), spotted with dots and

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15. Sa'ad al-Khadim, 'al-Hirz al-Sha'bi wa al-'Aqaid al-Murtabita bihi', al-Funon al-Sha'biya, vol. 6, 2ed. year, Wizarat al-Thaqafa al-Hi'a al-'Amah lil-Ta'lif wa al-Nashir, Cairo, 1968, p 54.
16. Sulayman M. Hassan, op. cit.,1989, p 66.
17. 'Afif, Bahnasi, 'Ma'ani al-Nujum al-Zukhrufiya', al-Hawliyat al-Athariya al-'Arabiyat al-Suriya, vol. 31, The General Department of Archaeology and Musements, Damascus, 1981, p 23.
18. Margaret Trowell and Hans Nevermann, *African and Oceanic Art*, Harry N. Abrams Inc., London and New York, ND, p 29.
19. 'Afif Bahnasi, op. cit.,1981, p 27.

other geometric shapes, and a secure place that guards what is inside it.[20] However, it is not restricted to this alone; the artist used to place the triangle at the centre of almost every formation whether on jewellery or stucco or wood surfaces, as is clear in the *Rawshan* elevation of al-Tuwayjari house (Plate 162, Figs. 184 and 185). Perhaps the reasons for its use in these places is its symbolic value to earlier people,[21] for it was also used in tattoos on the bodies of bedouins dwelling in Sa'udi, Yemen, Oman, Syria and Jordan in this form, with dots or crescents and stars (Fig. 186).[22]

The writer's mother was questioned, about the names of the various types and formations of triangles,[23] and received the following information: when a triangle appears alone it is called *Hijab* (pl. *Ahjuba*) a guard (Fig. 180 or 181); when three triangles appear in a compound form it is called *Hijab Mthulath* a three triangles guard (Fig. 187); when four triangles appear in a compound form (four pointed star) it is called *Hijab mruba'* four triangles guard (Fig. 188) (originally this shape symbolises the cardinal points); in the case of the existence of a dot in the middle, the resulting formation is known as *Hijab Abu Nuqta* (Fig. 189) (for protection against the eye of envy),[24] a triangle guard with dot and so on as the number of triangles increases (three, four etc...) (Fig. 190-192); in the case of a compound triangle composed of five triangles it is called *Hijab Mkhumas*, a five triangles guard, and so on as the number of triangles increases (six, sevenfold, eight fold etc...) (These triangular forms appear in the artistic compositions of small openings to Najdian buildings, Fig. 165). Regarding the *al-Hijab*, Doughty provides an interesting description to show the symbolic or magical significance of the triangle among the Peninsula 'Arab:

> *All the Arab would have hijabs sooner than medicaments, which they find so unprofitable in the hands of their hareem...there are hijabs for the relief of several diseases, and against possession of the jan or earth-demons; also hijabs which should preserve life in dangers, a hijabs written against lead.* [25]

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20. Accourding to Naif al-Mu'azi, (interview in 1988 in 'Unayza).
21. Akram Qansu, 'al-Rasim al-Sha'bi al-'Arabi', in al-Ma'thurat al-Sha'biya, year 4, vol. 16, Markaz al-Turath al-Sha'bi li-Duwal al-Khalij al-'Arabiyat, Doha, 1989, p 58.
22. The bedouins dwelling in the deserts of al-Rab' al-Khali, al-Nufuth, al-Dahna', and Nufuth al-Sir in Arabian Peninsula, and in the deserts of Badiyat al-Sham wa Hamad al-Urdon in Syria and Jordan.
23. My mother is belongs to the 'Utiba bedouin tribe.
24. A similar triangle with the eye in the middle (instead of the dot) surrounded with sun's rays is a common symbol in Renaissance Churches in Austria (c. 1748). See Arnold Whittick, *Symbols, Signs and their Meaning*, Leonard Hill Book Ltd., London, 1960, p246
25. Doughty, *Wanderings...*, 1926, p 104.

There are other abstract shapes with symbolic meaning: the polygon, including the square and diamonds, is believed to represent stability and equilibrium, and the diamonds containing a dot or circle, or the small rhombus seen in some of the stucco and wood ornaments of the region, is thought to be a symbol protecting against envy (Figs. 143 & 144).[26] The circle (or composition of many circles formed of one center) represents the universe or 'life egg' (Figs. 147 & 148), and is similar in connotation to the six-pointed star; the upper part of the circle representing the sky (Fig. 193), the lower the earth (Fig. 195), and both the universe (Fig. 194).[27] It is thought that the circle also symbolises the sun and the moon, and is used as a symbol of prosperity and fertility in some ancient creeds.[28] The circle containing a square, as found on some of the horizontal stucco friezes, is a holy symbol of the sun and moon.[29] Udo Becker says:

> *Circle...is thus a symbol of unity, of the absolute and of perfection; it is thus also a symbol of heaven in contrast to earth or of spiritual in contrast to material;...the circle is an effective symbol of protection against evil spirits, demons, etc...* [30]

The Crescent shape was also considered a symbolic element (Figs. 150, 154, 172-174, & 185-186).[31] It appears frequently in stucco, and woodwork decoration, accompanied by circles, stars and semi-circles and their sectors. It was used by Arabs of pre-Islamic times as a symbol of Gods. The existence of the crescent persists to this day as a singe of prosperity, fertility, perfection, and integrity.[32] Star shapes also had symbolic meaning, corresponding with the shape and number of points; the square star, with four points, symbolises sexual power, continuity and success in life.[33] While the star with five points, is the symbol of central manifestation of light, and it is like number five a symbol of perfection.[34]

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26. Sulayman M. Hassan, op. cit.,1989, p 69.
27. 'Afif Bahnasi, op. cit., p 23.
28. Qasim Radi Haneen, 'Matariq al-Abwab wa 'Alaqatuha bi al-Mu'taqadat al-Sha'biya', al-Turath al-Sha'bi, vol. 7, year 7, Wizarat al-I'lam al-'Iraqiya, al-Markaz al-Fouluklori, Dar al-Huriya, Baghdad, 1975, p 149.
29. Sulayman M. Hassan, op. cit.,1989, pp 66-67.
30. Udo Becker, *The Element Encyclopaedia of Symbols*, Translated by Lance W. Garmer, Element Books Ltd., Great Britain, 1994, p 61.
31. For more information see paragraph13 in the notes to this chapter.
32. Sulayman M. Hassan, loc. cit.
33. Sulayman M. Hassan, op. cit., p 18.
34. Jean Chevalier and Alain Gheerbrant, *A Dictionary of Symbols*, Translated from French by John Buchanan-Brown, Penguin Books Group, Inc., New York, 1996, p 924.

OBJECT-RELATED SYMBOLIC SHAPES

Local artists were skilled in drawing and engraving symbolic shapes based on man-made objects, such as weapons, domestic tools, crests and flags of some Najdian tribes, on internal facades and elevations. The meanings of these objects would sometimes only be known to the owner and his family. However, there were some symbolic shapes whose meanings were common knowledge among the inhabitants of the Najd at the period 1700-1960.

Only a few examples still survive in the ruined mud-brick buildings of the Najd but include swords, axes, iron scales, and a composition consisting of domestic vessels. The sword was found on an elevation in the reception room of ruined house in Shaqra (Plate 161, Fig. 196). As mentioned in the related Arabic references, the sword shape is a symbol indicative of noble class, and is sometimes related to the strength, heroism and horsemanship of the house owner.[35]

These opinions regarding the symbolism of the sword are open to argument, however; though according to bedouins from northern Sa'udi Arabia, Syria and Jordan, who tattoo their right forearms with sword shapes, these meanings are correct, and are commonly found in bedouin societies. Some groups of primitive people believe that the sword keeps away sickness and evil from them. In addition, in various urban societies, it was customary for the leader of the defeated party in a war to hand over his sword to the head of the victors, symbolising his submission.[36] These symbolic meanings can be the same as for other weapons, such as daggers, shields and axes, that can be found in Najdian decoration (Plates 163 &164, Figs. 197 & 198). The symbolic sword shape is not only found in the applied art of the Najd, however, and can be seen in both applied and fine arts of other Arab countries, e.g. in Syria (especially in popular art) and Yemen.

The shape of an iron balance is carved on the stucco elevation of the sitting room in a house in 'Unayza (Plates 304 & 305, Fig. 199, and similar Fig. 175), this shape, of course, indicating justice, and as such, the owner of a house might have been a judge. A composition consisting of domestic vessels is found on the facade of the entrance to a reception room of a damaged,

35. Akram Qansu, op. cit., p 56.
36. Akram Qansu, op. cit., p 56.

abandoned house in al-Majm'a (Plate 165, Fig. 200), including a coffee kettle, tea pot, and a gas lantern. This indicates in Najd society that the guest is held in honour and that the owner enjoys receiving visitors in his house, to the point of welcoming everybody. [37]

37- This information was obtained from 'Ali al-Saif, resident of al-Majma'a.

2.2.2. INTERIOR SURFACE TREATMENTS AND TECHNIQUES OF ORNAMENTATION

INTRODUCTION

The comprehensive and proficient use of surface treatments in mud-brick buildings is certainly one of the most characteristic features of Najdian architecture. Throughout the ages, both before and during the Sa'udi States, the architects and artists of the Najd practised seven types of surface treatment on various raw materials: coating; painting; carving; modelling; incision; pyrography and stamping. In point of fact, the first style has appeared in every area of the Najd throughout its history. The use of the others was dependent on the economic situation and differed from time to time and place to place. The use of carving, painting and incision reached its height during the late Second Sa'udi State and early Third Sa'udi State (especially during the reign of King 'Abd al-'Aziz), while modelling was relatively rare.

MUD-SURFACE TREATMENT

1- PLAIN SURFACES

In the early Islamic monuments, such as the desert palaces of the Umayyads, the architect employed both plain and decorated areas alongside each other, in order to provide contrast and highlight the decorations.[38] Many inhabitants of the great mud-villages and cities, even today, have a great interest in mud, tending to use plain and decorated mud on the interiors and exteriors of their various mud-buildings.[39] The surfaces of the facades and elevations of the

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38. For example, the exterior walls of the palace of Mshatta are all plain, except the main facade which is decorated with various kinds of ornaments. See David Talbot Rice, *Islamic Art*, Thames and Hudson, London, 1965, p 20.

39. Including the villages of Rajasthan in India, Amelan near Tafracut in Morocco, Zulu and Ndebele tribes in South Africa, likewise, at the cities of Shibam in southern Yemen, and Damascus (old quarters) in Syria. See Susan Arritt, *Desert*, the Reader's Digest Association Inc., New York, 1993, p 185. See also Lisa Lovatt Smith, *Morocco Interiors*, Taschen, London and Paris, 1995, pp 54 & 55; Abantu, *An Introduction to the Black People of South Africa*, Martin West, C. Strwk Publishers Cape Town, 1976, pp 59 & 81; and Tony Allan and Andrew Warren (ed.), *Desert*,

mud-brick buildings in the Najd (i.e. walls, floors and roofs) were usually treated using plain coatings of mud, in addition to other artistic methods. It is apparent that mud was the most suitable raw material for use on the exterior façades, since its dark colour and rough texture allow it to absorb the high levels of solar radiation and glare remains the effect of eye. In fact, exterior mud façades in Najdian mud-brick settlements would reduce the effect of high glare, comparing with the soft exterior façades in Najdian modern concrete settlements.

The thickness of these plain mud coatings varied between 1cm. and 2cm. on exterior walls, and between 0.5cm. and 1cm. on interior walls. It could reach a thickness of 0.30m. on roofs and 0.40m. on the floors of rooms. The exterior and interior walls, including those overlooking the inner open courtyards, sometimes involved the use of mud to create various three-dimensional architectural features with plain surfaces. For example, series of stepped projections and cornices with raised denticules, were rectangular in shape and known as *zakhrafit al-dalayat* (denticulate decoration),[40] and were often formed on the top part of portico elevations (on interior walls) in the ancient mud-brick mosques in the Najd. These features can be seen in the small mosques in Huraymila (Plate 24), 'Unayza (Plate 25), and Burayda (Plate 26), and in the Friday Mosques in al-Dir'iyya (Plate 21) and al-Riyad city (Plate 27). Another style of plain mud decoration consists of a parallel series of raised triangles, known as *al-mayazib*, examples of which are still seen on both the exterior and interior walls of most mud-brick buildings (Plates 153-155). Moreover, the series of crenellations which were known as *al-shurofatt* were often formed in various shapes and sizes on the tops of interior and exterior walls (Plates 153-154).[41]

IUCN the Word Conservation Union, Mitchell Beazley Ltd., England, 1993, p 63.

40- Denticulate decoration was first employed in the art of Greece and was also known in the art of Rome, likewise, it was used as decoration for the stone-work of the Yemen, see Fouad M. Murabit, op. cit., p 203. See Marten J. Vermasoen, Cybele and Attis, *The Myth and The Cult*, Thames and Hudson Ltd., London, 1977, plate 33. See also Brian Doe, *Southern Arabia*, Thames and Hudson, London, 1971, plate 10, and see Ray Cleveland, *An Ancient South Arabian Necropolis*, Balumore Manyland, 1965, p 96.

41- Hassan Fathy, *al-Taqat al-Tabi'iya wa al-'Amara al-Taqlidiya*, al-Muasasa al-'Arabiyat lil-Dirasat wa al-Nashir, Beirut, 1988, p34. See also 'Ali S. al-Muqawashi, op. cit., p 35.

2- CARVED AND PAINTED SURFACES

In very rare cases, mud-brick surfaces, both interior and exterior, were treated using primitive artistic methods involving carving, incision and painting, causing an uncustomary artistic transformation on the surfaces of buildings. One of these methods is known locally as *zakhrafat al-kharbasha,* translated as 'random carving'. It involved the builder, or owner, moving his fingers, or a piece of rough wood across freshly coated surfaces, thereby roughening it (Plate 166). This coarse surface was sometimes used as a foundation for another smooth layer of plain or carved mud (Plate 167). Similar methods are still in use in the domestic mud-buildings of the badwan people in Rajasthan, a village in north west India.[42]

The second method is known as *zakhrafat al-misht al-khashabi,* or 'wooden comb ornamentation'. This was applied using a large, wooden comb which was moved across freshly coated, plain mud surfaces leaving shallow and raised lines, with varied forms such as horizontal, perpendicular, semi-circular or zigzag- waves (Plates 149-151, 167-168). This style of mud decoration is also used on the walls of domestic buildings in both the Yemen and Africa.[43] In 1973, Geoffrey King recorded both the first and second methods at al-Riyad:

> *Another tool that I saw in use in al-Riyad in 1973 was a broad scraper with teeth on a handle used to comb the plaster on the exterior of the building until it was smooth. This left distinctive lines shallowly incised in the mud-plaster surface. Some work was finished by hand; in the early 1970s I saw a Yemeni craftsman sitting astride a house wall in al-Riyad, carefully sculpting a corner finial.* [44]

The third method has already been described in the first chapter. It is known as *zakhrafat al-madamic,* or 'band' decoration (Plates 7 & 8), and appears widely in the buildings of the Yemen.[45] Here plain mud surfaces are engraved with horizontal and parallel lines.

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42. Susan Arritt,op. cit., p 185.
43. Fernando Varanda, *Art of Building in Yemen. Archaeology,* The MIT Press Cambridge, Massochusette, London, 1982, p 143. See also Abantu, op. cit., p 84.
44. King, op. cit.,1998, p 14. See also King, op. cit.,1977, p 92.
45. L. Golfin, 'Isham fi Dirasat al-'Amara al-Islamiya fi al-Yaman', in al-Hawliyat al-Athariya al-Arabiya al-Suriya, Vol. 31, al-Mudiriya al-'Ama lil-Athar wa al-Matahif, Damascus, 1981, p 373. See also Muhammad S. al-'Abd Allah al-Rabadi, op. cit., vol. 2, p 33.

Painting however was rarely used on plain mud surfaces in the Najd. A few facades, elevations and friezes were treated using the primitive method of painting with simple geometrical elements rendered in polychrome, matt colours and harmonious tones (Plates 169 & 170). Brushes of various sizes were used.

2.2.2.b. STUCCO SURFACE TREATMENT

The local artist more commonly concentrated his interests on the decoration of interior spaces, as opposed to exteriors. He selected stucco for the treatment of interior surfaces, and used it on a few exterior areas only. As mentioned previously, stucco performs several functional roles: for instance, it absorbs heat and retains coolness, diffusing it slowly throughout the room. It also reflects light rays and disperses them evenly through the space. There is also the aesthetic aspect: it greatly enhances interior mud surfaces; and is especially easy to mould and engrave using various technical means.

1- PLAIN SURFACES

The use of a plain stucco coating over large areas of the interior surfaces of Najdian domestic houses was commonplace from pre-Islamic times, and continued during the First and Second Sa'udi states. This method reached the height of its development in the homes of religious scholars during the Third Sa'udi State, as they often refused to decorate their houses with any type of ornamentation. Plain stucco coating is also much used in Morocco and Andalucia.[46]

In a number of mud-brick houses of the Najd, the walls and floors were completely covered with a plain coating of stucco, while in other homes, only certain areas were treated, such as the lower half to one third of the walls - the dado - and the areas around niches and openings, forming a kind of frame or architrave. The colour and thickness of the coating varies: in some cases it is white and easily crumbles, its thickness ranging between 0.3cm. and 0.5cm., while in others it can be up to 1cm. thick. However, the floor coating appears hard and grey in colour, and its thickness ranges between

46. Marzouq, op. cit., ND, p 85.

2cm. and 3cm., with the thickness of the dado coating being again between 2cm. and 3.5cm.

2- CARVING, PAINTING AND INCISION

The interior walls of mud-brick buildings were usually treated using several techniques, before the ornamentation was carried out. They were either coated with one thick layer of stucco, as are the elevations of al-Suba'i's reception room (Plate 119) and those of an unknown's reception room at Sadus (Plates 129 & 130), or divided into vertical and horizontal areas, creating a variety of friezes and panels on the mud elevation (Plates113-115 & 122). These friezes or panels were either situated very close to each other (the spaces between them being between 2cm. to 5cm) or are separated, allowing one to distinguish accurately between them. Sometimes, the lower part of the wall, between a quarter and a half of it, is coated with a flat layer of plain stucco, forming a dado only. In other examples, both a dado (either to one third or one fourth of the wall height) together with horizontal friezes appear on one wall simultaneously. While in very rare examples, a dado to one third of the wall height appears with both horizantal and vertical friezes reaching to the ceiling level (Fig. 113).

After applying the stucco on the wall's surface, the artist used two distinct methods, executed on the surface before the ornamentation. These methods can be described as, a) simple, or b) compound (complex).

1- SIMPLE TYPE

It is possible, on examination of the ornamental units and decorative elements to recognise this style of stucco decoration. In this type the artists intended to limit their use of ornamentation by separating the decorated areas by a distance of between 50cm. to 100cm. These separated decorated units would sometimes appear densely compacted but it is easy to distinguish their decorative motifs and compositions.

2- COMPOUND TYPE

In this type, the ornaments usually organized on an area of a stucco coating, whether in groups of friezes or dados (such as the ornaments of al-Suba'i's reception room), but they appear intersecting and interlocked with each other so that it is sometimes difficult to distinguish between the units of the various elements. Analysis and disassembly into basic ornamental elements may require a great deal of time. This does not mean that ornamentation of this type is overcomplicated, displaying the endless repetition which is seen in some Islamic arts (as with the Arabesque style),[47] where a clear beginning and end to an ornamental formation cannot be discerned. What distinguishes this ornamental technique from other Islamic ornamental methods is the existence of very small areas which are void of ornamentation. These serve as 'partitions' which help in the appreciation of the ornamented areas.

Ornamentation, in both the simple and compound styles, was usually engraved or painted. There are four kinds of engraving: perpendicular engraving; oblique engraving (at 45 degrees to the surface); solid and void ornamentation; and the incision method. In the first technique the patterns are carved into stucco surfaces at right angles to a depth of not more than 3cm (Plates 174, 298, 299 & 319). This perpendicular style of engraving, of both wood and stucco surfaces, was used in the Hellenic and early Islamic ages including the Umayyad and Abbasid eras. However, during the reigns of the Ayyubid and the Mamlouki, the artist became accustomed to working on successively revealed layers.[48]

Oblique engraving was fairly common in the Najd area during the Sa'udi States. The ornamentation was cut at a 45 degree angle into the smooth front of a stucco surface, to a depth ranging between 0.3cm to 1cm (Plates 135, 139, 142, 175, 177 & 206). This style is one of the most important Islamic innovations in the field of engraving. It was used in both domestic and religious buildings . Examples of this style are found at Samarra in Iraq and at the Friday Mosque of Zaytuna in Tunisia.[49]

47- For example, the arabesques of the Qirawan Friyday Mosque and the ornaments in the palaces of Jafra and Surour in Srkata, see Shak, Fone , *al-Fan al-'Arabi fi Isbaniya wa Siqiliya*, translated to Arabic by al-Tahir Ahmad Makki, Dar al-Ma'arif, Cairo, ND, pp 164 & 169.

48- Hassan al-Basha, 'al-Fan 'inda al-Shu'oub al-Islamiya', al-Dara, vol. 3 & 4, year 2, Darat al-Malik 'Abd al-'Aziz, Riyadh, 1976, p 168. See also Marzouq, op. cit.,1974, pp 149 & 150.

49- Hassan al-Bash, loc. cit. See also Zaki Muhammad Hassan, *al-Funon al-Iraniya fi al-'*

Solid and void ornamentation was rarely used in Najd, and only a few examples can be found in ruined, domestic, buildings. It usually appeared on very thin stucco coatings; the pattern is carved into the stucco at right angles to a depth of not more than 0.2cm or 0.3cm., so that it is common for the underlying mud surface to be clearly visible (Plate 178).

Incision was well known in the Najd, and it was usually made in thick stucco coatings, resulting in circular shapes (Plates 179 & 180), horizontal, vertical, zigzag, curve and crossed lines (Plates 181, 182, 185 & 252). In this style, artists usually used hard, pointed tools made of metal or wood, they used to incise decorative shapes of between 0.2m. to 0.4m. deep into the stucco, depending on its softness and hardness.

The appearance of painted decoration on stucco surfaces was very rare during the First and Second Sa'udi States when compared with the Third Sa'udi State; however, it was well-known in Najd before the Islamic age. Examples of painted stucco were found in the excavations of Quryat al-Faw in the south-west of Najd.[50] Najdian painted decoration during the Third Sa'udi State is distinguished by the use of geometrical elements, examples of which can be seen on the walls of bathrooms and bedrooms at the guest palace of King 'Abd al-'Aziz in al-Kharj (Plates 96-97 & 98-100). A primitive, geometrical painted view from the late Sacond Sa'udi State can be seen in a reception room of unknown, poor people in Thadiq (Plate 237); while painted botanical elements (especially palm-trees) can be seen in the various rooms of the Masmak Palace in al-Riyad city (Plates 137 &138) and also on the dado of the reception room of Hamad al-Sa'aid's house in Huraymila (Plates 132 & 133).

In pre-Islamic times, inhabitants of the Arabian Peninsula often used to paint the stucco and mud surfaces of both their domestic and religious buildings. The best example of this style were the interior paintings of the al-Ka'ba religious building, where the entire walls and ceiling areas were decorated with renderings of landscapes and animals. K. A. C. Creswell provides a good description of the al-Ka'ba decoration:

Asr al-Islami, vol. 5, Dar al-Ra'id al-'Arabi, Beirut, 1981, pp 10 & 101.

50. 'Abd al-Rahman al-Taib. al-Ansary, *Quryat al-Fau. A Portrait of Pre-Islamic Civilisation in Saudi Arabia*, University of Riyadh, Riyadh, 1957-1982, p 25.

...They decorated the ceiling, the walls, and the columns. On the latter they made pictures of the prophets, trees, and angels. There was a picture of Ibrahim as an old man practising divination by means of arrows, a picture of Isa ibn Maryam (i.e. Christ), and his mother and angels... [51]

Archaeological evidence taken from early Islamic architecture indicates that the first appearance of painting on stucco dates back to the Umayyad Caliphate. It was employed on stuccoed walls and floors in most Umayyad palaces located in the deserts of Syria and Jordan. Magnificent examples of painted stucco are still seen in these palaces, including al-Hir al-Gharbi and al-Sharqi, 'Amra, al-Mushata and Khirbat al-Mafjr. Fragments of painted stucco from the Abbasid monuments have been found at the Samarra excavation in Iraq and the palace of al-Jawsaq in Iran. During the rule of Tulunid, the art of making frescoes was carried to Egypt, and in the time of the Fatimid Caliphate, stucco-floors were also painted using water colours.[52]

2.2.2.c. MOULDING

The use of carved and moulded stucco, both in high relief, friezes and in window partitions, in the form of grille work, known locally as *shamasat,* was typical of the Najd during the Sa'udi States. Stucco workers originated from various areas in the east and west of the Arab Peninsula, and some were brought to the area from African countries as slaves. These were the craftsmen who created beautiful examples of the above-mentioned styles of moulded stucco in the Najd. Najdian craftsmen, originally from the area, began to invent simple examples of moulded stucco in the early 19th century A.D.

Both moulded friezes and work in relief were commonplace during the Second Sa'udi State, while being rarely seen during the First Sa'udi State. In the making of moulded friezes and relief-work, the artist used first to put a layer of stucco in a wooden mould. When the stucco was dry the artist

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51. K. A. C. Creswell, *Early Muslim Architecture. Umayyed,* 1969, part1, p 2.

52. M. S. Dimand, *A Hand Book of Mohammedan Decorative Art,* Metropolitan Museum of Art, New York, 1930, p 17. See Danyal Schlimberger, op. cit., p 25; Hassan al-Basha, *al-Taswir al-Islami fi al-'Usur al-Wusta,* Maktabat al-Nahdah al-Masriya, Cairo, 1959, pp 10 & 47; also Hassan al-Basha, *Funon al-Taswir al-Islami fi Masr,* Dar al-Nahdah al-'Arabiyat, Cairo, 1973, p 25. See also Muhammad 'Abd al-'AzizMarzuq, *al-Funon al-Zukhrufiya fi al-'Asr al-'Uthmani,* Maktabat al-Anjlou al-Masriya, Cairo, 1976, p 11, and Myriam Rosen Ayalon (ed.), *Islamic Art and Archaeology,* Collected Paper, Gebr Mann Verlag, Berlin, 1984, pp 33, 34 & 814.

moved, with his mould, to another part of the wall until the required area was covered. The interiors of most houses in the cities of Roghba, al-Riyad and Burayda contain very good examples of this style of stucco-work, exhibiting an abundance of high quality moulded and carved stucco in geometrical and botanical formations (Plates 114 & 122).

It was late in the Second Sa'udi State that moulded window partitions, in the form of grille work, were first used in the houses and palaces of the wealthy, though in poorer households more primitive examples could also be found. These stucco partitions were commonly decorated with geometrical apertures, which could be easily cut into the material. Ordinarily, these partitions were fixed within the window-frame instead of glass, in order to let air and light come through the openings and into the room. Examples of these partitions are still seen in some mud-brick houses, and others are on display in museums (Plates 183, 185-188). Moulded stucco relief work and friezes featured in the Islamic arts during the Umayyad and Abbasid periods; some examples of moulded friezes are found at the site of Samura in Iraq and in the niche of the Friday Mosque of Qairawan in Tunisia.[53]

Moulded grille-work was also common during the Umayyad period; it was used in the ornamentation of the upper interior facades of doors and windows in both the palaces of al-Hir al-Gharbi and al-Hir al-Sharqi. Moreover, it appears in other Umayyad palaces, and its use continued in other Islamic periods, becoming very widespread in the buildings of the Mamlouki era.[54] The moulds in use during the Islamic periods were very complex and were either made of stucco or baked clay. Moulds were used in the slant-cut engraving , due to the ease with which moulded stucco surfaces could be formed and carved. Examples of this style of stucco mould are still seen in some of the friezes of Samarra and in the mosque of al-Thahir Baybars, as well as the mosque of Islam al-Salakhdar in Cairo.[55]

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53. David Talbot Rice, op. cit., p 34 & 43. See also Jamal 'Abd al-Rahim Ibrahim, 'al-Zakharif al-Jusiya fi 'Ama'ir al-Qahira al-Diniya al-Baqiya mn al-'Asr al-Mamluki al-Bahri', vol. 1, unpublished Master Degree, Islamic Archaeology Department, University of Cairo, Cairo, 1986, p 9.
54. Saleem 'Adil 'Abd al-Haq, 'l'adat Tasheed Wajihat Janah Qasr al-Hir al-Gharbi fi Mathaf Dimashiq', al-Hawliyat al-Athariya al-'Arabiyat al-Suriya, vol. 4, al-Mudiriya al-'Amah lil-Athar wa al-Matahif Damascus,1954,p 28. This style of molded stucco was used by the Muslim artists in Spain; it is seen on Minarets, domes and the facades of windows. See also Jamal 'A. Ibrahim, op. cit., pp 15-17.
55. David Talbot Rice, op. cit., p 34. See also Jamal 'A. Ibrahim, loc. cit.

2.2.2.d. WOOD SURFACE TREATMENT

Throughout the centuries, the decoration of architectural woodwork in the Gulf countries was influenced by that of Persia, Egypt, and even India and east Africa,[56] and, of course, by earlier Islamic styles. Many examples of Gulf woodwork can be seen today which exhibit the influence of these earlier civilizations.

Early Islamic painting and carving on woodwork first appeared in the Umayyad age; finely painted and carved decorations from this era can still be seen on the ceiling beams of the al-Aqsa Mosque (the Dome of the Rock) in Jerusalem.[57] Samples were found from the Abbassid era during the excavation of the site of Samarra in Iraq. Evidence from this site indicates that most of the domestic buildings of Samarra were provided with fine decorated woodwork, enriched with painted and carved decoration of various styles.[58] The Abbassid styles of decorated woodwork were introduced to Egypt during the Tulunid period, while in the Fatimid era extraordinarily rich development took place in the carving and painting of wood.[59]

The decoration of architectural woodwork by painting, stamping, slanted engraving or incision and pyrography was typical of the Najd region. These styles of decoration were well known in the late Second Sa'udi State, and reached their fullest development during the Third Sa'udi State. Magnificent examples of wooden shutters and beams, decorated with great care using these methods, can be seen in mud-brick buildings of the Najd.

Though there is no archaeological evidence to indicate the nature of the methods used in the decoration of wood surfaces prior to the First Sa'udi State, local sources point towards the use of painting, incision and stamping in the decoration of architectural woodwork by Najdian craftsmen during the First Sa'udi State. However, examples of wooden shutters and beams from the early period of the Second Sa'udi State appear completely plain, rough and uncoloured, though some are carved and further ornamented with small pieces of applied decorated wood (Plates 157-160 & 190). Small, decorated

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56. Muhammad 'Ali 'Abd Allah, 'Gulf Wood Ornament', al-Ma'thurat al-Sha'biya, year 1, vol. 3, Mrkaz al-Tuwrath al-Sha'bi lil-Duwal al-Khalij al-'Arabi, Doha,1986, p 22.
57. Creswell, *Early Muslim Architecture...*, vol1, part1, 1958, pp181 & 184.
58. Ibid., pp 27 & 287.
59. Ernst Kuhnal, *The Minor Art of Islam*, 1971, p235.

wooden pieces like these usually adorned the traditional wooden doors of domestic buildings and others in Morocco.[60]

Examples from the second half of the Second Sa'udi State show little development. The surfaces of some doors, windows and beams are seen to be smooth and uniformly painted (Plate 18), or are simply left natural (Plates 61 & 191). Other samples from the same period indicate some decorative progression, with many wooden doors and windows being decorated with geometrical designs. Sometimes these painted designs are distributed over the surfaces without arrangement around an axial line (plate 54 & 156), while on other occasions they appear either in simple horizontal bands across the top, middle and bottom (Plates 192 & 193) or in complex horizontal bands separated by painted geometrical flowers (Plate 184).

Some samples of woodwork from the Third Sa'udi State, found in various houses in Kharj and Rawdat and 'Udat Sudayr, are carved and painted with geometrical and botanical designs of two to three colours. Other examples had incisions made in their surfaces, and are painted with various elements, again using three or four colours (Plates 163, 194). Others are richly painted and carved with geometrical elements (Plates 55 & 56) and some painted with a few X-shaped lines, dots and either clover-leaf patterns or sun-flowers (257, 266 & 268), while the background of all these examples is usually left natural.

Some doors are stamped with horizontal bands of monochrome, geometrical decoration on a natural background. Examples from Tuwayjari's house at al-Majma'a have incisions in their surfaces and are painted harmoniously with geometrical and botanical elements using various colours (Plates 195-198). A few examples from various cities and villages appear with natural backgrounds, while almost their entire surfaces are covered with carved, scored and poker-worked geometrical compositions (Plates 198-199).

The use of incision and painting during the Third Sa'udi State appears in isolated and in dense areas of decoration. Surfaces from this period are decorated with individual bands, each composed of a series of small geometrical designs, or isolated patterns of random sizes distributed over an area. The second style usually consists of small decorative elements,

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60. Thomas J. Abercomble, *Morocco: Land of The Farthest West*, p853.

compacted together so that they cover the entire surface with a heavy, complex composition of geometrical and modified botanical ornaments (143-147 & 250).

2.2.3. CONCLUSION

Traditional artists used three types of decorative motif on mud-brick buildings in Najd; botanical, geometric, and symbolic. Botanical motifs can be further divided into semi-realistic and modified, both of which flourished during the First and Second Sa'udi States, and, the latter becoming highly-developed at the beginning of the Third Sa'udi State. Geometric motifs were wide-spread in Najdian mud-brick buildings during the three ages of the Sa'udi States and, indeed were much more common than those of the botanical type, especially in northern areas. This is due perhaps, to the ease forming of their artistic compositions in comparison with botanical formations. However, compared to symbolic motifs, both the botanical and the geometric were much more highly developed during the Sa'udi States probably, due to the fact that such types of decoration do not contradict Islamic principles.

Coating, painting, carving, modelling, incision, pyrography and stamping are the seven types of surface treatment which were used in Najdian mud-brick buildings during the Sa'udi States. Surfaces of walls and floors were usually treated using plain coatings of both mud and stucco, while decorative motifs were carried out on surfaces by using simple traditional techniques:

a) Surfaces of stucco, timber and mud were usually treated by carving (by using both perpendicular and oblique types and, sometimes solid and void cut) , incision, painting and stamping.

b) Surfaces of wood were sometimes treated by pyrography.

c) Some surfaces of stucco were occasionally treated by the deep carved and moulded method, both in high relief, friezes and in window partitions, in the form of grille work.

2.2.4. CHAPTER NOTES

1- Semi-realistic shapes of palm-tree similar to those found in mud-houses of the Najd were used in the decorative arts of the pre-Islamic era: including those of Babylon and Greece dating from 3000 B.C.; early Syrian, c.1050-850 B.C.; Assyria c.850-750 B.C.,[61] and Sassanian and Palmyrian arts.[62] Though some semi-realistic trees are found in the Great Ummayyad Mosque in Damascus and the Dome of the Rock in Jerusalem, [63] they differ greatly from those found in Najd, due to the desire of the Muslim artist of that period to imitate reality as closely as possible. By contrast, the artist of Najd performs a great deal of abridgement, though generally following the actual form.

2- The simplicity that characterises Najdian botanical forms is inspiring and expressive, reminding us of the modified palm-tree forms which are found among the relics of the civilization of Mesopotamia. Also notable are those which appear on some clay utensils discovered at Tall Hassouna from 5500 B.C., and others which are related to the early Ubaid period from 3200 B.C.[64]

3- Historicaly blade shaped leaves were used in the applied art of various early civilisations, including those of the Greeks, Etruscans, and Romans. [65]. The oblate leaf shape, punctured in the middle, was well-known in the jewellery of the bedouins[66] and used in some of the applied art of the earlier Islamic ages.[67] While, solid oblate leaf shapes have been widelyspread in decorative art since ancient times, having been used by the artists of Mesopotamia since 2079 B.C.,[68] and also by the Parthenonians, Sassanians,[69] and Palmyrians, where it appeared on the surfaces of their stone tombs, jewellery and clothes.[70] It was much used in Coptic and Islamic art too, and has been discovered perforated on stucco window frames of the Qasr al-Hir al-Gharbi.[71] Interest in it increased in Moroccan and Andalusian

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61- Andre Parrot, *The Art of Mankind, Sumer*, Thames and Hudson, London and France, 1960, p 232. See Salih Lam'i Mustafa, *'Amarat al-Hadarat al-Qadima*, Dar al-Nahdah al-'Arabiyat lil-Tiba'ah wa al-Nashir, Beirut, 1983, p 143, and Carle J. Dury, *Art of the Ancient Near and Middle East*, Harry N. Abrams Inc., New York and London, 1969, p 185.

62- Malcom A. R. Colledge, *The Art of Palmyra*, Thames and Hudson, London, 1976, p 36.

63- Elisabeth Piltz, *Traiz Sakkoi. Byzantins*, Sweden Almqvist and Wiksell International, Stockhalm, 1976, plate 55.

64- Carel J. Dury, op. cit., pp 22 & 33.

65- Salih Lam'i Mustafa, op. cit., p 158. See also Jamal 'A. Ibrahim, op. cit., p 28, and Gisela M. A. Richter, *A hand Book of Greek Art*, Phaidon Press, London, 1959, p 77.

66- Heather Colyer Ross, *The Art of Bedouin Jewellery*, Stacey International, London, 1981, p 73.

67- Malcom A. R. Colledge, op. cit., plate 143.

68- Helen Gardner's, *Art through Ages*, 4th. edition, Bell and Son's Ltd., by Harcourt Brace and Co., London, 1959, p 75.

69- Zaki Muhammad Hassan, *Atlas al-Funon al-Zukhrufiya wa al-Tasawir al- Islamiya*, Dar al-Ra'id al-'Arabi, Beirut, 1981, p 70.

70- Malcom A. R. Colledge, op. cit., p 79.

71- Alexander Badawy, *Coptic Art and Archaeology*, Massachusette Institute of

art; artists used it in the decoration of corners and niches of some mosques, the hollows of arches, and on the capitals of columns.[72]

4- It is believed that the shape of the single-petalled flower surrounded by two bladed leaves which appears in Najdian applied art, represents the flower of the tulip before blooming.[73] Throughout history, this design has been widely used in the ceramic ornaments of Azic city (in Asia Minor);[74] in the applied art of ancient Egypt [75] and in the decoration of African masks.[76]

5- It is noteworthy that the flower form is one of the most important elements in the arts, both before and after Islam. The six petalled flower can be seen in ancient Egyptian and Sumerian art, on stone, stucco and wood surfaces, and on plates and other utensils.[77] Different shapes of flower appeared in the art of the Romans, Copts and Byzantines, as well as that of the Muslims who persisted in using it in the decoration of various architectural features including those found in the facades of Qasr al-Hir al-Gharbi, Qasr al-Mushata, and also the Central Mosques of Cordoba and Ahmad Ibn Toulon.[78]

6- (Fruit forms) It is of artistic interest that these shapes usually appear in Najdian fine art within compound decorative formations, and are found in a variety of both Islamic and non-Islamic art.[79]

7- Dot and line shapes were much used in ancient jewellery and Chinese applied arts over hundreds of years,[80] while the zigzag shape can be seen as somewhat different from other geometrical elements. They appeared on the surfaces of early pottery from the city-site of Tall Hasuna (c. 5500 B.C., and 4000 B.C.). They were also painted and engraved on the ancient jewellery and statues of both Egyptian (from 1350 B.C.),.and Phoenician civilisations.[81] In Islamic fine arts the zigzag shapes can be seen carved on the facades of al-Mushata palace,[82] minarets of the Mosques of al-Nasir Muhammad in

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Technology, U.S.A., 1978, p 36. See also Saleem 'Adil 'Abd al-Haq, op. cit., p 37.

72. Manwale G. Morino, *al-Fan al-Islami fi Ispanya*, translated to Arabic by Dr. Loutfi 'Abd al-Badi' wa al-Said Muhammad 'Abd al-'Aziz Salim, al-Dar al-Masriya lil-Ta'lif wa al-Nashir wa al-Tarjama, Cairo, ND, pp 60 & 150.
73. According to Dr. 'Asim al-Barghouthi, Department of Archaeology and Museums, King Saud University (interview,1992).
74. Zaki Mahammad Hassan, Atlas al-Funon..., op. cit., p 81.
75. M. F. Murabit, op. cit., p 77.
76. Margaret Trowell, et., al, op. cit., p 45. See also Danil Mecall and Edna G. Bay, *African Images*, Africana Publishing Co., New York and London, 1975, p 255.
77. M. F. Murabit, op. cit., p 91.
78. The four-petalled flower appears in the facade of Qasr al-Hir al-Gharbi see S. 'A. 'A.bd al-Haq, op. cit., p 20. The four as well as six-petalled flowers appear in the decoration of the niche of Qurtuba Mosque, while a five-petalled flower is found in the decoration of its dome. See Manuel G. Morino, op. cit., pp 25,151, 284, 313.
79. 'Abd al-'Aziz Hameed, Salih al-'Ubaidi wa Ahmad Qasim, *al-Funon al-Zukhrufiya al-Arabiya al-Islamiya*, Wizarat al-Ta'lim al-'Ali, University of Baghdad, Baghdad, 1982, p 9.
80. Jack Ogden, *Jewellery of the Ancient World*, Trefoil Books Ltd., London, 1982, p 25.
81. Salih 'Ali Muhammad,'al-Hili wa al-Malabis wa Ahamiyatuha', al-Manhal, vol. 16, year 53, part 48, Riyadh, May, 1987, p 70. See also Jack Ogden, op. cit., p 29.
82. Ni'mat Isma'il 'Alam, op. cit., p 34.

Egypt and Basil in Turkey,[83] capitals of the Mosque's columns of Cordoba, and also on some Islamic pottery.[84]

8- Cross-hatching and Lozenge styles were recorded in various applied arts. Some examples of this style are seen in the pottery of the new stone-age (Neolithic) in the city of Susa.[85] Other examples appear in the decoration on the ground floor of Coptic churches in Strasina,[86] and on pottery found at the Yajran site in Oman.[87] Likewise, it was much used in Islamic applied arts in carpets, tables and bedouin jewellery in Sa'udi Arabia.[88]

9- Decorative triangular shapes appear in three main forms: first in the form of embossed triangles, which are usually found on both interior and exterior façades of Najdian buildings. This style is locally known as *al-Mizab* (pl. al-*Maya'zib*) or *al-Mihdar* (pl. *al-Maha'dir*), and known as dog tooth or saw-tooth decoration in the field of archaeology.[89] The second forms are trianglar openings which are also found in both interior and exterior façades and known locally as *al-taqat* (s. *taqa*), while the third forms are carved and notched triangular compositions on both stucco and woodwork.

10- Star-shapes ordinarily appeared together with crescent shapes and sometimes with botanical and other geometrical elements. Star shapes appeared in the applied arts of most early civilizations: It was used by the artists of Mesopotamia, Greece and Byzantium, and was much used in Islamic arts. For example, the six-pointed star was used in the decoration of mud-houses in Samarra (*Samura'*),[90] and in the Mosques of Toulon and Ruqia in Egypt,[91] while the multi-pointed star was wide-spread in Iranian arts.[92]

11- Ribbed geometrical shapes are executed in Najdian decoration by using two methods. The first results in embossed, rectangular mud shapes of different sizes, which are commonly found in the higher parts of the Mosque's facades overlooking the interior open courtyard. This style of decorative element is known locally as *dalayat* (s. *dalaya*) and is much used in Eastern

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83- Al-Said A. Salim, op. cit., ND, p 31. See also Goodwin Godfrey, *A History of Ottoman Architecture*, Thames and Hudson, London, 1971, p 22.

84- Manwale G Morino, op. cit., p 33. See also Zaki Muhammad Hassan, *Kunwz al-Fatimiyeen*, vol. 4, Dar al-Ra'id al-'Arabi, Beirut, 1981, plate31.

85- Eva Strommenger, *The Art of Mesopotamia*, Thames and Hudson, London, 1964, p 14. See also Margaret Medley, *Oriental Ceramics*, vol. 8, Kodansha International Ltd., Tokyo, 1982, pp 10-31.

86- Alexander Badawy, op. cit., pp 85-86.

87- Muhammad Hassan 'Abd al-Rahman, 'al-Athar al-'umaniya', Majalat Kuliyat al-Athar, al-Kitab al-Dhahabi, University of Cairo, Cairo, 1978 , pp 107-112.

88- Heather Ross, *Bedouin Jewellery in Saudi Arabia*, Stacey International, London, 1980, pp 4 & 74, and see Shirley Kay, op. cit., p 8.

89- Muhammad 'Abd al-Sattar 'Uthman, 'fi Shawri' al-Madina al-Islamiya wa Turuqatuha', al-'Usour, part 2, vol. 2, Dar al-Marikh lil-Nashir, London, August, 1987, p 226. See also Shirley Kay, loc. cit.

90- Khalid Khalil Humudi al-'Ashmi, *al-Zakharif al-Jidariaya fi Athar Baghdad*, Manshurat Wizarat al-Thaqafa wa al-I'lam fi al-Jumhuriya al-'Iraqiya, Dar al-Rasheed lil-Nashir, Baghdad, 1980,.pp 128 & 130.

91- M. 'A. Marzouq, op. cit., pp 111 & 157, See also Zaki M. Hassan, *Kounwz al-Fatimiyeen...*, op. cit., pp 220 & 221.

92- Zaki M. Hassan , *al-Funon al-Iraniya...*, p 55.

decoration. It appears originally in the stone reliefs of Babylonian art, in Greek and Roman art and on the facades of Yemeni temples.[93] The second method is used in carving squares, rectangles, and rhombuses on stucco and wood surfaces both alone and combined with other geometrical and botanical elements .

12- Traditional artists were able to create, using circles and segmental shapes, marvellous and varied formations of different sizes, which were carved carefully on various wooden and stucco surfaces. In some respects these compositions can be considered the most beautiful geometrical decorative elements in Najdian art. Wonderful examples of these shapes can be seen in many mud-brick houses, overlapping with other elements.

A style of decoration in the form of small circles linked together and used in Najdian applied art was well-known in the applied art of ancient Iraq.[94] Such a style is also famous in Islamic applied art and is called *habat al-lulu* or *habat al-masbaha*. It was first used in decorating the Umayyads desert palaces such as Qasr *al-Hir al-Qarbi*, and subsequently in the decoration of other Umayyads palaces. It was also used in the decoration of some residential buildings in Samarra, in Iraq during the Abbasids periods.[95] Likewise, it was employed in both stucco and wood decoration of some traditional buildings in Gulf countries such as Bahran, Qatar e.t.c.

13- The crescent is considered one of the most popular abstract symbolic shapes in the art of both Arab and non-Arab civilisations, and was known by the Sumerians, Babylonians, Syrians, Phoenicians and Aramaeans, and was used to symbolise the gods. It was called *Wid* by the earlier Arabs, and *Rough* or *Rakh* by the Amorites. The Muslims would use it on banners, as did the Prophet Muhammad whose banner was a white crescent on a black background. It also appeared widely in the Seljukian era, due to their interest in astrology.[96]

Only few examples of Najdian stucco decoration, to some extent, seem to be like the Arabesque style in their formations. Originally, Arabesque art had been known in the early art of Islam and the development in the decoration of Andalusia in Spain. According to Islamic artists this style of fine arts has symbolic meaning, refering to something infinite, unknown and invisible. [97]

93- M. F. Murabit, op. cit., p 203. See also Helen Gardner's, op. cit., p 75; Marten J. Vermaseren, op. cit., plate 33, and Brian Doe, op. cit., plate 10.

94- 'Abd al-Aziz Hameed et. al., op. cit.,1982, pp 9 & 10

95- S. 'A. 'Abd al-Haq, op. cit., pp 12 & 26. See also Tahir Muzafar al-'Ameed, *al-'Amara al-'Abbasiya fi Samura' fi 'Ahd al-Mu'tasim wa al-Mutawakil*, Wizarat al-I'lam al-'Iraqiya, Baghdad, 1976, p 91.

96- Qasim R. Haneen, op. cit., pp 153-156. See also 'Abd al-Jabir Mahmoud al-Samourai, 'al-Qamr fi al-Asatir wa al-Mu'taqadat, al-Turath al-Sha'bi, year 5, vol. 12, Wizarat al-Thaqafa wa al-I'lam al-'Iraqiya, al-Markaz al-Fouluklori, Dar al-Jahiz, Baghdad, 1974, p 70.

97- Hassan al-Shishtawi, 'Arabesques', al-Benna, Vol. 3, year 1, Riyadh, 1979, p 93. See also 'Afif Bahnasi, *Jamaliyat al-Fan al-'Arabi*, 'Alam al-Ma'rifa, Kuwait, 1979, p 105, and Fone Shak, op. cit., p 166.

PART 2.

CHAPTER 2.3.

INTERIOR STRUCTURAL ELEMENTS OF TRADITIONAL MUD-BRICK BUILDINGS AND THEIR DECORATIVE FEATURES

PREFACE

This chapter treates the structural interior elements of traditional mud-brick buildings in general, and their decoration in particular. These elements consist of walls; columns and capitals; arches; roofs and ceilings; floors and openings.

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2.3.1. WALLS

INTRODUCTION

The Najdian architect paid close attention to interior walls, demonstrating his ability in a way that often arouses admiration and which shows a clear distinction between interior and exterior areas. He could be successful in some of his works, but not in others. In analysing the interior of mud-brick buildings of the Najd, we can distinguish three types of interior walls, *viz* the interior walls of courtyards; the interior walls of gardens; and the interior walls of rooms.

2.3.1.a. COURTYARD WALLS

This type of interior wall had two forms: the first type was very simply formed from one vertical area (walls of rooms overlooking an open courtyard created without porticoes) and its decoration usually consisted of either one or two rows of triangular clusters (Plate 200). This style of decoration applied to the wall appeared frequently on internal façades of mud-brick buildings of the Najd region.[1] Examples can be seen in the palaces and houses of al-Sa'ud family at al-Dir'iyya, such as the Qasr Nasr, as well as in smaller poorer houses.[2] Similar decoration is also still found on façades and elevations of traditional buildings in the Uras area of Algiers.

The second type was more complex: it was commonly composed of several vertical projecting and recessed stages, and permitted traditional architects a greater decorative thrust than was the case in the simpler walls. Examples of this type were used to form the façades of porticoes and rooms overlooking open centralized courtyards in both domestic and defensive buildings. Rows of geometric crenellations, horizontal, engraved lines, and rows of parallel projecting triangles (inverted V-mouldings) called *al-Mayazib* or *al-Mahadir* (dogs-tooth decoration), as well as arches, columns and capitals were the most common decorative features of this style of interior wall. Best examples

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1- Muhammad bin Su'ud al-Sindah, *Ta'reikh wa Athar Mantiqat al-Quwai'ya*, Isdarat al-Mahrajan al-Watani lil-Turath wa al-Thaqafa (88), Riyadh, 1992, p 73.

2- Geoffrey King, op. cit., 1998, pp 160 & 164.

can be seen in the palaces of al-Sa'ud at both cities al-Riyad and al-Kharj and houses of al-Dikheel in al-Riyad, al-Suba'i in Shaqra and al-Tuwayjari in al-Majma'a (Plates 76-82 & 153-155, Fig. 71). [3] Geoffrey King recorded both architectural and decorative features of walls inside an open courtyard in the women's section of an unattributed house in Burayda:

> *Curiously enough, the part of the house that I was able to examine was that reached through the women's door on the left....This door opened on to a rectangular courtyard. The colonnades around the courtyard supported the walkways of the upper-floor balcony, which gave access to the upper rooms. This two-storey central courtyard design is common throughout Najd. The balcony had high walls forming a balustrade that gave privacy from view from below. This balustrade was decorated with the same stepped crenellations that were found on the exterior, and there were also string courses of inverted V-moulding in relief.* [4]

2.3.1.b. GARDEN WALLS

Houses of the wealthy were usually set within gardens known locally as *al-tahwitat* (s. *tahwita*): in English this means 'enclosures' and the gardens were indeed enclosed by walls. In their decoration such walls did not differ from the walls overlooking the internal courtyards.[5] Structurally, they seem simple and their decorative elements are somewhat slight, especially in the lower parts which are in total contrast to the more elaborate upper parts of the walls. These are characterised by their frequent triangular apertures (pyramidal compositions)[6] and large window openings, which served a beneficial function by facilitating the passage of air currents and light, in addition to enabling the house owner to watch the areas either inside or outside the garden and, likewise, to enjoy their views. The abundance of these walls in detached buildings is noticeable. An important example of this type is the northern wall of a mud-brick house in Thadiq (Plate 201), and

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3. Originally, examples of this style of wall with porticos surrounding an open courtyard appeared in the mud-brick houses at Tel Hassona city-site. See Firial Mustafa, *al-Bait al-Arabi fi al-Iraq fi al-'Asr al-Islami,* Wizarat al-Thaqafa wa al-I'lam, Dar al-Huriya lil-Tiba'ah, Baghdad, 1983, p 117.
4. Geoffrey King, op. cit.,1998, p 144.
5. Al-Sindah, op. cit.,op. cit., p 72.
6. The pyramidical triangular decorations such as those that appear on this type of wall are an ancient style of decoration. The people of Tal-Halaf were used this style of decoration on the surfaces of their clay utensils. See Ni'mat I. 'Alam, *Funon al-Sharq al-Awsat al-Qadim Qabil Dhuhur al-Islam,* Dar al-Ma'arif, Egypt, ND, p 58. The embrasure decorations *zakhrafat al-Mazaghil* seen in this wall, are also known from early Islamic relics, including *Qasr al-Hir al-Gharbi* (the Western Hier Palace). See S. 'Abd al-Haq, op. cit., p 13. See also 'Abd al-'Aziz Hameed wa Salih al-'Ubaidi, *al-Funon al-Arabiya al-Islamiya,* Wizarat al-Ta'lim al-'Ali, Dar al-Huriya, Baghdad, 1979, p 211.

another is the western wall of a mud-brick house in al-Dir'iyya town (Plates 202).

2.3.1.c. WALLS OF ROOMS

Walls enclusing the interior spaces of rooms were the subject of great interest on the part of both local architects and artists; they received a great deal more decoration than the other types of wall mentioned earlier. The artist here employed a whole variety of styles of geometrical, botanical, symbolic and semi-realistic decorative elements, with both mud and stucco as raw materials, as well as employing colour and texture.

The decorative style of these walls is considered similar to those found in Ottoman and Iranian art, where both architect and artist tended to emphasise the decoration of interior elevations, rather than of exterior façades. [7] It differs from the decorative style found in some Islamic buildings from the Middle Ages where, conversely, the interest in decoration was transferred from the internal elevations to the external façades, which often appeared richly and densely ornamented.[8]

It is possible to categorise internal walls enclosing the interior spaces of rooms as follows: the walls of bathrooms and bedrooms; the walls of reception and sitting rooms; the walls of the *rawashen*-; and partition walls.

2.3.1.c.1. WALLS OF BATHROOMS AND BEDROOMS

During the First and Second Sa'udi States, the inhabitants of Najd were apparently disinterested in decorating the walls of bathrooms and bedrooms. They considered that bathrooms were to be used only for short periods of time. Because of that, their walls were not in need of decoration, unlike those living spaces which were built to be used for long periods of time. Similarly, they thought that bedrooms were primarly designed for use during night-time, when it was dark and there was not enough light to observe walls' surfaces.

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7. Al-Rihawi, op. cit., p 220. See also Z. M. Hassan, *al-Funon al-Iraniya...*, 1981, p 54.
8. 'Ali Mustafa Ramadan, *Ta'amulat fi al-Mi'mar al-Islami fi Libya*, al-Dar al- 'Arabiya lil-Kitab, Libya and Tunisia, 1976, p 25.

Plain, high walls surrounded the bathroom area and this was enough to give the user isolation and privacy. However, in the late 18th. century, some wealthy familes with large houses began to be interested in decorating their bathrooms by adding rows of geometrical crenellations to the tops of the walls. Other families started to cover the walls of their bathrooms with fine layers of plain, white stucco. Ruined walls found in various archaeological sites are witness to the fact that, some Najdian people, from the early 19th century onward, were interested in applying plain plaster to their bathrooms.

Rich families from the upper classes in Najdian society (from the early 19th. century) began to paint multi-coloured decorative motifs on the plastered walls of their bathrooms. This type of decoration can be seen in the palace of King 'Abd al-'Aziz at al-Kharj city. The walls of the first bathroom (Plate 96) were painted with matt colours, blue (light and dark) and pink, having first, it seems, been painted light blue as a background. Then the lowest third of the walls was decorated with dark blue, geometrical, decorative motifs to form a flat dado. Finally, the upper part of the walls was painted in matt pink. The walls of the second bathroom (Plate 97) were painted with three matt colours; yellow, black and white. The upper parts of the walls were painted yellow, and the lower parts left white and then decorated with a dado of geometrical motifs painted in black.

In the late 18th. century, the walls of bedrooms were generally ignored by both the inhabitants and artists. Bedrooms, especially in houses of the upper classes were not used during daytime. Because of that, rich people were not interested in decorating the walls of their bedrooms in the same way that they decorated the walls of both the sitting and reception areas. The walls of the bedrooms of the poor, lower classes, however, tended to be decorated with engraved stucco or painted colours. Because this class of Najdian people were used both to sitting and sleeping in their bedrooms, the walls of their bedrooms had to be visually pleasing. However, the walls of bedrooms belonging to the rich people usually contained architectural features such as niches, recesses and wall-cupboards of various shapes, even though the walls were largely undecorated.

In the early 19th. century, the walls of bedrooms in some of the large houses and palaces began to be painted in one colour only. Others were decorated either with several matt colours or with engraved stucco ornaments of various

styles. Examples of painted stuccoed walls can be seen in some of the bedrooms in the palace of King 'Abd al-'Aziz in al-Kharj city. The walls of these bedrooms were decorated with painted geometrical and modified-botanical motifs of various shapes and sizes. The walls of some rooms were painted with light pink, while the others had white (Plate 98-100) as a background colour. Each wall was then divided into three areas by rows of regular, painted, geometrical and botanical motifs which went along the entire wall perimeter. Motifs included saw-tooth decoration, straight lines, arches, leaves and flowers of various shapes and sizes. In some rooms these motifs were painted in red and both dark and light blue. In the others they were painted with red, pink and both dark and light green. The areas between these horizontal bands were then painted with geomemetrical shapes of light grey and green. The ornamentation of walls of these bathrooms and bedrooms was carried out by using the stamping style. However, the artist sometimes recourses to his thin brushes to paint the empty areas of the stamped motifs which were not covered carefully by colour during stamping work.

2.3.1.c.2. WALLS OF RECEPTION AND SITTING ROOMS

As already mentioned, these walls were usually provided with various kinds of architectural element, executed in a variety of sizes and shapes. These included: small windows and apertures; crenellations; niches, recesses and wall cupboards.

In poorer houses, the most common surface decoration of both reception and sitting rooms was either flat, engraved mud work, laid directly on mud-brick or else the walls were simply decorated with layers of plain stucco or large numbers of irregular niches (Plate 128). In the first case, where mud work was concerned, denticulation, crenellation, random carving (*zakhrafat al khrbasha*) and wooden comb engraving (*zakhrafat al-misht al-khashabi.*) were the most common (Plates 149-151). By this simple, traditional decoration, the interior elevations of sitting or reception rooms were ordinarily decorated either completely or partly with large numbers of parallel, horizontal or vertical zigzag or waved inscribed lines. Other walls were sometimes partially adorned by raised zigzag strips of mud, in which were included open triangles, such as those found in a ruined house in Shaqra' (Plate 210). Only

rarely were parts of both mud and stucco surfaces of such walls decorated with geometrical coloured patterns (Plates 170 & 237).

In houses for the middle class, the lower half to one third of the wall was sometimes decorated with a flat plain stucco, forming a dado provided with a row of successive crenelations (Plate 171, Fig. 201). On other cases, the lower half of the wall was coated with a stucco dado, its upper part decorated with very simple, carved, geometrical crenelations, row of niches and some geometrical elements (Plates 127, & 172-173, Fig. 202). However, in very rare cases, the walls were partially decorated with raised horizontal friezes and zigzag strips of stucco. Examples of these decorated walls can be seen in houses at both Rughba and Hutat Sudayr (Plates 152 & 185, Figs. 203 & 205).

The most common surface decoration in rich houses was flat, moulded and engraved stucco work (Plates 116-125 & 129-131) to form cornices; architraves, panels, parallel horizontal and vertical friezes, dado and frames. Cornices, architraves and panels were to be found around the edges of walls, windows, apertures and wall cupboards; friezes and frames appeared above the head, on the dado and the fronts of shelves in both recesses and wall-cupboards. Geometrical and botanical motifs (circles, triangles, horizontal and vertical lines, cross and zigzag lines, leaves and flowers), were those most commonly used by artists engraving or moulding stucco (Fig 204).

In some houses and palaces, the lower part of the walls of both reception and sitting rooms was usually provided with a stucco dado decorated with very complex decorative motifs and architectural elements, while the upper part of the walls was commonly left plain with a coat of either mud or stucco (Plate 121). The dado surface was usually decorated with engraved friezes and panels ran around, above dado-level. Various sizes and styles of arched niche were commonly created and occasionally bordered with angled engraving of geometrical and botanical elements often imitating natural plants or textile materials. In other examples, the lower part of walls was usually provided with a stucco dado, while the upper part was densely decorated with friezes, cornices and panels (Plates 113-115 & 122). Stucco friezes, cornices and panels applied either directly close to each other on a layer of stucco (to mud-brick walls) as decorative features thereby defining the plane of the wall itself, or separated by empty spaces of mud, often appeared in houses and

palaces of the wealthy. When applied to existing walls the stucco friezes and panels could extend to the ceiling level in these domestic buildings.

Such decoration is found on the walls of the reception rooms of al-Tuwayjari in al-Majma'a (Plates 116 & 117), in the reception rooms of some houses in Rohgba (Plates 122-125), the al-Suba'i's house in Shaqra' (Plates 118-120) and in the ruler of Shaqra's residence. The last two were visited and their walls described by Philby as they appeared in 1917 A.D.:

> *House of Abdullah al-Subaii' the local tax-collector. His coffee-parlour, where we found Iben Sa'ud with a large gathering, differed little from that which I have already described, except that the colour-scheme of walls was of a dark greyish hue in place of white, while the decoration was less elaborate and consisted of a series of friezes separated by bands without decoration. The eternal circle and triangle provided the motive of friezes.* [9]

Regarding the reception room of Muhammad Bin Sa'ud, the ruler of the Shaqra, Philby also said:

> *His coffee-parlour,.....his loyal subject-was comfortably....on corner of a room, whose walls were covered with a spotless white gypsum plaster richly decorated with circles, triangles and other symmetrical designs. Several openings, furnished with decorated wooden shutters, led out from one side of the parlour to a sort of roof-garden or open-air coffee- parlour.* [10]

The upper parts of walls in some reception and sitting rooms in the houses of both al-Majma'a and 'Unayza were sometimes decorated with framed engraved motifs. These included geometrical and modified-botanical decorative elements, all of which were considered symbolic decorative compositions in both these cities. So, because of their symbolic meanings, the people of both these cities usually formed this type of decoration on the wall above head-height, either over the entrance to the room or on the wall facing the entrance (Plates 312-316). Geoffrey King recorded this style of interior decorative composition, which distingushed the decoration of reception rooms in mud-brick houses of 'Unayza:

> *This Unayza majlis had elegant and complex plaster decoration in the form of decorative bands that ran around all three extant walls, interrupted by arches and niches. On the north wall was a large tabula ansata-like motif, flanked by vertical panels that contained floral motifs. The overall effect was to create visually unified areas that were able to carry a variety of geometric and floral forms.* [11]

9- Philby,1928, op. cit., p 107.
10- Ibid., p 106.
11- Geoffrey King, op. cit.,1998, p 148.

Geoffrey King also described the decoration of the reception room's walls at the house al-Tuwayjari in Burayda:

> *The majlis of the Bayt al-Tuwayjari has been partly demolished.....The white plaster decoration of this majlis interior covered the entire wall, interrupted only by the doors. It was the finest work of its sort that I have seen in Najd, rich in decorative motifs that used an interplay between negative and positive images. There was a balance between floral and geometric motifs, which were set within the three broad horizontal registers into which the wall surface was divided, and there was a clear separation of decorative panels by frames. The most striking feature was created by a rank of white plaster palm trees in relief, set against a plain ochre background in the uppermost register, immediately below the roofing beams.* [12]

Architecturally, wooden shutters on both doors and windows, recesses (*al-Taq and makhzan al-shi wa al-qhwa wa al-tamr*) and wall-cupboards overlooking the interior spaces of both sitting and reception rooms are considered inseparable parts of the walls of these rooms. Aesthetically, their coloured decoration creates a beautiful contrast in hue within the rooms, due to the white background which is presented here by stuccoed walls. Indeed, from the artistic point of view, wooden elements in Najdian interiors are regarded as integral applied work to the stucco. The aesthetic value of the stuccoed walls of reception and sitting rooms was usually obtained from the multi-coloured decoration of these wooden shutters on one hand, and from the balance between the motifs of stucco and that of timber on the other. Therefore, equally, the surfaces of both walls and shutters in reception and sitting rooms received a great deal more decoration than other interior and exterior areas. The artist employed a variety of similar styles of geometrical and botanical decorative motifs on the surfaces of these interior features, while trying to achieve a balance between coloured and uncoloured areas.

2.3.1.c.3. WALLS OF *AL-RAWSHAN*

Some *rawshan* walls were decorated with few decorative elements, while others were commonly densely decorated with carved horizontal and vertical friezes of stucco. Examples of these are still found in some Najdian cites such as Shaqra, Rohgba (Plates 109-112) and al-Riyad (Plates 113-115). Men's rawshans had sometimes two kinds of wall, one low and the other high, both overlooking the lower reception room, as in the house of al-Tuwayjari's at al-Mjma'a (Plates 102-108). Here the upper parts of the lower wall were usually decorated with a row of large, geometrical, stylised crenellations; while the upper half of the higher wall was often decorated with a number of

12. King, op. cit.,1998, p145.

protruding, ornamented friezes and panels running vertically or horizontally or alternating from one to the other. The lower half of this wall was sometimes beautified by a projecting stucco dado, either ornamented or plain.[13]

In the women's rawshan, especially in the better class of houses, the walls were usually enriched with engraved stucco decoration with many friezes, these being of hard stucco some 10-20 cm. apart (Plate 74). Compared with the stucco work of other interior walls, this was the finest, rich in decorative motives and artistic compositions, and executed in different ways. There was, to a certain degree, a balance between these compositions in general and their floral and geometrical elements in particular. The quality of wall decoration in Najdian women's rawshans when compared with that in the men's rawshan and also in reception rooms, gives some idea of how much the Najdian women was interested in interiors. In poorer houses, the rawshan's walls in both the men's and women's sections were usually covered with a layer of plain mud or white stucco, decorated with some niches only.

2.3.1.c.4. PARTITION WALLS

Among those structures of which the Najdi architect took great care over were the internal partitions that came in various shapes and sizes in order to perform various utilitarian and aesthetic functions. The Najdian partition consisted of a wall built of mud-brick, perpendicular to the ground but hardly ever extending to the ceiling of the building (rare examples of partition reaching to the ceiling levels can be seen in plates 208 and 210). In order to enhance its stability the partition was usually stiffened in the middle by a pillar which did indeed reach from floor to ceiling. Commonly, three types of interior partition were found in mud-brick buildings of the Najd, *viz*: those in front of either the main or rear entrance-halls (Plates 58-60, 83 & 87); in the main central corridors, separating two sections of building (Plate 211); and those separating the sitting and dining areas (Plates 203-210).[14]

These partitions were an indivisible part of the building, even though they do not actually carry the weight of the ceilings (rarely reaching that high). Due to their large area and the importance of their locations, they are distinctively

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13. Al-Sindah, op. cit., p 45.
14. For more details of these kinds of Najdian partition, see paragraph 1 in the notes to this chapter.

ornamented. Their types of ornamentation varied according to the function performed by the partition and the status of the house-owner.

The two faces of the first type of partition (i.e. in the entrance hall) were often decorated with rows of triangular openings, geometrical crenellation and small, shallow recesses forming niches of a kind for housing lamps and lanterns. Sometimes, these niches were left plain, coated with a mixture of mud and stucco. In other cases their surfaces would be ornamented to varying degrees, according to where the partitions were.

The second type of partition (separating different parts of the building) was usually more beautiful and had more ornamental elements than the first since they would be seen by female guests and, even if only for a brief period, would give a good impression of the level of house ornamentation and thus the taste and social standing of its inhabitants. Some of them contained ornamental elements, while others did not. When present, such ornaments consisted of architectural elements executed in a decorative style, e.g. the crenellations and the apertures, both circular and triangular, which allow light into the dark passage.

Despite the simplicity of the ornamentation in the first two kinds of partition and its limitation to simple architectural elements, the artist's effort was adequate since such partitions would usually only be seen for a moment: by men entering quickly through the main entrance by female visitors; or solely by the residents of the house. Its simplicity might also be attributed to the financial situation of the owner, who may have had to make do with minimal ornamentation.

The third kind of partition, in the sitting or reception room, surpasses the previous two in beauty. It was the most important, most visible and most highly decorated. Seated guests would look at it at length during the day and at night, enjoying its artistry, particularly in the area near the entrance. In addition, it needed to complement the other walls of the salon, which were also highly decorated. So in consideration of its prime location, the artist gave this partition a great deal of attention and executed condensed ornamentation across its surface. He designed the ornaments and engraved them, harmonizing their forms which were distinguished from those on the salon walls by their concentration around areas such as the fire-places.

2.3.2. COLUMNS AND CAPITALS

INTRODUCTION

Some buildings from the 17th and early 18th centuries A.D., in many cities and villages were mostly void of an interior courtyard and their rooms were small in size. Where they still exist, they are generally very small in area, not exceeding 3m x 4m or 2.5 x 5m. Therefore they did not require columns, or porticoes where thick walls were sufficient to bear the beams and the ceilings. However, some older people of local families, such as al-Suwayan, al-Tuwayjari, al-Dikheel, al-'Asaf and others, believe that there were once mud-brick buildings provided with wooden columns and capitals made from palm or tamarisk.[15] This, of course, does not prove or disprove the existence of larger buildings with spacious rooms and courtyards supplied with columns.

According to their account, there were some fine, engraved, wooden columns and capitals found in the houses and palaces of Najdian traders, decorating the interiors of their courtyards and rooms. Some of the wooden capitals would have been obtained by the traders from the cities of al-Zubair and al-Basra in Iraq, while the other were locally made by Najdian craftsmen. It may be that the ornamental botanical and geometric compositions engraved in the stucco of stone columns and capitals in some mud-brick houses (e.g. al-Tuwayjari in al-Majma'a) recall the decoration of their earlier wooden prototypes; and, in so doing, demonstrate very clearly that decoration first applied to wooden columns and capitals is much more beautiful and natural, but becomes less appropriate when applied to stone columns and capitals. In fact, there were several wealthy families in Najd who could afford to spend lavishly on the construction and ornamentation of their buildings even prior to the advent of Islam.

In Najdi mud-brick architecture, we can identify a number of different forms and sizes of column erected within mud-brick structures, whether in domestic, defensive or religious buildings; and whether inside the rooms, in the porticoes, or at the sides of the main entrances. Featureless, these columns can be divided into two basic types: plain and ornamented.

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15. See paragraph 2 in the notes to this chapter .

PLAIN COLUMNS

Plain columns had either a circular or square cross-section, the dimensions of which usually remain constant throughout the length (Figs. 215-220, 223, 238 & 239). Examples of this type of column are found in many houses and palaces in the cities of al-Riyad, al-Majma'a, Aushaqir, Shaqra, and Roghba. However, a minority are constructed with a tapering, gently conical form: e.g. the column found in the old city of Jalajil (Plate 216, Fig. 216). Another, similar to this, is seen in Shaqra (Plate 75, Fig. 223, d) and al-Riyad (Plate 222, Fig. 220). Alternatively, the middle section of the latter two columns may be thickened (entasis) as if two tapering bodies of equal dimension had been placed base to base.

Those columns having regulated dimensions such as those of Shaqra and al-Riyad appear elegant and their measurements are satisfying in comparison with those of unregulated dimensions in some houses at Jalajil and Rawtat Sudayr. However, while differences in these two forms appear in their respective shafts, both have capitals constructed either simply of one or two pieces of stone or, less simply, with three pieces of stone so as to form a kind of pyramid capital (Plate 78, Figs. 223, a, b & c, 236 & 239). The introduction of such inverted pyramidal capitals is not a modern phenomenon, having been used since ancient times: similar forms can be found in the Rameseum Temple near Luxor, built between 1237 - 1302 B.C.[16] and the form is also known in Greek art.[17]

ORNAMENTED COLUMNS

Columns of this type appear abundantly in the cities and villages of middle Najd, and decrease in number progressively either north or south, with the exception of al-Riyad. Important cities possessing an abundance of this type of column are: al-Majma'a; Aushaqir; Shaqra; al-Tuwam; 'Udat Sudayr; Rawdat Sudayr; Sadus and Rugbba. With regard to the technique used to execute the ornamentation, they can be divided into two types: that which is embossed; and that which is incised. These two types generally have

16. Henri Dorra, *Art in Perspective*, Hercourt Brace Jovonovich Inc., New York, ND, p 14.
17. Helen S. Gardner, op. cit., p 65. See also Thomas F. Mathews, *The Early Churches of Constantinople*, The Pennsylvania State University Press, N. N. Parks, London, 1971, plate 55.

cylindrical shafts, and their cross-sections generally form circles of regular circumference. Their capitals can be, regarding their construction, either simple or complex (Fig. 237).

THE FIRST TYPE

Of all the artists of the area, those of al-Majma'a city are considered among those most committed to ornamenting the surfaces of their columns, both capitals and shafts. The artist would use familiar ornamental elements, embossed on the fronts of the capitals, which, by the shadows they cast, created beautiful natural colour gradations between dark grey and white.

Among the columns in al-Majm'a which facilitates the appreciation of these techniques most fully are those in Tuwayjari's house which beautify the men's upper reception room, *al-rawshan*, overlooking the salon,*al-Majlis,* on the lower floor (Plates 102-108 & 217-220, Figs. 214 & 224-225). Most of the columns have short, cylindrical shafts and pyramid capitals. The faces of the capitals are decorated with embossed, complex formations of geometrical elements consisting of equilateral triangles, regular trapezia and crescents which curve forwards from the column base. The necks of these columns are also ornamented with rings of equilateral triangles, enriching the lower edges of the capitals.

One notable artistic high spot in the ornamentation of the columns is the *rawshan* of the Tuwayjari house, where the patterns of ornament are nowhere repeated. Therefore, great ornamental variety on the columns can be noted but little ornamental formation that resembles another, in spite of the artist's use of the same, individual geometrical elements. This also can be noted in the ornamentation on the columns in some houses in al-Riyad, indicating the existence of cultural exchange between cities, corresponding to the distance between them. It indicates the refined artistic consciousness manifested in the distinguished character of the technical work which remains fresh.

THE SECOND TYPE

Among the various columns excavated in the cities and villages of the Najd region, examples have been found decorated either with slant engraving (i.e. where the tool enters the surface at 45°) or shallow incisions. These methods

are used for the easy, direct treatment of the surface of the column, particularly compared with deep, right-angled engraving (i.e. where the tool enters the surface at 90°). Archaeological evidence from the sites of some mud-brick buildings can provide both general information about column ornamentation as well as more specific information about a particular artist's skills and the state of ornamental development locally.

The ornamentation of some columns appears very poor and simple such as the columns found in both Hutat Sudayr (Plate 212, Figs. 208 & 226) and Rawtat Sudayr (Plate 214, Figs. 209 & 228). While in other columns such as those of the Attar village (Plate 213, Figs. 210 & 229) and al-Dahu Skirt (Plate 221, Figs. 212 & 227) it appears more pleasing. This last column shows more development than the other two, with that at Rawtat Sudayr demonstrating more skill than that at Hutat Sudayr.[18].

The columns of al-Dahu are ornamented with engraved geometrical and botanical elements which consist of hexagonal petals, equilateral triangles and circles. From examining this column, a good idea of the characteristics of its developmental stage can be assessed. The artist's love of ornamental variety is apparent from his use of ornamentation on the faces of the capitals in this house, despite the aesthetic perfection possessed by the shape of the columns even when its shaft is undecorated. In addition, it appears that the artist was satisfied with only ornamenting the faces of the capitals of al-Dikheel's columns by engraved lines making the capitals with two clear plain levels (Plates 222 & 223, Figs. 220 & 232). However, the same artist decorated the upper parts of the shafts of al-Suwayan's columns by engraved saw teeth ornamentation, but not the lower parts of the shafts (Plate 225, Fig. 211).

Unfortunately, the writer has been able to find only one example of ornamented columns showing engraved ornaments on both body and capital. This is a column in Rughba village, located in a *rawshan* of a mud-brick house now falling into ruin (Plates 109-110 & 226, Figs. 213, 221 & 222). This column shows another developmental stage which may be the last to include this method of engraving and ornamental composition which consisted here of geometrical elements. [19].

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18. For more details about the development stages and the ornaments' origins in these columns, see paragraph 3 in the notes to this chapter.
19. For more details about the ornamentation and origin of the ornaments include: zigzag

This conclusion is reached in the light of the accuracy of the slanted engraving, the quality of construction, both of its masonry and its stucco. In addition, there is the pleasing selection of the ornamental elements, arranged in formations that cannot be found on earlier columns. Despite the use of decorative elements seen in the Najdian columns in various other applied arts of early civilazations, the general formation and the harmony among these elements are considered specific to the area.

On inspection, the decoration applied to Najdian columns appears not unlike that found in woven items such as rugs, carpets and other types of textile, further evidence of the extent to which both bedouin and Persian textiles influenced the ornamentation of Najdian stucco.

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waves, straight and curve lines in addition to forms of pyramidal triangles. See paragraph 4 in the notes to this chapter.

2.3.3. ARCHES

INTRODUCTION

The arch is one of the most important architectural elements in both modern and ancient architecture. Jean-Pierre Adam provides a description asserting the significance of the arch in space and touching on the origin of the true arch (i.e. one constructed with voussoirs):

> *The voussoir (or true) arch is rightly considered to be one of the fundamental elements in the conquest of space, a contribution made by the Romans in their monumental architecture. An image traditionally accepted for generations was that the Etruscans were the inventors of this technique and responsible for its transmission into Roman architecture.* [20]

In fact, the architecture of most early civilizations that existed either during or after the Romans was clearly influenced by Roman architecture, especially by their various types of true arch, which played such an effective role in the creation of interior spaces of buildings. However, neither the Etruscans nor the Romans were the earliest people to create the arch, although they may both have re-invented it. According to Fletcher, the arch first appeared in the third millennium B.C. in the architecture of Mesopotamia:

> *The arch now first appears on the architectural horizon as applied to openings. In some cases it is not a true arch...but finally the true arch was practised, being probably accidentally hit upon by the use of small units of materials, which must have had a direct influence, for the Chaldaeans.* [21]

In reality, many civilizations have utilised the arch with its various architectural and ornamental roles and in Najd the focus probably has been on the latter. However, the true arch was unknown in the mud-brick architecture of Najd, the use of arches in this type of architecture in their various forms and sizes, were common as decorative features. The use of the true arch was confined to a few examples of stone buildings in Najd such as the new, semi-circular arches (perhaps from the early of 1930s) of a stone building in al-Muraba'

20- Jean-Pierre Adam, *Roman Building. Materials and Techniques*, Translated by Anthony Mathews, B. T. Batsford Ltd., London, 1994, p 158.

21- Banister F. Fletcher, *History of Architecture on the Comparative Method*, B. T. Batsford Ltd., London, 1901, p 29. According to John Alexander Smith, the true arch was also known to the ancient Greeks, but little used in public architecture.

district in al-Riyad (Plate 237, a), and the ancient pointed curved arch over a street in Dumat al-Jandal, recorded by Geoffrey King in 1975:

> *....In a different way, a pointed arch over a street in Dumat evokes other more northerly influences from Syria or Iraq, for the true arch is unknown in traditional buildings to the south in Najd.* [22]

Najdian arches completely differ from columns which, in bearing the ceilings, always perform architectural as well as aesthetic functions. This does not mean, however, that some arches in the buildings of the area may not also fulfil a functional role. However, it is in an ornamental capacity that they appear most often: they are abundant in the interior façades and elevations of mud-brick buildings in the Najd. Among the types of arches which the architect has used are: the semi-circular; the straight pointed; the curve pointed; the horseshoe; and the lobated. All these types were employed as false arches in old mud-brick architecture of the Najd.

SEMI-CIRCULAR ARCH

This arch appears in both large and small doorways, connecting both interior and exterior spaces (Fig. 240). Examples of gateways with this style of arch are seen in mud-brick buildings in 'Unayza and Shaqra (Plates 233 & 234), and in al-Majma'a, Ushager and Jalajil. It is also seen in the guest palace of the King 'Abd al-'Aziz at al-Kharj (Plates 81-82), beautifying the porticoes' elevations, in the interiors of some houses and palaces in both Burayda (Plates 235 & 236), and at the Marid Palace in Dumat al-Jandal, as well as in numerous buildings in the eastern region, e.g. the Ibrahim Palace in Al-Hufuf; and in the Holy Mosque of Makka. The use of this arch is not confined to doorways, but is also exploited as a decorative element in other interior features, as in apertures, niches and wall-cupboards, likewise, stucco friezes and panels (Figs. 75-76 & 82-83).

In fact, this arch is considered to be an archaeological feature which has appeared in every era, but the origins in the Najd are unknown. We know, though, that it appeared in the early architecture of Mesopotamia, in the Ægean, Hellenic and Roman eras and in south east Asia. The most ancient

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22. Geoffery King, op. cit.,1998, p 131.

Islamic examples are to be seen in the Mosque of the Holy Dome in Jerusalem and at the Umayyad Friday Mosque in Damascus. [23]

STRAIGHT POINTED ARCH

With great frequency, this arch appears in the internal façades of various traditional Najdian mosques, both small and large (including Friday Mosques), such as some of those in al-Dir'iyya (Plates 21-23) Huraymila and Burayda (Plates 24 & 26), in the external façades of traditional mud-brick markets; and in the internal façades of houses and palaces (Plate 78); but also in other Najdi villages and cities.[24] It is also seen in the interior elevations of rooms, beautifying the tops of all types of niche, large and small (Figs. 80, 81 & 241).

This form of arch is also considered in the same light as other ancient, familiar types, appearing as it did in the Roman and Byzantine eras. The earliest Islamic example of a straight pointed arch is located in the Qasr al-Hir al-Sharqi (Eastern Hir Palace) which was built in 110 A.H. It also appears in the buildings of Sammara (in Iraq) and other Moslem cities.[25]

CURVED POINTED ARCH

In Nejdian mud-brick buildings, a type of arch that appears less frequently in façades and elevations is that which is both pointed and curved, the so-called *al-Kaus al-Farisi* or Persian arch. Examples of this arch are still found in the façades of the prayer hall at the old mosque in 'Unayza (Plate 25) and in the façades of traditional mud-brick market in al-Majma'a (Plates 49 & 50). However, this arch was more widely used in the ornamentation of interior niches (Plate 128) and to form the architraves of wall-cupboards (Figs. 78 & 242).

Unlike in the Najd area, this arch was commonly used as a true arch both in domestic and religious buildings in the Eastern and Western areas of Sa'udi Arabia. In the former it appeared in Jwatha Mosque and, in the latter, in

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23. For more details about the origins and appearance of this type of arches see paragraph 5 in the notes to the chapter.
24. Al-Sindah, op. cit., p 61.
25. Fareed Shafia'i, op. cit., 1970, p 145. See also 'Abd al-Haq, op. cit., pp 34-35.

'Abbas Mosque in the west of the Jazan area and in the old mosque in Abu 'Arish.[26]

In comparing Persian arches found in buildings of the Eastern and Western regions of Sa'udi Arabia with those of the Najd, we find that they resemble each other to some extent in the accuracy of their construction indicating the technical unity of work between these areas. It may also indicate that the builders of these arches came from one of these two outer areas. The arches in the mosques of Huraymila and Jalajil closely resemble those of Jwatha Mosque.

This arch is considered of Persian origin because it is believed that it first appeared in Kisra Palace, built during the Sassanian era.[27] Its use was continued in Islamic architecture and most ancient example is found in the Islam's Umayyad Mosque in Damascus although it is believed that it also appeared in Wardan Palace from 560 - 564 A.D.[28]

HORSE-SHOE ARCH

In the Najd, this arch was not used in the façades and elevations, unlike those described above, builders confining it to decorative architraves around wall-cupboards in occasional buildings (Plats 297 & 298, Figs. 73 & 243). However, it did clearly appear in both mud and stone architecture of other countries in the Arabian Peninsula contemporary with the mud-brick architecture of the Najd area.

It was widespread elsewhere, too. The earliest example dates from the Roman period; it was also known in the Sassanian and the Byzantine ages; and in the early Islamic age, especially in the various Umayyad establishments, e.g. in north Africa and Spain.[29]

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26. Geoffrey King, op. cit.,1986, p 64, and for more details see paragraph 6 in the notes to this chapter.
27. Helen Gardner, op. cit.,p 493.
28. Fareed Shafi'i, op. cit.,1970, p 207. See also 'Abd al-Haq, op. cit., p 40.
29. For more details see paragraph 7 in the notes to the chapter.

TRILOBATE AND MULTI-LOBE ARCHES

By contrast, a type which has scarcely been used is the trilobate arch, an arch having three lobes or leaves. Artists have, however, used it to ornament some small apertures which decorate the elevation of the ruined sitting-room in Rogba (Plate 304, Figs. 73 & 244). The appearance of multi-lobe arches in Najdian building was also rare; however examples of this type can be seen in the palace of King 'Abd al-'Aziz in al-Kharj beautifying the entrance façade of a staircase which leads to upper floors from the open courtyard (Plate 244). Both of these types of arch are much more commonly found in western and eastern areas than in Najd.

The formation of these arches is more technically accurate in these two areas, and their use is limited and may be found in façades.; while in Najd, we see that their use in the façades of buildings is infrequent to their appearance in apertures and staircase entrance; moreover, their construction was more primitive. In short, it is thought that the artist who first executed this arch in Najd belonged either to the Eastern or the Western areas of Sa'udi Arabia, or, perhaps he was influenced by arches he had seen in one or other of these neighbouring parts.

In the Eastern area, these types of arches were used in al-Jabri Mosque in al-Hufuf in 880 A.H., also appearing in al-Rjeiba Mosque in al-Qatif; [30] in the pavilion south of al-Qatif.[31] In the Western area it served at Abu Hanifa Mosque in Jedda which was built in 1240 A.H.[32] It also appeared in early Islamic architecture, both during the Umayyed and Abbassid eras. It is thought that these arches and others of lobate design were inspired by the lobulated stripe which ornaments the façade of the Ctesiphon Palace which was built between 241 and 272 A.D. [33]

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30. King, op. cit.,1986, p180. For more information see paragraph 8 in the notes to this chapter.
31. King, op. cit.,1998, p 196.
32. King, loc. cit.
33. Qasim Twair, 'Kashif wa Tarmim wa Taqwim Qasr al-Banat fi al-Raqqa', Research in the book of *Dirasat al-Athar. al-Kitab al-Awal,* Department of Archaeology and Museums, College of Arts, King Sa'ud University, Riyadh, 1992, p 205. For more details see paragraph 7 in the notes to this chapter.

2.1.4. CEILINGS

INTRODUCTION

Throughout history, various styles of ceiling have been created using a wide variety of natural and artificial materials, each type designed to be suitable to the society and climate of the area in which it was to be used. Flat ceilings are the most common in the hot areas of the Middle Eastern countries, especially those located within or close to the desert, including Iran, Iraq, Syria, Egypt and Morocco.

NAJDIAN CEILINGS

The typical ceiling in Najdian mud-brick architecture was flat, constructed from the same selection of natural raw materials mentioned in the first chapter. Its structural and ornamental design depended on the type of building and the social and economic status of the owner.

Throughout history, ceilings were the favourite places for stuccos, frescos and mosaics.[34] Najdian ceilings were also, as in many other architectural traditions, opportunities for the artist and architect to demonstrate their respective abilities. The ceilings of the 17th and 18th Centuries were very simple and their visible surfaces appear in their natural, unadorned textures and colours. This was certainly the case in poorer houses for much of the early 18th Century. Moreover, plain ceilings continued to appear in the mosques of the area until the early 19th Century, and may examples can be seen in both the large and small mud-brick mosques of Najd.

During the 18th Century, the ceiling beams of poorer housholds were either left plain or might sometimes be decorated with very simple designs. Even the ceilings of the poorest houses could be decorated, usually with a few coloured dots, lines and triangles appearing clearly on the lower areas of the ceiling joists (Plate 169). The projecting beams, including their lower

34. For example the ceilings of countryside in England were on occasion decorated with ornamented plaster work, see Judith and Martin Miller, *Country Style*, 1990, p218.

surfaces, could be coated with white stucco, and the upper areas of the sides of the beams might be engraved with geometrical elements. This finish was found among both the poor and rich, and is seen in the house of al-Tuwayjari (Plates 107-108 & 220) in al-Majma'a .

In the late 18th and early 19th Centuries, the under-sides of the ceiling beams in wealthy households and palaces began to be decorated with geometrical compositions of various colours. Magnificent examples can be still be seen in many houses and palaces dating from the early 19th Century (Plates 16, 18, 100, 153-154, 215 & 222-224).

As described above, the Najdian ceiling was aesthetically very pleasing. This was achieved through the use of materials with rich and varied natural colours and textures, and the method of construction which lent the interior a great variety of light and shade, colour and contrast. The beauty of the Najdian ceiling is further enhanced by the application of colours which draw the eye to the decorated central beam.

Dickson seems to have been the only visitor who recorded in depth the construction and decoration of the traditional ceilings of the al-Badi'a guest palace in al-Riyad. About the portico ceiling he said:

> *It is supported by stone pillars covered with white plaster (juss). Between each pair of pillars are three beams of pale-yellow or fawn tamarisk wood, on which are painted in scarlet and black striking designs in lines and dots.* [35]

Moreover, about the ceilings of the *al-rawshan* and the main reception room she said:

> *The beams are all made of tamarisk wood and are usually placed three together between each pillar, supporting smaller branches covered with reeds and mud, that form the roof of the veranda - these in most cases, being covered up by nailing white cloth over the ceiling. The beams supported by the pillars are decorated in true Najd fashion with paintings of dots and lines in scarlet and black on a pale yellow ground, as described above....the ceiling cloth in the main reception room is gaily decorated with coloured blobs of silk in patterns representing moons and stars, and circles large and small.* [36]

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35. Dickson, op. cit., 1956, p 380.
36. Ibid., p381.

2.3.5. FLOORS

INTRODUCTION

The floor has evidently been among the most functionally important elements of architectural endeavour since ancient times. This unique importance which has distinguished the floor from other elements is clearly apparent in the course of our daily activities, though its cultural value varies from society to society.[37] For example, the floor in Najd region, as in various other Islamic areas, has a symbolic meaning. Pierre V. Meiss says:

> *The floor is not always pragmatic. On your path you come across perhaps a gravestone carefully carved to the memory of the dead. You walk on it with discretion, perhaps even with respect, you enter into tactile contact with eternity. This ground is therefore no longer a simple horizontal plane for feet and posterior, it becomes a symbolic place.* [38]

The floor is closer psychologically to the Muslim than to the non-Muslim, due to the five sets of prostrations he performs daily, and its use as a sleeping and eating area. Because of this, floor-space in Islamic cultures is generally not walked on with outdoor shoes and, as such, the Muslim can afford to give it special decorative attention; and, perhaps to a lesser extent, almost everybody inevitably experiences the texture, temperature, colour and organization of flooring to some degree. On these points Meiss observes:

> *The floor has most of all a pragmatic meaning.....Vertical and horizontal do not, therefore, have the same force....We walk on it; Western man hardly ever uses it for sitting or lying on, touching with his hand or the rest of his body.* [39]

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37. For the physical significance of the floor among other surfaces such as walls and ceilings see Stephen Calloway, *The Element of Style. An Encyclopedia of Domestic Architectural Detail*, An Imprint Reed International Books Ltd., London, 1991, p 30.

38. Pierre Von Meiss, *Elements of Architecture. From Form to Place*, Van Nostrand Reinhold International Co. Ltd., New York, 1990, p 127. Early man believed that the floor had a symbolic meaning. This gave rise to its being decorated with symbolic geometrical, botanical and representational ornaments, using fresco or mosaics of various colours and compositions, for example, the floors at tell el-'Amarna were painted with water colours. See Helmuth Bossert, *An Encyclopaedia of Colour Decoration*, Ernst Wasmuth Ltd., Berlin W. 8, 1928, p 16.

39. Meiss, op. cit., p 126.

NAJDIAN FLOORS

The floors of mud-brick buildings of the Najd were constructed using various natural materials including mud, stone and stucco. Practically speaking, the coat of stucco provided an all-over floor-covering which was warm in winter and cool in summer, as well as being quite soft and pleasing to the touch and easy to clean. The major drawback was cost, and as such it was seen most frequently in the houses and palaces of the wealthy. Consequently, the mud-floor was the cheapest and most popular choice, though it was not as hard and needed cleaning daily.

The grey or white colour of stucco fits easily with any colour scheme, while mud must be offset by bright colours in order to lend balance and life to the interior. However, an interior in which only one colour is utilised on the floor space appears more spacious than when a combination is used. The floor-spaces of domestic and defensive buildings were usually either partly or completely covered with rugs, carpets, mats or even blankets and other kinds of material, while the floors of mosques were either left bare or partly covered with mats and carpets.

The floors of the sitting rooms of most buildings were covered in two ways. They could be partially covered with rugs, mats and carpets arranged in a L or U shaped formation, leaving the middle section of the room completely empty, except for some small iron utensils surrounding the fireplace. The floor-covering was thus organized around the walls of the room, and on it were placed mattresses and cushions of various sizes and colours. The second method had the entire area of the floor covered, except the high area of the hearth. This style of floor-covering was usually seen in wealthier households. In the large sitting-rooms of palaces and some houses, the floors were often covered with various kinds of furnishing, including rugs, carpets, leather and tapestries of various sizes and colours, and in this way the floor was divided into many areas. Carpets covered the middle area of the room, with other pieces of material situated around their perimeter, attached to the lower edges of the walls. Sometimes small areas appeared between these, defining and framing each one.

Bedroom floors were without any kind of covering during the daytime, while at night they were partially or completely covered using mats, blankets,carpets

and rugs, on which sleeping mattresses and pillows were laid. In poorer houses, bedrooms were sometimes furnished with the mattresses used as sitting-rooms all day long. The floor-covering of sleeping rooms as well as other bedding were stored during the day time in wall recesses, or simply stacked in a corner of the room.

The floors of corridors and staircases were always left without any kind of covering, while during the summer nights, the floor-space under the portico ceiling of open courtyards located around small gardens, such as that seen in Rabi'a's house, were often furnished with rugs, mats and carpets, as well as mattresses and cushions which were used in open seating areas.

The floors of small mosques in poorer villages were commonly left without floor-coverings, or were partially covered with matting, while the floors of both small and Friday mosques in the towns and cities were usually covered with fine carpets on which men would pray.

The floors of niches, wall-recesses and wall-cupboards were sometimes covered with decorated cloth, tapestries or small pieces of rug or carpet. The seats of mud-benches and the areas close to the main doors of small shops were also often covered with rugs, carpets or mats, where the proprietor and his customers would sit.

2.3.6. OPENINGS

INTRODUCTION

Architectural openings, whatever their size and type, are among the distinguishing features of a building, whether it be domestic, defensive or religious in character, and can be seen from both inside and outside. Moreover, they offer the greatest variety of practical and aesthetic functions, providing beauty, life and dynamic movement to a structure, and opening on to unexpected views of adjacent areas.[40] Openings also allow both direct and indirect sunlight and fresh air to enter into the interior spaces.

NAJDIAN OPENINGS

In hot climates, such as that of the Najd region, most of the structural openings that overlook the interior spaces are formed in the north and south façades, facing across the path of the sun, and those which overlook inner courtyards are usually shaded by portico ceilings. However, those oriented east and west were commonly provided either with grilles, horizontal hoods or *brises-soleil* (sun-breakers). Najdian openings can be divided into geometrical apertures and openings of doors and windows.

2.3.6.a. GEOMETRICAL APERTURES

Wall apertures were one of the most common architectural features of Najdi mud-brick architecture. Apertures occurred not infrequently in domestic buildings, particularly in the houses and palaces of the wealthy. The majority of apertures were located in the topmost portion of the walls which faced on to the both inner courtyards and rooms (Plates 200, 227, 229 & 231) or both rooms and out on to the street (Plates 228, 230 & 232). The shapes and sizes of the apertures were diverse, but the most common was the equilateral

40. Francis D. K. Ching, *Architecture, Form, Space, and Order*, Van Nostrand Reinhold Inc., New York, 1996, p 172.

triangle, though squares, rectangles and circles etc. were also used, and were usually small in size.

For security reasons, the number of apertures appearing in a wall was restricted and, in the 17th century, they were always found close to ceiling level. During the 18th century these apertures advanced a great deal stylistically, particularily those appearing in palaces, where the upper section of every wall would be enriched with a variety of forms. Examples can be seen in the walls of some ruined palaces, including those of the Sa'ud family at al-Dir'iyya (Plates 35 & 232) and al-Kharj, and the palaces at al-Majma'a and Burayda.

However, it was in the 19th Century that this type of Najdian feature reached its highest stage of development, when large numbers of apertures of various sizes and forms were used in both the interior and exterior walls of mud-brick buildings. These apertures were often grouped and organized in horizontal and vertical parallel lines, demonstrating the creativity of the traditional architect. Sometimes these groups were arranged, instead, in pyramidic form, particularly when the apertures were triangular in shape (Fig. 165). Some of these apertures were sometimes framed from the inside face by engraved stucco friezes formed into zigzag shapes (Plates 112, 152, 185 & 254)

2.3.6.b. OPENINGS OF DOORS AND WINDOWS

Decorative stucco and wood work, the most important exterior feature, distinguished both large and small exterior wooden doors. Large exterior doorways were sometimes provided with rounded arches, which were commonly surrounded with raised stucco friezes, like those found in various houses in al-Majma'a Burayda and al-Riyad. Other examples of these large doorways were flanked by short columns, two on each side, bearing rounded arches, as can be seen in houses at 'Unayza and Shaqra (Plates 233 & 234).

Some small entrance-doors were framed by plain, stucco friezes (Plates 52 & 53), while in others they were more complex, as in the house of al-Rabi'a at al-Majma'a and others (Plates 56, 191, 317 & 318). In other cases these doors, were supplied with short columns, one or two on each side carrying

decorated, horizontal awnings (over-hanging sun-shades). Examples of this type can be seen in houses at Shaqra, Burayda and al-Riyad (Plates 239, 319 & 320). Sometimes, doorways of this last type were decorated with engraved woodwork and painted architraves, as in houses in the al-Daho district of al-Riyad (Plates 240 & 241).

In 1982, Geoffrey King recorded two excellent examples of decorated wooden doors. The first was framed by friezes of white plaster and crowned with complex V-motif decoration carried out in relief, forming an overhead pediment. The second was surrounded by friezes and its lintel decorated with simple, horizontal rows of V-motif decoration.[41]

Nearly all exterior windows were framed by plain, white stucco friezes (Plates 53, 63, 186 & 247-249), and only a few had either decorated engraved woodwork or stucco friezes. Of these only a few rare examples remain, decorated with simple geometrical shapes, to be seen in wealthy houses sometimes surrounding the wooden decorated boxes (*turmas*) (Plates 155 & 317).

Interior doors and windows were usually arranged in straight lines overlooking the inner courtyards, and in the late 18th century were commonly surrounded by stucco friezes. These friezes also served a functional purpose by protecting the mud-edges of doors and windows openings. In mosques, the interior doors and windows were often enclosed with plain frames of white stucco, completely devoid of ornamentation. This was due to the prohibition of the appearance of any form of ornamentation in mosques by the religious leaders of Najd, following the successful Unification Movement led by Sheikh Muhammad Ibn al-Wahhab. Archaeologically, we do not have any evidence to indicate the use of decoration in Najdian mud-brick mosques before 1700. However, according to the account of Nasir Khasro (from the 4th. century A.H.- late 9th. century A.D.) the people of al-Aflaj used to to decorate their mosques and they asked him to decorate the niche of their Friday Mosque, which he did. As a consequence, it may will be that the people of Najd pre-1700 used to decorate the interior of mosques.

In contrast, the doors and windows of domestic buildings were often decorated with carved stucco freizes, greatly enriched with geometrical and

41- Geoffrey King, op. cit.,1998, p 144.

botanical elements. Some examples are engraved with only geometrical designs, including those found in the reception room of al-Subii's house, al-Rabi'a's house (Plate 250) and various ruined houses in Milhim (Plate 242) and Rughba (Plate 252), where engraving usually consisted of a series of circles, equilateral triangles, squares and zig-zag lines. Others were adorned with botanical decorative elements, examples of which can again be seen in the al-Suba'is reception room (Plates 119-120 & 243) and in some ruined houses at Sadus (Plate 129), where the decorative motif is formed from plant leaves of various forms. However, some friezes contain both botanical and geometrical elements, such as those found in al-Subii's house, al-Dohu rawshan at al-Riyad (Plates 251 & 253) and in some ruined houses at Raghba (Plates 122-125), Sadus (Plate 125) and Burayda,[42]which consist of circles, equilateral triangles leafs and flowers.

2.3.6.c. DOORS AND SHUTTERS

Interior doors and shutters of the 17th and 18th centuries, until the importation of new kinds of wood (including poplar, fir, beech and others) in about 1890, were fashioned from tamarisk and palm timber. The boarded door and window-shutter are typical of this period (Plates 55-56 & 250); the doorways being fitted with a single leaf, while windows could have single or double leaves. Both doors and shutters often consisted of several, vertical boards, fixed together with great accuracy using three cross-rails (top, middle and bottom) on the outside face held in place by large iron, bifurcated nails, the ends of which were turned over to ensure that they could not be removed. The nail heads performed a decorative function. In the non-opening edges of both doors and shutters, small pivots were usually formed in the top and bottom outer corners of the end board. The topmost pivot entered a hole in the wooden lintel, while the lower pivot fitted into a hole in a piece of stone (Figs. 245 & 246).

The cross-rails, and the areas between them, were often adorned with geometrical and botanical ornaments; and the surfaces of this type of Najdian door and shutter were usually decorated with many pieces of wood and metal of various sizes. These were non-structural and fixed to the surface (by nails or even leather thongs) for their pattern and/or symbolic values. The inner

42. G. King, op. cit.,1998, p 142.

face of the shutter was sometimes supplied with a heavy, decorated wooden lock, known locally as a dubaa (Plate 269).

Geoffrey King's description of the construction of Najdian boarded wooden doors is as follows:

> *.....doors in the Burayda house had the same general construction- three heavy cross-beams held in place by iron bolts set at the top, centre and bottom of the door. There was a massive rectangular wooden lock panel on each door, with reinforcing bars at the top and the bottom. This type of lock panel is found at least as far south as Sudayr.* [43]

In the late 18th and 19th centuries, under the influence of Egyptian craftsmen, as well as workers from the east and west of Sa'udi Arabia, panelled doors and shutters started to appear in many mud-brick buildings of the Najd. They were often made with many solid panels, both raised and flush; both doors and shutters could be either one- or two-leaf (Plates 143-144, 239-240 & 263). This style of panelled door and shutter was more customary in wealthy houses, being popular in the large houses and palaces of towns and cities of the Najd, where residents sought to beautify their homes with these new interior features. However, the boarded door and shutter were both still in use, and were subject to the attentions of the woodworker who would cover their entire surfaces with finely detailed, ornamental compositions, painted or incised, which were then polished to a high sheen.

Panelled and boarded doors and shutters all appeared in traditional mosques in the Najd, but, with few exceptions were devoid of any decoration. Only a few rare examples, which were decorated with simple geometrical shapes, could be seen, such as those in the Friday mosque of 'Unayza, its double doors being described by Geoffrey King:

> *The jami' of 'Unayza is the largest among the mosques in traditional style in the town....The mosque is rectangular with the main entrance on the south-east side, from the direction of the town square. The great double doors...were subsequently replaced by modern ones...Each door-leaf was very substantial: three heavy beams run across the face of each, held in place by great iron nails. The panels formed between the cross-pieces were decorated with X-shapes painted on the plain background of the wood. The entire entrance was approached by steps and the doors were flanked by pilasters on square capitals.* [44]

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43. King, op. cit.,1998, p 144
44. King, op. cit.,1986, p 122.

Decorated panelled doors and shutters were also almost unknown in small mosques and in the houses of farmers and small villages, in comparison with the boarded types. The doors of sitting-rooms and bedrooms were often provided with wooden frames and lattices which let air and natural light enter the inner space of the rooms (Plate 143), while their surfaces were covered with various styles of decoration and were richly coloured. This was because these doors and windows were always positioned overlooking either the men's courtyard or women's sitting places and so were highly visible and regarded as something of a status symbol. Kitchen doors and windows were, on the other hand, commonly left completely natural.

2.3.7. CONCLUSION

Four important results can be taken from the above examination;

a) Early people in Najd were interested in designing the internal areas of their mud-brick buildings with various structural elements and architectural features.[45]

b) They concentrated on the decoration of the internal surfaces of these structural elements and neglected the ornamentation of their external surfaces.

c) Najdian people spent a large proportion of their lives indoors.

d) The floor of Najdian buildings was a very significant structural element. This was due to its various practical and spiritual functions. On the floor the Najdian man used to sit, sleep, pray and practice various kinds of social and economic activity. This led Najdian people to be concerned with the coverings of the floors in their buildings, hence the various kinds of soft and hard furnishing, such as carpets, mattresses, cushions and others.

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45. For example; walls, columns and arches, ceilings and floors and openings.

2.1.8. NOTES TO THE CHAPTER

1- If the partition was in the main entrance, then the entrances are located either at one or both ends of the corridor that contains it. This style of partition was built in the middle of the entrance corridor in various buildings, positioned so that it faced the main entrance. This is for reasons of utility in that they are used to block the vision of people passing or standing in the corridor, thus preserving the privacy of the people in the house, even if the door is wide open.

However, if the partition is located between sections of the building (i.e. the men's and women's areas), then the entrance opening is to one side of it. This type of partition stands upright in the intermediate area between the doors of the men's and women's sections, forming a simple labyrinth. These entrances are known in both Islamic and non-Islamic periods.[46] The existence of this partition is also for reasons of utility. It prevents the person standing at the entrance in the men's section, which is usually without a wooden door, from seeing the women who are preparing food to be collected by the head of the house from the opposite entrance in the women's section.

But when it is dividing internal rooms, one or two entrances are made within the partition. This type of partition is built between the sitting-room and dining-room and was used to prevent guests from seeing the activities in the dining room during food preparation. Usually, the children of the house owner or his servants would prepare the food in the place designed for it and then the guests would be invited to eat.

2- People of early civilizations initially used wooden columns and capitals in their building, as in ancient Egypt before 5000 B.C., to be replaced, however, during the Theban Kingdom (5000 B.C.-2300 B.C.) by stone. The Assyrians also used wooden columns and capitals which have disappeared and only the remains of their thick walls are still to be seen at the sites of their cities.[47]

3- The column shown in the ruined mud-house from Rawdat Sudayr is of simple form and primitive ornamentation with no more than the incision of crossed straight lines. The apparently coeval column of Howtat Sudayr looks similarly developed. The two columns might have been the work of the same artist, particularily since the two sites are located close to each other, facilitating movement between them.

Laboratory-based analysis is necessary to determine a column's age with defined parameters of accuracy. But, the researcher can still trace the stages of the ornamental development of columns through examination of their general form and ornamental patterns and through comparison with other ornamented examples. Decorative styles similar to those of these columns (straight crossed lines) are considered to be among the most popular in all applied arts. They appeared in Mesopotamian art, including the pottery

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46- Farid Shafi'i, op. cit.,1970, p191. See also Firial Mustafa, op. cit., p 108.

47- Fletcher, op. cit., pp13 & 35.

discovered at Susah city-site in Iraq which was dated to 4000 B.C.[48]They also appeared in the ornamentation of African woodwork (e.g. masks, statues, etc.)[49] Moreover, they are seen in every period of Islamic arts, for instance, in the ornamentation on items of woodwork discovered in excavations at Fustas city-site (Cairo),[50] and in the designs which adorn Iranian Islamic carpets.

4- It is well known that pyramidic formations have been used abundantly in ornamentation in pre-Islamic arts. Similar patterns have appeared in ceramic utensils discovered in Tal Half,[51] and also on the surfaces of African woodwork.[52] Their use has continued in Islamic art all over the world.[53]

Zigzag lines belong to the old ornamenting patterns which were used in many ways that do not always resemble those found in this area. They appeared on applied art objects discovered at Susa city-site dating from 4000 B.C.,[54] and on the capitals of the Byzantine columns from between 550 and 600 B.C.,[55] and also on stone vessels in Balad al-Akhdar and Yajran areas in Oman belonging to the pre-Islamic period.[56]

Zigzag lines were also used throughout the Islamic eras on the front of the mufti's platform (*mimbar)* as in the ornamentation on the minarets of Al-Nasser Muhammad Mosque in al-Qal'ah in Egypt,[57] and on many minarets in Iran and Turkey.[58] The parallel zigzag lines which resemble the lines to be found on the shafts of columns appear on the fronts of the Gothic capitals in the Central Friday Mosque in Cordova.[59] The origin of the design belongs to Greek art where it appeared on several stone sculptures and on examples of applied decoration in Sirius (2400 - 2000 B.C.).[60]

5- The semi-circular arch is considered to be an archaeological feature that has appeared in every era, though its original source is unknown. It appeared in Mesopotamia after the third millenia B.C.; in the Ægean civilization[61]; in Ramsion Temple near Luxor from 1302-1337 B.C.[62]; in the Hellenic and

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48- Carel J. Dury, op. cit., p 26. See also Eva Strommenger, op. cit., plate iv.

49- Dennis Duerden, *African Art and Literature*, Heinemann Ltd., London, 1975, p 72. See also Arnold Bament, *Africa*, Thames and Hudson Ltd., London, 1980, p 11.

50- Marzouq, op. cit.,1974, p 91.

51- 'Alam, *Funon al-Sharq al-Awsat al-Qadim...*, op. cit., ND, p 58.

52- Margaret Trowell et. al., op. cit., p 57.

53- Andre Paccard, *Traditionl Islamic Craft in Moroccan Architecture*, Part 1, Published by Editions Ateliers 74, 74410 Saintzonioz, France, 1974, p 38.

54- Andrew Parrot, op. cit., p 120.

55- Harvey Weiss, *Ebla to Damascus*, Smith Sonion Institution, London, 1985, p 461.

56- M. H. 'Abd al-Rahman, op. cit., pp 107-112.

57- Salim, *al-Ma'dhin...*, op. cit., ND, p 31.

58- Goodwin Godfrey, op. cit., p 22.

59- Manwal G. Morino, op. cit., p 32.

60- Patrick Connel, *Greek Ornament*, translated by Palrick, B. T. Batsford Ltd., London, 1968, p 31.

61- 'Asim al-Barghuwthi, 'al-Khasais al-Mi'mariya lil-'Uqoud wa al-Qibab al-Klasikiaya', al-'Usour, vol. 1, part 1, Yolyo, Dar al-Marikh lil-Nashir, London, 1986 , p 145.

62- Henri Dora, op. cit., p 14.

Roman eras during the 5th and 6th centuries B.C.,[63] and it is also seen in the buildings of south-east Asia which were built between 272-332 B.C.[64]

The most ancient Islamic example is in the Mosque of the Holy Dome where it appears in the external windows, and on the colonnade within the porticos.[65] It also appears in the windows of Sa'id Ibn Al-Aas Palace from the 6th century A.D., located near al-Medina al-Munawara; [66] in the external porticoes of the Umayyad Mosque in Damascus which overlooks the yard and the internal porticoes; [67] in the Prayer Place in Cordova; and its use has been continued in the Islamic eras.[68]

6- The curved pointed arch was used in the Qasr al-Hir al-Gharbi from 110 A.H., Qasr al-Mushata (in the desert of Belad el-Sham) and Qasr al-Jawsaq al-Khakani in Sammara city (Iraq).[69] Moreover, it is found in Qasr al-Banat (from the Abbasin era) and existed in al-Raqa city (Syria)[70] and in Ibn Toulon Mosque (Egypt). [71]

7- The earliest example of horse-shoe arch dates from the Roman age; it was also known in the Sassanian and the Byzantine ages, where it appeared in the entrance of Taisaffon Palace; in the Saint Jacob Baptistry in Nsibin; the Sam'an Abbay Baptistry in the north of Sham from the 6th A.D.; and in the various Umayyad establishments. It has been seen in the Umayyad Mosque in Damascus; the Umayyad Palaces in the al-Sham Desert; in the Mosque of Cordova, where it appeared within combined arches; and in al-Mihrab and Bab al-Maksourah.[72]

8- The trilobate arch appears clearly in al-Aukhaidar Palace which was built in the second century A.D., (between 241-272) and later, it was to appear in the Umayyad era and the first Abbassid age, where it was used in al-Banat palace in al-Raqa, [73] and enhanced the Baghdad Gate which existed also in al-Raqa from 155 A.H. It appeared in Sammara Mosque, constructed between 234 - 237 A.H.; in al-'Ashiq Palace in Sammara from 48 A.H.; in 'Amr Ibn al-'Aas Mosque, when it was renewed in the time of Abd Allah Ibn Taher in 212 A.H.; in Ibn Toulon Mosque; in the marquetries of the platform of

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63. Farid Shafi'i, op. cit.,1970, p 201.
64. Helen S. Gardner, op. cit., p 516.
65. Farid Shafi'i, op. cit.,1970, p201. See also Muhammad 'Abd al-Sattar 'Uthman, 'Nazariya Jadida li-Tafsir Kaifiyat Takhtit Qubat al-Sakhra', al-'Usour, vol. 3, part 2, Dar al-Marikh lil-Nashir, London, 1988, pp 239 & 254.
66. Sa'ad 'Abd al-'Aziz al-Rashid, 'al-Athar al-Islamiya fi al-Jazira al-Arabiya fi 'Ahid al-Rasul wa al-Khulafa' al-Rashideen', al-'Usour, vol. 3, part 2, Yolyo, Dar al-Marikh lil-Nashir, London, 1988, p 288.
67. Al-Rihawi, op. cit., pp 50-53.
68. Muhammad Nadir al-'Atar, 'Jami' Qurtuba Jawharat al-'Amara al-Islamiya', al-'Usour, vol. 3, part 1, Yanayer, Dar al-Marikh lil-Nashir, London, Yanayer, 1988, p 35
69. Fareed Shafi'i, op. cit.,1970, p207. See also Tahir M. al-'Ameed,op. cit., pp 86-88.
70. Qasim Twair, op. cit., p 205.
71. Helen Gardner, op. cit., p 493.
72. Farid Shafi'i, op. cit.,1970, p 203. See also al-'Atar, op. cit., p 33.
73. Twair, op. cit., p205.

al-Quairawan Mosque in Morocco; in the Central Friday Mosque in Cordova, where it appeared in the curved oyster-like form. [74] It was also used abundantly in the monumental buildings which belong to the Mameluke period in Syria, for instance, the arches located in Akhnatieh Cemetery and in al-Tourizi Mosque in Damascus. [75]

74- Morino, op. cit., pp 116-117 & 134. See also Fareed Shafi'i, op. cit.,1970, p 203; also F. Shafi'i, *al-'Amara al-'Arabiyat al-Islamiya. Madiha wa Hadiraha wa Mustaqbalaha*, 'Imadat Shu'wn al-Maktabat, King Sa'ud University, Riyadh, 1982, p 165. See also al-'Atar, op. cit., p 34, and 'Abd al-Haq, op. cit., plate 6.

75- Al-Rihawi, op. cit., pp 161-162.

PART 2.

CHAPTER 2.4.

INTERIOR VOCABULARY OF TRADITIONAL MUD-BRICK BUILDINGS OF THE NAJD

PREFACE

This chapter studies the interior vocabulary of traditional mud-brick buildings of the Najd including scale, texture, colour, light, and furniture and discusses their relationships with architecture and interior architectural elements. Likewise, it analyses the impact of these features one upon the other and on the human life within the interiors.

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2.4.1. SCALE

INTRODUCTION

Scale is a term which has a number of meanings depending on the context in which it is used. For the designer, scale has two important senses: the first indicates the use of a small module in the presentation of a larger one, while the second is concerned with the relative sizes of, e.g., objects and their materials, buildings and their environmental elements, particularly the surrounding landscape, or buildings and people. In this sense, Frank Orr describes scale as follows:

> *Scale" is a word used rather indiscriminately in conversation and applied to a wide range of notion. In origin, it relates to measurement, as is shown by one of its definitions: the measuring instrument that architects, engineers, and other designers use in making proportionate drawings that differ in size but not in basic form from the physical things they represent.....Scale is the aspect in architecture that makes buildings intelligible to us: it gives us a sense of how to relate to the building, and it dose so in a way that either attracts us and reinforces our values or repels us and contradicts our values.* [1]

From the remains of Najdian mud-brick settlements much can be learned about the scale and proportions of the elements of mud-brick buildings, whether external or internal. With few exceptions, the size of mud-brick building depended on four factors: 1) its location within the settlement; 2) its function; 3) the status of its owner; 4) and the size of the family occupying it.

Before the success of the Unification Movement (*Harakit al-Tawhid*) in the Najd, each mud-brick settlement was usually enclosed by between one and three defensive walls, the additional walls being added to accommodate increasing numbers of inhabitants. The residential area within the first enclosing wall was very limited and encompassed every dwelling, and as a result the area occupied by each house was very small, compelling the owner to build to two or three storeys and to a height of between 6-15m. Only mosques and the homes of the rulers and large, powerful families (including those of princes, *shayukhs* and traders in the form of the emirates, fortresses and palaces of this era) were built on a larger scale.

1- Frank Orr, *Scale in Architecture,* Van Nostrand Reinhold Co., New York, 1985, pp 7 & 9.

However, the buildings put up within the second and third enclosing walls were all generally larger. Most of these buildings also belonged to wealthy and powerful families, so were generally created with many open and closed places covering a considerable area and enclosed with massive mud-brick walls. After the success of the Unification Movement settlements' enclosing walls were mostly demolished, whereby residents became free to build anywhere they wanted. Because of this, the buildings of this era are even larger than those of the previous one.

Generally, mud-brick buildings were divided into two parts, one for men and the other for women; each was also sub-divided into various open and closed spaces. According to the interior activities and requirements of the residents, the size of each area (whether open or closed) was again commonly broken into smaller spaces. As examined in the final chapter, the Najdian building was usually created in one of three different forms. In the most well-known of these, the closed area is larger than the open area and usually envelopes it. Here also, as we shall see in the last chapter, the size of each depends on the uses of, and the relationship between, the two spaces. The size of the smaller, contained space is dependent on the size of the larger, enveloping one, which is in turn regulated to a degree by the exterior environnment. In this case, if the activities were too demanding for the contained space, its size was gradually increased, while the size of the larger enveloping space usually decreased correspondingly and lost its encompassing nature.

The dimensions of mud-brick buildings of the Najd conform to regular scales, in particular in their width, due to the materials that were used in their construction such as earth and timber. The physical properties of these materials, such as their elasticity, hardness and strength, often limited the dimensions of this type of building. Francis D. K. Ching explains the properties of these building materials which usually limit the scale of the building:

> *All building materials in architecture have distinct properties of elasticity, hardness, and durability. and they all have an ultimate strength beyond which they cannot extend themselves without fracturing, breaking, or collapsing. Since the stresses in a material resulting from the force of gravity increase with size, all materials also have rational dimensions beyond which they cannot go.* [2]

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2. Francis D. K. Ching, op. cit., p 279.

Throughout history, it has been a well-known fact that the height of earth buildings was limited by the finite load-bearing capability of their walls which were required to carry the weight of the upper construction of a building and to endure this continual pressure for years. Due to this, the thickness of the walls of high buildings in Najdian architecture was very substantial; the lower part of the wall would range from between 80cm to 150cm; and from 30cm to 40cm in the upper sections. Even with this thickness, the height of the mud-brick buildings of the Najd was limited and ranged between 6m to 18m. This was quite low in comparison with the height of the mud-brick buildings of Western area of Sa'udi Arabia, the walls of which are less thick, and those of the settlements of the Yemen , in which their height would reach 25m. These differences, of course, relate to the properties of the particular mud mixtures used and to the local qualities of earth in particular.

There are some types of clay brick (adobe) which have high durability against both scarification and fracturing and can carry heavy loads. This durability is usually dependent on the area from which the earth is brought and on the method of primary preparation. Today, in many places including Sa'udi Arabia, researchers in building construction have created various adobes which are capable of bearing many storeys and have very high resistance to the environmental factors that lead to degradation. William Facey, through his research on the adobe of al-'Udhaibat site (close to al-Dir'iyya) shows the importance of a new kind of adobe for new architecture in Sa'udi Arabia. According to him, the new adobe costs less than any other wall-building material and requires only a low-level of technology; he refers also to sites in Arizona and New Mexico in the U.S.A. where, since the 1970s, high quality adobe has been produced and utilised.[3]

It follows that the scale of any Najdian mud-brick interior can be determined by a variety of factors: 1) the materials which are used in its construction; 2) the natural scale of its ornaments; and 3) human scale. For instance, both the breadth and height of an interior can be determined by the size of its adobes, while its width depended on the available lengths of tamarisk or palm trunks, often only between 2.5m and 3m used in the construction of ceilings and roofs. Consequently, if the builder was required to construct wider interiors he would simply increase the scale by butting beams togther(rather

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3. William Facey, *Back to Earth. Adobe Building in Saudi Arabia*, Published by al-Turath in Association with the London Centre of Arab Studies Limited, Riyadh, 1997, pp 200 & 201.

than using longer ones) and introducing a number of central columns with which to support the joints. Marco Albini refers to this situation in the mud-brick architecture of the Najd:

> *The material used in traditional building, the tamarisk beam does not allow to exceed certain span generally included between 2.50m. and 3.00m.; thus corresponding to a column every span. The building is therefore regulated by this module which dictates the overwhole plan. The dimensions of the gallery around the internal courtyard [he means the porticoes] and the rooms are generally multiple of this module.* [4]

The height of the interior can also be determined by comparison of the dimensions of interior modules with the proportion of either the length or width of various interior features, for example: 1) with the scale of stones used in the interior columns,[5] doors, windows and apertures; 2) by extension, its scale can also be defined by comparison with the proportional scales of some types of interior ornaments, such as: the modules of the tridimensional crenelations and triangular shapes; or the raized and sunken lines of the decorations of the *zakhrafit al-misht al-khashabi.* However, in all cases, the scale of Najdian interior can be easily determined by the human scale (as mentioned above).

2.4.1.a. ANALYSIS OF INTERIOR SCALE

In Najd, all major, traditional, mud-brick, interior spaces fall into one of two basic types:

THE FIRST TYPE

These are the spaces located in houses and palaces and, similarly, in emirates, forts and markets. Except in markets, these buildings were provided with a selection of spaces which were used for various purposes, serving the needs of their residents. Their central halls, which were used as sitting and reception areas, and also the open and closed courtyards in both the men's and women's sections, witnessed a great deal of movement during both day and night. The interiors of the markets typically consisted of a central area (they varied in size) where owners, workers and buyers circulated.

4- Marco Albini, op. cit., p 16.

5- Each column of any mud-brick interior of Najdian building commonly consisted of regular pieces of stone which had somewhat similar dimenisons.

THE SECOND TYPE

These are spaces in traditional mosques which would usually be used a little during the day and not at all in the course of the night. Only small areas were normally utilised, such as the entrance and prayer halls and also the ablution areas. These places were generally used heavily for 20 minutes at a time, on five occasions through the day.

In both types of interior space there is a great variety of architectural features to be found which serves a variety of purposes. The spaces themselves were created on a precise scale which allowed them to serve either general or private use as appropriate. However, to give an accurate assessment of the interior spaces of Najdian buildings, we must at least know to what extent scale serves their function.

With a few exceptions, the scale of the interior spaces of typical mud-brick buildings of the Najd were agreeable to the people of that time, yet seem to be unsuitable for some contemporary inhabitants. However, in comparison with scales of the modules of new concrete buildings in Najd, we found those of the mud-brick interiors are generally better suited to peoples way of life. All necessary needs, including social, economic and physical requirements were achieved in a typical mud-brick interior of Najd. According to the opinions of general people in Najd, most of these requirements are lost in new Najdian concrete buildings. The interiors of the houses of al-Suba'i in Shaqra, al-Rabi'a and al-Tuwayjari in al-Majma'a and al-Suwayan and al-Sulayman in Burayda, as well as the interiors of various palaces of the al-Sa'ud Family (such as the palaces of al-Muraba' and al-Badi'a in al-Riyad and the family and guest palaces of King 'Abd al-'Aziz in al-Kharj), Burayda and al-Kharj, all possess a people-oriented scale in most areas. Every interior, whether entrance-hall, open or closed courtyard, room or roof, provides a scalar range of architectural features with varied functions and sequences of repeat patterns.

The entrance-hall usually had a large-scale T- or L- shaped plan with various niches and decorations, and was provided with a large entrance door, it presents a useful space for people to circulate in, being of a suitable scale. The courtyards of the houses and palaces mentioned above, also present useful scales of modules apparent in their open interior places, which provide

acceptable circulation and sitting places, and also good ventilation and exposure to daylight.

The interiors of the reception-rooms, sitting-rooms and kitchens in all the above buildings (consedered typical buildings in Najd) are also generally provided with primary features that give scale, including doors, windows, apertures, niches, columns with capitals and with arches, wall-cupboards and fireplaces, in addition to secondary features including ornaments of various styles and sizes. The relationship of the scales of these features with each other and to human scale is rather agreeable.[6] Physically, the proportions of these features including their height and length are suitable to human scale. The enclosed spaces of both the roofs and gardens of a variety of these buildings provided good open internal places suitable for working, sitting and sleeping. In all of these cases we can sense an appreciation by the architect for the significance of both open and covered interior spaces and the human scale. The interior architectural features of these places have a practical, scalar, and also a symbolic, function that was served by the creation of agreeable modules and with appropriate proportions.

Careful analysis of the interior spaces of some typical Najdian buildings, informs that the Najdian architect had a pointed interest in scale and proportion, consequently the great extent of importance given to human scale in Najdian interiors. Philby provides a description of sizes found in one of the upper reception-rooms of the palace of al-Muhana in Burayda, and also the height of the enclosed wall on its roof:

> *The new majlis [reception-room] was 44 feet in length, 22 feet broad, and about 18 feet high; adjoining it was a retiring-room of the same width but only ten feet long, with a spacious bathroom....The roof of various section of the Qasr [he means the sections for men and for women] were surrounded by walls almost six feet high with the usual stepped pinnacle crenelation, and the whole fortress was dominated by a lofty central tower.* [7]

6- With few exceptions, the sizes of door-openings usually ranged between 200cm and 250cm in height and were 100cm to 180cm in width; those of windows ranged from 60cm to 100cm in height and 40cm to 80cm in width; while those of apertures ranged from approximately 30cm to 60 in high and 20cm to 40cm in width. The size of interior columns differed from place to place, while their height with the capitals ranged from 260cm to 450cm, they measured between 25cm and 35cm in diameter. The size of the fireplaces ranged from 20cm to 35 in height, 100cm to 130cm in lengthand from 80cm to 100cm in breadth. The sizes of wall-cupboards ranged between 150cm and 200cm in height, were 30cm to 50cm deep and 80cm to150cm in breadth.

7- Philby, op. cit.,1928, p 199.

From the analysis of Philby's description of the sizes of both rooms, we find that: the ratio of width to length of the reception-room is 1:2; the ratio of height to length is approximately 1:3; and that of height to breadth is 1:1; while the ratio of the length of the retiring room to its breadth is 1:2. Perhaps, this is the only documentary example of scales of Najdian mud-brick interior provided by Philby, although, we can perceive from the above obtained scales how important the interior proportions in Najdian interiors were to traditional Najdian architects.

Certain aspects of interior scale tend to elicit a particularly strong response, for example, a change in scale between successive interior spaces and the repeat patterns used either vertically or horizontally on the walls.

CHANGE IN SCALE OF SUCCESSIVE INTERIOR SPACES

In reality, the changing scales of consecutive interior spaces is used to great effect in Najdian buildings. For example, a large entrance-door leads to a small entrance hall then on to a larger one again which leads in turn to a still larger open or closed courtyard, sitting-hall or reception-room on the ground floor. These marked differences in the scale of interior spaces, makes a strong impression on the observer. Also, as earlier European explorers have noted, and the writer has experienced, one can enjoy an extraordinary sense of drama in some Najdian buildings: as, for example, when entering through a small door that leads on to a large entrance-hall which, in turn, passes on to a narrow staircase which then gives access to a long, tight, winding, sometimes ill-lit corridor on either the first, second or third floor which opens suddenly, finally, on to a large, upper reception-room that is provided with large windows, and decorated ceilings and walls.

The dissimilarity of scale and proportion of both the interior spaces and architectural features in both the lower main reception-room (*majlis*) and the upper gallery (the *rawshan* , which is usually distinguished by its large open and closed areas) on one hand, and the contrast of scales and proportions of both together (the *majlis* and the *rawshan*) with those of the open and enclosed places on the roof on other hand, create a strong architectural impression.

The large interior of the reception-room of the al-Suba'i house displays such a phenomenon through the subdivision of its large-scale area into smaller spaces by the use of central columns,which create an invisible linear partition, raised shapes of wall-cupboards and large coffee hearths. However, furnishing would introduce further strong, dynamic movement, because the objects and materials involved, with their diverse range of scales and colours, would help in breaking down the main space into yet smaller places. Elsewhere, large reception rooms were divided in two by low partions with different scales, each of which served a distinct function.[8]

CHANGE IN MODULES OF SUB-DIVISION OF VERTICAL INTERIOR ELEMENTS

The same changing of scale and proportion appears in the interior elevations and façades. For instance, the elevations of both reception and sitting-rooms were often divided by horizontal and vertical stucco friezes and panels into smaller-scale decorated and undecorated areas. The effect of changing scale and proportion in these areas is increased strongly by the existence of the dado (which was also made of stucco), niches and windows (these elements were usually provided with many horizontal and vertical friezes of engraved stucco). Also, the façades that overlook the interior courtyards of most Najdian buildings were commonly sectioned by horizontal sunken lines and raised rows of triangular shapes into smaller areas of dissmilar scales and proportions. This style of architectural composition, utilising varied scales in interior walls, makes a strong impression.

The prayer-hall of most traditional mosques was always broken into regular small spaces by high arched columns built close to each other in order to create parallel linear forms. The distance between the one column and the next differed from mosque to mosque, but was often no more than 180cm., The height of of each column was also divided into two areas by a shelf that projected about 25cm.[9] The ratio of the upper area to the lower is approximately 1 : 3.

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8. Philby, op. cit.,1928, p 199.
9. This is commonly made of both mud and stucco and is used for the resting of copies of the Holy Qu'r'an.

The inside face of the Qibla wall in each mosque was always divided into two equal parts by a large niche (*Mihrab*), and its height broken with a row of small windows or apertures created in the wall above the heads of the worshippers. The floor of the prayer hall was usually divided into narrow spaces of equal size by low, thin parallel walls of mud which ran across the length of the hall and connected the columns.

The façade of the prayer-hall overlooking the courtyard of each mosque was commonly divided into two parts by a series of rectangular projections (these were denticulate decorations known locally as *zakhrafit al-dalayat,* Fig. 207), the ratio of the upper part to the lower being about 1:5. In some important traditional mosques, such as the Friday Mosque in al-Riyad, the height of this façade was usually broken into two parts in a very pleasing ratio of approximately 1:4 by a series of geometrical, stepped decorations of different forms and sizes. This type of decoration is striking and has recently all but disappeared (Fig. 206, the writer has not seen this style of decoration in any Najdian mosque). Geoffery King described these geometrical, decorative forms of the mud-brick Central Mosque at al-Riyad:

> *...Series of stepped projections, one above each column and a shorter one above each arch-crown, which had the effect of a rhythmic articulation across the façade of the prayer-hall; I have not seen such a system on the wall-surfaces of other mosques in the area. Above the columns there were also a number of small shelves projecting from the façades, one to each column: in other mosques such shelves (rafa) are used to rest copies of the Holy Qur'an, but in the case of this mosque they seem to have been somewhat high.* [10]

The tapering, conical minarets of most traditional mosques also exhibit changes in scale and proportion. Their façades were always divided into segments of differing sizes by sunken lines and rings of projecting, running triangles. From the base of the minaret, the scale of each part decreases gradually, from the lowest one up toward the smallest one at the top, creating a splendid hierarchy of vertical form. The dimensions of this style of minaret usually depend on the scale of the mosque itself, but they generally ranged from 6m to 15m in hieght, 3m to 5m in base diameter and from 1.5m to 2m in their topmost diameter. This use of gradated scale and proportion in the design of Najdian minarets lends their high, massive walls a pleasing and dynamic appearance.

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10. King, op. cit.,1986, p 158, this mosque deteriorated and was recently replaced by a concrete structure.

EXPERIENCE OF LARGE AND SMALL SCALE OF INTERIOR

High, wide interiors, whether of the reception area, sitting-room or prayer hall, usually have functional, aesthetic and psychological importance for the inhabitants of the mud-brick buildings of the Najd. Large-scale, open courtyards with high walls which are surrounded by decorated porticoes in both the men and women's sections, often present a useful and relaxed environment which enables the residents to practice various kinds of day and night-time activites in freedom and full privacy. The residents of Najd often preferred wide, high interiors, for example, the large width of reception rooms and prayer-halls of mosques would both provide a greater area for people to sit and pray. While the large height in both places would offer ample ventilation and daylight.

However, the large height in Najdian reception-rooms, in particular, and other rooms in general presents a considerable vertical space which is usually designed with both decorated and undecorated areas of walling. The decorated areas composed of many raised and sunken features of various shapes and sizes. Some of them serve functional purposes such as the niches, openings, recess-walls and wall-cupboards, while others are purely symbolic and ornamental. These features are usually separated from each other by plain areas made of either mud or stucco with various sizes and shapes. In general, the proportion of decorated area to undecorated area on the walls of most Najdian reception rooms is commonly 2:1 as in the rawshan of al-Tuwayjari. Although, the contribution of decorative variety to great functional character is a matter of debated.

The proportional relationship between height and width of these interiors, and between the sizes of decorated and undecorated areas to the human scale is a very important factor in the interiors, with an emphasis on height in the interiors of some Najdian buildings. Therefore, Hassan Fathy traced the development of height to the Najdian interior by the addition of the dome.[11]

11- However, this architectural element which is associated with much of Islamic architecture is considered to be a strange element in Najdian architecture. See Hassan Fathy's research referred to by Marco Albini, op. cit., pp from 32-34. In fact, there are many examples of Najdian interiors which are built to a small size; the width of the rooms is no more than 2.5m, while the height no more than 2.80m. However, these could be cramped, but also homely and intimate, since they obviously did not possess the impact of very large interiors.

2.4.1.b. THE ARTISTIC RELATIONSHIP BETWEEN DIMENSION AND THE SIZE OF ORNAMENTING ELEMENTS

The appearance of both decorated and undecorated areas changes a great deal according to their distance from the viewer. Naturally, the distance between the viewer and the ornamental elements has the utmost effect on how well they can be appreciated: the perception of size is dependent on distance.[12] As a decorative element gets further from the eye of the viewer, its aspects become less distinct and perception of its measurements becomes less relate. Of course, this continues until the viewer can no longer perceive its aspects and size at all, and the object becomes a dot perishing on the horizon.

On this basis designers in early important civilizations such as the Greek and Roman eras carried out ornamental patterns ensuring the form, colour and size suit the distance, from which the ornamentation will be seen, whether the viewer is on the street or in the room itself. The skilled artist can compromise between these factors and display the ornamental elements clearly and harmoniously.

In fact, there are no written documents that show that the artists of Najd were interested in the size of ornamental elements and the distance from which these elements would be seen. But, by analysing some of their applied works in several typical mud-brick buildings, for example: the decoration of the northern external façade of the house al-Suba'i in Shaqra; the decoration of the southern interior elevation (overlooking the indoor open courtyard) of the house al-Tuwajari in al-Majma'a; and any interior elevation from the al-Daho's *rawshan* in al-Riyad, we know that the Najdian artist employed a somewhat sophisticated understanding of the principles of diminution in a remarkable way on both internal and external façades. Examples of these ornamental patterns include the crenellations on the upper parts of the external walls that overlook the streets and the internal walls which dominate the courtyards. These were made large in size, to the extent that someone standing close to them would be surprised by the enormous volumes of clay involved. In fact, the artist probably estimated the average distance from which the viewer would observe the wall.

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12. Frank Orr, op. cit., p 58.

We find that the artist applies his geometrical ideas to the available areas and a wide range of ornamental architectural elements including horizontal sunken lines, spy-holes *turmat*, window frames, doors and windows, apertures and niches, columns, capitals and arches and the grille-work of windows. These were large in size and simple in composition, so that they can be observed clearly.

Both the internal spaces, excluding the open courtyards or gardens and external façades of Najdian mud-brick buildings, can be easily distinguished from those of Islamic buildings of earlier periods which tended to be decorated in a complex manner. In contrast, the Najdian artist used his skill to decorate his external façades with simple ornamental patterns, but on a large scale.

The Muslim artist, during most periods of Islam, attempted to fragment the whole into never-ending parts. Internally, the Najdi artist follows his lead in his dense and complex ornamentation of the interior elevations of various rooms and halls. However, in spite of their broad agreement, we find some trivial differences. The Muslim artist of old attempted, through his ornamental work, to admit us to endless labyrinths by the use of complicated interlinked lines the beginning and end of which cannot be discerned. However, the Najdian artist, though he interlinks the various ornaments, defines them with specific lines while deliberately leaving empty spaces of different sizes between one formation and another. This style is in common with that employed by Andalusian Muslim artists, who adopted it in the ornamentation of the facades of their palaces and mosques. Without this separation between the ornamenting units, it would be difficult to appreciate their various elements.

It is for this reason that the Najdi artist divided the areas on the internal elevations into ornamented and non-ornamented areas, which alternate on the elevations continually. Also, he usually organized the decorative elements on interior surfaces in a specific order, while their scale was chosen according to their distance from the viewers eye. Due to this large scale decoration, separated compositions were often formed at the top part of a wall, while small, dense ornamental compositions were usually created at the lower part of a wall where their more detailed forms can readily be appreciated by the viewer.

2.4.1.c. CONCLUSION

The scale and size of Najdian mud-brick buildings were very important. By examining the scale of Najdian interior features the following points became clear:

a) the dimensions of mud-brick buildings in Najd conformed to a regular scale, especially regarding their width. This was due to the use of earth and timber in construction. Both these natural materials were local and limited the dimensions of a Najdian building because of their physical properties such as elasticity, hardness and strength.

b) The size of the Najdian interior was determined by the building materials used in its construction (such as adobe and beams of both tamarisk and palm-tree) and the physical dimensions of man.

d) The scale and proportion of interior features in a Najdian interior were very well-suited to the occupant.

e) The interior scales of architectural features in Najdian buildings was influenced by the system of change in scale, in particular, between successive interior spaces.

2.4.2. TEXTURE

INTRODUCTION

Texture refers to the scale of a surface, or its degree of roughness or smoothness. It may be self-evident, but everything around us has its own particular texture and it is commonly considered to be one of the most important elements of an interior, being experienced both visually and by touch.

The façades and elevations of most mud-brick buildings of the Najd were coated with layers of mud, which in fact strongly affected the forms of the buildings and gave them their typical Najdian character. These façades were, at least partly, treated once a year by the addition of a new coating of mud. Every surface, whether wall, floor or roof, if not coated would be exposed to damaging environmental factors, including rain, wind and heat which would often lead to the collapse the walls and whole buildings. Entire walls were usually treated with mud coatings from time to time, and wood surfaces would be covered with a layer of lacquer or paint.

Coatings of mud, stucco, or paint are first and foremost used to protect the interior's architectural features and also to make them pleasant to the touch. The philosophers of aesthetics believed that there is a strong psychological relationship between human sensation and the scale of a texture. Even though it can be perceived visually, it makes its strongest impression when touched by hand. To touch a soft stucco surface in a mud-brick interior gives pleasure and happiness in itself. In contrast, touching a mud surface, palm trunk or any piece of woodwork in this interior often provides a rough and unpleasant sensation. Tactility is clearly important: Pierre von Meiss refers to this matter:

> *Tactility occupies a special place in architecture for two reasons: on one hand it is inevitable because of gravity, and on the other it is anticipated by our ability to see forms and texture. A person's standing or walking are in permanent tactile contact with the ground - smooth or rough, hard or soft, flat or sloping. When we are permitted to choose, it is often that which is most convenient which triumphs. And our hands? It is well known that it is not enough just to look at beautiful objects on*

display: we want to touch them, examine the weight and the texture quality of surface and its form. [13]

Even when we do not touch things, our eyes can still sense their textural scale. Thus materials used in Najdian ceilings, for example (tamarisik, palm, straw and grass) or on walls (stucco and mud) can all be perceived visually. As Frank Orr says:

> *Texture can be understood in both visual and tactile terms. Even though architecture as a form of expression may seem to be primarily a visual medium, other senses can be enlisted to complement sight in enriching our perception of scale.* [14]

In fact, the coatings of Najdian mud-brick building, depending on the quantity of material used in their execution, often allowed the artist a great deal of freedom to create different textures and styles of ornament. He could produce hard and soft surfaces using stucco or mud, for example, raw materials with great diversity of suitable applications.

Rough and smooth textures, whether executed using hard or soft materials, were common in the mud-brick buildings of the Najd. Both were employed carefully on walls, materials and the surfaces of objects. The texture of these surfaces, especially that of exterior and interior walls and woodwork, could be either smooth or rough (in addition to the textures of other materials such as stone). Traditional architects of the Najd (as far as they could) gave great importance to the human body and material comfort. Surfaces were designed to be agreeable to the user and their textures can be appreciated in various ways and not only through touch but also visually.

2.4.2.a. MUD AND MUD-BRICK TEXTURES

Throughout history, successive generations in Najd were characterized by their own, distinctive types of mortar and adobe. This included mortar based on mud and there was also variation in the size, form, texture and colour of the mud-bricks themselves. All of them were created from natural, simple materials which were found in various areas of the Najd. Mud-brick was always regarded as a structural building material, while mortar was simply

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13. Pierre von Meiss, op. cit., p 15.
14. Frank Orr, op. cit., p 54.

used as a filling in order to join together mud-bricks in courses and as a coating for those courses.

Mud-bricks in Najdian buildings formed the structure of the building and their courses can be seen in some uncovered walls, revealing the regular and irregular patterns, textures and colours of mud-brick; while walls coated with either mud or stucco mortar were recognisable by the textures and colours of these coats. In some existing buildings both covered and uncovered mud-brick walls can be seen, the latter especially in poorer houses, where very effective contrasts in texture and colour are apparent. These walls show differences in the texture and colour of the same material, while there is also a contrast between the texture and colour of mud-brick set against the smooth texture of the mud coat. Here the form, scale of texture and the finish results from the amalgamation of individual pieces.

Mud-brick, therefore, should not be considered as an essentially functional material for building construction merely, but should also be regarded as possessing striking tonal and textural qualities which can dominate our impression of a wall, if it is produced from good quality materials and finished carefully. Their texture, colour and pattern are visually and tactilely more striking than those which are covered with a mud coat. If a fine mud-brick is used in conjunction with a fine mortar, as can be been seen in some modern houses, the regularity of texture and colour will give buildings a kind of beauty.

Some buildings in the Najd area, including the houses of Tuwayjari and al-Rabi'a in al-Majma'a, Suba'i in Shaqra and the palaces including al-Badi'a and Muraba in al-Riyad, are distinguished primarily by their interior features and secondly by their surface finishing. These massive and impressive mud-brick structures are seen from a distance simply as solid masses of dark yellow or brown. However, on drawing nearer, they appear full of life with a variety of colour and texture. Their interior features are more effective in terms of form, texture and colour, and are also difficult to perceive from a distance. However, their forms and their ornamentation are recognizable, especially those that are large in size.

The texture of many interior mud-brick walls is smooth, but it is noticeable that the architects employed a rough texture in exterior locations. They gave the

available surfaces of the façades overlooking the inner courtyards deep, rough reliefs instead of making them smooth. This may have been due to their lack of interest in exterior ornamentation (*zakhrafit al al-mayazib* and *al-misht alkhashabi*), but nevertheless this style of textural surface helped to raise the quality of the materials used. It could be seen in this case, that mud, the cheapest material, can be marked in deep, rough relief while expensive and high quality of materials, such as stucco, appear to their best advantage when smooth and with or without relief or ornament. The rough texture of mud surfaces is also used to effect on the facades overlooking the outside, where it may be used in conjunction with stucco. Here, the impact is usually related to the relative areas of each material. The texture of stucco is the most appropriate for use on interior surfaces, where its use usually dominates that of mud and any ornamentation can be clearly recognised from a distance.

Some of the most effective examples of hand-made textural mud surfaces are those that utilise a combination of sunken and prominent areas, which include both *zakhrafat al-misht al-khashabi* and *zakhrafat al-mayazib wa al-khutot al-gha'ira*. The former is created in the lower part of the walls using stripes of protruding lines of mud with deep hollow lines between the stripes (parallel lines roughly textured with zig-zag, circular or wave movements). The latter is textured at the upper part of the wall with raised mud shapes composed of parallel chains of protruding triangles and sunken lines. Both styles of of mud decoration, though crude, were the preferred choice in both rich and poor buildings, being much cheaper than stucco. They represent the strongest textures of all in Najdian interiors and both usually depend on two distinct, contrasting textures which also contrast with those, both plain and ornamental, that surround them.

Both these styles of Najdian decoration display the effect of scale upon texture that can be seen in interior scale modules. Although the writer believes that the traditional Najdian designer had no scientific theory concerning space ratios or modules of scale, by exercising his own aesthetic judgement he formed pleasing areas with suitable proportions and modules, and this is seen clearly in the textured areas. For example, the scale module of *zakhrafit al-misht al-khashabi* might be suitable for covering a large area of a wall at a ratio of about 2:3, in which the texture covers large areas of wall. On the other hand, it might well prove to be unsuitable if the texture of this

style of decoration covered only part of a wall. In addition, the texture resulting from the decoration of the parallel chains of protruding triangles and sunken lines is suitable for use in a small ratio and particularly in the high sections of a wall. In mud-brick interiors they usually appear in a ratio of 1 to 5 on a wall area, in which their forms divide the wall into agreeable proportions (Fig. 282).

Early Najdian houses, dating from 17th and 18th Centuries A.D., were almost texturally bereft, particularly those belonging to poorer people, being built cheaply from mud alone. As such, their building surfaces were simply coated with a rough layer of plain mud. Only a few surfaces, such as those of the reception room, were commonly decorated with the rough decorated mud of the *zakhrafit al-mishit* al-kashabi (Plates 149 & 151). Later buildings, especially those of rich people from the 18th and early 19th Centuries A.D., seem rather smooth and hard. This appearance can also be recognized in the finishing of interior floors and also in the surfaces of large ornaments such as the crenellations and protruding triangular shapes (V-shapes or *al-mayazib*, Plates 153-155, Fig 282).

2.4.2.b. STUCCO TEXTURES

Stucco is a very sensitive material in comparison with mud, stone or wood. Its quality, colour and texture differ completely from these and its physical appearance varies from place to place and from one building to another. There is a great difference between the textured surfaces of the stucco of mud-brick buildings from the 17th and 18th Centuries, and the texture of stucco in newer mud-brick buildings from the 19th Century. The texture of various stuccoed walls in buildings of earlier periods lend a certain liveliness to interiors, despite its rough texture (medium in scale) and grey colour. It harmonizes well with the texture and colour of mud-surfaces and it has a more 'hand-made' physical appearance.

In some of the older buildings , the texture of stucco has a large scale which can have a deadening effect due to the absorption of most of the light by the rough stucco surface and which also reduces the clarity of impression made by the ornaments. The texture of the stucco used in new buildings, has a richer character than the types mentioned above. The surfaces appear very

white and smooth, so that any engraving creates a strong contrast and a high level of detail can be seen. This is, of course, due to the very small scale of the surface of this stucco which reflects most of the light falling upon it.[15]
Field work information reveals that the rough texture of stucco surfaces in the interiors of these periods resulted from two things: firstly, it was related to the quality of the stucco material and its primary treatment; and, secondly, it was a natural result of the ability of the worker himself. In fact, good quality stucco material was very rare and expensive at that time in Najd, being found in only a few places including: al-Riyad and the surrounding villages; 'Unayza; Burayda and Shaqra. Only rich families were able to afford this quality of stucco. Also, the ability and experience of native Najdian workers in stucco from both these periods was limited, particularly in the primary and final treatments, in comparison with that of workers from other areas of the Arabian Peninsula. The result was deeply textured stucco surfaces which were full of sand and other blemishes.

Smooth-surfaced plain and ornamental stucco began to appear in many small and large mud-brick interiors at the beginning of the 19th Century due to the influx of new, foreign stucco-workers who emigrated to the Najd region from various areas in the East and West of Sa'udi Arabia, and also from neighbouring countries such as Yemen, Bahrain, Iraq and Egypt. These workers often had experience of working in stucco including both the primary preparation and the final work of coating and ornamental treatments. Magnificent examples of stucco composition finished with smooth surfaces, both plain and ornamental, are still seen in many houses and palaces including: the houses of al-Tuwayjari and al-Rabi'a in al-Majma'a; al-Suwayan and al-Sulayman in Burayda and 'Unayza; the palaces of al-Muraba', al-Badi'a, al-Masmak in al-Riyad; and that of al-Sa'ud in al-Kharj whose stucco works were mostly executed by Yemeni and African workers, in addition to some Najdian artisans.

This contrast between old and new stuccoes allows an assessment of the various textures. The differences between them are due to the quality of the stucco, its handling and the finishing treatment used Yellow and brown mud coating and stone and wood surfaces in both old and new buildings have less character and aesthetic quality than plain and ornamented stucco surfaces. This can be seen in most mud-brick buildings, where stucco is employed with

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15. See note in paragraph 1 to this chapter.

skill and understanding of both the materials and finishing techniques. As such the stucco surfaces seem somewhat smoother than other materials. There are many mud-brick buildings built entirely with elegant and texturally interesting painted, stucco surfaces.

2.4.2.c. TIMBER TEXTURES

The textures of timber surfaces, whether of ceilings, lintels, doors, windows or furniture or of objects such as chairs, boxes, benches and utensils, differ from place to place and from building to building. This is due to the type and quality of the wood on one hand, and the ability of the craftsman and the status of his patron on the other. In various palaces and houses of the wealthy dating from the 18th and early 19th centuries A.D., there are found pieces of woodwork carefully finished with high quality cutting and polishing. There are examples featuring rendering and painting using layers of either lacquer or paint or both together, the surfaces of which appear rather smooth. However, most woodwork featured in Najdian interiors is left natural, with a few examples being unskillfully treated and in which the grain can be felt by hand.

This case of self-texture (natural texture) is seen in the combinations of timbers used in ceilings, lintels, doors and windows. Here the characteristic self-texture of each kind of timber has resulted in the evolution of an artistic language which highlights the rules that were employed in the use of various natural patinas in order that they appear in integrated combinations which fit with the surrounding textures and colours of the interior. The varied scales of the self-grain ensure a lovely relationship with both treated and un-treated surfaces in the interior, which themselves have varied textural scales. Combinations of timber of various types whether used in ceilings, lintels, doors or windows, all show strong use of contrast which enhances the interior as a whole. The contrast in textures can be clearly seen where background material appears between pieces of timber. Gaps, separating one piece of timber from another (or from other surrounding materials) help define the timbers themselves. The grain of timber appears most clearly on its surface when it is exposed to the elements, so most doors and window-shutters of Najdian buildings overlooking the interior courtyards gradually deteriorate texturally, while their colours also fade.

2.4.2.d. STONE TEXTURES

Stonework *was* employed in Najdian building, but always rather roughly, the architects being less interested in stone than in other materials and stonemasons being the least skilled of Nadjian workmen - not surprisingly, since stone is not a common material As a result, when it was used, its roughness was hidden under layers of mud or stucco. Small, split stones used on the façades of some houses in al-Dir'iyya which are naturally smooth give an acceptable appearance to the building, but less precious in comparison to mud and stucco facades.

2.4.2.e. CONCLUSION

There are three main points to be made regarding texture in Najdian interiors:

a) Texture is one of the most important interior elements in buildings, for in humans touch is particularly sensitive. However, textures have to gratify both vision and touch.

b) Rough and smooth textures were both used in Najdian interiors, whether the artists employing both hard and soft materials.

c) The significance of texture in Najdian interior is most apparent when the artists used two different materials adjacent to each other on one surface such as stucco and mud, wood and stone and timber with either stucco or mud. However, the importance of texture in the Najdian interior is most obvious in the dissimilarity of textures of furniture, walls and floors. Here, variation in softness and roughness of the various interior features brought the Najdian Interior to life.

2.4.3. COLOUR

INTRODUCTION

Throughout history, colour can easily be seen as a central aspect of interior design, whether of domestic or public buildings.[16] Colour is, of necessity, a feature of our life and every object or material at any location to Ernst Van Hagen:

> *Color is life; for a world without colors appears to us as dead. Colors are primordial ideas, children of the aboriginal colorless light and its counterpart, colorless darkness....Light, that first phenomenon of the world, reveals to us the spirit and living soul of the world through colors. Nothing effect the human mind more dramatically than the apportion of a gigantic color corona in the heavens.* [17]

Marjorie Elliott Bevlin emphasises its importance as a design element:

> *'Of all the design elements, colour is perhaps the most appealing. It has been called the 'music' of the visual arts... It is therefore one of the most powerful tools of the designer.'*[18]

Colour is both very powerful and highly subjective. Many studies of colour's essence have been undertaken by both philosophers and scientists, likewise designers and artists.[19] The former two concentrate on formulating abstract theories of colour, and the study of the sources of colour sensation, as well as the optical principles underlying the perception of colour. The latter two naturally focus on the development of personal variations on, and distinctive

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16. Paul Bahn (ed.), *The Story of Archaeology,* The 100 Great Discoveries, Weidenfeld and Nicolson Ltd., 1996, p 58. See also Warwick Bray and David Trump, *A Dictionary of Archaeology,* Allen Lane the Penguin Press, London, 1970, p 32, and Jacquetta Hawkes, op. cit., p 176. See also Alexander Speltz, *The History of Ornament,* Studio Edition, An Imprint of Bestseller Publication Ltd., London, 1989, pp 5-78 & 189. For more details see paragraphr 2 in the notes to this chapter.
17. Ernst Van Hagen, *The Element of Color,* Van Nostrand Reinhold International, New York, 1970, p 8.
18. Marjorie Elliott Bevlin, *Design Through Discovery,* 3rd edition, Holt Rinehart and Winston, New York and London, 1977, p 79.
19. Faber Birren, *The Colour Primer. A Basic Treatise on the Colour System of Wllhelm Ostwald,* Van Nostrand Reinhold Compony, New York and London, 1969, p 9. See also M. E. Chevreul, *The Principles of Harmony and Contrast of Colour and their Application to the Art,* Reinhold Publishing Corporation Inc., New York, Amsterdam and London, 1967, p 53-54. For more details see paragraph 3 in the notes to this chapter.

characteristics of, a colour or colours, with a view to fulfilling specific aesthetic and practical purposes.[20]

In scientific terms, colour is perceived due to the quality of light reflected from an object to the human eye, in particular its wave-length.[21] For the artist or designer, colours have specific visual characteristics distinct from other optical and tactile qualities which allow them to play an effective role in all kinds of design, including interiors.

2.4.3.a. NAJDIAN INTERIOR COLOUR

In most ancient, primitive societies and urban civilizations, including those of Egypt, Babylon and Assyria, and also amongst surviving primitive African peoples, colour was, and continues to be employed in distinct combinations.[22]

In Najd, as in other Islamic areas, the inhabitants took an interest in the interior colours of their mud-brick buildings, both prior to and during the Islamic age.[23] This interest continued, during the first, second and early third Sa'udi State. Traditional architects and artists of these periods employed several applied and self-colours (natural) in the interiors of mud-brick buildings, which reflected various Najdian traditions and customs. The self-colours are white, brown, yellow and grey, in their various tones, further modified by variations in scale of texture and resultant light reflection characteristics. This family of self-colours is visible on plain and ornamented stucco and mud surfaces, and can be seen in the natural appearances of stone, wood, plant branches and leaves. Applied colours were mainly red, pink, yellow, light and dark blue, brown, green, orange, white and black (Fig. 247). These colours are often used in the decoration of architectural woodwork and furnishings.

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20. Marjorie Elliott Bevlin, op. cit., p 78.
21. M. E. Chevreul, op. cit., pp 53-54.
22. Concerning the colours of Egyptian, Babylonian and Assyrian see Alexander Speltz, op. cit., pp 5-7; and with regard to the colours of primitive people see Owen Jones, *The Grammar of Ornament*, the original copy published in 1856 by Messrs Day and Son London, this copy published by Studio Edition, London, 1986, p 15. See also Philip Steadman, *The Evolution of Designs, Biological in Architecture and Applied Arts*, Cambridge University Press, Cambridge, 1979, p 104.
23. Throughout the Islamic age (from the Ummayad period until the Ottoman era), it is well-known that the Muslim was very interested in the brightness colours of his domestic buildings see Myriam Rosen - Ayalon, op. cit., pp 33-34 & 60.

Stucco and mud, used in the coating of walls, ceilings and columns in the Najdian interior, were left completely natural or might be painted in applied colours (usually light and dark blue, green, brown or dark yellow), or were sometimes coloured in ochre (Plates 96-101).[24] Many examples of these features could be seen covering the walls or some of the lower parts in the houses of both poor and religious men (Plates 127, 235, 237, 263 & 270). Other examples of mud surfaces were sometimes painted in ochre with geometrical elements (Plates 169 & 170) or flowers motifs and the figures of birds.[25] A few examples still survive on stucco, among which are the walls of the sitting-room of al-Masmak Fort in al-Riyad, which are light blue with dark blue and red botanical decoration (Plates 136-138 & 189).

The use of colour on architectural woodwork (typically doors, windows, lintels and ceiling beams) was also a feature of the interiors of early mud-brick buildings. These colourful ornamental compositions demonstrate the ability of the interior artist in the use of colour. Examples appear in houses at al-Majma'a, al-Riyad, 'Unayza and Shaqra in which the ground of the woodwork is either left natural (with its self-colour) or painted either in monochrome or polychrome. The monochrome woodwork, had, of course just one colour, such as green (Plates 260 & 263), light blue (Plate 261), dark blue (Plate 262) or dark grey (Plates 257-259). Polychrome woodwork had two or more colours; pairs, such as dark brown with orange (Plate 263, the door), black with red (Plates 215, 265 & 267) and black with brown (plate 266), blue with dark grey (Plate 264) blue with dark orange (Plate 224) blue with orange (Plate 55), and blue with red (Plate 18); or triads, such as blue, red and white (Plate 269 & 274) or, green, light blue and yellow (Plate 241). Alternatively, woodwork could be picked out in vibrant colours, usually blue, red, yellow, green, brown, white and black, sometimes all together (in which ornamentation may also be carved, burned or notched) (Plates 56, 144, 146, 147 & 197).

These strong varied colours used in conjuncition with decorative elements such as the symbolic rosettes, bunches of grapes, stars, crosses, dots and lines, is characteristic of Najdian decoration, and by their acceptable artistic arrangement with other decorative elements (stucco and mud ornaments) recall the magnificence of mud-brick interiors of the late 18th Century. For

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24. Charles M. Doughty, op. cit., vol. 1, p 652.
25. Ibid., p 659.

example, the beams of the sitting rooms at Suwayan's house in 'Unayza (Plate 18), at al-Suba'i's house in Shaqra (Plate 16), at al-Dikheel's house in al-Riyad (Plate 223) and at an unknown's house in Sudus (Plate 215); the lintels of doors and windows at the Sa'ud palaces in al-Dir'iyya (Plates 148, 264 & 267); as well as many of the doors and windows themselves; all glowed with pure colours.

The interior colours of the house of al-Tuwayjari in al-Majma'a represent the style of 18th Century A.D., at which time the mixture of self-and applied colours in the decoration of walls, columns and ceilings, as well as, in the ornamentation of architectural woodwork, fell out of favour. Instead, stucco coatings of walls, columns and parts of ceilings are seen in many degrees of natural white ranging from snow-white to dark grey; mud areas ranged from light brown to dark brown; and the wood of ceilings ranged from light yellow and brown to dark yellow and brown. The wooden surfaces of doors and windows were no longer left plain, but were instead given carved and notched ornaments, painted in harmonious colours.

The decorated interior woodwork in the Fort of al-Masmak, the al-Muraba' palace in al-Riyad and in the houses of al-Suba'i in Shaqra, and Sowayan in 'Unayza is the most complete and well-preserved from the late 18th and early 19th centuries. The longer horizontal beams of the porticos in the palace at al-Muraba' (Plates 153 & 154), and the doors and windows at al-Masmak, are painted precisely in red, yellow, blue and green. Similarly, in the houses of al-Suba'i and al-Suwayan, the ceiling beams, doors, windows and lintels glow with very bright colours. There are also remains of early 19th Century coloured decoration in some houses at Sadus, where interior patterns are painted in black and brown.[26] Around 1940 A.D Dickson visited al-Riyad city and saw the important palace of al-Badi'a, and he provides a good description of the decoration of the ceiling beams of an interior veranda:

> *An upstairs veranda.....It is supported by stone pillars covered with white plaster (juss). Between each pair of pillars are three beams of pale-yellow or fawn tamarisk wood, on which are painted in scarlet and black striking designs in lines and dots.* [27]

The use of colour also appeared in Najdian furnishings, as mentioned above, their polychrome character often creating the interior atmosphere and

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26- 'Abd al-Rahman bin Zaid al-Suwaida', op. cit., p 31.
27- A. D. Dickson, op. cit.,1956, p 380.

spreading life and movement throughout the space, making floors and wall areas full of vigour (Plate 131).

THE CONCEPTS OF INTERIOR COLOURS

In order to evaluate the colours of the Najdian interiors, there should be: firstly, an idea about the social, economic and environmental factors in the Najd which in fact affect both Najdian life and architecture; and, secondly, it should be recognised when this style of artistic work was being produced. The extensive and extraordinarily skilful use of both self- and applied colour still to be seen in ruined interiors is enough to demonstrate the occupiers' interest in using colours inside their buildings. Even so, the writer believes that there were no rules for the use of colour at that time (1700-1950) to which builders and woodworkers had to adhere.

The Najdian artist employed colour combinations in three ways: the first was spontaneous, and was decided upon as he started to draw the motifs which would then be coloured; the second involved the borrowing of ideas and colour combinations from other artists of earlier generations or more advanced civilizations, which he could copy from the artefacts that he had access to; and finally, foreign artists brought colour combinations, inherited from their native cultures, to the Najd. In attempting to analyse the aspects and attributes of the colour combination found in Najdian interiors with a contemporary eye, it does not follow that early Najdians shared this understanding of it. However, from simple, early accounts their thoughts, beliefs and tradition regarding colour can be estimated.

The architectural interior of the typical Najdi mud-brick building seems at first sight to be poor in its form and design features; it is however rich and very strong in comparison with the modern concrete buildings of the area. Its strength lies in its simplicity and in the use of a variety of natural colours and textures, resulting from the employment of various families of raw materials including mud, stucco, wood, plant leaves and straw.

An natural, raw materials have a base colour as well as many gradations of that colour. However, their effect depends on the quality, direction and quantity of the light, the related forms and textures; and inter-relationship

between themselves and these other modifying factors. This diversity of natural colour creates life and enriches compositions, giving interiors beauty and some prestige.

The use of natural materials, such as stucco and mud, within mud-brick interiors could be three-dimensional, leading to the creation of raised and sunken surfaces of different sizes which are formed at various angles to the perpendicular. These affect the whole space, and provide a greater variation in tones (of natural original colour) and contrast between them due to the variation in surface levels. This is, of course, modified by light direction and textural variety. This in turn enhanced the interior spaces of mud-architecture more than would the simple application of paints to a flat surface, even though the natural colours of mud, stucco and wood dominated the interior spaces of mud-brick buildings.

It is apparent that a stucco coating is the best background against which to enjoy other colours, such as those of woodwork and soft furnishings.[28] However, because white surfaces tend to reflect virtually all the light that falls upon them, they are only actually perceived as white if the light itself is white. But if, for example, a red light shines upon a white-pigmented surface, *in the absence of any other clues to the contrary*, the surface will be perceived as reddish or pink, depending upon the saturation of that red light (i.e. the degree to which there is any white light mixed with the red) (Fig. 247).

In al-Suba'i's sitting-room interior, at al-Ulaiyan rawashin's interior, at al-Masmak's new sittng-room interior and at al-Tuwayjari's sitting and rawashin rooms, the brilliant stucco of the wall reflects the light making them more noticeable than any other part.[29] Thus the size of the interior appears larger than it is in reality, and coloured features can be clearly seen. On the other hand, the mud walls of the large interior of the al-Rabi'a women's sitting room absorb most of the light, whether natural or artificial, creating the illusion of a smaller interior. White stucco was therefore equally suitable for large and small interiors which have coloured objects within them, such as sitting-rooms; while a brown mud coat was more agreeable for larger interiors such as sleeping rooms, where it provided, in association with other coloured

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28. J. Scott Taylor, *Colour Science*, part2, Winsor Newton Ltd., London, 1909, p 62.

29. Usually light colours appear to recede and so make walls look less prominent and further away than in reality. See Sonya Mills and Ernest Joyee, *More Space For Living*, J. M. Dent & Sons Ltd., London, Melbourne and Toronto, 1982, p 20.

features such as furnishings and dim lighting, a kind of romantic colour and atmosphere.

The impact of colour in Najdian interiors is also greatly enhanced by the use of the applied colours which appear on architectural woodwork, including shutters, lintels and ceiling beams. However, the impression this kind of colouring has on the eye is one of complexity, particularly when compared with the natural colours of stucco ornamentation. Both the large and small horizontal and vertical ornamental compositions painted in bright colours, appearing on door and window shutters, lintels and wooden beams often lead the eye strongly in their direction and create a kind of changing in interior atmosphere, especially in the existence of large surfaces of white stucco.[30] For example, in al-Suwayan's sitting-room, and in al-Suba'i's interior amongst others, the coloured surfaces of the central ceiling beams, against the naturally dark colour of the wooden ceiling, make the ceilings seem lower than they actually are.

In fact, these simply coloured areas of architectural woodwork did not affect the natural colours (materials self-colours) negatively. On the contrary, they enhanced them by creating a strong contrast and balance between themselves and also with the natural colour of other surfaces. A contrast here is achieved: 1) by the dissimilarity between the colours themselves (i.e. between basic colours or hues); 2) by variation in apparent brightness of the colours (i.e. between tones); 3) and also by light and shadow.[31]

These three types of contrast, achieved through use of the natural colours of stucco, mud, stone, straw and timber, can be seen in any mud-brick interior. The first type appears where stucco and mud are used together and, similarly, with the combination of stone and ceiling timber (Plates 255 & 256), likewise between the colours on the ceiling beams and the stucco or mud (plates 108 & 240). The second type is apparent in the tonal differences appearing within the stucco, mud of the house. The third style results from variation in surface level that give rise to highlights, unlit areas and cast

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30. Sonya Mills, op. cit., p 20.

31. T. Elder Dickson, *An Introduction to Colour*, Pitman and Sons Ltd., London, 1932, pp 23 & 53. See also M. E. Chevreul, op. cit., p 57, and Jeremy Robinson (ed.), *The House and Home Book of Interior Design*, Mc Graw-Hill Book Company, The Housing Press, New York, 1979, p 20. For more details see paragraph 4 in the notes to this chapter.

shadows. Variations in surface texture and in the direction and quality of light itself can further enhance these last two effects.

In applied colours, only the first type of contrast is achieved in Najdian interiors through the difference between the colours themselves, while both the second and third types of contrast are somewhat absent, due to the Najdian artist's limited knowledge of the manufacture of tones from pure colours.

However, the strongest contrast of all to be seen in the interiors of mud-brick buildings is that between the self-colour (natural) and applied colours. It is the phenomenon of contrasting applied colours (on woodwork and in other interior materials and objects) and also the contrast between applied and self-colours that often create the atmosphere of the interior and spread life and movement throughout the space.

The Najdian architect and artist, like primitive, contemporary artists,[32] both took inspiration from the balance of colour to be found in nature. This they often imitated in the decoration of their interiors, though modifying it according to their own judgement. With a few exceptions, both the architect and artist attempted to achieve a balance in colour in one of two ways: 1) by use of colours symmetrically (repetition of coloured areas of equal size and shape); 2) by use of colours asymmetrically (i.e. in unequal sizes and shapes).[33]

The symmetrical balance in colour appears in the regular, or rhythmic, repetition of motifs rendered in both natural and applied colours which are organised into compositions, either on surfaces of stucco or timber or in textiles: for instance, repeating bright and dark coloured areas (in between areas of white, black and grey coloured stucco) of equal size and shape on surfaces of engraved stucco motifs. The symmetrically repeated colours (in balance) of these motifs appear as equal circles, rosettes, leaves and triangles arranged in parallel and equal horizontal and vertical friezes on walls. Similar symmetrically repeated, equal coloured motifs are seen painted in applied colours on woodwork and weaved in textiles. This appearance of

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32. For instance such as those of the Savag and Oceania primitive tribes of Central Africa. See OwenJ ones , op. cit., p15.

33. For more information about types of balance see Marjorie Elliott Bevlin, op. cit., pp 117-120. See also Bruno Zewi, *The Modern Language of Architecture*, University of Washington Press, Scottl, London, 1978, pp 15-18.

visual rhythm in symmetrical coloured motifs on stuccoed walls, woodwork and textiles indicates a deep sense of balance. The effect is both strong and lively as the observer's eye is drawn to the balanced repetition of coloured geometric and other shapes that comprise the decorative motifs.

We cannot be sure, though, that the balance that we now discern in what remains of some old interiors was always intentional! An asymmetrical balance in the use of natural colours can be seen among certain examples of engraved compositions on stucco (Plates 137-139), and also in applied colours among the various objects found in Najdian interiors for their aesthetic and functional purposes such as bellows (*al-mifakh*), censer (*al-mibkhara*), iron roaster with its spatula (*al-mihmasa wa yaduha*), wooden and iron mortar (*al-nijr*), swords (*al-suyuf*), wooden file (*al-mubarid*), kerosene lanterns (*al-fawanis*) and other objects (Plates 131 & 302). This type of balance appears in the colours of these materials and objects of various sizes and shapes hung on the walls; or the colours of those which are arranged on the shelves of wall-cupboards; and in the decoration of the shutters of the wall-cupboards themselves. Asymmetrical balance may also be seen between these coloured items and their background, particularly where this consists of either white stucco or brown mud.

From the analysis of various surviving mud-brick interiors in the Najd, we can distinguish two styles of colouring which are employed by the Najdian artist: harmonious colouring and symbolic colouring.

2.4.3.b. HARMONIOUS COLOURING

Harmonious colour constitutes a sizeable and demanding aspect of human culture. Harmony is most easy understood in relation to music, as Michael Green argues:

> *In music, harmonies are momentary. A piece may consist of a series of harmonies, all more or less momentary. Sometimes moments of disharmony may be introduced by way of contrast. The temporal aspect of music is essential; in what other art form is appreciation dependent on a series of sensation via a single organ (in this case, the ear)? Ballet is close and is undeniably temporal, but appreciation depends on the use of both ears and eyes; wine-tasting is temporal too, but over rather a short time-span, is an experience not easily shared and also depends on two organs, the nose and the*

tongue; perhaps fireworks are the only true parallel in the sense that they can be appreciated by a single sense and that they start, develop and then end. [34]

In fact, in assessing harmonious colour combinations like those found in Najdian interiors, we must take into consideration three important factors: the physical appearance of the work; the aesthetic sensibilities of either the designer or artist; and the cultural background of both the specific designer and his society. Michael Green provides an interesting analysis of the various factors underlying harmony:

> *....If two colours are harmonious, we mean that they go well together, that we are pleased by their conjoint appearance. The reason we think they look good together may be based in physics (attempts have been made to relate notions of colour harmony to the physical characteristics of the light-waves concerned) or in cultural attitudes (some groups or individuals may assign meaning to particular colours and so it is the further meaning implied by their use in particular combination that may be regarded as agreeable, rather than their appearance.* [35]

Moreover, in order to classify the types of harmonious colour, we must study some of the important theories of harmony in colour. In fact, there are many different opinions about harmony in colour provided by both early and modern researchers such as H. B. Carpenter, A. H. Munsell, M. E. Chevreul, Faber Birren, Peter F. Smith and others.[36] To a certain degree, the opinions of all these researchers appear to be similar. From their thoughts, we can derive three types of harmonious colour presented carefully by Chevreul: harmony of hue, which he refers to as, "simply a change of hue without change of value or chroma; "the harmony of value, where the changes appear in both hue and chroma but, as he says he gives, ".a monotonous harmony of regular value;" while the third, "connects opposite hues by a sequence of chroma balanced on middle gray and is more stimulating to eye.[37]

Chevreul does not differ in his thoughts on harmonious colours from the above mentioned theorists, but he is more intelligible in his clarification of the concept of harmony; he also bases his analysis on the natural order (chromatic wheel). He divides colour harmony into: 1) harmony of proportion of areas; 2) harmony of hue; 3) the harmony of a dominant coloured light.

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34. Unpublished discussion document: Michael Stuart Green,1998; Interior Design Dept., Edinburgh College of Art, Heriot-Watt University.
35. Ibid.
36. For more information about some theories see paragraph 5 in the notes to this chapter.
37. M. E. Chevreul, op. cit., p 106.

Moreover, he presents another type of harmony which he calls 'the harmony of contrast,' which he further divides into two sub-categories:

1)- The harmony of contrast of tone, can be seen in two ways, the first can be seen between two tones of the same scale, but which are very distant from each other, the second can be seen between two differing tones each of which belongs to a continuous scale.

2)-The harmony of contrast of hue can be seen between two colours belonging to scales which are very distant from each other.[38]

Faber Birren and Peter F. Smith both consider harmony of colour as a source of aesthetic pleasure.[39] However, the former attempts to formulate a law relating to harmony which can be summarised as harmony=order and order=arrangment:

> *A certain combination of different colours has a pleasant, other an unpleasant or indifferent effect. The question arises, on what does this depend ? The answer is: such colours will have a pleasing effect, between which there exists a lawful relationship, i.e. order. If this is absent, they will have an unpleasant or indifferent effect. We call colour groups that have a pleasant effect harmonious; we can therefore establish this basic law: harmony = order....The simpler the order, the more illuminating or convincing is the harmony.* [40]

In fact, all of the above theories, in addition to various others (some of which have been touched on earlier, like those of Goeth, Ostwald, Albers and Itten) have been based on a hypothesis that harmonious colours in a composition, or concordant, coloured parts in a whole formation, have a strong relationship with the scale and proportion of their natural chromatic components. Due to this, a colour harmony must be created from neighbouring, equidistant hues; from saturation tones of regular gradation or different levels; or from contrasting hues or tones (that is the contrast of value seen between bright and dark colours).

NAJDIAN HARMONIOUS COLOURS

Harmonious colouring depends for its effect on the skill of the artist in utilising the colours and artistic devices at his disposal. Visual harmony, in all its

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38- Peter F. Smith, *Architecture and Principles of Harmony*, RIBA Publications Ltd., London, 1987, p 65.

39- Faber Birren, op. cit.,p 65.

40- With regard to the styles of harmony see Chevreul, op. cit., pp 106. For more details see paragraph 5 in the notes to this chapter.

aspects, whether harmony of scale, harmony of hues or harmony of contrast, has been identified in the art of early civilizations such as ancient Egyptian, Babylonian and Assyrian. It is also well-know in the art of contemporary primitive tribes of the Savage and Oceania in central Africa.[41]

However, in the Najd, analysis of the applied and natural colours of mud-brick interiors, shows that harmony of scale (tones) is relatively limited in applied colour due to difficulty of execution; but harmony through contrast of hues is frequent, particularly where colour is applied to architectural woodwork. Examples are found in the decoration of wooden lintels, doors and windows in the al-Tuwayjari's house in al-Majma'a, at the palace of al-Masmak in al-Riyad, at the palaces of Sa'ud in al-Dir'iyya.

Harmony, whether through contrast of hues or tones appears in the combination of natural colours in most mud-brick interiors, including those of al-Rabi'a, al-Tuwayjari, al-Suwayan and al-Suba'i. For example the harmony of hues (in this case yellow, orange, brown and dark brown) can be seen in every dry trunk of either tamarisk or palm used to support ceilings. Both the harmony of contrasting hues and the harmony of tone can be also seen in the colours of wooden beams, joists and ceiling laths.

In Najd, early woodworkers and their families who had emigrated to Najd from places such as Africa, usually preferred to use hot, vibrant, contrasting colours in their interiors (for both woodwork and movable objects) and also in their clothes; for example, the combination of red, orange and yellow, often seen on doors and windows. These colours, apparently, were harmonious with each other. Najdian city-dwelling tribes-women, known as *Qabili,* generally shared the tastes of the woodworkers' wives in their preference for strong harmonies of hot, vibrant, contrasting colours when decorating interior woodwork, especially lintels and beams.

However, the Najdian *Qabili* male in his quarters, preferred a combination of cool colour schemes inside (on internal faces of wooden lintels and shutters) such as deep and light blue, green, white with violet, and a combination of contrasting, hot with cool colours for use outside (on outer faces of wooden shutters), like red, yellow, orange with black, white, green and blue. Each

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41- Owen Jones, op. cit., p 15 & 24. See also A . Racinet, *The Encyclopaedia of Ornament*, First published in 1873 by Henry Sotheranand Co., London, and the title *Polychromatic Ornament*, published by Studio Edition, London, 1988, p 15.

combination, according to him, was harmonious and all were a source of pleasure.[42]

2.4.3.c. SYMBOLIC COLOUR

Symbolic colour is a difficult area of art, especially with regard to the interior use of such colour, due to the complexity of the related psychological and social background. Simply stated, symbolic colour can be seen as the representation of symbolic meanings through the use of colour. The first use of the word *symbolic* in its current sense and meaning was in 1876 A.D., by Emile Zola,[43] but it is recognisably Greek and derives from the ancient Greek.*συμβολον*, meaning *mark* or *token*, which transliterates as *sumbolon*.

Besides the apparent aesthetic, psychological and other functional purposes of interior colour, there was a well-known and very important symbolic purpose to the use of colour in art which, in fact, has been present from ancient times.[44] The symbolic use of colour pre-dates even the emergence of symbolic shapes of various elements: the early human painted his shelter blue, symbolising the sky; while green symbolised plant-life; brown and yellow represented earth; and red signified blood and fire.[45]

Colour was used symbolically in the art of the early Egyptian and Mesopotamian civilizations. It was used in conjuction with geometrical,

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42. Information on the harmonious use of colours in Najdian mud-brick interiors is the subjective view of the researcher, derived: firstly, from personal field work, in which the remains of both natural and applied colours surviving in mud-brick interiors, whether on stucco, mud or wood have been analysed; secondly, from the information of older people who still remember some of the customs, thoughts and opinions of earlier generations about interior colours. For instance, it is known which colours earlier people considered to harmonise with each other, and what such colours meant to them. Most of this data was collected through interviewing with my relatives (males and females) and also their neighbours in the cities of Burayda and Unayza, and al-Asyah area in 1993 & 1994.

43. Pierre- Louis Mathieu, *The symbolist Generation*, Rizzoli International Publication Inc., United States, 1990, p 9.

44. The ornaments and their colours of Egyptian, Assyrian, Greek, and Roman cultures have symbolic meanings. See Owen Jones, op. cit., pp 23 &24. See also Arnold Whittick, *Symbols Sign and Their Meanings*, Charles T. Branford Co., Newton, Massachusetts, 1960, p 349, and Pierre - Louis Marthieu, op. cit., p 9

45. Raymond William Firth, *Symbols Public and Private*, George Aiien and Unwin Ltd., U.S.A., 1973, p 136. See also Pierre - Louis Mathieu, op. cit., p 67, and Carles A. Riley ii, *Color Codes. Modern Theories of Color in Philosophy, Painting and Architecture*, University Press of New England, Hanover, England, 1995, pp 209 & 213. For more details see paragraph 6 in the notes to this chapter.

botanical and other representational symbolic ornaments; in the decoration of botanical elements, especially flowers and leaves;[46] on materials and artefacts; and in religious monuments.[47] In the Far East, the symbolic use of interior colour was particularly significant; Michael Freeman explains its importance:

> *The significance of colour is an important factor in determining the look of much of the Far East, as colour is used not only for its decoration or mood-changing qualities, but also for its symbolic significance. The ancient Chinese believed that the "five colours" of blue, red, yellow, white, and black corresponded to "five elements" of wood, fire, earth, metal and water.* [48]

In Najdian society, Colour has also had well known symbolic connotations since early times. Its use symbolically originated among the bedouins who lived in the deserts surrounding the mud-brick settlements of Najd, and over time, found it way into urban culture.[49] This was possible largely due to the strong blood ties and economic relationship between the bedouins and the urban societies of the Najd, and both Bin Bishr and Ibn Ghanam cite the strength of the influence of bedouin society on urban settlements before the Sa'udi States as being responsible for the marked cross-cultural transfer between the two.

The use of symbolic colours in Najdian interiors clearly thrived, particularly in the decoration of ornaments and other household artefacts, architectural woodwork and textiles. It was greatly developed in the decoration of botanical ornaments such as flowers and leaves, as well as in children's furniture and utensils, including quilts, pillows and cradles. Prior to, and during, the First Sa'udi State, ethnic groups from various classes of Najdian society were accustomed to ascribing meanings and magical powers to colour. However, the Unification Movement resulted in a desistance from these beliefs due to the presence of religious guides who taught that they were nothing more than superstition, and that there was no power except the power of God. Because of that, the symbolic use of colour persisted in a

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46- Owen Jones, op. cit., pp 22-24. See also A. Racent, op. cit., p 18.

47- E.g. most Egyptian and Chinese artefacts, which often carried symbolic meanings. See Grahame Clark, *Symbols of Excellence. Precious Materials as Expression of Status,* Cambridge University Press, Cambridge, London and New York, 1986, pp 23 & 46. Concerning the Babylonian monuments. See Muhammad A. al-Rifa'i, *al-Athar. al-Funon al-Jamila,* Collage of Fine Art, Damascus, 1956, p 86. For more details see paragraph 7 in the notes to this chapter.

48- Michael Freeman, at. al., *In the Oriental Styles,* Thames and Hudson Ltd., London, 1990, p 182.

49- For the history of symbolism in Najd see paragraph 8 in the notes to this chapter.

limited way only amongst a few ethnic groups, including the African and bedouin Qabili ethnic groups.

In Najd, as in other parts of Arabia or in Oriental countries, each colour has a symbolic meaning and function; for example it might grant protection to the one who wears it or the place where it is found. The meanings of these colours are strengthened when they are employed to delineate symbolic figures and objects. The use of colour is obviously a form of artistic self-expression which transcends specific cultures, but its symbolic power varies considerably from one ethnic group to another and even from place to place.[50]

Bright, high-intensity colours were used particularly by the African ethnic groups of the Najd, who ascribed great symbolic power to them, believing that they would protect objects, dwellings and their residents, from envy and the evil eye. When used in the decoration of woodwork, these colours usually included red, yellow and orange in association with blue and green. Many groups of dots, as well as straight, curving and zigzag lines were painted on the surfaces, the number of each having a specific symbolic meaning and power. Dots would appear in dense numbers grouped as squares, triangles, rectangles, circles and semi-circles representing, for example, the symbolic shape of the sun (Plate 267). Various peoples (of African ethnic origin) from Burayda, 'Unayza and al-Asyah, take these coloured geometrical elements to be symbolic of strength and warfare, especially those of red colour which signifies both power and blood.

Light and dark brown, and deep red and black were the preserve of the high classes of urban Qabili ethnic groups. They were symbols of stateliness, gravity and equanimity. In Najd, these colours were employed on natural woodwork surfaces, and acquired other meaning when used in the form of botanical elements. Green and brown were served to depict the palm tree (Plates 132 & 134); light brown, dark brown, deep red and black were used to render the shapes of cross with star of four points (Plate 56), sunflowers (Plate 266); a clover-leaf pattern in various artistic compositions (Plates 257 & 268), spiral discs,[51] and bunches of grapes onto natural wood, where they

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50. The Berbers of Morocco, for instance, believe that power is transferred to objects through the decorative arts in association with colour and techniques, whether as representational or abstract decoration. See James F. Jereb, *Art and Craft of Morocco*, Thames and Hudson, London, 1995, p 13-14.

51. The shape of the spiral was well-known in early civilazation as the symbol for rain

signified blessings and love (Plates 259 & 266-267). Even the simplest unit of these colours, namely a dot, not only provides aesthetic pleasure, but in fact, according to its place and time, itself possessed active and symbolic meaning. Unfortunately, the majority of symbolic meanings resided among earlier generations of the Najd on textiles objects and materials, and, after many generations, were eventually lost to posterity.

Qabili bedouin ethnic groups, in particular the women, enjoyed both light and deep blue, using them in various textiles and objects, especially rugs and beads. They believed that these colours had a strong effect in protecting people, animals and objects from the envious eye. Necklaces of blue beads were hung on the necks of their animals, while beads of various sizes were sewn onto the quilts, hats and pillows of children and fixed onto walls using mud, particularly those of siting rooms. In addition, a few small, fragments of blue glass would sometimes appear above an entrance.[52]

Urban Qabili ethnic women were influenced by both African and bedouin Qabili ethnic women. They would often weave bright, hot symbolic colours into their materials, and also used cloth which was believed to have of itself magical, symbolic power. They would paint various decorative motifs and objects with the blue and green symbolic colours (Plate 138 &189) and also inlay wooden boxes and mirror frames with fragments of blue beads while painting various areas in this colour, which carried the same symbolic significance as that for bedouin women.

Some colours in Najd carried another symbolic meanings, for instance, white which is the most widespread colour used to denote peace and calmness; while black symbolised grief, especially in eastern areas. Red was considered to be the most efficacious colour for protecting a house and its residents from the Devil, and was also a symbol of strength and courage. Blue was the sign of blessings, and was also used as a protection against envy on both living creatures and inanimate objects. Green was a symbol of benediction, boon and fertility.

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and was often painted on doors. See Pearl Binder, *Magic Symbols of the World*, Hamlyn Publishing Group Ltd., London, 1972, pp 20 & 78. Regarding this symbolic shape, Jill Purce says: "Like all existence on the descending scale of realities the spiral is a symbol. It denotes eternity, since it may go on for ever". See Purce, *The Mystic Spiral. Journey of the Soul*, Thomas and Hudson, London, 1974, p 7.

52. In many small villages in Iran, women used often to embed fragments of blue-glazed pottery in the mud wall above the main doors. See Myriam Rosen - Ayalon, op. cit., p 60.

2.4.3.d. CONCLUSION

Visually, colour was often the most attractive internal and external feature in Najdian mud-brick buildings. This attractiveness was achieved through the use of strong combinations of warm, bright colours in contrast with cool, quiet colours on either natural or already-coloured backgrounds. By analysing interior colours used in Najdian buildings it can be included that:

a) Artists used both applied and self-colours (natural) on the surfaces of mud, stucco and timber.

b) Artists employed two artistic approaches when it came to colour; visual harmony and symbolism. In the first a diversity of artistic compositions, for example, harmony of contrasting colours (hue) or harmony of tone (saturation), was used. In the second, colours were used for their symbolic meaning on the one hand, and to enliven both symbolic botanical and geometric motifs when they employed them on the other.

c) the effect of interior colours usually depended on the quality of colours that were used in decoration and on the direction and quantity of the light on the one hand, and on the quality of the decorative motifs and textures on the other.

2.4.4. LIGHT

INTRODUCTION

Light, whether natural or artificial, has special significance and unlimited importance in the field of architecture. William M. C. Lam shows the impact of good interior illumination on the human senses:

> *A good luminous environment helps us to do what we want to do and makes us feel good while we do it. Although it may seen implicit, this statement summarizes the real objectives of lighting design- to provide a comfortable, pleasant, reassuring, interesting, and functional space for the people who will inhabit it.* [53]

Natural light may be found in the form of either sunlight, moonlight or starlight, while artificial light may be found in the form of incandescent filament light, fluorescent light or other. Each kind of either natural or artificial light has its own characteristic. In the Najd (the hot and dry region), the ground environment receives intensive sunlight and a high degree of heat throughout the day,[54] and agreeable light of both the the moon and stars at night, all of which were very important influences on the interior of mud architecture of the Najd.

The light of both moon and stars was exploited in the illumination of open interior spaces, including courtyards and roofs, where the inhabitants of mud-brick buildings would sit and sleep during the summer nights. However, when the light of the moon and stars would be obscured during periods of the winter, oil lanterns and tamarisk wood fires would be lit in these places. At night-time, light from fire-places, oil lanterns and candles would be used to illuminate interior spaces, such as rooms, halls and corridors.

Due to the different styles of traditional oil lanterns and candles, specialised niches and wall-recesses were created by the traditional architect in various

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53. William M. C. Lam, *Perception and Lighting as Formgivers for Architecture,* McCraw-Hill Book Co., New York, 1977, pp 14, 23 & 25.

54. Usually in sunny areas such as Najd, the ground receives very high degree of solar radiation, Le Grand says: "when the sun is at the zenith, according to Cabannes the atmosphere absorbs at least one fifth of the solar energy, 12% [of which] reappearing as heat (true absorption) and 8% being re-emitted by diffusion (apparent absorption). See Yves le Grand, *Light, Colour and Vision,* Approved translation by R.W.G. Hunt, Chapman and Hall Ltd., London, 1957, p 41.

sizes and forms to hold them, each of which was suited to a specific space. Large oil lanterns were placed on the floor, hung with iron chains from the ceiling- beams or carried by hand from one place to another. During the day, the sun was the principle source of light, serving to illuminate the closed interiors of rooms, halls and corridors.

2.4.4.a. INTERIOR DAYLIGHT

Many studies have been published concerning daylight and its significance for both indoor and outdoor environments. Daylight reaching the interior, as Michael Lancaster remarks, consists of sunlight from the sky together with that reflected from objects and architectural features both outside and inside buildings.[55] John W. T. Walsh expands on this:

> *The daylight received at the point comes in part directly from the window or windows and part by reflection from the ceiling, the walls (including furnishings) and floor. The light coming from the window is again a mixture of light received directly from the sky and that reflected by objects outside the window. These three components may be termed respectively the internal reflected light, the direct sky light and the external reflected light, and the corresponding portions of the whole daylight factor known as the internal reflected component (I. R. C.), the sky component (S. C.) and the external reflected component (E. R. C.). It follows that the daylight factor (D. F.) is equal to (S. C.) + (E. R. C.) + (I. R. C.).* [56]

Openings in the surviving mud-brick buildings of the Najd show clearly the importance to them of daylight, and how the traditional architect learned throughout long generations to deal with this natural source in the hot and sunny climate of the Najd. R. G. Hopkinson refers also to the value of daylight, its significance, how humans adapted to it in both sunny and cold cloudy climates and learned to use it.[57]

In Najd, traditional architects working in mud-brick, tended to depend mainly on indirect daylight and to reduce the amount entering a building (*via* small structural openings) so as to avoid glare and excessive heat gain internally. In fact, only a little indirect daylight (i.e. that reflected by external features) is needed to illuminate the interior of any mud-brick buildings in the Najd.

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55. Michael Lancaster, *Colourscape*, Academy Edition Group Ltd., London, 1996, p 23. And see Michael Baxandall, *Shadows and Enlightenment*, Yale University Press, New Haven and London, 1995, p 109.
56. John W, T. Walsh, *The Science of Daylight*, Mac Donald and Co., London, 1961, p 78.
57. R. G. Hopkinson, *Daylighting*, Heinemann Ltd., London, 1966, p 1.

Hopkinson again emphasizes this fact, and quantifies the sunlight reaching the ground in sunny climate areas, such as of Najd, and also the resultant reflection, being a source of interior lighting:

> *Indirect sunlight, which is received in the interior of building after reflection from the ground and from buildings outside, can serve a useful purpose as the main source of illumination in sunny climate...The illumination received from the sun in sunny climates is of the order of 9,000 - 10,000 lumen/ft² [840 -930 lux].The ground, whose mean diffuse reflectance may be of order of 10% may therefore have a mean luminance of order of 1,000 lumen/ft² [93 lux], i.e. of the same order as that of the blue sky. The ground illumination by sunlight can therefore serve as a useful source of interior lighting.* [58]

This is in fact so, if the architect carefully regulates the amount of sunlight and optimises: 1) the number, size, orientation and location of the structural openings and, 2) the specification and finish of internal surfaces, including their colour and texture. The result, otherwise, is discomfort either because of excessive heat or insufficient illumination. A lack of illumination was noted by the early European explorers. William G. Palgrave states:

> *The house...its position was therefore good...A winding stair of irregular steps and badly lighted, like all in the Nejed, led up to extent of flat roof"....."The Kawah [reception room of the ruler's palace in Riyadh city] its self....low and ill-lighted.* [59]

The indirect daylight that reaches the interiors of those more densely planned houses (for instance, the central houses in both 'Unayza and Burayda), those which began to lose their open interior courtyards from the end of the 17th century A.D., comes through a few, very small apertures which open on to shaded lanes; and as such is very weak. In addition, walls and floors are treated with an unreflective, dark, rough coat of mud which exacerbates the problem. In 1919 A.D., Philby commented on the same problem of ill-lit, mud-brick interiors, as in the reception room of the Prince of Burayda which, he says, was lit only by small openings high on one side:

> *We pass into cool half-light, where another door is opened into the audience hall of the Emir. It is a large rectangular room, lit only by a twilight from triangular holes.* [60]

The illumination of these interiors could be improved to an adequate level if their surfaces were to be covered with a smooth coat of snow-white stucco. Because, as W. M. C. Lam says, indirect sunlight is always absorbed by

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58. R. G. Hopkinson, op. cit., p 24.
59. Palgrave, op. cit., pp 281 & 398.
60. Philby, op. cit.,1928, p 98.

darker coloured floors, walls and furniture surfaces.[61] However, when such surfaces are light, such indirect daylight as falls on the first intercepting surface will then be reflected directly on to other surfaces and so on, to illuminate the whole of the interior.

There are also some examples of compact houses from the early and mid-18th century A.D. that were very ill-lit; daylight only entering through a small sky-opening,the primary purpose of which was originally to let smoke and heat from the fire-place escape. Internal surfaces are also treated with dark, rough mud, with the attendant disadvantages mentioned above. In Najd, for various social and architectural reasons, it was not always possible to provide dwellings with wall-openings and these had to rely instead either on sky-openings or on small openings overlooking small ill-lit, open courtyards (where these existed) for illumination.[62]

In contrast, the daylighting and atmosphere inside some scattered houses dating from the early 19th century, are very inhospitable due to intense brightness and high heat levels - the result of unsuitable windows which are orientated east-west and placed at eye-level, allowing sunlight to flood the rooms and cause strong glare.

DAYLIGHTING OF TYPICAL MUD-BRICK INTERIORS

The typical interior of mud-brick buildings of the Najd was, as mentioned above, illuminated by indirect daylight that entered through various sizes and styles of structural openings. These included:

1) Rows of small, separate triangular openings in either the north or south façade; these were made in the upper third of the wall, close to ceiling level, and opened on to the street or the interior courtyards or gardens.

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61. William M. C. Lam, *Sunlighting, as Formgiver for Architecture*, Van Nostrand Reinhold Inc., New York, 1986, p 27.

62. In such buildings, if the size of the sky-opening was increased somewhat and shaded with a moveable wooden grille, and interior surfaces were treated with a soft coat of white stucco, the lighting conditions would not just be adequate, but in fact very good. This type of lighting could well be developed for mud-brick interiors such as workshops, since it creates a good working environment due to the absence of side-shadow.

2) Groups of two or four windows situated above head-height of a seated person, overlooking the portico which usually commanded an open, interior courtyard or garden.

3) small skylights provided with moveable, solid, wooden covers. Irrespective of window-type, the interior walls were usually treated with smooth, white or light coloured stucco.

Positioning openings high in north and south walls, reduces the chances of glare since the sunlight is reflected several times internally and, so, becomes diffused, before reaching eye-level. But, although the smooth stucco walls will have absorbed a little of the light's energy with each succeeding reflection, illumination levels are still adequate.

In fact, window openings in typical Najdian mud-brick houses, overlooking private or public spaces were all designed in small sizes, in order to reduce the amount of solar radiation and glare indoors. Such considerations are obviously important where, internal lighting conditions are so dependant on and affected by those outside and their variability.

ORNAMENTS AND DAYLIGHT

The architect, in many civilizations, has manipulated objects and light to disclose and enhance shape, size, texture and colour. It is apparent that any protrusion, or indentation will produce a shadow when daylight is directed towards it, relative to its size and to the angle of illumination. Shadow, in general a very important phenomenon, helps us to appreciate the general form of every projection or hollow in ornaments, especially when the light is directed from one side. If, however light is to come from two sides, the architect usually prefers one source to be brighter than the other. The greater the contrast between light and shadow, the greater the clarity of the decorative elements.[63]

In Najd region, we can see the architect's response to the precise architectural details of both the internal and external surfaces with their numerous protruding and receding elements. Due to this, they created

63. Michael Baxandall, op. cit., pp 9 & 36. See also Burne Hogarth, *Dynamic Light and Shade*, Waston-Guptill Publication, New York, 1981, pp 26-30.

various artistic compositions on both the external and internal facades and elevation. However, by analysing some of these facades and elevations, we know that the architects of Najd used the impact and advantage of daylight and shadow to clarify both ornament and surface.

Outside, the architect did not control the daylight, its intense glare could obscure the details of the external decorative elements (edges and mass) and their true texture and colours. For this reason the architect built large and protruding ornamental elements on the exterior, in contrast to the interior where ornament is smaller and more precise. But, inside, the architect could control the daylight as received through the apertures, allowing in an appropriate amount for the appreciation of ornament, while taking into account their size, form and distance from the eye . So, by use of daylight, he made it possible to fully appreciate colour, which is considered an essential feature of the interior applied art, and to enjoy the textures of the elevations and objects without actually needing to touch them.

2.4.4.b. CONCLUSION

Light in mud-brick buildings was also an important factor. There are five important points concerning light:

a) The inhabitants of mud-brick buildings in Najd used both natural and artificial light (e. g. candles and oil lanterns).

b) Daylight was the most important natural source of illumination in Najdian interiors during the day.[64] However sunlight was also the source of heat and glare which had a profound effect on man and his environment.

c) In order to protect interior areas from heat and brightness, architects tended to reduce the size of external openings and chose suitable locations for them.

d) Although only a little daylight reached the interior spaces in Najdian buildings it was generally enough to illuminate them and show off their interior elements

e) To some extent, the architect of Najd was benefit from the impact of daylight and resultant shadow to clarify inside ornament.

64- Other sources of natural lights used in Najdian buildings were from the stars, moon and fire.

2.4.5. FURNISHING AND FURNITURE

INTRODUCTION

Throughout successive historical epochs, man has continuously innovated textiles and furnishings; selecting styles and designs with great care, in order that they harmonize with his traditions, customs and environment. Highly-developed types of textile and furnishing appeared in early civilizations, including those of ancient Egypt, Mesopotamia, Greece and Rome, and those of the Mediaeval ages.[65]

In Islamic times, the progression of these crafts began during the Umayyad Caliphate, and reached full development during the Ottoman Empire.[66] This design of furnishings and furniture showed great development during the lengthy period, and this is seen particularly clearly in examples used by the ruling and merchant classes. The advances were largely connected with developments in shape and decorative style, including the use of high-quality timber and rich decoration. A strong relationship can also be seen between the character of furnishings and furniture and the structure of the interiors in which they are found.

Data drawn from mediaeval texts, surviving objects and representational Islamic art, including wall paintings, demonstrates the great importance of textiles during this period (from 7th century A.D. to 15th century A.D.).[67] That such textiles existed at all makes their importance to Islamic society self-evident. In her essay L. Golombek wrote of:

> *In this essay I have attempted to evoke a world submerged in textiles, where textiles played a role in every facet of life, for everyone, rich or poor. They served for more*

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65. John Hooper, *Hand Craft in Wood*, Batsford Ltd., London, 1952, p 6. For more details about the furniture of these early civilizations see paragraph number 9 in the notes to this chapter.
66. Concerning the development of Islamic woodwork as a whole see Abd al-Aziz Hameed et. al., 1982, op. cit., pp 32-52. For development in each Islamic age see paragraph 10 in the notes to this chapter.
67. Lisa Golombek, 'The Draped Universe of Islam', Soucek P., ed. Content and Contex of Visual Arts in the Islamic World, Papers from A Colloquium in Memory of Richard Ettinghausen Institute of Fine Art, pp 25-38, New York University, 2-4 April 1980 (University Park and London: The Pennsylvania State University Press, 1988), p 26.

than a purely functional role and were incorporated into codes of social and religious behaviour at every level of society and in every phase of human existence. [68]

Islamic textiles and furnishings give us a deep insight into the domestic culture of the Middle East generally. Islamic, domestic buildings in Egypt, Turkey, Africa and Belad al-Sham bear witness to the flourishing of traditional Islamic culture with their magnificent coloured furnishings; the organization of their interiors; and the ornamental compositions (including botanical, geometrical and symbolic elements) which are displayed on furnishings and which strongly influenced the interior architectural areas. Jennifer Scarce clarifies the significance of Islamic textiles in the interior spaces of domestic buildings:

Domestic Culture of Middle East....wealthy urban homes in Turkey, Egypt and Iran between the sixteenth and nineteenth centuries. This was a period of flourishing traditional culture and also of change.....Family life took place in a domestic environment of material comfort secluded behind discreet facades. The distinctive features of an affluent domestic interior were textiles which provide household furnishing and clothing, functioned as symbols of power and social status and played a vital economic role in industry and trade. Delight in brilliant colour and an imaginative treatment of surfaces and texture are striking aspects of Middle Eastern textiles. These distinctive features also influenced architectural decoration. [69]

In Najd, furnishings were also considered to be very important cultural materials, both in interior and exterior environments. They clearly reflected the lifestyle (social and economic background) of the area. Gordon Russell suggests that, by studying the social background of furniture, and the materials and techniques used in its fabrication, in a particular location and time, we can draw certain conclusions about that furniture:

If we wish to know much about furniture we must look at it against the social background of its time. We must know something of the materials, technical equipment and skill which were available to make it. [70]

Of course, the process works in reverse and we can find out a great deal about the customs of a society from the study of its furnishings.

Social and economic activities in mud-brick buildings exerted a great influence on the organization of interior spaces, and on the style and form of furnishings. Moreover, these various activities have a direct effect on the distribution of these cultural materials (furnishings) within the interior areas.

68- Lisa Golombek , op. cit., p 33.
69- Jennifer Scarce, op. cit., p 5.
70- Gordon Russell, *Furniture,* Penguin West Drayton, Middlesex, 1947, p 3.

Even though we do not possess any archaeological evidence of traditional furnishings from early mud-brick interiors, analysis of the spaces allows us to surmise the importance to Najdian culture of furnishings generally.[71] Early Islamic sources also provide useful information thanks to the similarities between the Najdian and early Islamic styles. Both were influenced by the Orient, where activities often took place on, or close to, floor level.[72] Lisa Golombek also discusses the origin of this custom in Islamic culture, relating it to one of two factors: it either originated in the climate of the Mediterranean, or from the traditions of the nomads, who dwelt within and around the settlements, thus influencing urban society:

> *Most activities took place on or close to the floor.....It could be argued that the climate in the Mediterranean required warm floor coverings in the winter to insulate against the cold of stone floors.....One can also argue that the origin of textile furnishings should be sought in the nomadic life. Although floor coverings and wall hangings are associated with both indoor and outdoor space.* [73]

This mode has long been a feature of Najdian society (both urban and bedouin) in particular and Islamic societies in general. The Muslim used to sit, eat and sleep on the floor on low furnishings.[74]

According to the accounts of early European explorers, the furnishings of domestic mud-buildings in the 17th and 18th Centuries were extremely simple, even including those found in magnificent houses and palaces. However, highly developed designs appear in the early 19th Century during which many mud-brick buildings were beautifully appointed. In general, Najdian furnishings and their accessories provide insulation and comfort, establishing the character of the space without altering its structure. They were also capable of rapid adaptation and alteration to suit the occasion.

The furnishings of mud-brick buildings in the Najd varied greatly according to the economic and social stature of the owner. The small houses of farmers, craftsmen and workers contained some furnishings and little or no furniture.

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71. On this point Russell also notes that, by analysing places, we can know much about the furniture, Gordon Russell, op. cit., p 4. For more details about space analysis see paragraph 11 in the notes to this chapter.
72. Oriental people often sat on floor. See Michael Freeman, op. cit., p 62. Most mountain people in the Karen area (Thailand) sat and slept on mats laid on the floor. See Paul and Elaine Lewis, *Peoples of the Golden Triangle*, Thames and Hudson Ltd., 1984, p 86.
73. Lisa Golombek, op. cit., p 30.
74. The Prophet Muhammad (s) and most of early Islamic people used to sit, eat and sleep on the floor. See Abdul Hamid Siddiqi, *Sahih Muslim*, vol. iii, Dar al-Arabia lil-Tiba'ah wa al-Nashir wa al-Tawzia', Beirut, ND, pp 1064 & 1353.

Low mattresses, cushions and quilts served as beds and seats, and some wooden, stone and leather objects were used in the kitchen. There might be low walls platforms of mud, built either in the courtyards or outside, close to the main entrance of the house, which were sometimes covered with rush mats and served as seating, or even beds during summer nights

Even in the lofty mud-brick buildings of the Najdian upper classes, the simplest materials were used in furnishing. The Najdian man of this class sometimes had furnishings made in matching sets, and many examples are still in use today, including textiles of various types, such as: rugs; blankets; sheets; tapestries and carpets (made of wool, cotton, velvet and linen); and mattresses, pillows, and cushions for seating and bedding. There might also be chests, stools, benches, low tables, cradles and wall cupboards. With few exceptions, the furnishings of Najdian mud-brick houses are divided into two types, furnishings and furniture.

2.4.5.a. FURNISHINGS

Najdian furnishings can be classified into three main categories: 1)Wall and ceiling hangings; 2) seating and bedding materials; 3) floor-coverings.

OBJECTS HUNG ON WALLS AND FROM CEILINGS

Neither curtains nor glass were used in the windows of Najdian mud-brick buildings during the 17th and 18th century A.D. Window openings were often closed with wooden shutters or pieces of old cloth, and, in very rare cases, stucco grilles were used. In the 19th century, curtains of fine wool, velvet and silk were often used in large palaces.[75] Niches, wall-recesses and wall cupboards were covered with hanging pieces of decorated velvet cloth made of cotton or wool (known locally as *shif*), which in most houses, served as portières (Fig. 248). Sometimes sewn strips of decorated, woven rug (made of wool), were hung in the front entrances of sleeping rooms, again serving as

75. H. R. P. Dickson, op. cit.,1956, p 380.

portières. The functional purpose of portières was to give the occupants of these rooms full privacy, even when the doors were open.[76]
The sleeping rooms in the smaller dwellings of poorer households were usually divided by large, decorated, woven rugs which were either attached to opposite walls using nails or ropes, or tied to the wooden beams of the ceiling (Fig. 249). This kind of woollen partition was known locally as *qati'*, reminding us of the *qati'* used by Najdian bedouins to divide their tents into men's and women's sections.[77]

Iranian and Syrian tapestries, as well as bedouin woollen rugs in a variety of shapes and sizes, often served as decoration, being hung in the important spaces (especially the sitting and rawshan rooms) of the houses and palaces of the wealthy. These hanging textiles were often enriched with geometrical coloured patterns or alternatively, were simple and natural in appearance, and completely free of figurative decoration.

A variety of objects were hung on the walls of men's sitting rooms including items made of metal, copper, leather, wool and wood. Examples include: iron roasters and their spatulas (arabic: *al-mihmasah wa yadudhah*) (Plate 302, Fig. 262,a), in addition to swords, daggers, camel head-dresses and small woollen bags.[78] Leather sacks and sticks of various sizes, which were used for making butter, as well as small woollen containers, spoon-bags and metal sheets, which were used for baking bread, were all hung on kitchen walls (Plates 278-181).

Spindles, carpet-combs and the combs used for carding wool were hung on the walls of the enclosed women's courtyards. Small items were often hung by ropes either from three pieces of wood, such as the leather skin for storing butter (*girbat al-Zibd,* Plate 282) and various other leather objects, or from the ceiling beams such as wooden food cupboards and children's leather cradles (Plate 286, Figs. 250 & 251).[79] Large pieces of canvas were sometimes

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76. During the Middle Ages portières were often used at the doors of domestic buildings in England, though they tended to be made of heavier-weight fabrics, such as tapestry, velvet, bracelet and damask. The functional purpose of English portières was to sound- and draught-proof doorways. See Judith Miller, *Soft Furnishings,* Mitchell Beazley Ltd., Great Britain, 1996, p 74.
77. H. R. P. Dickson, *The Arab of the Desert. A Glimpse into Badawin Life in Kuwait and Saudi Arabia,* George Allen and Unwin Ltd., London, 1949, p 66.
78. The residents of traditional mud and wood huts of Tihama (close to the Red Sea), still hang various types of dishes on their interior walls. See Sulayman Mahmoud Hassan, op. cit.,1993, p 21.
79. Throughout the world textiles of various styles and sizes were often used as wall-

suspended beneath the ceilings of the porticos and rooms in poorer houses in order to keep the floors free of earth which sometimes fell from the roof. Similarly, even in some palaces, white canvas cloth was hung below the ceilings of some porticos, while fine decorated cloth was used protectively beneath the ceilings of receptions rooms. Dickson observes this decorative feature in the palace of Badi'a in Riyadh city:

> *The roof of the veranda [portico] -these in most cases, being covered up by nailing white cloth over the ceilings.....The ceiling cloth in the main reception room is gaily decorated with coloured blobs of silk in patterns representing moon and stars, and circles large and small.* [80]

SEATING AND BEDDING MATERIALS

Low upholstered mattresses, cushions and pillows of various sizes and materials were the most important items of seating used in the mud-buildings of the Najd (Fig. 252). Such furnishings were often made by Najdian women; however, during the 19th century, foreign craftsmen known locally as *Munajedeen,* took their place. Ordinarily, any item of seating of the various types mentioned above was composed of an inner canvas bag called *kis kham,* and an outer bag, known as a *ghata,* the latter having been made from various types of soft cloth, (though in poorer households canvas was used for this also). The inner bag was usually filled with cotton or wool (or sometimes straw), or a mixture of cotton and straw, if finances did not permit the use of wool. Najdian seating mattresses (Arabic: *tararih* , s. *turahah*), would be square in form, measuring about 100cm. x 100cm. x 25cm. The base of the early mattress would be filled with straw and the upper layer with cotton, while modern ones would be filled with cotton or wool.

Cushions were usually made in two forms: one large cushion was often placed adjacent to the wall for the guest's back to rest on, known locally as *misnad Zahir* (pl. *misanad Zahr*); the other was small and was usually placed on, or between, two seating mattresses, which was known as *misnad yad* (pl. *misanid yad*), and served as an arm-rest (Plate 131, Fig. 252). Both types of cushion were generally stuffed with straw, or straw and a layer of cotton. Very fine, decorated, cloth or sheep-skin covered saddles were

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hangings in folk and tribal art. See Nicholas Barnard, *Living with Folk Art,* Thames and Hudson, London, 1991, p 114.

80. Dickson, op. cit.,1956, p 381.

also used as hand-rests (Plate 287, Fig. 253).[81] Small decorated pillows, known as *masanid yad*, were often either placed on top of the hand-rest cushion, or to either side of a saddle (Figs. 253 & 254). This type of pillow was often filled entirely with wool, cotton, small pieces of straw or old clothes.

Unlike those of poorer families, the mattresses, cushions and pillows of the rich generally consisted of two bags; the inner was of canvas; while the outer consisted of a decorated soft cloth woven from cotton, wool, velvet or a wool / silk mixture. Seating mattresses and pillows were filled with pure, clean wool, while cushions were commonly stuffed with straw covered with a thick layer of wool or camel hair.

BEDDING

Large mattresses, pillows, quilts, blankets and sheets of various shapes and sizes, consisting either of wool or cotton, all served as bedding in the Najdian mud-brick house.

Seating mattresses and pillows, discussed above, were sometimes used as bedding by family members during the day, and by visitors at night. In practice, there were only minor differences between bedding mattresses and pillows, and those intended for seating; they were made of the same materials and were similar in design. However, bedding was always larger in size; sleeping mattresses measured 100-120cm in width, 160-190cm long and 20- 30cm high; while pillows measured 30-35cm in width, 80-100cm in length and 25- 30cm in height. Both (with a few exceptions) were made of very soft material.

The Najdian sleeping mattress, known as *dushak* or *frash*, in its oldest form, consisted of a leather bag filled with straw.[82].This type of mattress was known as *dukshak safir* or *frash safir.* Sometimes, in poorer households, it would be stuffed with straw mixed with cotton, while rich families would sleep on mattresses filled with wool *(* Arabic: *dukshak suf* or *frash suf).* [83]

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81. The saddle or as it called locally *rahal* or *shdad* is also used in the men's port of the Najdian tent where the master himself would sit, on which is usually found white or black sheep skin. See Dickson, op. cit.,1949, p 76. See also Klaus Ferdinand, op. cit., pp 100 & 241.
82. According to the accounts of contemporary elders.
83. The cover of both bedding *Frash* and the pillow *wisada* of the Prophet Muhammad

Najdian quilts were made using the same material, consisting of very soft pockets filled with pure wool or cotton. They measured between 120cm and 140cm in width, 5cm to 7cm in thickness and 190cm to 200cm in length, and were stored in the bedroom within special wall-recesses during the day and covered with hanging pieces of cloth (Plate 238). Najdian rugs were sometimes used as covers on sleeping mattresses, and were normally made of wool. However, they were, in rare cases, made of cotton, most particularly in the case of rugs produced between 1930 and 1960 in some northern villages, where raw materials were often brought from Syria.

FLOOR-COVERINGS

Mats, wool and fibre rugs, carpets and blankets were the most common materials employed as floors-coverings in mud-brick buildings. In Najd and neighbouring areas, mats were usually made of woven plant-straw, palm-leaves or palm-fibre (Arabic: *hasir qash, hasir sa'af al-nakhal* and *hasir lif al-nakhal)* (Plates 284 & 285).[84] Najdian craftsmen often made very simple, plain mats, that were small in size, leading richer families to furnish each room with several mats (Plate 271).[85] The finest coloured examples, known as *hasir munaqsh* , were made in Iraq, Syria, Arab Gulf countries and in various eastern cities of Sa'udi Arabia, including al-Hasa, al-Qatif, Tarut and alHufuf, reaching Najd via local and foreign traders.[86] The best quality undecorated mats were imported from Africa (via Oman and Bahrain) where local women would weave them from grass.[87]

(s) was made of leather stuffed with palm fibre: "'A'isha reported that the bedding on which Allah's Messenger (s) slept was made of leather stuffed with palm fibre" "'A'isha reported that the pillow on which Allah's Messenger (s) reclined was of leather stuffed with palm fibre". See Siddiqi, 'Abdul Hamid, Sahih Muslim, vol. iii, Dar al-'Arabia lil-Tiba'ah wa al-Nashir wa al-Tawzia', Beirut, ND, p 1147.

84. A variety of styles of mat were still in use until the 1960s, when they went out of fashion in mud-brick domestic buildings. However, they are still in use in some ancient, small, mud-brick mosques. Similar in some Gulf countries, mats are still in use. See Muhammad Sa'ad al-Bulushi, 'al-Hiraf wa al-Sina'at al-Sha'biya fi Dawlat al-Imarat al-'Arabiyat al-Mutahida', al-Ma'thurat al-Sha'biya, pp 30-39, Year 6, vol. 23, Doha, 1991, p 31. However, in country houses of England, rush matting was still in use until the middle of the 17th century A.D. See Miller, op. cit., p 63 - and is now marketed as a traditional natural floor-covering.

85. During Doughty's visit to Najd he saw some mud-brick houses furnished with mats of palm fibre. See Charles M. Doughty, op. cit., vol. 1, p 653.

86. Muhammad Jasim al-Khalifi, 'Min al-Hiraf wa al-Sina'at al-Sha'biya fi Mantiqat al-Khalij', al-Ma'thurat al-Sha'biya, pp 88-95, year 5, vol. 19, Doha,1990, pp 88 & 89.

87. According to the accounts of older people. See also Martin West Abantu, op. cit., pp. 68, 70, 75.

Rugs consisted of woollen material, known locally as *"bsat suf"* or *"sado"* and were often found in a variety of recognisable forms. They were commonly used by wealthier households, where they served as floor coverings. In 1919 A.D., Philby saw inside the sitting room of 'Abd al-Rahman Ibn Sulayman al-Jammaz (the governor of Shaqra) in Shaqra', when was furnished with fine cushions and rugs:

> *His coffee-parlour.....was comfortably furnished with sumptuous cushions and rugs.*[88]

Rugs also appeared in the houses of poorer people, particularly in the dwellings of those who manufactured them. Najdian rugs large and small consisted of multi-coloured, stitched strips which were enriched with many geometrical patterns of various sizes.[89] Most were made in the desert by bedouin women, with only a few types being manufactured by those living in mud-brick houses (Plates 271 & 277).

In Najd, carpets were rarely used as floor coverings in poorer mud-brick households due to the prohibitive cost. However, in the houses and tents of rich families, the men's and women's sitting rooms were usually furnished with very fine, coloured carpets brought from Syria, Iraq and Iran.[90] Doughty, during his visit to Ha'il saw the men's sitting room of the prince of Ha'il, and later described its furnishings:

> *The Oriental rooms are enclosures of air without moveable furniture and...their only ornaments are the carpets for sitting place, here laid upon the three sides of the upper end, with pillowed places for "the Emir" and his next Kinsman.* [91]

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88. Philby, op. cit.,1928, p 106.

89. The art of nomadic rugs everywhere has today been given various names according to the style or ornament, e.g. some are termed "zoomorphic" when the ornamentation represents the geometric shapes of animals. See James Opie, *Tribal Rugs,* Laurence King Publishing, England, 1992, p 24.

90. Carpet-making is one of the oldest arts of mankind, it is based on very ancient traditions. Carpets (Arabic: *al-sijad* , s. *sijadah*) were common throughout the world, and continue to be so. They were usually made from wool or cotton, but many other types of material were also used. Some attribute the origins of carpet making to the Egyptians, others to the Chinese, and others still to the Mayans. The earliest example was found in 1949 A.D., in a tomb in the frozen area of western Altai, near the Mongolian border, which dates from the middle of the first millennium B.C. A hand-knitted piece of carpet was also found in the Pasiryk valley in Tumulus dating from the 5th Century B.C. See Albrecht Hopt, *Oriental Carpets and Rugs,* Thames and Hudson, London, 1962, p 9. See also Fabio Formenton, *Oriental Rugs and Carpets,* Hamlyh Group Limited, london, 1972, p 13. The carpets of the cities of Khorassan and Kirman in Iran were well-known both prior to and during the Islamic age, and they are also still famous today. See Albert Jacquemart, *A History of the Furniture,* Chapman and Hall, London, 1878, p 130.

91. Charles M. Doughty, op. cit., vol. 1, p 652; see also vol. 2, p 346.

During Philby's visit to Burayda he saw the palace of Ibn Sa'ud and also described its interior features, including the floor covering of the Imam's sitting room:

> *The floor was covered over with carpets and one corner of the room was furnished with two cushioned elbow-rests on either side of the Imam's own sitting-place and a few other cushions of visitors forrecline gainst.* [92]

Dickson refers also to the floor of the interior reception room of the al-Badi'a palace, which were, around 1940 A.D., fully furnished with heavy Persian carpets of various sizes and textures.[93]

Medium-sized fine tapestries also served as floor coverings in some wealthy houses, while smaller sizes were used as prayer carpets in both rich and poor houses. These styles of furnishing reached the Najd from various countries, for example, from Syria, Iraq and Bahrain. Blankets and fibre rugs of different sizes and colours were sometimes used as floor coverings in poorer households, as were various leathers.

2.4.5.b. FURNITURE

As mentioned above, chests, cradles and wall cupboards seem to have been quite common items of furniture in the domestic mud-brick buildings of the Najd. Other types, including stools and chairs of various heights, benches, tables and primitive beds, were found more rarely, since Najdians were accustomed to sitting, eating and sleeping on the floor.

CHESTS

Chests (Arabic: *sanadiq* , s.*sanduq*) were the most common item of furniture found in all mud-brick domestic building. They were used throughout Najdian society, both before and during the Sa'udi States, and were particularly important to a Najdian woman, as part of her trousseau. Najdian chests had either flat or convex tops, and were made in a wide variety of sizes from both wood and metal, with or without legs. Some of these were secured with

92- Philby, op. cit.,1922, vol. 1, p 85.
93- Dickson, op. cit.,1949, p 380.

heavy metal locks. Large chests were usually used to store clothes and various bulky objects, while the smaller ones served as storage for expensive silver and gold jewellery. Najdian wooden chests were often adorned both inside and out, a few, typically those of poorer households, were completely plain and without painted decoration of any sort.

Chests were commonly lined with linen of various colours, while the outside faces were usually decorated, with varying styles. Dome-headed iron nails were arranged in rows and other geometrical compositions; geometrical and botanical patterns were carved, scratched and painted on the chests; and geometrical inlays of pieces of shell, bone and silver, both small and large, were also used (Plates 273-276).[94]

Inlays were a feature of the finest decorated chests, and were imported from Damascus. They were known in Najd as *sanadiq dymashki munaqasha bil sadaf* (English: Damascene ornamented chests with shells).[95] Chests of different styles reached Najd through local and foreign dealers from countries including Iraq, Egypt, Bahrain, India and Pakistan. They were also brought from the Hijaz area, particularly the cities of Makkah and al-Madina.[96] The simplest forms of chest were usually made by local Najdi craftsmen, using designs originating from cities in both the east and west of Sa'udi Arabia, and from Bilad al-Sham.

CRADLES

The cradle was a very necessary item and, as such, was found in most of the mud-brick houses of Najd. It was usually made from various readily available materials, including wood, metal, leather and even the branches of palm-trees (Plate 288). Wooden cradles were often very simple in form, and were built around a rectangular frame, while cradles made of metal and leather were somewhat more complex.

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94. In general, most of the chest's ornaments were usually copied from those found on rugs, carpets or, even dresses. See Albert Jacquemart, op. cit., p 5.

95. Although in English "Damascene" normally only describes the inlaying of base metal with gold or silver, Oxford English Dictionary.

96. The chests of al-Hijaz Area were often made of a very hard wood, *al-Sasam* . Their interiors were usually divided into many compartments: some smaller ones were secret and were usually for the safe keeping of expensive jewellery; exteriors were covered with fine cloth. See Tharwat al-Said Hijazi, 'al-Nijara al-Yadawiya fi Makka Qadiman', al-Ma'thurat al-Sha'bia, year 8, vol. 32, Markaz al-Turath al-Sha'bi li-Duwal al-Khalij al-Arabiya Doha, 1993, pp 108 & 109.

Najdian cradles were made in two styles; one mobile and the other stationary. The first type was either suspended from ceiling beams by a rope (Fig. 250) or placed on the floor (Fig. 255); the second was usually found on the floor (Fig. 256). The latter was commonly made with a carved base or two semi-circular rockers, allowing it to be rocked by hand or foot. Better quality cradles were often made with metal (Fig. 257) and their upper section were usually enriched with small objects, include beads, various motifs, feathers and blue beads stitched to small pieces of cloth.

The finest examples of wooden cradles were usually painted and carved with fine geometrical and botanical ornaments. Small leather cradles were often carried on the shoulder (Plates 289 & 290) or hung by ropes from the ceiling, in order to protect the baby from young siblings and animals by raising him off the ground. Some cradles, usually in richer houses, appear to have been provided with stuffed mattresses which were probably filled with feathers or pure wool, while in poorer houses folded pieces of cloth sometimes served as cradle-mattresses.

STOOL AND BENCHES

There is no archaeological evidence to indicate the use of these objects in early mud-brick houses of the Najd; however, the reports of both the European explorers and elders of Najd refer to them. In the early 19th century, most houses and palaces of the wealthy were furnished with very fine styles of furniture, including stools, benches, chairs and sofas which were imported from neighbouring countries such as Syria, Jordan and Iraq.[97] However, as mentioned above, there is no concrete evidence, even though the designs of this early furniture survive, through imitations and modifications by contemporary Najdian craftsmen. Najdian stools and benches were known locally as *miq'd* (pl. *Maqa'id*)

Stools and benches from the early 18th century A.D. were of two styles; those with woven seats; and those with solid wooden seats. Both were made in a variety of styles, ranging from the simple to the richly ornamented (Plate 272).

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97. In 1917 A.D., Philby saw chairs in the palace of the King Abd alAziz in Riyadh - which were upholshered in dilapidated plush. See Philby, op. cit.,1922, p 66. Also Dickson saw other examples of chairs, benches and sofas in the sitting room at the palace of Badi'a: *"Round the walls are placed heavy wooden[benches] -and - plush chairs and sofas from Baghdad"*, Dickson, op. cit.,1956, p 380.

They usually had four carved and painted legs, that could be either square or round in shape, and some had back and hand rests. There was also considerable variation in the height of both stools and benches; ranging from between 50cm to 100cm.

Najdian stools and benches were often large enough to seat two persons, or alternatively could be used as beds. Hard, solid examples were sometimes provided with cushions to support the backs and a thinner, mattress-like cushion on which to sit, both of which were commonly filled with straw. In the early 19th Century, wooden stools and benches were usually upholster in wool or velvet and were decorated with domed iron nails.

TABLES

Small, low wooden tables, either square or round in shape, were often used in the houses of labourers, in particular those who originated from the Hijaz and Bilad al-Sham. This style of table was known as *tabliyat* (s. *tabliya*) (Fig. 258) and probably originated in Bilad al-Sham or the Hijaz, being derived from earlier grass and palm fibre plates, or from wooden bowls in which food was served, that were placed on the ground.[98] In wealthier households originating from Najd, this type of table might be used for writing, eating, or alternatively, a mat woven from palm-fiber or leaves *(al-mafrash)* served in its place.

BEDS

Beds (*tukhut*, s. *takht* or *asira* (or *surur* s. *sirir*) were very rarely used in the mud-brick buildings of the Najd, usually being found only in houses of Najdian shepherds with large herds. They would prefer to sleep in their open courtyards on wooden beds, close to their animals, during the summer nights. The bed was simple and rectangular in shape, often raised about 100cm. of the floor on four, heavy square legs. Planks of solid tamarisk or palm timber were usually fixed to the frame, and were sometimes covered with a rush mat. Najdian summer beds were commonly wide enough to be used by the whole family (up to five or six persons). This style of bed is still in use in

98. The low small tables of al-Hijaz area were usually decorated with fine painted ornaments originally influenced by the Ottoman decoration. See Hijazi, op. cit., pp 88 & 89.

some mud-brick villages of both Najd and Syria, where it was known as *manamiya* (Fig. 259).

WALL-CUPBOARDS

Wall-cupboards were one of the most important architectural features found in mud-brick houses of the Najd during the Sa'udi States. They were found in most rooms and served both aesthetic and practical functions. Customarily, two types of wall-cupboard were built with great accuracy in selected interior locations of the mud-brick house. The first type was built-in, while the second was constructed separately. When a mud-brick house was built, recesses were usually left in the walls of various rooms. Their number, size and form often depended on the economic and social standing of the household on one hand, and the desires of the owner and opinion of the builder on the other. The second type was usually built when the mud-brick walls were completely finished, without the addition of a coating, when the builder would construct a mud-brick enclosure adjacent to the wall.

Both of these types were usually provided with wooden frames, shelves and shutters. With the help of a builder, the woodworker would add frames to various areas of wall cupboards, fix their shelves and make their decorated shutters in a work-shop, after establishing the required size on site. The stucco worker, who might sometimes also be the builder, would then finish-off the structural work by coating the surrounding areas and shelf-fronts with stucco, providing the top of a wall-cupboard with a stucco architrave.

Wall-cupboards, as mentioned above, were built to serve a variety of functions. That in the kitchen was used to store cooking and drinking utensils, as well as baking equipment. It sometimes also provided a storage place for food. This style of cupboard was usually constructed in a simple rectangular form of two parts, separated by one thick shelf made of wood, or a combination of mud and wood. The upper section was open, while the lower was sometimes provided with two decorated shutters (Fig. 260).

The wall-cupboard of the sleeping room looked like that of the kitchen, but without shutters. It was located in a niche and had two parts; the upper being very much larger than the lower. The upper served as a storage area

for various materials that were not required in the daytime i.e. mattresses, quilts, blankets, sheets and pillows, while the lower section was used for storing small items of furnishing (Plate 238, Fig. 248).

The most beautiful and important wall-cupboards were those located in the men's and women's sitting rooms, known locally as *kumr.* They were a feature of every mud-brick building, found either built into, or adjacent to, a wall. This style of cupboard contains many shelves supported by frames of wood and stucco friezes , in addition to a head architrave. It was built in order to lend sitting rooms greater aesthetic character on the one hand while serving practical functions on the other. It was used as storage for beautiful tea and coffee utensils and books etc. (Plates 131, 300-302). The stucco friezes and architrave, as well as the wooden frames and their surrounding areas, were usually decorated with engraving and sgraffito, and were greatly enriched with geometrical and botanical patterns with various compositions. In poorer households, wall-cupboards appear without architraves and were commonly decorated with very simple ornaments (Plates 291-295).

During the Second Sa'udi State, the architrave was decorated with horizontally engraved cornices covered with abstract botanical elements, in addition to geometrical designs (Plates 297-299). The simple *kumars* were sometimes provided with architraves consisting of rows of large crenelations which were known as *shurofatt* (Plate 296). The finest stage of the *kumar's* development was reached in the early years of the Third Sa'udi State in houses and palaces of the wealthy. The *Kumrs* of this period were often provided with projecting architraves enriched with embossed geometrical elements. On occasion, they were also supplied with engraved and painted wooden frames and shutters decorated with monochrome geometrical and botanical elements (Plates 300-304). The *kumr* was still in use, especially in wealthy households, until about 1960. Today it can still be seen in the sitting-rooms of many ruined buildings, including the Masmak palace in Riyadh, the house of Suba'i in Shaqra, the houses of Tweijri and Rabia in Majmaa, and likewise in many abandoned houses and palaces in different Najdian mud-brick settlements.

UTENSILS

A variety of sizes and forms of baskets made from grass, fibre, palm-leaves and others were used in the kitchen for storage, particularly of food (Plates 283, 285-286 & 306); [99] there might also be many stone and wood utensils and implements for the crushing and grinding of wheat, barley oats etc. (Plates 307-311). In the sitting room, bellows (Arabic: *mifakh*) of various sizes were usually found, used for the lighting fires in order to brew coffee (Fig. 261). Coffee-pots (Arabic: *dilal*, s. *dala*) were used for brewing and serving; iron coffee roasting trays and spatulas (*al-mihmasah wa yaduhah*) were used for roasting the beans (Fig. 262,a); and wooden trays with handles (*al-mubarid*) were used for cooling them (Fig. 263).

Wooden and iron mortar and pestle sets (Arabic: *al-hawen wa yadh* and *al-nijer wa idou*) (Plate. 211), censer (Arabic: *al-mibkhara*) (Fig. 262) and tongs for handling hot cinders (Arabic: *al-milgat*.)were also used (Fig. 264). Most of the latter objects are often found among bedouin artefacts, specifically in their tents in the Arabian deserts.[100] The bath room also typically contained various types of iron utensils, and water vessels (*zir mai*) of brass or pewter (Fig. 265).[101]

2.4.5.c. CONCLUSION

Najdian Furnishings were considered to be very important cultural materials in the interior environment. The furnishings of Najdian mud-brick buildings clearly reflected the socio-economic lifestyle of the area. In fact, both social and economic activities in mud-brick buildings exerted a great influence on the organization of interior spaces, and on the style and form of furnishings. In the 17th and 18th Centuries, the furnishings of domestic mud-brick buildings were extremely simple, even including those found in magnificent houses and palaces. Highly developed designs appear in the early 19th Century during which many mud-buildings were beautifully appointed. In general, Najdian furnishings and their accessories provide insulation and

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99- M. J. al-Khalifi, op. cit., pp 88 & 89.

100- For example in the bedouin's tents of Qatar see Klous Ferdinand, op. cit., pp 223 & 227, and in the tents of the bedouin of Saudia Arabia, Oman and Kuwait see Dickson, op. cit.,1949, pp 89-101 .

101- Philby, op. cit.,1922, p 66.

comfort, establishing the character of the space without altering its structure. They were also capable of rapid adaptation and alteration to suit a particular occasion.

The furnishings of Najdian mud-brick houses are divided into two types, soft and hard pieces. The furnishings of mud-brick buildings in the Najd varied greatly according to the economic and social status of the owner. The small houses of farmers, craftsmen and workers contained some furnishings but little furniture. Low mattresses, cushions and quilts served as beds and seats, and some wooden, stone and leather objects were used in the kitchen. There might be low walls platforms of mud, built either in the courtyards or outside, close to the main entrance of the house, which were sometimes covered with rush mats and served as seating, or even bedding during summer nights.

Even in the lofty mud-brick buildings of the Najdian upper classes, the simplest materials were used in furnishing, The Najdian man of this status sometimes had furnishings made in matching sets, and many examples are still in use today, including textiles of various types, such as: rugs; blankets; sheets; tapestries and carpets (made of wool, cotton, velvet and linen); and mattresses, pillows, and cushions for seating and bedding. There might also be chests, stools, benches, low tables, cradles and wall cupboards.

As a result of the above examination, the following points were established:

a) The furnishings of domestic mud-buildings were usually extremely simple during both the 17th and 18th Centuries. However, more complex types appeared in the early 19th Century.

b) The furniture of a Najdian mud-brick building clearly reflected the socio-economic lifestyle of its occupants. Poorer houses usually contained little by way of furniture or furnishings, while wealthy houses and palaces contained a great variety of both.

c) In general, the purpose of furnishings in both poor and rich houses was to provide physical comfort.

2.4.6. NOTES TO THE CHAPTER

1- One of the important textural characteristic of wall surfaces of Najdian interiors is achieved through the differentiation between the colours of surfaces. In other word, by the dissimilarity between the degree of softness or roughness of surfaces. This is clearly achieved here as a result of the variation in the scale and texture of each surface. For example, the favourable impression made by many plain or decorated surfaces is achieved by situating two contrasting surfaces close to each other: one that is deeply textured; while the other is smoother. In this case, the first surface would appear to be of a darker colour than the second even if both are made from the same material, such as wood, mud or stucco. This is because, when light hits the first surface many light waves would be obsorbed and a little reflected, while the second surface would absorb only a little of the light waves and many would be reflected. Robert F. Ladeu notes the natural phenomenon of colour and absorption and reflection of surface:

> *The most common method of producing different colors is through absorption / reflection. When light hit an object, some of the light waves are absorbed by the molecules of the object's surface, while others are completley or partially reflected off the surface. These reflected light waves are picked up by our eyes and transmitted to the brain as color information.* [102]

In fact, very smooth surfaces tending to reflect light and thus appearing to be bright (smooth stucco, wood or mud surfaces, whether forming walls, ceilings, or even floors) usually reflect both artificial and natural light, while deeply textured surfaces often absorb light to a certain degree and thus appear to be dark. Lou Michel also clarifies the phenomenon of absorption and reflection of light and the relationship of that with surface texture and colour:

> *Light travels in rays through empty space...It can be absorbed by the surface,...it can be reflected back into space...or it can be transmitted through a medium to continue onward on the other side...Not all the light that strikes an opaque surface is reflected back into space. Even in the case of high-gloss mirrored surfaces, a small amount of light is absorbed into the material itself. Reflectance is therefore defined as the percentage of incident light that bounces back into space after striking a surface. A perfectly reflecting surface would reflect 100% of the light reaching it, but that rarely exists in the world. A good white reflects about 85% of the light received. Even the darkest, flattest black surface still reflects about 4%. Most people would perceive a surface as "black" when it reflects up to 10% and dark grey reflects only about 14%.*[103]

2- Throughout human history the treatment of interior surfaces has revealed variations in lifstyles, cultural values and use of colour. Starting in early Aurignacian times (around 70,000 - 80,000 B.C.) primitive cave dwellers decorated their irregular walls and roofs with monochrome drawings. By the Mid-Magdolenion period (Paleolithic, from about 10,000 - 12,000 B.C.) in

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102. Robert F. Ladau, Brent K. Smith and Jennifer Place, *Color in Interior Design and Architecture*, Van Nostrand Reinhold Inc., New York, 1989, p 46.

103. Lou Michel, *Light: The Shape of Space, Designing with Space and Light*, Van Nostrand Reinhold Inc., New York and London, 1996, p 35.

Africa and Europe (southern France and at Altamira in northern Spain) man was making magnificent polychrome paintings.[104]

In ancient Egypt, Syria, Babylon and Assyria use was made of interior surfaces for both monochrome and polychrome paintings. The Egyptians transformed the walls and ceilings of their interiors by painting red, blue, green and yellow figures of themselves, natural views and animals on either black or white background. The Syrians of Mari city (modern Tell-Harri, from 2800-1750 B.C) employed different types of colours on interior surfaces of their domestic buildings.[105] The dwellers of Babil (the capital of Babylon) used dense monochromatic paintings on the exterior surfaces of their monuments, e.g. the blue Ishtar Gate.[106] The Assyrians, in the time of Nimrud, worked in polychrome using blue, white and black and, in the time of Sargon, pale blue, white, yellow and orange.[107]

Moreover, some contemporary primitive societies employed different styles of decoration, until today they still derive their colours from Nature, using both image and natural motifs in their textiles.[108]

3-The study of colour as a phenomenon started with the natural observations of the Greek Philosophers who thought its appearance was the result of some "natural factor" passing between the human eye and objects seen. The Muslim philosopher Abu Ali Muhammed Ibn al-Hazen (965-1039) was aware of the emanation theory of vision but rejected it. Drawings by Leonardo da Vinci reveal his interest in solving certain problems of vision.[109]

However, around 1666 A.D., Sir Isaac Newton demonstrated that colour is a constituent of sunlight; that it is found by refracting white light. He was one of the first the use circles to demonstrate colour relationships. In 1758 A.D., Tobias Mayer arranged primary colours in a triangle, H. H. Lambert continuing its use in 1772 A.D.[110] M. E. Chevreul in 1830 A.D., devoting himself to the study of colour, especially colour contrast and harmony, wrote of colour and light:

> *When light is reflected by an opaque white body, it is not modified in proportion to differently- coloured rays which constitute white only.*
>
> The white light which falls upon any point of surface; so that the point become visible to an eye placed in the direction of one of these rays...We may easily conceive that the image of a body in a given position, is composed of the sum of the physical points which reflect to the eye so placed, a portion of the light that each point radiates.

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104. Paul Bahn, op. cit., pp 58, 100 & 101..
105. Jacquetta Hawkes, op. cit., p 176.
106. Warwick Bray et. al., op. cit., p 32.
107. Alexander Speltze, op. cit., pp 5-7 & 18.
108. Henry Balfour, *The Evolution of Decorative Art. An Essay Upon its Origin and Development as Illustrated by the Art of Modern Races of Mankind*, Percival and Co., London, 1893, p 17. See also Joseph Rykert, *The Necessity of Artifice*, Academy Edition, London, 1982, p 125.
109. Robert M. Boynton, *Human Colour Vision*, Hot Rinehart and Winston, New York and London, 1979, pp 2-5.
110. Faber Birren, op. cit., p 9.

When light is reflected by an opaque coloured body, there is always a reflection of white light and a reflection of coloured light by which we are enabled to see their colours. [111]

4-T. E. Dickson described contrast of colour as follows:

A colour may vary according to the character of the colour itself (Hue), or according to its degree of lightness or darkness (Tone), or according to the strength of colour quality (Intensity). To contrast two different colours (or two tones of one colour) is to put them side by side in order to display their differences. [112]

Jeremy Robinson shows the effect of colour in general and its intensity in particular, according to him:

The effect of colour is more than that of lines, form, texture and pattern,....colour has specific importance due to its intensity which can attract our attention. [113]

5- The theories of the early researchers about harmony in colours, are, in fact, very important to this study. H. B. Carpenter argues that harmony between colours depends on their natural order, so accordingly, if colours are used in their natural order (as seen in colour systems and colour wheels), it necessarily follows that harmony results:

Simple harmony is the effect produced by using any colour together with its next neighbour, or neighbours, in their natural order....Used in pairs, or in threes, in the natural order, no colours will appear unpleasant....Three colours-yellow orange and red-in their natural order of tone, as illustration of harmony. [114]

A. H. Munsell develops the ideas of Carpenter by equating colour harmony with rhythmic order and arrangement:

The term color harmony, from associations with musical harmony, presents to the mind an image of color arrangement, varied, yet well proportioned, grouped in orderly fashion, and agreeable to the eye. [115]

However, Munsell establishes his own ideas about colour harmony, suggesting three possible paths relating to the system of colour notation that he developed:

There are three typical paths [he mean to the colour harmony] : one vertical, with rapidly changing value; another lateral, with rapid change of hue; and a third inward, through the neutral centre of seek the opposite field. [116]

111- M. E. Chevreul, op. cit., p 53-54.

112- T. Elder Dickson, op. cit., pp 23 & 53. See also M. E. Chevreul, op. cit., p 57

113- Jeremy Robinson, op. cit., p 20.

114- H. Barrett Carpenter, *Suggestion for the Study of Colour,* published by H.B. Carpenter, School of Art, Rochdale, London, 1923, pp 20 &22.

115- A. H. Munsell, *A Color Notation,* Munsell Color Co. Inc. Baltimore, MD 21218, 1946, p 36.

116- Ibid., p 37.

6- Raymond William refers to Redcliffe Brown who says:

> *Among other symbolic representation of forces affecting the social life, he cited, fire and red paint. In Andmanese colour symbolism red was pre-eminently the colour of blood and fire. Blood was associated with the warmth of the body and life, fire with activity and mental excitement.* [117]

Some contomporary critics consider the bright colours of Paul Gauguin's paintings as symbolic and which are, according to Matthieu, borrowed from the Parisian symbolist poets.[118] They also deem the colours of some modern architects such as le Corbusier and Michael Graves also to be symbolic; signifying in the case of the latter the natural elements, his blue = sky, green = foliage, brown = earth and so forth. [119]

7- For example, Egyptian Pectorals, which were made for their symbolic meanings. Such artifacts were usually inlayed with blue beads and jade, which the Egyptians believed had magical power to protect them from envy and the "evil eye". In Maori society (race living in New Zealand) similar indigenous magical power was accorded to the green stones inlayed in certain materials and objects.[120] Babylonian society also believed in symbolic colours and their magic power: the seven colours of its Holy Ziggurat (the Holy tower of Babel city) indicated as much; archaeologists believe each colour to signify one heaven and the seven colours to refer to the seven skies.[121]

8- Early bedouins displayed a use of colour which was highly specific to their culture. However, on their winter and summer migrations in search of animal fodder, they came into contact with the ancient civilizations of Bilad al-Sham and Babylon, and gradually assimilated aspects of their symbolism. These symbolic elements, and the colours employed in their execution, transformed the appearance of bedouin artefacts, and over time, found their way into urban culture.

9- Various kinds of timber were used by early Egyptian craftsmen for furniture. Some of the wood was produced locally from Egyptian trees such as the Doum, Acacia, Palm and Willow, while some was imported from neighbouring countries, e.g. Oak, Cedar, Teak, Beech and Ebony.[122] Egyptian furniture was often painted in diverse colours.[123] Good examples of their furniture were found in excavated tombs in the King's Valley. Examples of Greek furniture however have not survived and only a few examples of Roman wooden

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117. Raymond William Firth, op. cit., p 136.
118. Pierre -Louis Mathieu, op. cit., p67.
119. Carles A. Riley ii, op. cit., pp 209 & 213.
120. Grahame Clark, op. cit., pp 23 & 46.
121. M A. al-Rifa'i, op. cit., p 86.
122. Marzoq, 1974, op. cit., p 87.
123. Joasta Innes, *Paint Ability*, Weidnfeld and Nicolson, London, ND, p 8.

furniture now exist, for instance St Peter's Chair in St Peter's, Rome.[124] Mycenean, Etruscan and Roman furniture was also polychromatic.[125]

10- 'Abd al-'Aziz Hameed and others all provide good descriptions of the development of Islamic woodwork generally,[126] but particularly for the Umayyed and Abassied periods.[127] Zaki Muhammad Hassan outlines woodwork's development in Egypt in general and those of Fattimied and Iran in particular.[128]

11- Lewis R. Binford indicates that by analysis of the of site and its remains we can learn something of its activities.[129] David Clark demonstrates that even a single small area in any site can reveal information about the activities of its users.[130]

124- John Hooper, op. cit., p 6.

125- Isabel O. Neil, *The Art of the Painted Finish for Furniture and Decoration. A house and Garden Book*, William Morrow and Co. Inc., London, 1971, pp 17 & 25.

126- Hameed et. al., op. cit.,1982, pp 32-52.

127- Hameed et. al., op. cit.,1979, pp 7-31.

128- Z. M. Hassan, *al-Fan al-Islami fi Masr*, vol. 2, Dar al-Ra'id al-'Arabi, Beirut, 1981, pp 91-99. See also Z. M. Hassan, 1981, *Kunwz al-Fatimiyeen*, op. cit., pp 196-225, and see again Z. M. Hassan, *al-Funon al-Iraniya...*,1981, pp 260-271.

129- Lewis R. Binford, *Working at Archaeology*, Acadimic Press Inc., London, 1983, pp 328-330.

130- David Clark, *Spatial Archaeology*, Peter House, Cambridge Acadimic Press, London, 1977, pp 54 & 55.

PART 3.

CHAPTER 3.1.

IMPORTANT FACTORS IN THE DEVELOPMENT OF THE INTERIOR DECORATION OF MUD-BRICK BUILDINGS.

PREFACE

This chapter examines the effect of certain environmental factors which led to the development of the interior decoration of mud-brick buildings in the Najd. These include the traditional social customs and the influence of both the popular inherited decorations and the requirements of hospitality; the social conditions of the owner and workmen; the influence of workmen's migration; the impact of both material and tools; and the effect of both trade and religious factors.

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3.1. IMPORTANT FACTORS IN THE DEVELOPMENT OF THE INTERIOR DECORATION OF MUD-BRICK BUILDINGS

INTRODUCTION

The strong desire for understanding the gradual developmental stages of the various decorative motifs of the arts of mankind, and the tracing of their historical origins was the principle aim which led to the appearance of many anthropological, ethno-archaeological, archaeological and historical studies at the beginning of the 19th Century. Among the earlier researchers were Gottfried Semper, Owen John, George Harris, John Evans, Pitt Rivers, Henry Balfour, Alfred Haddon, Edward B. Tylor and Christopher Alexander. Most of these researchers, especially Balfour and Haddon, were interested in the primitive arts of small societies; they believed that the decorative forms of primitive people at any period were close to traditional decorative forms, while novel decorative forms were introduced later.[1]

THE DEVELOPMENT OF ORNAMENT

In the light of the scarcity of information available regarding the period of Najdian history extending from the 5th century B.C. to the 17th A.D., which encompassed the fundamental, developmental stages of Najdian decorative design, researchers cannot trace these changes in ornamental style today. Consequently if researchers want to find out more about Najdian decorative development during this period, further excavation at various key locations is required.

From these early periods, there are only a few examples of decorative elements and motifs from the excavation of the remaining mud-brick buildings of two city sites: the first is Qurayat al-Faw (5th century B.C.); and the second, al-Rabadha (9th century A. D.). Examples of both mobile and immobile arts found at Qurayat al-Faw show great development in the form and technique used in the execution of their decorative motifs, particularly when compared with the earlier examples from other contemporary

1- See paragraph 1 in the notes to this chapter.

archaeological sites in Sa'udi Arabia in particular and the Arabian Penisula in general. Those of al-Rabadha are in the style of the Abbassid age, but display a certain inferiority to the decorative elements and motifs of the Abbassids themselves.[2]

From analysis of various surviving ornamental compositions in both stucco and timber from mud-brick buildings of the Najd (dating from between the 17th and early 19th centuries A. D.), we found simple changes in the main ornamental form, but not in the design of either decorative elements or motifs, and this will be discussed later. The real changes which can be considered to constitute stages of development in the Najdian ornamentation of this period, appear in the dissimilarity between the main decorative compositions, and the quality of the materials and techniques used. These sometimes differed from settlement to settlement, and indeed, from house to house. Such slight changes in Najdian buildings are very important as an issue: it would show the stylistic change of Najdian decorative composition throughout history. Similar debate on stylistic change of pottery is presented by Lewis R. Biford:

> *We reasoned that if variability in the frequency of pottery types could be show to be responsive to the different sizes of kin group within a community, then the assumption that variability was a measure of stylistic change.* [3]

Najdian decorative elements and motifs look alike across the Najd during this period, while the dissimilarity between them appears in their quality, not their diversity, and in their decorative compositions. The same elements and motifs were usually employed in work executed in stucco, wood and mud, and also in textiles and jewellery (both silver and gold),[4] and some decorative elements and motifs appeared in both before and during Islamic periods.

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2. To a certain degree, the ornamental, applied art of al-Rabadha resembles that of Sammarra in the main forms of both decorative elements and motifs, but the ornaments of Sammarra are technically much more developed than those of al-Rabadha,even though both belong to the Abbassid Age (i.e. 9th century A.D.).
3. Lewis R. Binford, *Working at Archaeology*, Academic Press, New York and London, 1983, p 6.
4. Especially geometrical shapes such as those appearing in Figs. 143-195, and a few of botanical shapes like those appearing in Figs. 94, 120-122, 132-137, 139 & 141-142.

3.1.1. SOCIAL FACTORS

Social factors affected artistic production of all kinds, both in quantity and quality. The upper classes in particular, represented by princes, *shayukhs* and merchants, but also the poorer classes which comprised largely of labourers, had an important effect on the development of the arts.

Najdi society is composed of both bedouins and urbanized tribes, which themselves contain various sub-groups.[5] The family constitutes the basic social unit, and its members form an integrated group connected by social, economic and political bonds that are based primarily on Islamic obligations and also on customs and traditions passed from one generation to the next. These social relations have an important influence on the external and internal architectural and decorative formations of buildings. Indeed, this is not peculiar to Najd but is apparent in every society. Customs, traditions and concepts have an effect on the development of the decoration of the interior.

Of the customs and traditions that had a constructive role in developing the decorative arts of Najd region, the popular inherited decorations, the effect of hospitality and the effect of socio-economic conditions of both the owners and workmen and the emigration of workmen will be examined.

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5. The bedouin tribes (or *arab*, Musil, op. cit.,1928, 44) are composed of two groups: the pure nomads *(al-Jamala)* ; and the semi-nomads *(al-Ghanama)*. The *al-Jamala* are characterised by their long migrations in the depths of the desert, and their use of black tents made of goats hair. They graze flocks of camels, and trade with others. The migrations of the *al-Ghanama* , are of shorter distances (no more than 30 Km.; the distance their flocks are able to walk). Due to this, Ibn-Khaldun named them *alShawiya* (s. *shawi*), meaning *semi-nomads*, while Musil called them *ra'ijje* (Musil, lo. cit.).They used to live around cities and villages in simple mud-brick dwellings during summer and in tents surrounding settlements in winter. They were shepherds, harvesters and traders, mainly grazing flocks of sheep, and sometimes also goats. The urbanised tribes (*al-mustaqireen*) (or *hazar*, Musil, loc. cit.) are composed of three groups: the nomads (consisting of both pure nomads and semi-nomads), who settled during various periods and conditions; farmers (*al-falalih*); and governmental officers. For more information about Najdian society see the following references: 'Umar Farukh, *al-'Arab. Hadaratuhum wa Thaqafatuhum*, 2nd edition, Dar al-'Ilm lil-Malayeen, Beirut, 1968, pp 68 & 70; Hamad al-Haqail, *Kanz al-Ansab wa Majma al-Adab*, Mu'asasit al-Ma'arif, Beirut, 1967, p 172; 'Abd Alla bin Salih al-' Uthaimeen, *Ta'reikh al-Mamlikat al-Arabiyat al-Su'udiya*, part 1, King Sa'ud University, Riyadh, 1984, p 37; 'Umar al-Faruq al-Said Rajab, *Gughraphiyat Shiph Jazirat al-'Arab*, part 1, edition 2, Maktabat al-Anjlu al-Masriya, Cairo, 1978, p 70. Concerning the tribes of Najd in general see George A. Lipsky, *Saudi Arabia. Its People. Its Society. Its Culture*, Hraf Press, New York. See also Alice Musil, *The Manners and Customs of the Ruwala Bedouins*, American Geographical Society, New York, 1928.

3.1.1.a. THE EFFECT OF POPULAR INHERITED DECORATIVE ELEMENTS AND MOTIFS (*AL-MAWROTH AL-SHA'ABI AL-ZOKHROFI*)

Alfred C. Haddon says:

Everywhere the human mind has become accustomed to certain local patterns, designs, and structures. These are bound up with the sacred association of family and religion, with the green memories of childhood, and have become as it were indented into the consciousness of the individual. [6]

The popular, inherited ornamentations that were used in fine, applied works on stucco, timber and mud surfaces in the mud-brick buildings of the Najd region, are considered to be among the most important elements of traditional ornamentation in Sa'udi Arabia. Their impact on the interior decorative formations of mud-brick buildings, whether on stucco, wood or mud, is self-evident. A variety of traditional forms and styles of decorative motifs were employed in mud-brick buildings and densely enriched most of the available exterior and interior surfaces causing great changes in interior appearance. In reality, there was much development in the interior decorative compositions of stucco, wood and mud surfaces, though the inherited decorative motifs within these compositions were always to keep their original structures, which were known throughout Najdian society. However, the ways in which the workmen formed these motifs in combination with other shapes within a larger ornamental context showed significant design developments and led to changes in the appearance of interiors as a whole.[7] In this sense Susanne K. Langer shows what the motif is, and its importance in art and to the artist's imagination:

> *The fundamental forms which occur in the decorative arts of all ages and races - for instance the circle, the triangle, the spiral, the parallel - are known as motifs of design. They are not art 'works', not even ornaments, but they lend themselves to compositions, and are therefore incentives to artistic creation. The word motif bespeaks this function: motifs are organising devices that give the artist's imagination a start, and so 'motivate' the work in a perfectly naive sense. They drive it forward, and guide its progress.* [8]

6- Alfred C. Haddon, *Evolution in Art. As Illustrated by the Life-Historis of Designs*, Walter Scott Ltd., Paternoster Square, London, 1895, p 117.

7- We can observe the differences between the main decorative compositions of many houses at different places, even though, the artist, to a certian degree, in all of these houses used the same decorative elements and motifs: for instance at the houses of al-Tuwayjari in al-Majma'a (Plates 105-108, 116-117) and al-Suba'i in Shaqra (Plates 118-120), and of unknown houses at al-Riyad (Plates 113-115), Rughba (Plates 109-112, 122-125), Shaqra (Plate 121), and Sadus (Plates 129-130).

8- Susanne K. Langer, *Feeling and Form. A Theory of Art*, Routledge and Kegan Paul

Al-mawruth al-sha'bi al-zukhrufi refers to a type of applied art comprising many decorative elements and motifs which are employed on all kinds of surfaces and objects. Societies, whether they consisted of several ethnic groups (as is the case in Sa'udi Arabia and various other Arab countries), or were ethnically homogenous, posessed distinctive decorative elements and motifs. These were, throughout their long history, passed from one generation to the next, and were of great significance for the group to which they belonged. Each motif would carry various symbolic meanings, and was a repository for the memories and culture of early forefathers. Due to this, the people of that time were interested in the internal essence of these motifs as well as their visible forms, whether or not they were considered aesthetically pleasing. Bashir Zuhdi clarifies the meaning of motif, its cultural role in the traditional applied art and the artistic way in which it is used:

> *Motif decoration is generally the repeated and continuing decorative part which is culturally significant and contributes to the formation of the shape and content of different types of cultural work. Motif may be regarded as the only method applicable to decorative folk antiquities worldwide. The issue of folk decoration started with 'decorative motif'. Motif has been used as a decorative unit on its own. It has also been used in stucco and wood which depends on repetition in form of decorative tapes or distance. One motif may once be seen within a circle, and another time within a rectangle.* [9]

Many ethnographic and ethno-archaeological studies focused on *al-mawruth al-sha'bi al-zukhrufi*, and its importance in traditional decoration, for instance, Yusif Hubi's study, *al-Shajara fi al-Turath*; Tharwat al-Said Hijazi's *al-bina fi Makka Qadiman*; and Qasim Sa'ad al-Khadim's *al-Hirz al-Sha'bi wa al-'Aq'id al-Murtabita bihi.* Many of these studies and others,[10] indicate the importance of traditional elements and motifs, and their impact, which usually led to various developments in traditional interior decoration. Some of these studies discuss changes in these inherited motifs of *al-mawruth al-sha'bi al-zukhrufi*, which usually happened with great difficulty, and only after a consensus had

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Ltd., London, 1953, p 69.

9. Bashir Zuhdi, *Ilim al-Jamal*, College of Fine Art, Damascus, 1978, p 156.

10. For example see Qasim Radi Haneen, op. cit.; Lith al-Khafash, 'al-Washim wa Wihdat al-Fouluklor al-'Arabi', al-Turath al-Sha'bi, year 11, vol. 10, Wizarat al-Thaqafa wa al-I'lam al-'Iraqiya, al-Markaz al-Fouluklori, Dar al-Jahiz, Baghdad, 1980; 'Abd al-Jabir Mahmud al-Samura'i, op. cit.; Su'ud 'Awad 'Awad, 'al-Zakharif wa al-Nuqush fi al-Thawb al-Falastini', al-Ma'thurat al-Sha'biya, year 4, vol. 13, Mrkaz al-Turath al-Sha'bi lil-Duwal al-Khalij al-'Arabi, Doha, Yanayer, 1989; Ibrahim Muhammad al-Faham, 'Rumuz al-Wasim 'inda al-Bado wa Dalalatuha al-Ijtima'iya wa al-Tarikhiya', al-Funon al-Sha'biya, year 5, vol. 17, Wizarat al-Thaqafa, al-Hai'a al-Masriya al-'Ama lil-Ta'lif wa al-Nashir, Cairo, Yonio, 1971; Akram Qansu, op. cit.; Ahmad Adam Muhammad, 'al-Tama'im wa al-Auhjuba', al-Funon al-Sha'biya, year 4, vol. 16, Wizarat al-Thaqafa. al-Hai'a al-Masriya al-'Amah lil-Ta'lif wa al-Nashir, Cairo, March, 1971.

been reached within the group. This change would sometimes take place over a long period, which could extend to a century,[11] however, it could also happen suddenly for reasons related to specific ethnic groups.[12] Sulayman Mahmoud Hassan in his recent study, *al-Ajza' al-Khashabiyat al-Mukamila lil-Biyut al-Hajariyat fi al-Mamlikat al-'Arabiyat al-Su'udiya* (*Wooden Parts of Stone Houses in Sa'udi Arabia*), provides an interesting description of traditional motifs *al-muruth al-zukhrufi* , and traditional artists in Sa'udi Arabia:

> *In Saudi Arabia, traditional artists often used specialised, local ornamental designs which did not conform to the overall style of the age. These traditional, decorative motifs, known as* al-muroth al-zukhrofi, *were handed down to them from earlier generations and they in turn passed them on. In extreme situations, when early people were determined to change symbols for various reasons, refusing even to develop the old one, the traditional artists complied, usually unwillingly, as they desired to use the distinguished, traditional forms which carried a symbolic charge beyond their outward appearance. These forms were a treasured part of the heritage of these peoples.* [13]

Also, S.M.Hassan indicates three reasons which compelled early generations in Sa'udi Arabia to preserve their inherited motifs with minimal change, however, this preservation was the case only when the following circumstances dictated it: The first was where these motifs had a symbolic interaction with natural phenomena (this is not specific to Arab countries but is seen throughout the the world). In this case, the inherited motif started as a representative form, then in the course of time, it became no more than a simple geometrical shape, such as curved lines, circles or squares, containing definite geometrical elements (such as the linear geometrical drawings which are found on surfaces of early caves in France known as *Tectiform* drawings, [14] or as those found in some houses in Najd (Figs. 141, 147-149, 171 & 175).

The second occurred when these motifs had a symbolism which correlated with traditional magic and astrology, and here they appeared as geometrical features with specific numbers of dots and lines configured together to create specific symbolic shapes (Figs. 176-195). In the third case, some of these motifs had a strong relationship with the symbols of belongingness and

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11- Fahmi M. Miqbil, 'Zakharif al-bait al-Taqlidi al-'Arabi', in Majalit al-Jami'a, King Faisl University, Dammam, vol. 21, May, 1982, p 27-38. The new reconstructed plaster decoration in some Najdian houses and palaces noted in plates 131 and 300-303, indicates a development stage in both decorative elements and formations.

12- Isma'il Muhammad Abu Shari'a, 'Zakharif al-Bait al-Sha'bi al-Aurduny', Unpublished research, King Faisal University, al-Hasa, 1987, p 28.

13- Sulayman Mahmoud Hassan, op. cit.,1989, pp 57 & 64.

14- Carl G. Jung, *Man and his Symbols*, 1969, p 236.

discrimination, which were applied by branding and tattooing (Figs 166-168, 169-170 & 172-175).[15]

1- SYMBOLIC MOTIFS-INTERACTION WITH NATURAL PHENOMENA

Originally, this form of inherited, traditional motif has a strong relationship with Nature and its powers. Haddon says:

> *Under the term of 'physicomorph' I propose to describe any representation of an object or operation in physical world. The heavens and all the powers therein have been depicted in every age and by diverse people - usually, but not invariably, with some mystical or religious significance.* [16]

This kind of motif originally consider as a representative form, then in the course of time, it became no more than a simple geometrical shape, for instance, the symbols of *Mandala* (Fig. 145-154), when a semi-circle is classed as a symbol of the rainbow; a circle as emblematic of the sky; and a zigzag line as lightning (Figs. 155-157).[17] A circle could have other geometrical elements such as: division into four parts (a symbol of the God Horus and his four sons in ancient Egypt), a crescent or cross etc. (Figs. 150 & 154); the symbol of protection such as the eye and hand. Each symbol of these traditional decorative motifs, whether of stucco or woodwork has a long history and has its own origin, which carries its own meanings. In the first instance, a symbol may often appear simple, whereas in reality it is the result of a long series of modification and adjustment made to its origin, which is greatly different from the present form. The first stages of most earlier symbols might have began as a complicated form presenting the natural phenomena. Later when simplified by the process of transferring and subjugation, their features gradually disappeared from scenic form in order to bear mere geometric form.

2- BRANDED MOTIFS

Branded motifs first appeared among nomadic Arabian tribes, and were used to distinguish their animals, trees and lands from those belonging to others,

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15- Sulayman Mahmoud Hassan, op. cit.,1989, p 69.
16- A. C. Haddon, op. cit., p 118.
17- Ibid., p 119

and as such each tribe had distinctive motifs with specific structures of iron that differ from those of other tribes. These iron structures were used to heat by fire and then would apply on trees and different parts of animals' bodies. During Philby's visit to king Ibn Sa'ud in the desert, he saw the operation of branding carrying out on the camels of Ibn Sa'ud. He also recognized the motifs of the Mark *Wasm* of Ibn Saud, which used in this operation:

> *....In the case of Ibn Sa'ud's* Wasm, *involved four separate applications of the iron...[it consists of] - a rod with two circles and a third circle surmounting the whole.* [18]

Tribal branding, over time, extended to the decoration of the movable objects and materials of the nomads which were transported with them from place to place, and eventually these designs featured in their simple mud-brick houses when they settled in urban villages. This type of motif varied from the very simple to the complex, and became particularly sophisticated when they were later transferred to stucco and wood-work.[19]

3- TATTOO MOTIFS

Tattooing appeared on the face, hands, legs, feet and sometimes on other parts of the body, the principle aim of it is beauty and symbol, it consisted of patterned dots, which were formed close to each other creating geometrical figures of varying complexity. E. B. Tylor says:

> *When the skin is tattooed, the chief purpose of this is no doubt beauty...Tattooing prevails as painting, and the fashionable design range from a few blue lines on the face or arms, up to the lower - patterns with which the skins of the Formosans are covered like damask...Higher up in civilisation, tattooing still lasts on, as where Arab women will slightly touch up their faces, arms, or ankles with the needle.* [20]

The number of dots used usually had a symbolic meaning, and they sometimes depicted the shape of the tribe's branding. The tattoo appeared among the Arabian tribes who emigrated in ancient times to Iraq and Syria, while only a few tribes remaining in Sa'udi Arabi used the tattoo. The forms of the tattoo were also transferred to the decoration of mud-brick and stone houses, and were particularly common on wood-work (such as camel necklace and grape decoration, Figs. 141 and 142, which are both transferred

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18. Philby, op. cit.,1928, p 53.
19. According to Haddon's view, tribal signs usually arise from pure accident, and these signs do not necessarily require any analogy between the objects representing and the objects or qualities represented. See Haddon, *Evolution...*, op. cit., p 212.
20. Edward B. Tylor, *Anthropology: An Introduction to the Study of Man and Civilization*, Mac Millan and Co., London, 1881, p 238.

to the wooden doors, windows, beams and lintels Plates 16, 18, 258-259, 267).[21]

Certainly, Najdian decorative motifs all refer to the time and place of their origin, although at the present time in Najd they are being used more flexibly by traditional artists. The motifs are being expanded and reproduced creatively to provide a great number of decorative compositions or units as seen recently, for instance, at *al-'Udhabat* farm in Sa'udi Arabia, where the traditional artist recreated and produced a number of new and developed decorative motifs and compositions.[22] During the development process, the names of the original formations may remain associated with the new motifs but, the old indication and meanings may be forgotten. New motifs may transform abstract decoration or may be given new appellations which may be entirely different from old names.

3.1.1.b. THE IMPORTANCE OF HOSPITALITY

The effect of the social habit of hospitality on the interior decoration of Najdian mud-brick building was very strong because this habit led to entertaining guests indoors rather than outdoors. This led the people of Najd to decorate their interiors with various styles of decorative elements and motifs fit and suitable for guests and indirectly to clarify both the social and economic status of the owner.

The inhabitants of Najd region that noted for their hospitality. They much loved giving hospitality, to a degree they used to write above their internal and sometimes external doors welcoming poetic verses and words.[23] Palgrave saw some of these written welcoming poets and enjoyed Najdian hospitality. On this, he stated:

> *Words bearing an ascetic, almost a Christian import, where they stand in the exquisite piece whence they are extracted, but here designed to express the feelings of hospitality and of ready friendship. Like all Nejdean inscriptions, they were simply painted, not carved.* [24]

21- Sulayman Mahmoud Hassan, op. cit.,1989, pp 69-70.

22- William Facey, op. cit., p 35.

23- Also, they used to incise above their internal and external doors welcoming decorative compositions, see plate 165.

24- "Above door [the majlis] was inscribed, in the large half-Cufic characters usual throughout Nejed, the following distich of the celebrated poet 'Omar-ebn-e-Farid:- Welcome to him of whose approach I am all unworthy, welcome to the voice

This attractive custom was well-known in Najdian society before the Islam. Throughout Islamic ages the roots of this habit were firmly established in Najdian society and inhabitants due to its relationship with the Shari'a (Islamic law), which encouraged people to meet their guests indoors not outdoors in accordance with certain honourable traditions of the Prophet (s), for example, his saying:

> *Let he who believes in Allah and the Day of Judgement show his guest hospitality," and, "Beware of sitting on the roads," and, "The best halls for meeting are the widest ones.* [25]

In the past, some men in Najd with their guests would sit outside under a shaded area on benches either of mud or wood, there were usually built close to the main doors and created especially for this purpose. However, this habit was thought to harm walking females, who might be observed by those sitting outside. But the sayings of the Prophet about sitting by the road laid the foundation of this habit:

> *Avoid sitting on thoroughfares'. They said it is difficult to avoid as they are our gathering places where we spend time talking. 'But if you insist then you should respect the rights of thoroughfares'. What are these rights? they asked, 'Avoid staring, do not create harm, salute back to those salute you..* [26]

These sayings and others urged the people of Najd to specify a place inside the house for sitting with their guests, known in the region by different names, for example; *al-majlis , al-qahwah, al-diwaniya, al-muqalat or al-ma'zaba.* The habit of sitting indoors rather than outdoors became a fundamental part of Najdian customs reinforced by other verses of the Holy Qur'an and sayings of the Prophet that give special importance to indoors places in general particularly the existence of the reception room *majlis* in the house and the social etiquette of sitting, as in the following examples:

> *O ye who believe! When ye are told To make room In the assemblies, (Spread out and) make room: (Ample) room will Allah provide For you. And when Ye are told to rise up, Rise up: Allah will Raise up, to (suitable) ranks (And degree), those of you*

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announcing joy after lonely melancholy: Good tidings their; off with the robes of sadness; for know Thou art accepted, and I myself will take on me whatever grieves Thee. See Palgrave, op. cit., vol. 2, p 5.

25- Al-Imam Abi Muhammad al-Hussain bin Mas'ud al-Ghara al-Baghawi (436-516), *Sharih alSuna*, vol. 11 & 12, investigated by Shou'aib al-Arnauwt, al-Maktaba al-Islamiaya, Damascus, 1977-1978, pp 339 & 377. See also al-Imam al-Hafiz Abu Dawood bin al-Ash'ath al-Sa'jistani Abi Dawood (died 275 AH), *Sunan Abi Dawood*, vol. 5, presented by 'Izat 'Ubid al-Da'as and 'Adil al-Said, Dar al-Hadith, Syria Hums, 1974, p 160.

26- Abi Dawood, op. cit., p 160. See also al-Baghawi, op. cit., vol.11, pp 339 & 377.

Who believe and who have Been granted Knowledge. And Allah is well-acquainted with all ye do. [27]

And of the sayings of the Prophet:

Never ask of your brother [any Muslim] to give up his sitting place and then you sit in it." and "The man has the absolute right to his sitting place even though he goes and returns. [28]

Because of this, the inhabitants of Najd took an interest in the interior in general and the reception-room in particular, considering it one of the most important places inside the house where private and public meetings could be held. So, due to the importance and nature of the meetings which are held inside it, the inhabitants of the Najd selected the best and suitable location for the reception-room and increased its size and also the number of its necessary interior features (accommodation elements): for instance, wall-cubpoards with shelves and some wooden shutters, where the tea and coffee kettles were kept with the tea cups and coffee pots; recesses with or without wooden shutters, some for keeping dried dates and others for small pieces of wood; fire-places; niches for the placing of lighting utensils and books including copies of the Holy Qur'an; a number of windows and doors; side and ceiling apertures; columns, capitals and ceilings (Figs. 66, 68-72 & 84-85) (Plates 116-120, 131 & 302-304).

These features encouraged the owner of the house to decorate them with the best ornamental compositions, so as to show the guests his artistic taste, thus Najdian interior decoration developed. The artist would experiment with interlacing decorative elements and compositions, on the elevations of all these interior features, whether on surfaces of stucco, mud or woodwork, with full freedom of all techniques and colours.

There were other rooms and courtyards in the house such as sleeping and sitting-rooms, and open and closed courtyards: two or three devoted to men, and the same for women; and the walls of these places and their interior features were full of different forms and sizes of decoration which also helped in the development of the interior decoration (Plates 74, 76, 78-82, 98-100, 113-115). But what affirms the important role the reception-rooms played in developing decoration was its quality in comparison to the barrenness of the

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27- The Holy Qur'an, Surat Al-Mujadila, Ayaht 11, al-Madinah,1413 A.H., pp1708 &1709.
28- Abi Dawood, op. cit., p162.

other areas of some rooms and courtyards, especially those in poorer houses. Where there was decoration it seldom matched the beauty and magnificence of that found in the reception-room.

Artistic taste in interior decoration, as Muhammad M. al-Dikheel says, often depended on three things: firstly on the feelings of the owner himself about the customs and traditions of the area and on his social background; secondly on the opinions of viewers (guests); and thirdly on popular, inherited, decorative features, which limited change in decoration and, in turn, its development. Because of this, the owner usually took into consideration some important questions to be addressed firstly to himself and then to his close visitors: for example, what are the best and most suitable elements and motifs which can be found? what do they mean?, in which place should they be created?, what do these decorative compositions mean to visitors, how do they see them and how do they react to them?.[29]

Muhammad indicates that the owner also sometimes asked the workmen to give him advice regarding both the form and style of his rooms decoration'. So, according to the acount of Muhammad, the opinions of workmen were very influential on the development of interior decoration and usually led to beautiful interiors, depending of course on the skill and experience of the workmen. Such decorations generally point to the social rank of the house owner and show his capability, wealth and ability to bestow pleasure on those sitting in the rooms with scenes of decorative art in various styles on stucco and timber surfaces.

29. Muhammad M. al-Dikheel is one of the contemporary stucco workmen of Buryda, (interview, Buryda1994).

3.1.1.c. THE EFFECT OF THE SOCIO-ECONOMIC CONDITIONS OF BOTH OWNERS AND WORKMEN AND THE EMIGRATION OF WORKMEN

INTRODUCTION

In addition to Islamic law, most Najdian people; whether bedouin or urban fell in with the tribal code, which in turn gave birth to a large number of social classes, each with socio-economic conditions somewhat different from the next. In the course of time, these varied conditions, in addition to tribal traditions and customs, led to a kind of discrimination within Najdian society. People of the higher classes relished both tribal power and good socio-economic conditions. On the other hand, those of the lower classes were condemned to lower standards of living. As a result of this, people of the higher classes exercise control over those of the subordinate ones.

Regarding Najdian applied art, the socio-economic condition of both employers and workmen was one of the most important factors in the development of decoration, not only in Najd but, also in society generally. This is usually reflected in the progress of art, its modes of production, and also in the sentiments of the artist. Its impact is usually more apparent in small societies, and increases in isolated, tribal societies, particularly when these societies are composed of many tribes, each with varying socio-economic powers, such as can be seen in Najdian society. In order to understand the impact of socio-economic conditions on Najdian social classes during both the First and Second Sa'udi States, it is important to define these classes.

In the deserts, the system of social class was based on family origin and purity of blood. Because of this, leadership was always assumed by the *shaykh* who belonged to the most powerful, wealthy family of the tribe. The second tier was seized by the *shayukhs*; the heads of other families in the same tribe, or those who came to the group from other well-known tribes. The third was occupied by other well-known members of the tribes. The fourth class would consist of those tribal members who belonged to small, weak and lesser-known tribes, who did not have the pure origin or family status of the others, such as the gypsy tribes of al-Awazim and al-Salab

tribes. Finally, the slaves of the tribes were the fifth class; their descendants are free citizens today.

In settlements, the social classes were determined by bloodline and economic and educational considerations. At the top were the *shayukhs*; in particular those who traced their descent from Sheikh Muhammad Bin 'Abd al-Wahhab, while the next level consisted of the Emirs; those were the *shayukhs* of the most powerful tribes in the settlements. The third class was formed from both merchants and the heads of rich well-known families, in the fourth category were owners of agricultural lands. Finally, there were the craftsmen and slaves.

Right up to the present day, the tribal man (the *Qabili* or *Hur* meaning the tribal free man not slave),[30]whether dwelling in the desert or settlement, still submits to his tribal law. Though he assents to the superiority of Islamic law, in reality the traditions and customs of his tribe are decisive in determining his lifestyle. For example, his tribal traditions compell him to marry from his own class or a higher one, and never marry a slave's daughter.[31] The tribal customs also order him to refrain from practicing crafts such as hairdressing, cooking, shoemaking, tanning, carpentry, plaster kiln, smithy work etc., which are considered lowly. Furthermore, the *Qabili* man despises the people who practises these crafts. Such vacations were practiced exclusively by men of the lower classes in Najd.

1- SOCIO-ECONOMIC CONDITIONS OF OWNERS

Throughout history, wealthy people of different classes played an influential role on the development of both buildings and decoration. In this sense, Oleg Grabar says:

> *It could then be argued that the monuments reflected the wealthy tastes of the princes and that the aim of the decoration was to transform sober pious buildings into glittering palaces.* [32]

30- In other words he is a man who belongs to well-known tribes carrying clear origin, that is, pure blood. See Musil, op. cit., p 278.

31- Musil, loc. cit.

32- Oleg Graber and Derek Hill, *Islamic Architecture and Decoration,* Faber and Faber Ltd., London, 1964, p 89.

In Najd, rich people of high classes, such as princes and *shayukhs*, were the rulers in Najdian settlements. They were respected and highly regarded throughout the settlements, and had power, money, palaces and servants. Most of their servants, especially those brought from Africa, usually possessed one or two crafts which could be employed by princes and *shayukhs* to create the best designs in interior decoration. The high social condition of Najdian owners, in fact, played an effective role in developing the interior decoration of mud-brick buildings, because they were used to encouraging their workmen or slaves to work hard, and with accuracy to satisfy their aesthetic desires.[33]

Najdian merchants were also from the higher social classes. They often bought good quality materials, used the best workmen and paid them the highest fees. As a result of this, the best quality of decoration would appear in their interiors which showed a kind of development in comparable with the simpler and lower quality decoration of poorer people. However, there were exceptions in the interior decoration of some houses belonging to craftsmen themselves which show clear stages of development in comparison with to the decoration of 'normal' poor people.

Some archaeologists have pointed to the possibility of recognising, through the archaeological contents (decoration and other cultural materials), the importance of the place and the meetings held within it, and the social standing of the owner.[34] This cannot always be ascertained, however, especially in the Najd region, where we find some places devoid of decoration and nonessentials materials while the owner was a wealthy religious man (known locally as *shaykh din* or Shari'a judge) who shunned decoration for fear of vanity or ostentation.

2- SOCIO-ECONOMIC CONDITIONS OF WORKMEN

The style of ornamentation and its quality (including the creation of the design, the final form of the decorative compositions and the quality of finish) were effected by the workman himself according to his subjective tastes while the development of his ornamentation was dependent on his socio-economic

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33- The information about this social class was obtained from 'Ali al-Suwayan in 1986, though interviewed in Syria.

34- For example, Lewis R. Biford, David L. Clark and Ian Hodder.

status, skill and experience (artistic background), which was originally derived from his society's artistic heritage (*al-mauruth*).[35] These were the most important factors in the development of decoration for mud-brick buildings of the Najd. E. Gordon Childe states:

> *....fire, cloth, houses, trains...they are not inherited in the biological science, but the skill needed for their production and use is part of our social heritage, the result of tradition accumulated over many generation, and transmitted, not in the blood, but through speech and writing.* [36]

Najdian applied art did not differ from other traditional, popular art, its development was dependent on the individual skill of the artist and on social conditions, including pressure from the higher classes. The study of the development of Najdian applied art, without taking account of the behaviour, social interaction and economic situation of the artist, would not lead to a useful understanding of the phenomenon. Franz Boas states:

> *We have to turn our attention first of all to the artist himself.*[37]

A. C. Haddon went further in demonstrating indirectly the importance of the artist himself. He states:

> *Almost every line or dot of every ornament has a meaning, but we are without understanding, and have eyes and see not. But again, we must not stop short when we have determined what a form means, or what is the origin of a device. We have to discover why it was so. The reason for a motive, the meaning of its present form, have also to be sought.* [38]

Sometimes, the form of objects and their decoration alone do not give us a clear indication or full information concerning the creative process of design and the nature of its makers. So, to answer Haddon's imperatives, we must analyse not only the forms of objects and their decorative elements, but we must go to the artist himself; we must study his feelings and social interactions. Likewise, we must examine the impact of his socio-economic condition on the decoration. Ernst Grosse states:

> *We shall consider the art of primitive people as a social phenomenon and a social function.* [39]

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35. Popular ornamental local heritage.
36. E. Gordon Childe, *Man Makes Himself*, the Fontana Library, London, 1936, p 24.
37. Franz Boas, *Primitive Art*, Dover Publications Inc., New York, 1955, p 155.
38. Alfred C. Haddon, *Evolution in Art, as Illiustrated by the Life-Histories of Designs*, Walter Scott Ltd., Paternoster Square, London, 1895, pp 332-333.
39. Ernst Grosse, *The Begining of Art*, Dover Publication Inc., New York, 1897, pp 12.

While most of the published studies on the history and the art of Najd concern people, events, buildings and aspects of their remaining decoration, there is little or no regard for the nature of the workman.[40] This is perhaps due to the impact of local, traditions and customs, where traditional applied craft is considered to be relatively unimportant. In fact, local conventions forced early Najdian artists to leave their works unsigned. Likewise, they contributed indirectly in preventing most of the surviving artists from giving any information about their past history, or even from confessing that they were in fact artists and practised applied art. This is to disconnect the surnames of the following generations from these crafts, which are still considered socially unacceptable in Najd.

Studying building forms and decorative elements may help us in tracing patterns of historical and geographical distribution but, do not give us full information about the status of the artist. Moreover, only simple information was given by European explorers who, by accident, met some traditional workmen during their visits to Najd.[41] Because of this, I gathered oral information about Najdian workmen from older Najdian historians, local people and contemporary artists. In addition, both Fahad al-Marik and Ibrahim al-Zoughabi provided detailed information about Najdian workmen during the late 18th and early 19th Centuries. According to their acounts, Najdian workmen were composed of six groups of varied ethnic origins, most of them belonging to the lower classes of Najdian society. Most of these workmen came to Najd from either inside the Arabian Peninsula or elsewhere.[42]

40- These researches indicate the existence of workmen in Najd, but without detailed information, most of them showed that the traditional crafts were from the lowly professions, not only in Najd but in Arabia peninsula. For example, see Jawad 'Ali, *al-Mufasal fi al-Ta'reikh*, op. cit., part 7, p 453. See also 'Abd Alla bin Salihal-'Uthaimeen, 'Najd Mindhu al-Qarn al-'Ashir al-Hijri hata Zuhuwr al-Shaykh Muhammad bin 'Abd al-Wahhab', al-Dara, year 3, vol. 3, Darat al-Malik 'Abd al-'Aziz, Riyadh, Shawal, 1977 , p14. See also Jawahir S. A. al-Khuris, 'Tatheer al-Raqiq wa al-Mawali' Unpublished Master Theses, King Sa'ud University, Department of history, Riyadh, 1404 A. H., pp 18-108.

41- Even though, the information provided by European explorers seem to be no more than brief accounts , it is still very useful data to this subject. By analysing these accounts, we can, to a certain degree, learn something about the social and economic life of early Najdian workmen. See paragraph 2 in the notes to this chapter.

42- Fahad al-Marik was one of the early Najdi historians; he was born in Ha'il, and became the Sa'udi consul in both Turkey and Syria, and the head of both the Sa'udi Association and the Sa'udi School in Damascus. He died in 1988. Ibrahim al-Dhughabi was a member of the Sa'udi Association and teacher at the Sa'udi School from 1975- until today. I met them both when I was working as a teacher at the Sa'udi School in Damascus. For more information about the groups of Najdian workmen see paragraph 3 in the notes to this chapter.

The slaves, or as they were known locally, *al-'Abid* (s. *'Abd*), belonged to the black ethnic grouping, and represented one group of Najdian workmen mentioned by both al-Marik and al-Dhughabi. My uncle Ibrahim 'Ata Allah al-'Anbar (died aged 101) recalled the socio-economic conditions of *al-'Abid* workmen and also of those belonging to other groups. He states:

> *Most of the workmen in the late 18th. century were from the lowest level of Najdian society known as* suna' (s. sani') *and were usually despised by the high and middle classes of Najdian society. Their income was limited, especially that of al-'Abid who were working only for food and a place to live, slaves of* shayukhs *and princes.*[43]

My uncle's view was that most Najdian workmen during both the First and Second Sa'udi States came from the lower classes and, their social position was despised within Najdian society. They could not marry above there clans, for instance, the slave either in desert or settlements can not marry only from his class or from the class of workmen *al-suna'* (s. *sani'*), that is, if the workman's daughter agree to marry him. Aloic Musil says:

> *A slave can never marry the daughter of even the poorest Bedouin; and, on the other hand, the least of the herdsmen would not think of marring a slave's daughter. For even the poorest Bedouin is independent,* horr, *while the slave remains subject* abd *for ever...Only the sons and daughters of white blacksmiths,* sunna, *enter into blood relations with slaves.* [44]

In fact, the socio-economic conditions of Najdian workmen were unsatisfactory, especially, the situation of *al-'Abid* workmen.[45] These conditions affected their temperaments and, in turn influenced the evolution of Najdian applied art. Their work was very beautiful and dense with various styles of decorative elements and motifs. What remains of their wooden and stucco works in houses and palaces is witness to their ability in design and creation. The socio-economic situation of these workers would have affected their production of applied work. Even in the worst conditions they were able to create good examples of applied arts which may be considered better than those of other Najdian workmen. However, their work improved when their social conditions changed during the era of King 'Abd al-'Aziz, when there were major developments in the decorating of wood and stucco.

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43. I met him at 'Ain bin Fihaid in al-Asyah area in al-Qasim, a place where my family live.
44. A. Musil, op. cit., p 278.
45. The social condition of Najdian craftsmen was unsatisfing, even whose economic situation was somewhat enhanced such as (most of them belong to the Gypsy tribes *al-salab*). See Doughty, op. cit.,1936, vol. 1, pp 652 & 653.

In 1990, I met 'Abd Allah Bin Muhammad al-Hameed at the palace of al-Murab' in al-Riyad. He is a contemporary, traditional artist still practicing both stucco and woodwork decoration (Plate 179).[46] He provided a list including the names of traditional artists from different groups, who executed both stucco and wood work. Saleem al-Namla was one of these, and is considered to be one of the most eminent stucco artists of the early 19th Century. He designed and carried out the most well-known stucco decoration in al-Riyad. Among his early works are the old stucco decoration at the palaces of al-Muraba' and al-Masmak, and the stucco work at the Karaj al-Malik (king) Sa'ud in Hilat al-'Abid, and his later works include the stucco decoration at the old palaces of King Fahad (when he was Prince), the Prince Mish'al Bin 'Abd al-'Aziz, and the Prince Mit'ib Bin 'Abd al-'Aziz in al-Muraba' district.[47]

In the accounts of al-Hameed, the artists that he mentioned from the early 19th Century appear to have had better conditions than the *al-'Abid* workmen, but still fared poorly compared with the higher classes. Even the economic condition of al-Hameed was not good 10 years ago, however it improved when wealthy people started to employ him to decorate their interiors with the traditional Najdian style.

To a certain degree, the socio-economic conditions of these artists reflected positively on the decorative creative process. Because they belonged to different ethic groups, we sometimes find in their works gatherings of motifs within large decorative compositions that originally belonged to diverse ethnic groups of workmen. Such rich heterogeneity can be seen as having contributed much to the quality and development of Najdian decoration.

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46. For more information about this artist see William Facey's *Back to Earth*, which shows fantastic artistic work at the re-constructed palace of the Prince Sultan bin Salman bin 'Abd al-'Aziz al-Sa'ud at al-'Udaibat farm, south of al-Dir'iyya.

47. Saleem. al-Namla used to teach youths stucco craft in his workshop, so he educated a large numbers of artists, among them: the artists Sa'ad al-Dilihani; Muhammad bin Huwaymil and Abd al-Rahman al-Hussain both from al-Quway'iya; Muhammad bin al- Zuman from al-Beer; Muhammad 'Ali al-Fuzan from Sudayr and 'Abd al-'Aziz bin Muhammad bin Duhim from Jalajil. These artists used to move from city to city and from one village to another, to satisfy the needs of local inhabitants who required this decoration.

3- THE IMPORTANCE OF THE MIGRATION OF WORKMEN

The migration of skilled artisans from one society to another is considered to be an important factor in the development of the decorative arts and their flourishing, by allowing artists from different areas to meet together, and their styles to cross-fertilise.[48] Waitz states:

> *Migration became very important in their effects through the reciprocal influences of various nations who come in contact, which rarely of a peaceable nature at first.* [49]

In spite of this the applied art of the Najd region contains few foreign elements since it is far from the main cultural melting pots in both Eastern and Western regions of Sa'udi Arabia, though it still witnessed the immigration of some workers during both the First and Second Sa'udi States, arriving through bondage; or fleeing from their tribes for different reasons.

The immigration of workmen to Najd also continued from the Eastern and Western regions after the unification of the Najd region, and later of all regions, and the resulting stability and security that ensued. Hassan 'Abd Alla 'Ali al-Snan,[50] has started that his father, his grandfather and many of the artists of the eastern region, migrated to al-Kharj and al-Riyad and many of the surrounding towns and villages at different periods. They used to work at carpentry and stucco engraving during the reign of King 'Abd al-'Aziz and later.

Many of the craftsmen and artists who came on pilgrimage to Mekka also moved and settled in Najd.[51] Moreover, those who came with the military campaigns remained in the Western regions, such as the Egyptians and Turks who came to the Najd region after its unification and toured its different areas, specifically al-Kharj and al-Riyad, and some of the towns of Sudyer such as al-Majma'a and Shaqra. Some Africans also came to Najd as slaves.

In fact, the immigration of workmen to Najd may go back to early times of Najdian history. During Philby's visit to the south area of Najd, he gave a brief

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48- Hassan al-Basha, 'al-Fan 'ind al-Shu'ub al-Islamiya', al-Dara, vol. 3 & 4, year 2, Darat al-Malik 'Abd al-'Aziz, Riyadh, 1976, p 143. See also Fareed Shafi'i, op. cit.,1970, p 87.

49- Theoder Waitz, *Introduction to Anthropology*, Longman, Green Longman, and Roberts, Paternoster Row, London, 1863, p346.

50- One of the craftsmen, from al-Qatif town working in wood.

51- Al-'Uthaimeen, op. cit.,1977, p13.

account of the inhabitants' origins, showing that this area witnessed successive waves of invasion from both south-west and east areas of Sa'udi Arabia. According to Philby's view, this social phenomenon made strong progress on the path of civilization in Najd and led to cultural mix:

> *Whoever the earlier inhabitants of the Aflaj may have been, the character of the relics of their handiwork which have survived to our times makes it more than probable that they were not of Arab stock, and that the parent stock, from which they broke of to colonise suitable portion of the interior of Arabia, had already made very much greater progress on the path of civilisation than any of the indigenous Arab communities of those times except the Sabaeans of the south-west corner of the peninsula...the south-western highlands have been for centuries the source of the human stream, which has peopled the desert of Arabia, must necessarily make us cautions in ascribing to the ancient prosperity of these central provinces an eastern rather than a south-western origin.* [52]

Workmen of the Najd gained experience and learned much from these immigrant craftsmen. The result was a kind of artistic mix, which both directly or indirectly led to the further development of wooden and stucco ornamentation. Examples of good quality, applied work resulting from this cultural mixture can be seen in certain houses and palaces dating from the early 19th Century A.D., e.g. the house of al-Tuwayjari in al-Majma'a, the palaces of al-Sa'ud in al-Riyad (al-Badi'a, al-Muraba' and others) and in al-Kharj (the guest's palaces).

Several families from the towns and villages of Najd, especially from areas of al-Qasim and the Sudayr, emigrated in the late 18th. and early 19th. Centuries A.D. to Iraq (settling at al-Zubair and al-Basra), to the states of the Gulf Coast such as al-Kuwait, Qatar and al-Bahrain, to Syria (settling at Damascus, Aleppo, Dir al-Zur and al-Hasaki), Palestine, Jordan, Egypt and also to North Africa.[53] The return of many of the numerous families that had emigrated from Najd had a great impact on the development of applied art decoration in the region (after living conditions had improved).

By studying and analysing the decorative elements and their similar and different compositions found in the buildings of the region (different sites of similar age), it may be possible to trace the influences on their decorative styles, and to identify the origins of the artists with some accuracy. If this proves impossible, the traditions, culture and artistic influences that affected their works can be identified. V. Gordon Childe argued that:

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52. Philby, op. cit.,1922, vol. 2, p 104.
53. Subhi A. al-S'aid, op. cit., p 30.

We can recognize groups of man-made objects- implements, ornaments, ruins of dwelling- belonging to the same general age but normally collected from distinct, but not necessarily remote, sites that differ from one another arbitrarily in respect of method of manufacture, material, shape and kind. Such differences clearly reflect differences in tradition of workmanship, of hunting, of fighting, of fashion in dress, and so on. The differences in the culture of distinct group of men. [54]

In the mud-brick buildings, relics remain from which we can see the great extent to which styles were mixed in the decorative compositions. Some reveal their identity without any effort, such as the architectural decoration of the sun-shades of external doors and windows*(dhilat al-Abwab al-kharijiya)*; (Plates 239-241, 245, 263 & 319-320) and the panelled doors and windows in al-Majma'a and al-Riyad towns (plates 143-144) that trace their artists' origins back to the Egyptians and Turks. Their influence is also seen in the engraving styles on stucco and mould making, as is clear in the *rawshan* of a house at al-Riyad (Plates 113-115), in the *majlis* of a house at Rughba (Plates 122-125) and at the *majlis* of 'Abd al-Rahman al-Suba'i's house in Shaqra (Plates 119-120) .

Some of the wooden and stucco relics remaining at 'Unayza, Shaqra, Rawdah Sudyer, and al-Majma'a are the work of Yemeni and African artists. For example, the plaster decoration (Plates 105-108, & 116-117) of the house of the al-Tuwayjari in al-Majma'a of both Yemeni and African artists, while the wood decoration (Plates 143-144 & 147) is of African artists. It is believed that, most of the painted decorative motifs of woodwork, and also the wooden comb decoration on the mud of wealthy houses at Burayda, al-Riyad and al-Dir'iyya is of African artists (Plates 18, 148, 267, 149-151, & 167-168, Figs. 155-157). The plaster decoration within friezes with several deep and projecting frames in some of the houses and palaces of al-Qasim towns and villages point to the emigration of skilled and experienced artistic hands from Syria and other countries of Bilad al-Sham (Plates 312-316).

54- V. Gordon Childe, 'Is Prehistory Practical?', pp 410-418 in Antiquity, A Quartely Review of Archaeology, vol. viii, no. 28, December, 1933, pp 416-417.

3.1.2. THE IMPORTANCE OF MATERIALS AND TOOLS

Materials and tools are considered to be crucial factors in the development of Najdian ornamental compositions. The natural colour, texture, flexibility and strength of the materials at their disposal strongly influenced the artist and the development of his decorative productions. These differing physical attributes of the materials led the artist to consider how he could use each one most effectively; what could and could not be done with it and how it should be worked. Lewis F. Day shows the importance of the physical characteristics of the material for the designer:

> *The designer is influenced in his choice of material by its colour and texture, by the ease with which it can be cut, beaten or otherwise worked into the shape which is at once practically useful and attractive.* [55]

Both the early and later artists of the Najd knew the necessity of assessing the form, texture, scale and colour of their intended design, and also the technique which was to be used in its execution, which was clearly the key to success and development.

The abilities of early Najdian artists (from the 17th and 18th centuries A.D.) were constrained by the limited variety of local materials and their simple nature. They consisted of tamarisk and palm timber, stucco, mud and ochre, and required simple methods but lengthy times for their transformation into agreeable ornamental compositions. In fact, the material of an object has a very strong effect upon its form, decoration and time that is needed for its ornamentation, and the nature of material is usually dependent upon its local environment, while the nature of decorative designs is dependent upon the form of objects. A. C. Haddon states:

> *The material of which an object is made must have very definite effect upon its decoration, and the material is to a very large extent dependent upon the locality. Metal, stone, clay, wood, bone, skins, and textiles are so varied in their structure that they require different artistic treatment, and it has usually taken a considerable time for a people to discover what is the most suitable form of decoration for an object mad of a particular substance. The forms of decorated objects exercise a strong influence upon the decorative designs employed.* [56]

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55. Lewis F. Day, *Ornament and Its Application*, B.T. Batsford, London, 1905, pp15 & 16.
56. A. C. Haddon, op. cit., pp 110 & 111.

The variety of colours available and their methods of mixing affected the development of ornamentation in the mud-brick buildings of the Najd. The limited colours derived from local ochre were used on the surfaces of early wood-work from the 17th and 18th centuries A.D., and gave a very different impression from that of the new imported colours which appeared on wood-work of the late 18th and early 19th centuries A.D. The latter gave the artist a great choice of good quality colours, and using them he was able to create magnificent ornamental compositions which in themselves marked a stage in the development of the applied art of Najdian mud-brick buildings (Plates 56, 96-100, 143 & 195-197). The varied textures of tamarisk and palm timber, stucco and mud also affected the methods of production and quality of ornamental patterns and themselves show clear stages of development. In his research, Day emphases strongly the role of the texture of material in influencing decorative styles, which according to him, often exercises a decisive effect in determining the type of pattern which is appropriate to some materials.[57]

Tamarisk and palm timber, in fact, constrained the flexibillty of the Najdian artist, and because of this, boarded doors and windows dominated the area for a long period which continued until the early 19th. century A.D. However, when new qualities of timber reached the area from various places, including the Eastern and Western regions of Sa'udi Arabia about the late 18th and early 19th centuries A.D., panelled doors and windows appeared. These provided the artist with a kind of freedom to work easily with colour and carving tools on good quality surfaces. The increasing availability of good quality stucco impacted positively on the development of Najdian ornamental crafts.

In fact, the increase in the variety of materials and their quality led to a clear development in the decoration of both wooden and stucco works. This can be seen from a quick comparison between the applied arts (on stucco and wood) of the northern settlements with those of the middle and southern settlements of the Najd region.

So, the impact of materials on decorative art was usually seen in the various techniques used in ornamentation, which were related to the material itself, the intended style of decorative elements and motifs (which might be suited to

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57- L. F. Day, op. cit., p 46.

one kind of material and not another, as some of the carved, botanical shapes of the palace of al-Murab' at al-Riyad, which are suitable to plaster only, plates 137-138 & 189), and also to the use of special tools. Regarding this matter, Day states:

> *Treatment and style are as cause and effect - the character which comes of workmanship - all processes influence work done - material and tool determine character.* [58]

The method used for drawing and cutting decorative elements and motifs on fresh, wet stucco and mud surfaces, as would be expected, differs from that used on old, dry surfaces of the same materials, and again from that used on solid wood surfaces. Stucco and wood are decorated using a sharp knife intended for carving on these materials which differs from blunter knives used for other purposes, while wood is incised and burned using specialised tools, that have harder, thinner heads. The tools which were used to incise wood were made of short pieces of metal, had wooden handle (some without) and harder, thiner heads, while those used to burn wood were similar but had long bodies and sometimes curved heads (Plate 199). The reason for their long body was to protect the hands of workers from fire sources used to heat the heads of tools and from the heads of tools themselves when hot.

The effects of the use of crude, non-specialised knives and metal implements upon the carving, incising and burning of designs can be clearly seen in the works of early craftsmen of both the 17th and 18th centuries, who were unable, by virtue of these simple tools to create exceptionally attractive designs on stucco, mud and wood surfaces (plates 174, 178 & 198). The impact of the arrival of special carving knives and other tools upon engraved, incised and burned designs, which were brought to the area with new workmen from areas to the East and West of Najd, was great and led to a new level of sophistication in wooden and stucco works. Good examples of work in both wood and stucco were produced using high-quality, special tools which show a great advancement from earlier works that can still seen at many houses and palaces in the cities of al-Riyad (Plates 113-115), al-Majma'a (Plate 116), Shaqra (Plates 119 & 121), Rughba (Plates 122-125 & 304), Sadus (Plates 129-130), and in another cities such as Burayda and 'Unayza.

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58. L. F. Day, op. cit., p 70.

3.1.3. THE IMPORTANCE OF THE TRADE FACTOR

The towns and villages of Najd region are linked by internal roads which facilitated the transportation of people and their goods between markets and towns (Fig. 27).[59] There was a role played by the permanent, seasonal and weekly markets in the dissemination of decorative artistic ideas throughout the area, and also in securing an income that could afford simple luxuries. The result of this diffusion was the emergence of ornamental art that seemed to unify the various decorative styles of the towns and villages of Najd. In other words this artistic diffusion led to the emergence of a decorative school in Najd that has unified artistic character in all Najdian settlements, to a certain degree. The style of this school distinguished Najdian applied art from other applied arts in Sa'udi Arabia. So, by studying this artistic school knowledge concerning the cultural eclecticism and artistic capability of Najdian workmen who originally, as mentioned above, came to Najd from various parts of the Arabian peninsula and also from other countries outside it can be established.

Najd is located in the middle of the Arabian Peninsula (Figs. 1 & 3), and its roads are considered to be major meeting places for commercial caravans and cultures.[60] Its people benefitted commercially and culturally from these caravans which had contact with the countries of the Arabian Gulf, the towns and villages on the coast of the Red Sea, the countries in the south of the Arabian Peninsula, and also with those lands lying to the North, North-east and West of the Sa'udi Arabia Kingdom (Fig 28). These roads led to the existence of trade, and the merchants travelled with their goods from one country to another. Al-Madina and Makka trade intensively with the al-Yamamah, to the extent that it is said that al-Yamamah is a suburb of Makka.[61]

59- Al-Hamadani, op. cit., p 282. See also Sa'eed al-Afaghani, *Aswaq al-'Arab fi al-Jahiliya wa al-Islam*, 2nd edition, Dar al-Fiker, Damascus, 1960, pp 358-359.

60- Bin Khamis, *al-Majaz....*,op. cit., ND, p14.

61- Abu Muhammad 'Abd al-Malik bin Hisham bin Ayub al-Humairi Ibn Hisham (died 218 AH), *al-Sira al-Nabawiya*, vol. 2, part 4, investigated by Mustafa al-Saqa, Ibrahim al-Abyari and 'Abd al-Hafiz Shalabi, Dar Ihya' al-Turath, Beirut, ND, p 119. For more infomation about Najdian roads see Ibn Khurdadhaba, op. cit., pp 136-152. See also al-Ya'qubi, op. cit.,1891, pp 311-312, and Abi 'Ali Ahmad bin 'Umar Ibn Rusta (died 290 AH), *al-A'laq al-Nafisa*, vol. 7, published by Pril Press, Leyden, 1891, pp 180-183. See also Shams al-Din 'Abd Allah bin Ahmad bin Bakr al-Maqdisi (died

Makka is considered a civilizational and commercial centre in which different cultures meet. The influx of decorative art to Makka led to the flourishing and development of art, not just locally, but all over the Sa'udi Arabia kingdom. In Najd, artists became familiar with a multiplicity of decorative styles seen in various artefacts, which would carry the stamp of their area of manufacture. Of these it is worth mentioning the curtains, known as *al-shamsat*, that the Umayyad, Abbasid and Fatimid Caliphs used to send to Mecca during the pilgrimage season, which were decorated with ornamental forms; either engraved, embroidered or inlaid with precious metals or mother of pearl.[62]

The towns of Najd were famous for their markets, where merchants coming from Mekka and Madina, Iraq, Syria and Yemen sold many types of goods which were beautified with different kinds of decoration; including cotton, woollen and silk cloths decorated with silk or gold embroidery. There were also hair-dressing utensils such as combs, mirrors, and kohl containers, silver and gold jewellery of different types, in addition to utensils such as large pans, round trays and cups of copper or silver.[63]

By comparing stucco and wood decorations found in the Najd region with the decorations found on these foreign goods, great differences are not apparent, because the local artist would incorporate these designs in his own distinct style for use on walls and wood-work. The commercial relations among the towns of the kingdom led to an increase in the commercial income of various towns on the one hand, and the adoption of foreign cultural elements on the other, which in turn led to the development of the decorative arts and their flourishing, notably in the Najd region.[64] This happened in spite of the relative scarcity of decorative artists in this region, and the lack of spending on luxury items, expenditure which usually increases with prosperity.

A good example of the effect of commercial relations on the prosperity of the towns of Najd and the surrounding countries and the development of their decorative arts in the pre-Islamic era, concerns the Kinda tribe. In the centre

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380 AH), *Ahsan al-Taqasim fi Ma'rifat al-Aqalim*, 5th edition, published by Pril Press, Leyden, 1909, p 349; al-Qalqashandi, op. cit., p 383. See also Muhammad al-Said Ghalab 'al-Tijara fi Asr ma Qabil al-Islam', pp 190-192, in the book of *Ta'rikh al-Jazira al-'Arabia Qabil al-Islam*, University of al-Riyad, Riyadh, 1979 pp 190-192.

62. Ahmad bin 'UmarAl-Zayla'i, *Makka wa 'Alaqatuha al-Kharijiya* (from 301-487 AH), University of al-Riyad, Riyadh, 1981, pp 95-98.

63. 'Abd al-Rahman Z. al-Suwaida', op. cit., pp 127-129.

64. Fareed Shafi'i, op. cit., p 270. See also Z. M. Hassan, *Funon al-Islam*, op. cit., p 9.

of Najd, they generated a very high quality output of various crafts which were traded by many of the largest, wealthiest merchants, leading to the development and prosperity of the town of Qurayat al-Faw.[65]

The excavations at al-Faw point to a very ancient epoch of great prosperity in all the decorative and applied arts of the Najd region. Its relics represent the highest forms of artistic, civilisational and cultural output.; there was rarely a house, palace, or market that was devoid of artistic artefacts and embellishment, such as the frescoes, with their vibrant colours, and stucco wall pictures with projecting, engraved and moulded three-dimensional decorations, which indicate the deepest cultural contact between societies. We find in the engravings that appear in the applied arts, such as jewellery, wood and stone, the extent of the effect of commerce and its speed in transporting ideas and decorative styles. By analysis of the arts of al-Faw we can trace the impact of Egyptian, Babylonian, Assyrian and Hellenistic arts, which were imbued with a wonderful, local flavour.[66]

Though Taima is located far from Najd, archaeological research confirms the importance of commercial contact in transporting decorative designs and their setting in a local mould, as is seen in the decorations of Mada'in Salih.[67] Commercial relations between the countries of Mesopotamia and the south of the Arabian Peninsula and also ancient Egypt, shared in the diffusion of decorative elements from these countries to the houses and temples of Taima, where artists interpreted them magnificently.[68]

The site of al-Rabadha is currently not considered to be a part of Najd region by some geographers, in that it does not fall within the current administrative division. However, it is historically and geographically considered to be an integral part of Najd region by Arabian Islamic sources; and on this archaeologically important site later excavations revealed the extent of the development of the decorative arts in the early Islamic towns of the region,[69]

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65. Edwar Broy, op. cit., p 111.
66. 'Abd al-Rahman al-Taib al-Ansary, *Qurayat al-Fau...*,1982, pp 24-31.
67. 'Abd al-Rahman al-Taib Al-Ansary et. al., *Mawaqi' Athariya wa Suwra mn Hadara al-'Arab fi al-Mamlikat al-'Arabiyat al-Su'udiya. al-'Ula, Didan, al-Hijr, and Mada'in Salih,* Department of Archaeology and Museums, College of Arts, King Sa'ud University, Riyadh, 1984, pp 69-101.
68. Hamid Ibrahim Abu Dirak, *Muqadima 'an Athar Taima',* published by the General Administration of Archaeology and Museums in Saudi Arabia Kingdom Riyadh, 1406 AH, pp 134-136.
69. Sa'ad 'Abd al-'Aziz al-Rashid, *al-Rabadhah Sura lil-Hadara al-Islamiya al-Mubakira fi al-Mamlikat al-'Arabiyat al-Su'udiya*, King Sa'ud University, Riyadh, ND,

and clarified the role of a trading economy in the rise of towns and the blending of civilizations and artistic cultures. The flourishing commerce of the region of Najd had a hand in the richness of the surviving stucco and mud decorations in the mud-brick houses and palaces, and on their interior walls the summit of decorative development is evident, pointing to the abundance of funds and craftsmanship that was spread in various ways by the transportation of decorative styles between towns and villages. The persistence of the inhabitants of Najd in trading with Syria, Iraq, Egypt and Palestine through caravans that did not cease until 50 years ago, greatly increased income, as the above demonstrates.[70]

More funds became available after the unification of most of the parts of the Kingdom, while the removal of highwaymen and prevailing security and stability which spread into the corners of the Kingdom, due to its effective governance, caused a massive influx of labour from the East and West.[71] The merchants came to know through their travels of various decorative artistic styles and devices, and brought with them merchants who had artistic interests, in addition to their occupation of trade, to offer some advice to the local workers and craftsmen. They also took an interest in importing dyes that local artists needed for drawing and colouring their decorations; for dyeing skins and the wool threads that were used to weave the small, decorated carpets of the bedouin, and tools used for building and decoration, including engraving tools.

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pp 83-108.

70- Some Najdian families used to trade with some countries of Bilad al-Sham and still live in Syria: the families of al-Suwayan, al-'Urafi, al-Njadi, al-'Atiq, al-'Asaf, al-Qadi, al-Dikheel, al-Hammad, al-Rumih, al-Rumahi, al-Misnid, Hamza, al-Hudhali and al-Marik. For more information about the trade of Najdian people see Ibn Sa'd, op. cit., p 97. See also Amin al-Rihani, *Muluk al-'Arab*, vol. 2, Dar al-Rihani lil-Tiba'ah wa al-Nashir, Beirut, 1967, p 123, and Khair al-Din al-Zurkuli, op. cit., p 878.

71- During the First and Second Sa'udi States most Najdian settlements witnessed high economic revival compared with other regions. This was due the flourishing of both commerce and agriculture. See Palgrave, op. cit.,vol. 1, p 361; Philby, op. cit.,1928, p 208; and Doughty, op. cit.,1936, vol. 2, p 338. For more information see paragraph 4 to the notes of this chapter.

3.1.4. THE IMPORTANCE OF RELIGIOUS FACTORS

Religion has had a clear and direct effect on the development of the decorative arts over the ages. Both anthropologists and archaeologists, realising the connection between religion and art, have attempted to describe and understand the mutual relationship between them. They reached the conclusion that art was employed in the service of religion, that it has an ethical aspect that was born in the vastness of the temples, and that religion thus played a major role in the creation of the arts and their development.[72]

Islamic law, which was taken from the Holy Qur'an and the traditions of the Prophet played an influential role in the development of Islamic art. Concerning this, Alexander Papadopoulo states:

> *A number of excellent scholars have demonstrated that it was the development of a philosophical and scientific spirit in Islam that created a much more exacting mentality as regards religion and thus gave rise to the need for a theology with as rational a structure as possible...Ugo Monneret de Villard considers the numerous hadiths referring to the proscription of images of living beings to be a natural development in the particular atmosphere of philosophical exigency and theological refinement introduced by those Christians sincerely converted to Islam...*[73]

During the Sa'udi States from the 17th until early 19th centuries A.D., Islamic law played an important role in applied art in the mud-brick buildings of the Najd region. Its impact, in fact, had a double effect; one positive, and the other negative. The positive results were very clearly reflected in the botanical and geometrical elements and motifs, and led to the flourishing of these types of decorative features, a continuous refinement of their design, and their appearance inside many types of mud-brick buildings, excepting mosques, where only a few, simple geometrical elements appeared on the exterior wooden doors in some cases.

Geoffrey King has already documented the decoration of the wooden door of the Central Mosque of 'Unayza, which consisted of no more than painted X-shapes. This simplicity is the result of the impact of religion on artistic representation of human and animal forms, which caused this type of interior feature, that had appeared in Islamic decoration throughout its history, to later

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72. See paragraph 5 to the notes of this chapter.
73. Alexander Papadopoulo, op. cit.,1980, p 48.

disappear from Najdian buildings.[74] During field work, the writer did not find any shapes representing either animals or humans (either semi-realistic or realistic), only four abstract figures; the first two perhaps showed human shapes (Plates 321 & 322), the third presented the shape of butterfly (Plate 323), while the fourth represented the shapes of birds (Plate 324). The first three shapes were formed on the walls using stucco, and the last painted on the walls by using a stamp to imprint the shape.[75] However, various European explorers saw examples of bird figures presumably realistic, painted on stucco plaster during their visits to Najd. In 1864, for instance, Doughty saw examples of painted birds and flowers in the reception room of a house at Ha'il:

> *He had made this new clay house and adorned it with all his smith's art. Upon the earthen walls, stained with ochre, were devices of birds and flowers, and Koran verses in white daubing of jiss-which is found everywhere in the desert sand.* [76]

So, it possible that representations of human and animal forms (both semi-realistic and realistic shapes) may once have been used on stucco and wood-work in some mud-brick buildings of the Najd, with birds of various kinds probably being the most popular. However, due to the resurgence of Islamic law and its dissemination throughout Najdian society by religious guides during the First and Second Sa'udi States, the inhabitants started to cover over this type of painted decoration and demolish those which were sculpted from stucco.

ANALYSIS OF THE RELIGIOUS FACTORS

In the Najd region, the period of the construction of various types of old mud buildings being studied coincides with the call of the reformer *Shaykh* Muhammad Ibn 'Abd al-Wahhab. The Shari'a rules which were applied as a result of his activities affirm the juristic principles of Imam Ahmad Ibn Hanbal which were extracted from the Holy Qur'an and the traditions of the Prophet,

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74. For example, the representations of both humans and animals which appeared on fresco works in the interiors of the Ummayad desert palaces, in much of the applied art of Iran during most periods, and on Fatimid wood-work and also other applied work. See Fareed Shafi'i, op. cit.,1970, pp 262 & 265.

75. It seems that the shapes of birds which can be seen on the walls of one of the reception rooms at the guest's palace of King 'Abd al-'Aziz in al-Kharj were newly stamped on the walls.

76. Doughty, op. cit., vol. 1, 1936, p 653.

who, when instructing his companions, prohibited the drawing or embodiment of all kinds of living things in either two or three dimensions.

The Prophet did, though, allow the use of coins, chattels or merchandise on which pictures were engraved or drawn, because the Muslims were unable at that time to mint coins or weave textiles. Because of this, some jurisprudents later extended the prohibition to cover the use of chattels decorated with figures, based on something said by the Prophet to his wife 'A'isha, who recalled:

> *We had a curtain illustrated with a bird design and visible to whoever enters; the Prophet said, 'Relocate this, as every time I enter and see it I remember life of this this world.* [77]

The previous Hadith was also stated by 'A'isha in another way:

> *The Prophet said: 'O 'A'isha take away your curtain from here, for I see its pictures in the course of my prayers.* [78]

The inhabitants of Najd followed strict rules, even though other laws permitted the use of chattels, such as bowls, plates, carpets and pillows, bearing depictions of figures of all kinds, on the basis of numerous sayings of the Prophet, especially those narrated by 'A'isha:

> *There was in my house a cloth on which there were some pictures, I made it into a curtain and the Prophet used to pray towards it. Then he said, 'O Aisha take it down from there,' so I made it into pillow-cases.*[79]

However many traditions of the Prophet point to his dislike of any picture, whether appearing on a chattel etc. or not, with the following tradition affirming this:

> *The Angels do not enter a house in which there is a dog or pictures.*[80]

77- Al-Shaykh al-Imam Badr al-Din Ibn Muhammad Mahmoud Bin Ahmad al-'Aini, (died 855 AH), *'Umdat al-Qari'. Sharih Sahih al-Bukhari,* part 4, published by Muhammad Amin Damag, Matba'it al-Muniriya, Beirut, ND, p 95.

78- Muhammad Nasir al-Din al-Albani, *Mukhtasar Sahih al-Imam al-Bukhari,* published by al-Maktaba al-Islamiya, Beirut and Damascus, 1394-1399 AH, p 108.

79- Al-'Aini, op. cit., p 96.

80- Al-Imam Abi 'Abdalla Muhammad Bin Isma'il al-Bukhari, *Sahih al-Bukhari,* vol. 5, organized by Muhammad Dhib al-Bugha, Dar Ibn Kathir, Damascus and Beirut, ND, p 2220. See also al-Imam Abi Muhammad al-Husain Bin Mas'ud al-Ghara' al-Baghawi(436-516), *Sharih alSuna,* vol. 12, investigated by Shu'aib al-Arna'ut, al-Maktaba al-Islamiya, Damascus, 1978, p 127, and Salih Bin Fuzan 'Abd Allah Al al-Fuzan, *al-Khutab al-Minbariya fi al-Munasabat al-'Asriya,* Mu'asasit al-Risala, Beirut, 1989, p 326.

It is worth mentioning that all the Shari'a rules which the Prophet gave are inspired by and drawn from the Holy Qur'an, and so:

1) improve social conditions and eliminate the potential for the worshi of images.

2) indicate that man is incapable of imitating the Creator in any of His creations, however small, and warns those who attempt to do so of severe punishment.

3) and cautions Muslims against extravagance and pride in their buildings and their decoration.

Communities preceding Islam often worshipped what they had drawn or embodied,[81] and the Prophet was concerned lest the Muslims began to do the same, as was the situation in the Prophet Ibrahim's community, described in the Holy Qur'an:

> *Behold! He said to his father and his people, "What are these images, to which ye are (so assiduously) devoted?' They said, 'We found our fathers worshipping them'. He said, 'Indeed ye have been in manifest Error-ye and your fathers'.*[82]

Other verses affirm the inability of man to imitate the Creator in what he creates:

> *He is Allah, the Creator, The Originator, The Fashioner. To Him belong the Most Beautiful Names: Whatever is in the Heavens and on Earth, doth declare His Praises and Glory: And He is the Exalted In Might, the Wise.*[83]

So, due to this glorious verse and others, the statues were demolished and the pictures were covered; the Prophet promised severe punishment for anyone who tries to imitate Allah in what he creates:

> *The people who receive the severest punishment are those who try to imitate Allah in what he creates.*[84]

The Prophet reminds us of the human inability to emulate the Divine creational process, as Allah states:

> *Who is more vile than he who has gone to imitate My creation, let him create an atom or create a grain of barley.*[85]

81- Arnold Hawards, op. cit., p 162-163.
82- The Holy Qur'an, Al-Anbiya', Ayat 52-54, al-Madinah, 1413 A.H., p930.
83- The Holy Qur'an, Al-Hashr, Ayaht 24, al-Madinah, 1413 A.H., p1726.
84- Al-Bukhari, op. cit., vol. 5, p 2221. See also Ahmad Bin Hanbal, *Musnad al-Imam Ahmad*, vol. 2, al-Maktaba al-Islamiya, Dar Sader, Beirut, ND, p 217.
85- Al-Bukhari, op. cit., vol. 5; p 2220.

Also, the Prophet said:

> *He who makes a living picture in this world will be charged to bestow it with life on the Day of Judgement; but he will be unable to blow life into it.*[86]

In fact, the sayings of the Prophet played the central role in leading artists and craftsmen to imitate natural forms, excepting those of living creatures. So during his time, and that of his successors, they looked towards nature; for the Holy Qur'an and many traditions of the Prophet urge reflection on what the Creator has created, and adopted and were inspired by many of the decorative elements in nature. There are many such verses in the Koran, for example:

> *Say: Behold all that is In the heavens and earth"; but neither Signs nor Warners profit those who believe not.*
>
> *It is We who have set out constellations in the heavens and made them fair-seeming to (all) beholders.* [87]

And of the sayings of the Prophet, narrated from Sa'id Bin Abi al-Hassan, he said:

> *I was with Ibn Abbas, when a man came and said, 'I am a man whose living is not but of what I make by my hands, and I make these pictures.' So Ibn Abbas said, 'I will not tell you except what I have heard the Prophet saying,' he said, 'He who makes a picture, Allah will torture him until he blows life into it; but in vain for he would be unable to bestow it with life.' So the man became severely astonished and his face became yellow, then Ibn Abbas said, 'Woe unto you. If you insist on making pictures, you have to deal with these trees or anything that has no soul.* [88]

Moreover, the saying of the second Caliph 'Umar Bin al-Khattab to a non-Arabic artist is recalled by P. M. Holt:

> *['Umar said]...to a person artist who, having become a Muslim, was lamenting the fact that he must renounce his art, 'Umar is said to have replied: 'Come now; you have only to give your figures the shape of flower and cut off their heads'.*[89]

So, relying on the previous sayings, both the botanical and geometrical decorative arts flourished and developed during the 3rd, 4th and 5th Islamic centuries in all applied arts, where most artists directed their interests towards

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86. Bin Hanbal, op. cit., vol. 2, p 217.
87. The Holy Qur'an, Surat Yunns, Ayaht 101, al-Madinah, 1413, p577. See also in the Holy Qur'an, Surat Al-Hijr, Ayaht 16, p713.
88. Al-Bukhari, op. cit., vol. 2, p 19.
89. P. M. Holt, Ann K. S. Lambton and Bernard Lewis (ed.), *The Cambridge History of Islam, The Further Islamic Lands, Islamic Society and Civilization,* volume 2, Canbridge, at the University Press, 1970, p 579.

nature while rejecting the drawing of living creatures. Their interest was strongly directed to abstraction and transformation.[90] A number of European authors wrote an interesting description showing the effect of Islamic religion on images and development of ornamental art during the 7th. and 8th. Centuries. Theoder Waitz:

> *The mohammedan religion has made the Arabs a people of great historical importance...the prohibition to make images of man and animals, prevents any attempts in the plastic arts.*[91]

Oleg Grabar states:

> *The major decorative themes of this period consisted of vegetable elements. It is rarely indeed that one finds at this times any instance of a natural vegetation, of natural flowers or leaves. Yet at the sometime there is hardly a panel of tiles. Mostly various modifications of the palmette, although other floral designs appear also.* [92]

And, Trewin Copplestone states:

> *There is one marked feature of Muslim culture and art: the art to some extent exemplifies the life. In addition to calligraphy, the other major component in Muslim art is its absolute reliance upon symmetrical geometric patterning...It is a cultural phenomenon in its own right and is intimately connected to Islamic ideas about God and His relation with His created world.*[93]

Many of those interested in Islamic art, such as Muhammad Qutb, Fareed Shafi'i, Mustafa Froukh, Najat Shakir, 'Izz al-Din Isma'il, Muhammad Zaidan and Zaki Muhammad Hassan, pointed out the role of a reflective view of the cosmos, and its effect on the development of the decorative Islamic arts and the rapidity of their spread in comparison with others.[94]

In view of this, we have to recognise the reasons that caused the inhabitants of Najd not to decorate the interiors of the mosques, and investigate whether the mosques in the era of the Prophet were decorated or not. It is certainly

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90. Aba al-Khïl, 'Abd al-'Azïz, 'al-Ta'rïkh wa al-Majlis al-'Arabï, al-Bïna, year 4, vol. 39, published by Ibrahim 'Abd Alla äl al-Sheïkh, Riyadh,1408, p 54.
91. Theoder Waitz, *Introduction to Anthropology*, 1863, p376.
92. Oleg Grabar and Derek Hill, op. cit.,1964, p86.
93. Trewin Copplestone (ed.), *Art in Societies. A Guide to the Visual Art*, Prentic-Hall, Inc., Englewood Cliffs, N.J., America, 1983, p 133.
94. Qutb, Muhammad, *Manhaj al-Fan al-Islami*, edition 6, Dar al-Shuruq, Beirut, 1983, pp 48 & 84. See also Faroukh, Mustafa, *al-Fan wa al-Hayah*, Dar al-'Ilm lil-Malayeen, Beirut, 1967, p 60; Zaidan, Najat Shakir Muhammad, 'Athar al-'Aqida al-Islamiya fi Fan al-Zakhrafah 'ind al-Muslimeen', al-Dara, year 3, vol. 4, Darat al-Malik 'Abd al-'Aziz, Riyadh, Yanayer, 1978, p 77; and Isma'il, 'Iz al-Din, *al-Fan wa al-Insan*, Dar al-Qalam, Beirut, 1974, p 70.

the case that the mosques of the ages following the 'Rightly-Guided' Caliphs embraced Islamic decorative art and preserved it.

From reference to specialised sources we have found that the mosques during the Prophet's era, and the era of his successors, the Caliphs, with the exception of the Caliphate of 'Uthman Ibn 'Affan, were unornamented. The mosque of the Prophet was simple: built of mud, its roof was made of wooden beams of palm timber and covered with palm leaves and mud, and its columns made of palm wood. Abu Bakr, the first Caliph, added nothing to that, but 'Umar widened it, though building it essentially as it was during the Prophet's time, again using columns and capitals of wood.[95]

In the Mosque of the Prophet, there were no projections, from the decorative point of view; al-Samhudi mentioned that 'Uthman the Caliph died and there were no projections in the mosque, not even a prayer niche. The first person to innovate the projections and the niche was 'Umar Ibn 'Abd al-'Aziz.[96] There have been some sayings of the Prophet transmitted that affirm the non-legality of decorating the mosques, as recounted by Ibn 'Umar:

> *He prohibited prayer in a mosque that is ornamented...As to its rooms there is no doubt... Money may not be spent for ornamentation with gypsum.* [97]

To add to that, when Ibn Mas'ud passed by a decorated mosque, he said:

> *He is cursed who has done this* [i.e. decorated this mosque], *poor people are more in need of these columns.*[98]

Also, Abi Dawood narrates that Ibn 'Abbas stated:

> *The Prophet said: ' I have not been ordered to establish mosques,' Ibn Abbas said: 'To decorate them as did the Christians and the Jews.* [99]

It is also told by Anas that the Prophet said:

> *The Day of Judgement will not commence until people rival each other in the grandeur of their mosques.* [100]

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95. M. N. al-Albani, op. cit., p126.
96. Al-Samhoudi, op. cit., vol. 2, p 525.
97. Muhammad Bin 'Abd Alla al-Zarkashi (died 974), *I'lam al-Sajd bi Ahkam al-Masajd*, investigated by al-Shaykh Abu al-Wafa Mustafa al-Muraghi, Cairo, 1384 AH, pp 335-336.
98. Ibid., p 337.
99. Ibid., p 336-337.
100. Ibid., p 337.

Due to this, subsequent generations followed this pattern; the Caliph 'Umar hated the decoration and colouring of mosques, indeed, when ordering the building of a mosque he said:

> *Shelter people from the rain, but beware of colouring so as not to infatuate people.*[101]

The Caliph 'Ali Ibn Abi Talib said:

> *If they raise their mosques their deeds will be futile.* [102]

The Caliph hated to have any verse of the Qur'an written on the wall of the Qibla. In addition, it is said of the Caliph 'Uthman Ibn 'Affan that he once saw citrons made of stucco hanging in the mosque, so he ordered them to be removed, and they were removed.[103]

Based on the sayings of the Prophet and his Caliphs, some jurists therefore prohibit or dislike decoration in the mosque, while some of them permit decorations or ornaments in the mosque in certain cases. Each party justifies their opinion; those who dislike the decoration of the mosques assert that decoration in the mosques may distract from the prayer and remembrance of the Creator, damaging the spirit of worship.[104] It is related by al-Baihaqi that Anas said:

> *Build the mosques jum [meaning with very simple structure and without any decoration so as to serve only the necessary purposes].* [105]

Abu al-Qayim narrates that the Prophet said:

> *If the actions of a nation are wrong, they begin to decorate their mosques.*[106]

It is clear that ornamentation and decoration are forbidden, according to Abu al-Darda':

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101. Al-Baghawi, op. cit., vol. 2, p349.
102. Al-Zarkashi, op. cit., p337.
103. Al-Baghawi, op. cit., vol. 2, p 350. See also Hussain Mu'anis, *al-Masajid,* 'Alam al-Ma'rifa, Kuwait, 1981, pp 33-34.
104. Al-Zarkashi, op. cit., pp 335-336. See also Kamil Salman al-Juburi, *Masajid al-Kufa mn al-Qarn al-Awal al-Hijri hata al-Waqt al-Rahin*, Matba'at al-Nu'man, al-Najaf, Baghdad, 1977, p 10.
105. Al-Juburi, op. cit., p 335-336.
106. Ibid., p 337.

If you ornament your copies of the Holy Qur'a'n and decorate your mosques, then you are lapsed. [107]

But the scholars who permitted the decoration of the mosque, permitted it on the grounds that if it elevates the rites of Islam, it serves a useful function. They point to what the Caliph 'Uthman Ibn 'Affan did when renovating the mosque of the Prophet, he added a frontispiece of stucco and ornamented stones.[108]

However, in spite of these opinions the inhabitants of Najd (from 17th until early 19th centuries) preserved their mosques as they were in the Prophet's time, following the religious men (*shayukhs*) who came after the Rightly Guided Caliphs and who did not to permit the decoration of the interiors of mosques in the Islamic middle ages.[109] So local artists directed all their efforts towards the civil buildings where they excelled in decorating the internal spaces while neglecting the exterior.

The result was a multitude of decoration on the internal frontals of civil buildings, which was very dense and of a unique form. From their analysis we can determine the ability of the local artist, his school, and the origins of the decorative elements and artistic formations he uses, which depended largely on the principles of abstraction, transformation and symbolism. We can also see the inspiration the Najdi artist drew from his contemplation of nature in his imitation of botanic formations, such as leaves, flowers, roses, veins and branches.

107- Ibid., p 335-337.

108- Al-Baghawi, op. cit., vol 2, p 50. See also al-Zarkashi, op. cit., p 336.

109- Before the 17th. Century, we have not any archaeological evidence to indicate that Najdian mosques were with decorative elements such as other Islamic mosques in close areas or countries. This excluding the historical proof of Nasir Khusruw, who visited the region in the fifth Hijri Century, mentioned that the inhabitants of al-Aflaj asked him to decorate the niche of their Friday Mosque, which he did. However, some Najdian mud-brick mosques from the Saudi era, were decorated only with a few geometrical elements of mud sometimes appearing on exterior architectural features, for example, the crenellations which are usually found on the top of exterior walls, the band of projecting square steps of mud to be found on the facades overlooking the courtyard and the bands of V-shapes of mud which appear on the facades of the tapering minarets of some mosques. See Nasir Khusruw, Safer Namah, op. cit., 1983, p166.

3.1.5. CONCLUSION

Due to the lack of archaeological evidence of successive historical epochs for people of a specific area, we cannot follow the developmental stages of decorative style, and elements or motifs closely. In the Najd region as in other regions, we are not able to show the complete sequence of development of decorative motifs.

The decorative evidence from Najdian mud-brick buildings only shows the simple changes in the main ornamental form, not the more subtle changes in the design of either decorative elements or motifs. The real changes which can be considered to constitute stages of development in Najdian ornamentation during the eras of Sa'udi States are to be found in the contrasts between the main decorative compositions, the quality of raw materials and in techniques of ornamentation. The reasons for change were both environmental and spiritual and included the effect of social factors; the influence of workmen's migration; the impact of both materials and tools; and the effect of both trade and religion.

3.1.6. NOTES TO THE CHAPTER

1- According to Balfour's view, George Harris was the first who found the key to his theory of the development of early decorative motifs, but he failed to bring tangible evidence to document his theories. However, the work of Pitt Rivers (on his general collection from the city of Benin, which is situated on the Guinea Coast, near the mouth of the Niger- West Africa)[110] opened the door for many studies in the evolution of the arts of mankind. Semper presented an interesting thought about the evolution of the decorative motifs of architecture; Philip Stedman states:

> *In Semper's view there is certainly an evolution in architectural ornament, and its forms can be referred back to ancient prototypes, which in his opinion are those of handicrafts and clothing...according to Semper, that a pattern executed in one material is then imitated in another, as for instance floor mosaics imitating carpets, or wall tiles imitating wall cloths.* [111]

Likewise, Rykwert stated:

> *Ernst Grosse Semper, on the contrary [of Herbert Spencer's notion of the play origin of ornament and the expressive origin of music] investigated the elementary methods of making or fabrication and their transformation into formal devices through a social and therefore through a historic adaptation.* [112]

Owen John researched the art of primitive people in general, and was interested in the creative mind of the primitive designer. He declared:

> *In fact, we seek in every work of art, whether it be humble or pretentious, is the evidence of mind.* [113]

Balfour introduced several hypothetical stages in the development of design. The first is the 'Adaptive stage', the second is the 'Imitation stage', while the third is the 'Coping stage'.[114]

2- Doughty visited Ha'il in 1864, met the brothers Ghranim and Ghruneym, the jewllers of the Prince Ibn Rashid. Both used to practice smith-craft and wandering from place to another. Concerning these workmen, Doughty noted:

110- Augustus Henry Lane Fox Pitt Rivers, *Antique Works of Art from Benin*, prented privately, Harrson and Sons, London, 1900. See also his work, *Leutenant-General Pitt Rivers, Excavations in Cranborne Chase near Rushmore*, four volumes, Harrison and Sons Printers, London, 1887. In 1851 Pitt Rivers began his scientific collection, and according to Bowden's view he was the first to apply the archaeology in practice, Mark Bowden, *Pitt Rivers*, Cambridge University Press, Cambridge and New York, 1991, pp 44 & 154.

111- Philip Steadman, *The Evolution of Design. Biological analogy in Architecture and the Applied Arts*, Cambridge University Press, Cambridge, London and New York, 1979, p115.

112- Joseph Rykwert, *The Necessity of Artifice*, Academy Edition, London, 1982, p 123.

113- Owen John, op. cit., p 14.

114- H. Balfour, *The Evolution of Decorative Art*, 1893, pp 21-23.

...and first I was called to one Ghranim, the Prince's jeweller, and his brother Ghruneym. They were rich men, of the smith's caste, formerly of Jauf, where some of the sanies, for their work in metal, wood and stone, in nomad Arabia. Abeyd at the taking of the place found these men the best of their craft, and he brought them perforce to Hayil. They are continually busied to labour for the princes, in the making and embellishing of sword-hilts with silver and gold were and the inlaying of gun-stocks with glittering scales of the same...In his youth, Ghranim had wandered in his metal trade about the Hauran [Syria], and now he asked me of the sheykhs of the Druses [al-Durus is a sect of Muslim in both Syria and Lebanon]...[115]

By analysing Doughty's description, the following points were found:

1) the names of these craftsmen are indicate to their origin, both seem to belong to the Gypcy tribe *Salab*. This is apparent from their sayings. In Saudi Arabia the Gypsy craftsmen used to move from place to another practising their smith-craft.

2) even though the economic condition of both these workmen was fairly good socially their condition was unsatisfactory, both brought by force to Ha'il.

3) indirectly, Doughty shows us where craftsmen used to come for in the central area of Najd (as he mentioned from al-Jawf).

In 1919, Philby also visited 'Unayza in early 1919, and met Ibrahim Ibn Salih, one of the famous traditional architects at that time. According to Philby, Ibn Salih built the most well-known monuments in 'Unayza including the house of the Prince Muhammad al-Sulaiman and the Masjid al-Jami' of 'Unayza with its minaret which was considered the highest one in al-Qasim area. From the description of Philby, it can be reckoned that the socio-economic condition of this workman was not high, and he seemed to be from the lower or middle classes of Najdian society. It well-known in Najd area particularly, that most of the tribal men used to add to their surnames (al) and often the name of their tribes which confirms their origins. Here in the case of this workman he was carrying vague surname written by Philby without (al), in which may indicate also a less well-known tribe.[116]

3- Both Fahad al-Marik and Ibrahim al-Dhughabi classify Najdian workmen into six groups. The first group is composed of the tribal men; particularly those whose tribes are minor or less well-known. Most of them came to Najd from northern areas such as Dumat al-Jandal, Skaka al-Jawf and Arar. They practiced adobe construction - and, in Najd, such crafts are not considered humble works. Because of this, the Qabili men who belonged to well-known tribes used to build their own buildings, and also those of their relatives when required. Some workmen from this group, as well as Najdian farmers who belonged to poorer families (some of them were tribal people, but their tribes were either minor or lesser-known) started to practice both stucco and wood work in the late 18th and early 19th Centuries. The second group consisted of both *al-Safaryeen* (s. *Safari)* (from the yellow' ethnic group) and *al-Khadiryeen* (s. *Khadiri*; a man who born from a white mother and black father). The former came to Makka and al-Madian from Jawa and Jakarta and moved to Najd. A few of those are still in Najd having formerly practiced woodwork. Palgrave mentioned the *al-Khadiriyeen* and the Negro (*al-'Abid*) as two categories of inhabitants of the town al-Kharfah in al-'Arid. He stated:

115- Doughty, op. cit., 1936, vol. 1, pp 652-653.

116- Philby, op. cit., 1928, pp 253-254.

The Khodeyreeyah, or mulattos almost equal in number the white population; like their Negro relatives, they often repudiate the Arab shirt. [117]

While, Philby provided a brief account of the social condition of the *al-'Abid* group at al-Hair village, south-east of al-Riyad:

The land belongs in proprietary right exclusively to the tribesmen, settled or nomad without distinction... while the 'Abid, *the slaves, as they are still called, though such an appellation has in its application to them entirely lost its intrinsic significance, are but the tillers of the soil,* kaddadid, *digging and delving and labouring on the lands of others for the tenant's share of the produce.* [118]

The third group is represented by the Yemeni workmen; those who came from al-Yamen and settled in Najd and who used to practice various traditional crafts. The fourth is represented by the workmen who came from both Iraq and Bilad al-Sham (especially Syria); they worked in traditional crafts. In Najd, the workmen of all the above mentioned groups were known as *al-Suna'* (s. *Sani'*) and the master-worker was known as *mu'alim* or *Astad*, and, today this word 'Sani" has become the surname of some families. The fifth group is composed of the workmen who moved, in the early 19th Century from eastern areas of Sa'udi Arabia, including those who used to work in stucco. Finally the sixth group consisted of both gypsy and the slave workmen. The gypsies were represented by both the tribes *al-Salab* and *al-'Awazim*, and practiced smith and silver crafts. The slaves were represented by the black workmen, who were known locally as *al-'Abid* and belonged to African ethnic groups; they worked in stucco, wood and mud. According to the opinions of both al-Marik and al-Dhughabi, all the above groups who came to Najd from the Arabian peninsula or elsewhere, should be considered as Najdian workmen, because they lived and died in Najd.

The opportunity could be taken to acknowledge the artistic gift of Najdian women; the hidden artist who enriched Najdian applied art with various styles of decorative elements. Most of the developed decorative elements that are found in her production, objects, such as woolen rugs transferred throughout time into stucco, wood and mud work. Sometimes, when she is weaving in the loom, she used to shift her position accidentally without any planning to cover the whole breadth of the loom. So, according to the way she moves, various new decorative patterns on the surface of weaving may appear and the old ones may therefore develop into new.

4- The commercial activities flourished in most Najdian settlements during the rule of al-Sa'ud. Palgrave noticed that during his visit to the settlement of al-Hilwah:

The inhabitants are not only actives trader but diligent agriculturists...Hoolah, like many other villages hereabouts, has decidedly improved under Wahhabee rule...And thus a Central and national government, strong enough to maintain order at home, and to draw in the wealth strength of richer lands [has been establishment]. [119]

117- Palgrave, op. cit., vol. 2, p 80.
118- Philby, op. cit.,1922, vol. 2, p 13.
119- Palgrave, op. cit., vol. 1, p 361.

Doughty also observed the developed commercial activities of the people of Najd in general, and in particular the inhabitants of al-Qasim, those from long-distance caravans:

> *The Kusman (the people of al-Qasim, pl. Qusman and s. Qasimi) are prudent and adventurous: there is in them much of the thick, B. Temim blood. Almost a third of the people are caravaners, to foreign provinces, to Medina and Mecca, to Kuweyt, Basra, Baghdad, to the Wahaby country, to J. Shammer. And many of them left home in their youth to seek fortune abroad: where some (we have seen) serve the Ottoman government in arms: they were till lately the Ageyl at Baghdad, Damascus and Medina.* [120]

5-Many European researchers in art and religion provided an interesting description, showing the reaction of art and religion on each other on one hand, and on society on the other. Theoder Waitz stated:

> *Art usually attached itself to religion, by supplying the requisites of worship sensibly to represent the religious ideas...The creation of plastic art and poetry frequently give a type to religious notions.*[121]

Edward B. Tylor indicated the effect of primitive religions (which were often raised from magic art) of less civilized tribes on modern religions:

> *But the usual and suggestive state of things is that nations who believe with the sincerest terror in the reality of the magic art, at the same time cannot shut their eyes to the fact that it more essentially belongs to, and is more thoroughly at home among, races less civilized than themselves. The Malays of the Peninsula, who have adopted Mohammedan religion and civilization, have this idea of the lower tribes of the land, tribes more or less of their own race, but who have remained in their early savage condition.* [122]

Also Tylor noted:

> *...the history, not of tribes or nation, but of the condition of knowledge, religion, art, custom, and the like among them, the task of investigation proves to lie within far more moderate compass.* [123]

Grahame Clark points out the role of art in the service of both magic and religion:

> *Again, art was a vehicle both for magic and religion, and indeed is a main source of information about both these fields of activities.* [124]

While Vernon Blake, J. E. Barton, and Paul S. Winoert all confirm the role of religion on human art. V. Black states:

> *Art was generally attached, at least in part, to the service of religion.* [125]

120- Doughty, op. cit.,vol. 2, p 338.

121- Waitz, op. cit., 1863, p377.

122- Edward B. Tylor, *Primitive Culture*, Researches into the Development of Mythology, Philosophy, Religion, Art and Custom, vol. 1, Bradbury, Evans, and Co., Printers, White Friars, London, 1871, p102.

123- Ibid., p5.

124- Grahame Clark, *Archaeology and society, Reconstructing the Pre-historic Past*, Methuen and Co., Ltd., London, 1939, p 226.

125- Vernon Blake, *Relation in Art*, Being a Suggested Scheme of Art Criticism, Oxford

Likewise, J. E. Barton notes:

> *No phrase has been more popular in art histories than the saying that art, in its flourishing periods, was the handmaid of religion.* [126]

And, finaly Paul S. Winoert states:

> *A widespread need for art was in many instances due to the great diversity of religious beliefs and practices.* [127]

University Press, Printed by Robert Maclehouse and Co. Ltd., London, 1925, p 19.

126. J. E. Barton, Purpose and Admiration, A Study of the Visual Arts, Christophers, London, 1932, p 40.

127. Paul S. Winoert , Primitve Art, Its Traditions and Styles, Oxford University Press, New York, 1962, p 20. For more see Robert Layton, The anthropology of Art, 2nd edition, Cambridge University Press, Cambridge, New York and Sydney, 1991, p 36; and Titus Burckhardt, Sacred Art..., 1967, p 118.

PART 3.

CHAPTER 3.2.

FACTORS THAT HAVE INFLUENCED THE DEVELOPMENT OF TRADITIONAL INTERIOR SPATIAL ORGANIZATION

PREFACE

Developments within the interiors of urban mud-brick buildings in Najd have occurred due to a combination of contributing forces which emerged over the years as a natural result of human needs and requirements within the Najdian environment. These include simple functional needs including social and economic requirements, the impact of religion, the influence of climatic factors and the use of interior space. All of these were very important, and each exercised its own particular influence. However, it is impossible to isolate the specific effect of one factor or another on the nature of early interior architectural improvements though, in this chapter, the effect of these factors on the development of traditional mud-brick interiors in the Najd will be examined in detail.

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3.2.1. THE EFFECT OF CLIMATIC FACTORS

INTRODUCTION

It has become apparent that climatic considerations stand at the forefront of the factors which have influenced the development of traditional interior space arrangments.

The region of Najd lies under the Tropic of Cancer and consists of large desert areas. It is one of the hottest, driest regions of the world, with an average temperature of over 50 F., with sand and dust storms, during the summer season. In comparison with social, religious, economic, cultural and political factors, the Najdian climate emerges as the most influential, for its impact was not only on building design but also on human behaviour. It defines lifestyle. Theoder Waitz notes:

> *The climate condition which so much influence the temperament and character, and the natural products which determine the modes of life...*[1]

Despite the harshness of the weather, the climate of Najd is healthier than that of hot and humid regions, including the West and East areas of Sa'udi Arabia.

INTERIOR PHYSIOLOGICAL COMFORT

The dryness and extreme heat of Najd made conditions uncomfortable outdoors and, on occasion, indoors also. This situation influenced the form of building and design. Balwant Singh Saini provides an interesting description of the effect of air temperature and other factors on human comfort indoors in hot and dry areas:

> *In hot dry conditions a person is comfortable when his body is able to dissipate all heat it receives, including heat lost by evaporation from the body to the surroundings, which is mainly related to the air temperature, mean radiant temperature, humidity and air movement, and to a person's clothing, physical activities and state of health. If some or all of these factors are combined in such a way as to make it difficult for the body to dissipate its heat...The interrelationship of various factors is complex, and to*

1- Waitz, op. cit., 1863, p338.

a degree each affects the other. Movement of air, for instance, reduces the effects of humidity, and radiation may increase the air temperature. [2]

In the Najd region the unbearable solar radiation, daylight glare and dust and sand storms have forced the people to adopt an indoor life. Therefore, the architects tried, as far as possible, to isolate the interior environment from that of the exterior by the development of protective, construction methods and various design innovations in the interior architecture of mud-brick buildings. Most of these urban developments in the mud-brick architecture of Najd are clearly related to the forms of buildings and their structural elements, the interior architectural features and division and organization of interior space.

3.2.1.a. DEVELOPMENT IN THE FORMS OF MUD-BRICK BUILDINGS

Both the organic and inorganic realm are heavily influenced by climate, as is human behaviour.[3] The Najdian climate has evidently shaped the behaviour of the nomads and also the morphology of their tents, materials, forms and types of weaving, and also their interior design, spatial division and orientation. The influence it exerted upon urban man and the form of his buildings was no less pronounced. Since the beginning of the First Sa'udi State, three square forms of mud-brick buildings have appeared in the Najd area, and early in the Second Sa'udi State these forms developed due to numerous changes made in both their interior and exterior elements.

THE FIRST FORM

A movement from a nomadic to an increasingly settled way of life as a result of the effect of environmental factors seems to have begun during the First and Second Sa'udi States. One aspect of this phenomenon was the gradual appearance of more temporary small mud-brick houses in different parts of Najd. From the archaeological evidence, it would appear that these small houses of one or two rooms reflected the morphology of the main form, plan

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2. Balwant Singh Saini, *Building Environiment. An Illustrated Analysis of Problems in Hot Dry Lands*, The Royal Astralian Institute of Architects, Sydney, 1973, p 22.
3. Victor Olgyay, *Design with Climate. Bioclimatic Approach to Architectural Regionalism*, Van Nostrand Reinhold, New York, 1992, pp 84-87.

and interior design of the early developed urban form of Najdian mud-brick buildings and also those, which were found in the early Islamic settlements.

The form of these buildings was either square or rectangle (Fig. 266). Each dwelling consisted of a simple mud-brick built house, standing alone in its own grounds, without a courtyard, but separated by a distance from other buildings. Their mud-brick walls were nearly 40cm. thick, and the roof was constructed from straight horizontal timbers set side by side and given a thin covering of mud (Plate 17), while the floor was constructed of a thin layer of a mud. The interior planning was that of a square, single storey building of one or two rooms. Most of the rooms were formed close to each other and were arranged in linear fashion, while usually being separated from each other by low thin mud-brick walls or wooden partitions. The interior of a room was commonly provided with one wooden door, and a few side apertures for ventilation and daylight; and these openings were usually randomly formed in the higher regions of the building.[4]. The buildings of both al-Ghatghat and al-Artawiya settlements represented an excellent example of this type of early Najdian form. Geoffrey King described the building of al-Ghatghat settlement and provided an excellent comparison:

> *Ghatghat is a small village to the west of al-Riyad....The ruins of Ghatghat consist of a series of diminutive mud-brick chambers scattered across the sands near modern fields. The largest building is a congregational mosque, standing in the midst of the houses. I assume that tents would have provided much of the accommodation for what was one of the largest Ikhwan settlement in Najd. The Ghatghat* hujra *arose from the process of transforming nomads into settlers and creating housing appropriate to their needs during this transition. Ghatghat also recalls a far earlier version of the same process in the seventh century AD when Muslims settled in the* amsar *(early Islamic settlements) of al-Basra, al-Kufa, al-Fustat and the rest. It is interesting to consider to what degree the scattered housing of Ghatghat gives us an idea of what the* amsar *would have been like in their very first years, before they developed into major towns.* [5]

4- Some groups of Najdian nomads built this type of Najdian mud-brick building around oases, forming a kind of scattered settlement. Examples of this form of settlement appeared during the early period of the third Sa'udi State represented by many settlemenst, such as al-Artawiya, Ghatghat, Dahina, and others. These settlements were created by groups of religious men calling themselves *al-Ikhwan* - 'the Brothers'. See philby, op. cit., 1928, pp 296 & 349-356. Today, imitations of this form also appear from time to time close to the borders of some modern concrete settlements. These new settlements have been built, by newly settled nomads, from mud and metal sheets.

5- G King, op. cit.,1998, p 176.

THE SECOND FORM

After a short period of time, some progress had been made in refining the buildings of the first form, and this led to the emergence of the second distinct form, which was also created by the nomads of Najd i.e. those who were named *al-Shawiya* by Ibn Khaldoun.[6] The structure was also simple. It consisted of a mud-brick-built house, standing free in its own ground, with either a small or large exterior open courtyard *hush.* (sometimes with two open courtyards) and was again separated from other buildings (Figs. 267 & 268).

The building was either erected within the courtyard space or adjacent to it. In the second case, the courtyard was always in front of the building, and its only purpose was for retaining the flock of animals during the night. Both the structure and interior of this form were not much different from those of the first form; but the structure was generally provided with two to four small windows, in addition to the high-level small apertures. All of these windows were usually formed in the lower third part of either the North or the south wall at eye-level, overlookinging the courtyard. The purpose of these was to allow viewing, to offer air and daylight, and also to enable the owner to observe his animals during the night. In June 1973, Geoffrey King visited al-Budi'a al-'Ulya, a village to the west of 'Unayza. In this village he saw an example of this type of early Najdian mud-brick houses. He stated:

> *The house and the village were typical of the small rural settlements of Najd...The enclosure and the single-storey rooms were all of mud brick and the enclosure was divided into two separate sections: at the south end that for male visitors, and at the north end the secluded enclosure for women. The southern enclosure for men was entered from the south side through a simple rectangular doorway which gave onto a blank wall, the south wall of the* majlis. *I turned to the right and then to the left and into the open courtyard, this arrangement ensuring privacy from the street in the courtyard. The single-storey* majlis *on the western side of the courtyard had a level roof and an entrance at either end of its east wall. At the north end was an internal doorway into the women's area and which served as a service door. Near to it on the floor was a hearth of the normal Najdi type. The room was furnished only with cushion. In the roof was a trap-door, referred to as a* kashaf. *It was opened by a string and was used to allow smoke to escape. The windows onto the court were closed by* thal *shutters, made in the village by local carpenter.* [7]

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6. The nomads who used to settle during the summer season at the oasis, close to water sources, then later permanently settled.
7. G.King, op. cit., 1998, pp 148 & 149.

THE THIRD FORM

After years of changes and improvements to both exterior and interior architectural elements of both the first and second forms, the third form appeared (Figs. 269 & 270). This form of dwelling became suitable for the Najdian climate, social and economic activities, and is more representative of the typical form than the first and second forms.

This form of building represented the final stage of the development of mud-brick houses in Najd. It was a heavy mud-brick-built house: the mud-brick exterior walls were nearly 1m. thick; and the roof was constructed from heavy wooden beams and branches, covered with thick layers of earth; and the floors were also constructed from thick layers of stone, mud and stucco. A common interior plan for this form was that of a square building of at least two-storeys, with most of the rooms having both small and large windows and doors, arranged around an open, central courtyard with an inner garden, all of which was surrounded by porches and a balcony supported by columns. Some buildings of this form were also surrounded by a large garden and exterior walls. Also, most of the buildings of this form were arranged close to one another and all encircled by a massive wall to create a close clustered area, so that they then had less open area exposed to the sun. For this reason, the buildings of this form were squat and occupied a large area, and were oriented towards indoor life.

3.2.1.b. ANALYSIS OF THE FORMS OF NAJDIAN MUD-BRICK BUILDING

It is a recognized fact that square buildings are best suited to both hot and cool climates, especially when this form of building is on a North-south orientation. Victor Olgyay clarifies the significance of the square form as follows:

> *It is widely believed that a square building has the best characteristics for preserving heat in winter and remaining cool in summer. This conviction is based on the fact that a square building combines the largest practical volume with the smallest outside surface. The principle may be valid for older types of buildings where, because of relatively small window openings, the radiation effect is negligible.*[8]

8. Victor Olgyay, op. cit., p 87.

From the point of view of the geometrical design, the structures of all of these forms are based on a square plan, which was, as mentioned above, the best form for both hot and cold climates. However, in spite of this, the first and second forms mentioned above could both be unsuitable for the Najdian climate. As a result, both later developed quickly, adapting to the local weather.

The first form, including all of its various parts, demonstrated a significant step forward in urban development from the Bedouin tent; as can be seen in the existence of the exterior enclosure of the open courtyard and windows. The second form represented a still higher level of development. However, both were primitive in comparison to the third urban form. None of the structural elements in the first and second forms was completely tailored to suit the local climate, and as such gave inhabitants inadequate protection.

In general, the developments that should be emphasised in all Najdian forms is that of their structures and structural elements, their interior architectural elements, and their spatial division and organization, since they have marked significant, progressive steps in the interior architectural design of the typical mud-brick building of Najd. Little can be said about the first and second forms in the total pattern of development; they were important chiefly for the changes they showed in their structural elements.

The immediate and urgent need for indoor provision of shelter from the extreme, unbearable heat outdoors was, in fact, the factor which forced the new, Bedouin settlers to construct these buildings in a random way, ultimately limiting their options in determining the final form. Other limitations on the choice of form of these early buildings were directly related to the construction process, and stemmed from the need to select a suitable site for the buildings, a suitable thickness for both the walls and roofs, and also suitable sizes, numbers and locations of openings. The construction methods must therefore be adapted to the local climate and this would, in all cases, influence the comfort of the interior.

Both the first and second forms were built in a scattered array which affords little protection, and most of their exterior surfaces, including walls, roofs and openings, would be exposed to solar radiation and the movement of hot air during the day, and to sand and dust storms in the course of both day and

night. Their walls, roofs, floors and openings have all been constructed using primitive methods; the walls and roofs have an inadequate thickness for the prevention of heat transmission from outside surfaces to the inside atmosphere; while the windows and apertures were formed randomly in all faces of the structures, and were of unsuitable form, scale and number. Because of this, these important and necessary features became the main conduits for heat, glare, dust and sand, in addition to providing bad ventilation.

From the study of the symbiotic relationships between the interior and exterior spaces of these three forms of building, it was noted that the first form stands free on its own site without private outdoor spaces; indoor and outdoor spaces were merged together; without any useful climatic and social distance to separate the private, interior spaces and the public, exterior space. The external wall of the building itself was the only architectural feature which separated the indoor and outdoor environment.

The second form showed a development in spatial division and organization, and granted the inhabitants a kind of privacy, because this form was originally created within a private outdoor space where a walled site was built around the indoor private spaces. In this case, the interior private spaces would interlock with the private outdoor space of the courtyard, which insulated the interior spaces from the public outdoor space.[9]

The third form represented the final developmental stage in spatial division and organization and provided complete interior privacy for its occupants. This was achieved through a variety of spatial relationships. A house of this form was designed in two sections (one for men and the other for women), each with an interior, open, centralized courtyard and garden. There was an interrelationship between both the men's and women's sections through the intermediate space of the inner winding corridor, which linked and at the same time separated these two sections. Other interrelationships clearly appeared between the open, interior courtyards of both sections, and their surrounding rooms; and there were obviously also other connections between

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9. Similar buildings to this are still found in some Najdian settlements, for example in al-Majma'a, Shaqra and 'Unayza. See Fig. 283 showing various interior designs of small, developed buildings in Najd. Such buildings also still appear in most of the southern cities of Syria, for instance, Dir al-Zour and al-Hasaki. However, both of the first and second form have existed since the 5th century B.C., in Qurayat al-Fau, one of the early city sites in 'Aliyat Najd.

the indoor private spaces, and the outdoor public spaces, and this link was achieved through the intermediate space of the entrance hall.

However, houses of this form, which were designed with another, surrounding garden, usually showed a different relationship between the indoor, private spaces and the outdoor, public places. In this case, the relationship would be achieved through the medium of the interlocking, private area of the surrounding garden, which originally emerged from indoor, private spaces.

3.2.1.c. INTERIOR DEVELOPMENTS

The interior of the typical mud-brick building has been repeatedly changed and developed, and these developments passed from one process to another until 30 years ago, when the inhabitants moved to new concrete modern buildings. To understand these changes and developments, it is necessary to look at: the interior environment , the interior orientation, the development in interior structural elements, the developments in interior architectural features and space division and organization.

3.2.1.c.1. INTERIOR ENVIRONMENT

The interior architectural environment of the mud-brick building of Najd was very simple, but it evolved throughout history.[10] The inhabitants of Najd learned and understood from earlier generations the nature of the environmental stresses imposed by the region on interior architectural design. In the beginning they were concerned with conserving the characteristics of early interior design. Later, when they began to design their own interior environments, they continued to follow and improve on those early basic interior design principles.

The normal architectural design for the interior of mud-brick buildings emphasised a careful consideration of the site and the climatic influence. This led to their being created with a square form, a flat roof and an open central courtyard, and their interior spaces being divided on a hierarchical

10. Isma'il Abu Shari'a, op. cit., p 16.

basis. Although this type of interior architectural system appears very complex and unfamiliar to the Western eye, it was simple for Najdians and other Arab peoples. The reason for this is that it provided all the necessities of life for the occupants, who were commanded by Islamic Law, customs and traditions to enjoy indoor life and avoid the outdoors. Thus the inhabitants of Najd spent much of their time within the interiors of their homes, mosques and shops. They lived and practised their simple way of life within these interiors. Their actions and reactions affected both the distribution and appearance of the interior architectural elements (according to their necessary socio-economic needs and requirements), which in turn were influenced by climatic factors.

In analysing the typical interior, we found that there was a very strong and intimate interrelationship between the architecture and interior. There was a very clear integration and mutual relevance between them, represented by the relationship between the structural factors and the interior architectural elements. The interior environment of a typical Najdian mud-brick residential building had an independent interior system within its architecture. Each element of its interior architectural features can be seen as an autonomous constituent part within the interior system. Moreover, each constituent part works within its environmental mass as well as within the environmental interior system, and any single human action affecting any constituent part of this system would generate a reaction and would influence others in the system.

The most important elements of the architectural features in a typical mud-brick interior were form, space, openings, scale, surfaces, texture, light and ventilation. These elements represented an interior which emanated originally from mud-brick architecture of each building. These (interior and architecture of each building) worked together within the mass of one constituent part, which, in turn, worked within the larger ecological system of the settlement architecture and planning.

In fact, these elements were the ingredients of both the interior and exterior architecture and any unsuitable action would affect both the architecture and interior. This action would then, in turn, be reflected onto the occupants. However, most interior and exterior changes came through human actions. Their actions depended on the climatic condition, especially the heat and air

movement, which most affected the architecture and interior. Richard I. Crowther shows the importance of the interior as an ecological form of architecture, and what effect changes to the interior have on people:

> *As an ecologic form giver and delineator of architecture, interior design should encompass our physiologic, psychoneural, and behavioral receptivity and responses. Every nuance of the interior affects us. Every environment we attend leaves its imprint upon us. We are changed and modulated by our experiential impressions within the architecture and the attributes and characteristics of its interior. A fusion among interior spatial elements, their visual, tactile, acoustical, and aromatic characteristics, and the architecture is best realized in an interactive harmony.*[11]

3.2.1.c.2. INTERIOR ORIENTATION

As a result of both solar radiation and air movement, a typical residential mud-brick building in Najd was built facing North-south. In fact this act was one of the most important design factors to occur in these buildings, because most of the interior and exterior architectural elements were built following the same orientation, including interior space division and organisation. All these interior developments were to promote the comfort of individuals by shading large parts of the building, creating a good circulation of cool air and minimising the effects of local climatic factors.

Hassen Fathy's report on the mud-brick houses of al-Dir'iyya clarifies the impact of local climatic factors on buildings in general, and their interiors in particular. It clearly shows their role in changing the interiors of the ancient houses of al-Dir'iyya towards North-south. Fathy reports that both the East and West sides of most of al-Dir'iyya's buildings were exposed to hot air and the sun during the summer. Thus heat control on these sides was a difficult and complex matter for the early local people.

The archaeological survey carried out by both Muhammad 'Abd al-Sattar 'Uthman and Kristoff M. Hanki in some Najdian mud-brick cities including Sadus, Shaqra, Aushaqir and al-Majma'a, emphasises the impact of climatic factors on the orientation and organization of buildings in these early Najdian settlements. 'Uthman's report points out that most of the interior architectural features of the buildings in these settlements were orientated North-south, and there was only one major street in each settlement, which was also

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11- Richard I. Crowther, *Ecologic Architecture*, Butterworth Architecture, Boston and London, 1992, p 100.

mostly directed North-south. Most of the small side streets and alleys were closed off completely from both the East and West sides in order to lessen the heat of the sun on the buildings' facades.[12] In fact, the North-south orientation was used not only in mud-brick settlements, but also in all the early Islamic cities in the Middle East. Johen Lund Kriken gives some advice to planners and clarifies the reasons that forced the inhabitants of some of the hot and arid lands in the Middle East to orientate their buildings North-south:

> *Orientation of all structures must be carefully determined. To minimize the effect of hot sun, planners should design all buildings so that their major window exposure faces North and South. The North face of a building has no direct sun exposure; while the South face, though exposed to sunlight, can be controlled in summer months, the angle of the South sun is quite high at midday so the porch, overhang, or similar device will provide an effective protecting screen for the occupied spaces inside.* [13]

In the Najd region, the orientation of mud-brick interiors was usually determined by the degree of heat gain and heat loss, light and ventilation. Because of this, changes in temperature and radiation affected air movement and, together, all these climatic factors led to the interior orientation of Najdian mud-brick buildings towards North-south, and also changed the morphology of its architectural features and space organisation.

However, all these significant architectural changes, whether inside or outside, would not be applied to any Najdian building if it did not follow Islamic Law, respect the rights and privacy of neighbours, and achieve some socio-economic considerations for its occupants. Allan Konya expands on this:

> *The orientation of a building is determined by the climatic factors of wind and solar radiation as well as by the view, noise and requirements of privacy which may, at times override the climate consideration.* [14]

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12. Muhammad 'Abd al-Sattar 'Uthman, 'Taqrir Athari 'an al-Mabani al-Tiniya fi Najd', Unpublished Survey Archaeology Report, Department of Archaeology and Mseums, King Sa'ud University, Riyadh, 1984, p34. With regard the city of Sadus see Marco Albini, op. cit., pp 30-31. See also, William Facey in his study *Back to Earth* which indicates the importance North-South orientation of Najdian buildings , op. cit., p 76.
13. John Lund Kriken, 'Town Planning and Cultural and Climatic Responsivenss in Middle East', Gideon S. Golany, op. cit., pp 97-120.
14. Allan Konya, *Design Primer for Hot Climate*, The Architectural Press Ltd., London, 1980, p 37.

3.2.1.d. DEVELOPMENTS OF INTERIOR STRUCTURAL ELEMENTS

To understand completely the effect of climatic factors on the development of the typical Najdian mud-brick structural form on one hand, and the impact of the resulting structure on the interior architectural features and spatial organization on the other, it is neccessary to study the development of the various main components of the structure itself, including the walls, roof, ceiling and openings.

1- DEVELOPMENT OF WALLS

In Najdian buildings the walls had the following functional purposes: to protect the residents; grant them privacy; and to control the transmission of heat and the incoming flow of daylight and air patterns, sand, dust, and sound towards interior spaces. Architects soon developed their own methods and insights in order to achieve these important functions and then carefully applied them to the buildings.

Solar radiation in the Najd area usually falls on each wall of a building for a part of the day, with only the East and West walls exposed completely to the sun's rays in the absence of any adjacent structure or vegetation. Moreover, the impact of the sun's rays on the walls is less than that received by the roofs. The effect of both solar radiation and hot air movement on the scattered lofty buildings may be very pronounced on all the buildings's surfaces if these buildings are not protected externally.

The traditional architects of Najd, having observed these climatic factors, improved their construction methods and the protection of mud-brick walls by: building with high there walls and shading the areas exposed to the sun as much as possible, especially those areas on both the east and west walls; and by increasing the thickness of both the East and West walls (in general by building the walls with heavy-weight construction). By dividing the available areas of both the elevations and facades into sections, some raised and some sunken; and by creating building openings in both the North and South sides, including the small apertures and openings of doors and windows, further improvements were assured.

Both Hassan Fathy and Muhammad 'Abd al-Sattar 'Uthman's study of the mud-brick buildings of Najd confirm that the heavy-weight construction of walls would have a greater effect in reducing the temperature variations of the interior than a light-weight construction. The heat from the solar radiation that falls on the walls will naturally transmit inwards. However walls which are constructed with heavy materials such as mud, stucco and timber show a slow transmission of heat either inwards or outwards. Therefore, the thick mud-brick walls of traditional buildings helped keep the indoor places cool during the daytime and warm during the night due to the 'heat-by' effect. However, this control upon the extent of the variation in heating and cooling effects outdoors and indoors is dependent on the sun's radiation and air movement and these vary from one season to another.

2- DEVELOPMENT OF ROOFS

The flat roof was a major source of heat gain in the mud-brick buildings of Najd, because it was directly exposed to the hot solar radiation throughout the day. Because the intensive radiation of the sun in the Najd region generates considerable heat it is able to pass through both the surface and structure of the roof and would raise the temperature of the surfaces underneath the roof as well as the atmosphere inside the building. This local climatic problem has already been studied in Sa'udi Arabia by a number of architects who are interested in mud-brick buildings. They include Hassan Fathy, Muhammad 'Abd al-Sattar 'Uthman and G. Akbar. Fathy clarifies the effect of this natural phenomenon on the surfaces of the roofs:

> *If the outdoor air temperature is higher than the indoor temperature, the outer surface of the roof exposed to the sun is heated as it absorbs radiation, and, being in contact with the outside hot air, also is heated by conduction. The roof then transmits this heat to the inner surface, where it raises the temperature of the air in contact with it by conduction. At the same time, it radiates heat that is absorbed by people and objects indoors, thereby affecting thermal comfort.* [15]

The studies of both H. Fathy and M. 'Uthman also show that the temperature under the roof spaces can reach higher than 50C when the outdoor temperature is only 30C. As a result of this the temperature of the ceiling's surface is raised and heat is radiated from it to other surfaces within the

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15. Hassan Fathy, *Natural Energy and Vernacular Architectural. Principles and Examples with Reference to Hot Arid Climates.* The University of Chicago Press of America, Chicago, 1986, p 49.

enclosed space of the dwelling. In such cases, in order to lower the temperature, a suitable circulation of air is needed throughout the interior.[16]

Because of the negative climatic action that unprotected flat roofs had on the interior (often causing physical discomfort to those within) architects from both the 18th and 19th centuries, developed a construction method for protecting them. They aimed to reduce, as far as possible, heat transmission through both the surface and structure of roofs, by using a number of specially-developed architectural solutions. The first was by adding materials of low thermal conductivity to both the surface and structure of the roofs, thus reducing the absorption of solar radiation. The architects cover and some parts of the roof with a layer of stucco and sometimes mixed the final layer of mud with stucco.

Both of these exterior treatments reduced the absorption of the solar radiation falling on the roof's surface as the white colour and soft texture of stucoo were very effective in minimising the temperature of the roof during a hot day. However this technique of using white or light colours on the whole upper surfaces of roofs for reflecting the heat of solar radiation was unknown to the early builders of mud-brick buildings in Najd, although it was well-known in some areas of the Eastern, Western and Southern parts of Sa'udi Arabia. It was also known in other parts of the Islamic World as history testifies.

A second solution was to minimise the inward flow of heat by increasing the thickness of the roof structure itself. Most mud-brick buildings in Najd have been built using this method. It is done by adding either thick layers of mud with branches and palm leaves (or tamarisk leaves) or a layer of flat slabs of stone which were usually placed on the wooden beams of the roof (Plates 255 & 256). The latter type of roofing, which is quite common in the mud-brick architecture of Najd, is referred to by Geoffrey King. He also describes the steps of construction:

> *An interesting feature of the local construction method was the use of flat slabs of stone in roofing, whether in houses or across covered street. This system was apparently once of more common use in the area, with two examples at al-Dir'iya and I have also seen a similar technique employed in Bani Malik, far to the south-west in the Tihama highlands. In Jalajil, ithal [tamarisk] beams were laid first and then the flat*

16. H. Fathy, 'Report on The General Outlines in Executing the First Stage of the Rural Housing Project in the Kingdom of Sa'udi Arabia' (in Arabic), Unpublished research, Riyadh, 1964, p 10. See also Muhammad 'Abd al-Sattar 'Uthman, 'Takrir 'an Mabani Sadus', Unpublished Report, Department of Archaeology and Museums, King Sa'ud University, Riyadh, 1990, p 20.

stones were laid on this foundation. A floor was then constructed on this base with a thatch of matted palm leaves. On this, mud plaster was laid. Despite the great weight, I was assured that the overall structure proved quite satisfactory. [17]

In the early part of the 19th century, architects improved the construction and protection methods for roofs. They achieved this by dividing their spaces into small areas with a number of low mud-brick walls and by surrounding the roofs with high walls and towers. The functional purposes of this system of space division and space arrangement were varied and numerous. These features would provide shade for the surfaces of roofs during the day, helping to cool them and thereby cooling the roof structure and the interior surfaces.

3- DEVELOPMENT OF CEILINGS

Fathy's study of the mud-brick buildings of al-Dir'iyya indicates that high flat ceilings are more effective and more useful in providing cool interiors for the Najd region than lower ceilings. Because of that, he looked to using other types of roofing, instead of the traditional flat roof. These included domed roofs. Unfortunately, this type of roof was not used in Najdian mud-brick architecture. But if it were used in Najdian roofs then, on the one hand, the height of ceilings would increase and, on the other, the convex surfaces of the dome would tend to dissipate the heat from solar radiation received on its surfaces. This, in turn, would decrease the temperature of the interior.[18]

The resistance of the dome to heat transmission and solar radiation would be much greater, if the exterior surfaces of the dome were either painted white or with light colours. It would also be increased if another domed structure were added to make a double dome one inside the other, separated by a cavity. Mahmood Tavassoli demonstrates the effective action and reaction of both single and double dome in cooling spaces and minimising the effect of intensive solar radiation:

The form of the dome allows wind to cool its surface easily, and it also ensures minimal frequency of intensive radiation at any one point. The double dome is an excellent solution to the problem of intense radiation. The space between the inner and the outer dome acts as insulation layer. [19]

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17. King, op. cit.,1998, p 153.
18. H. Fathy, op. cit.,1986, p12; and for the use of this architectural element in Najdian buildings see Osama M. al-Jawhari, 'Hassan Fathi and the Traditional Architecture in Sa'udi Arabia', pp 32-34, in t Albini's book, op. cit.,1990, p 32.
19. Mahmood Tavassoli, 'City Planning in the Hot Dry Climate of Iran', in Golany', op. cit., 1983, p128.

However, in the early 19th century, most of the traditional mud-brick houses and palaces of the wealthy were built with high flat ceilings. This was contrary to some early mud-brick buildings of the 17th and 18th centuries, which were built with low ceilings.

4- DEVELOPMENT OF FLOORS

The effect of floors in Najdian interiors was little different from that of walls, roofs or ceilings. In fact, the floor was very effective, especially in those areas of the floor where the residents were accustomed to sit and sleep. The raw materials used both in foundations and in the finishing of the final layer were very important in preventing the entry of hot winds and heat tranmission, which would tend to crack the floor. The worst cases of this process can be clearly seen in floors of some older Najdian mud-brick buildings.

In the summer a layer of mud laid directly on the ground within rooms was agreeable. This was not the case for the winter. Therefore, local architects improved the foundation methods for the floors in both the open and closed areas within the buildings. Within the rooms, a layer of mud was laid onto a thick layer of stone which had been cemented with mud. It was then finished off with a layer of white stucco. By this process the condition of the room's floors increased the level of physical comfort, during both the summer and winter seasons, the thicker layers insulating against heat and to some extent moisture transfer from under the ground and the layer of white stucco reflecting the radiant energy.

Dark, rough and unshaded surfaces on the floors of courtyards caused a greater absorption of solar radation through its surface during the day. This extreme heat was retained in the course of the day and night, and reflected to other surfaces causing physical discomfort. This climatic problem urged the inhabitants to develop methods of surface-finishing and shading. In poorer buildings, the inhabitants used to cover the foundations of courtyards with a fine layer of a soft mixture of mud. This somewhat helped to reflect the sun's rays and reduced heat absorption. In wealthy houses and palaces a fine layer of mud and stucco mixture was usually used as a finish for the courtyard floors. In addition to this, a fine cover of either small, soft stones or green grass was added to the ground of the gardens in these buildings, which,

again, would reduce the heat gain.[20] Likewise, extended wooden roofs emerged from the porch over the courtyard. Covered passages, known locally as *mamashi masqufa (s. mamsha masquf)* were also used in these buildings in places where they would provide shade to the floors (the roof of the passage was usually made of wood placed on wooden pillars).

5- DEVELOPMENT OF OPENINGS

There were various functional purposes for openings in Najdian mud-brick interiors: the main entrance-doors gave access to the interior, security to the residents and the number of entrances and their sizes determined by the number of people going in and out; the interior entrance doors offered access to the rooms and were designed according to the use of interior spaces of the rooms; the exterior windows and apertures admitted natural daylight and allowed air to enter and spread within the interior; the interior windows offered daylight, air and a limited view from the rooms into the interior open courtyard and garden as well as establishing visual relationships between adjacent interior areas; finally the doorways of the partitions offered access, determined the pattern of movement and created at the same time visible and invisible relationships between adjacent spaces.

In spite of all the above-mentioned advantages, some of these openings created problems. They were the main souces for the admission of heat and glare as well as dust and sand storms. Architects, from the early 19th century, solved some of these architectural problems (i.e. they created means of protection) which were mostly due to unsuitable sizes, forms and locations of both interior and exterior openings.

According to the accounts of older people, the windows were rarely opened outwards during the 17th and early 18th centuries; only a few, small, high side-openings, which were sometimes found in some North and South façades, were opened (Plates 6 &183-186).[21] However, in the beginning of

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20- Most of the interior gardens of early Najdian palaces, especially those belonging to al-Sa'ud Family were well provided with a cover of grass. See Philby, op. cit.,1946, pp 117-118. The grass covering has recently been considered as one of the most effective elements in helping to reduce heat gain in houses. See David Oakley, *Tropical Houses. A Guide to Their Design*, B.T. Batsford Ltd., London, 1961, p 98.

21- For some architectural reasons, perhaps related to the location of buildings or to the behaviour and privacy of neighbours, the inhabitants of these houses opened their apertures and windows to either East or West or both rather than to North or South.

the early 19th century, when problems of security prevailed in the area, architects developed the appearance of the exterior façades. They did this by adding a number of large windows with protective elements (Plates 51, 53, 118-119 & 245). Most of these windows, like the doors and other apertures, were orientated North-south.

As the interior air temperarture and the amount of illumination inside mud-brick buildings depended on the condition of the exterior, the architects were 'in charge' of the amount of light and air entering the buildings. Therefore the traditional architects designed in such a way as to allow a large quantity of cool, clean air and a small amount of daylight to enter the interior space through small exterior openings and large interior ones. Natural ventilation and daylighting methods in some of the early mud-brick buildings from the 17th and 18th centuries caused a degree of discomfort, while those used in the buildings from the early 19th century were planned and developed more carefully. Both cross-ventilation and daylight within the interiors promoted physiological comfort.

In early mud-brick buildings, hot air and glare from the sun often got straight into the interior spaces and caused physical discomfort. As a result of this, architects of the early 19th century developed new construction methods in designing openings. This construction progress could be seen in the varied sizes, forms and locations of openings as well as in the construction solutions which the architects followed. These included adding movable and immovable materials to the openings in order to protect the indoor environment from extreme external conditions.

Fathy's study of Najdian buildings indicates that windows should not exceed the minimal size consistent with the need for good daylighting and ventilation. This fact is clearly apparent in Najdian mud-brick buildings from both 17th and 18th centuries. The inhabitants, during this period, designed their buildings with exterior openings high up on the façades and large interior openings lower down. By the early 19th century, this system had changed somewhat. In this era, as mentioned above, architects were starting to build a large number of windows into the façades. These were constructed in various sizes and forms and were protected by magnificently-decorated wooden shutters (Plates 250 & 251). This system of openings in Najdian buildings increased the amount of daylight and ventilation and afforded better views.

When it was first developed this system was used in large wealthy palaces and houses. Examples include most of the al-Sa'ud palaces such as those at al-Badi'a, al-Murba' and al-Futa in al-Riyadh and the guest's palaces in al-Kharj, as well as the houses of al-Suba'i in Shaqra (Plate 118-119) and al-Suwayan in Burayda.

Within these lofty buildings the architect tended to design the location of both the interior doors and windows in order to optimize the cross-ventilation of the rooms and interior spaces and so help the building cool down quickly after sunset. He also provided the openings with stucco grill-work (Plates 187-188) and thick, decorated wooden shutters protected by carved, wooden fronts (Plate 155) which could be shut during extreme conditions. They were to keep out dry, dusty, sandy air, but could be opened during the night in order to gain some coolness. Openings in large wealthy buildings were also provided with beautiful curtains made of heavy cloth, thus providing thermal comfort to the interior spaces.

The air flow in some of these buildings was also well organised, entering through a large number of small openings, and then directed to pass through the long winding buildings across a planted area. Therefore, on a hot day, the air temperature would have dropped before it reached the inner rooms.

To control the heat and glare of the sunlight, the inhabitants of poorer houses also provided the exterior openings with simple grill-works (louvres) made from stucco or timber (Plates 183-186). In very rare cases, they also supplied these openings with heavy blinds, exterior overhangs or vertical shields beside them. The latter two systems of protection usually appeared as a rising framework above or surrounding the openings (Plates 245-249). The openings to the main doors of wealthy palaces and houses from this era were also provided with an exterior overhanging screen (porch) placed on two or four short columns (Plates 239 & 319-320). This acted as a barrier to storm, sand and dust and helped provide shade.

3.2.1.e.3. DEVELOPMENTS OF INTERIOR ARCHITECTURAL FEATURES

A cool air temperature, an acceptable air circulation and good interior orientation against the sun's movement were all basic and important requirements for interior comfort in mud-brick buildings. The need for physiological comfort indoors encouraged the inhabitants of Najd to develop the physical appearance of the interior architectural features in their mud-brick buildings, which would play an effective role in decreasing the temperature inside and protecting them from the hot Najdian climate. These improvements features include bridge-rooms and bridge-alleyways, courtyards and gardens, porchs, verandas and windcatchers.

1- BRIDGE-ROOMS AND ALLEYWAYS

To reduce the amount of solar radiation, and to shade more of the available spaces, the inhabitants from both the 17th and 18th centuries extended their interior spaces horizontally. They did this not only on their given plots, but also over the neighbouring streets and lanes by building and developing new architectural features such as bridge-rooms (*al-sabatt*) (Plates 62 & 183. no. 9 & 7 in Fig. 52) and open bridge-alleyways (*al-ma'abir*, s. *mi'bar*) (Plate 47). Geoffrey King recorded many examples of this type of Najdian, traditional architectural feature in the cities of Jalajil, al-Dir'iyya and al-Riyad.[22] There were various functional reasons for these architectural features, one of the most important being shade. The inhabitants in these eras tended to leave only small open places, either within their interiors or close to them. The existence of these bridges meant that the small open areas, which still existed, only appeared close to the small district mosques and between one bridge and another. These openings areas were small so as to let in only a small amount of daylight and to reduce glare.

Most of the outdoor spaces in Najdian settlements seem to be completely covered by the roofs of bridge-rooms and alleyways. According to Muhammad 'Abd al-Sattar 'Uthman's description, each early mud-brick settlement looked as if it was a large interior completely covered by high and low flat brown roofs. The cities of Sadus and Huraymila even now represent

22- Geoffrey King, op. cit.,1998, p149. In this book see plate no. 136.

this model of a Najdian mud-brick settlement because of their interior and external space division and organisation.[23]

2- COURTYARDS AND GARDENS

The open centralised courtyard within a typical Najdian mud-brick building originally emerged from the volume of early enclosed mud-brick buildings. Although there was an open courtyard within some early buildings, it was usually a small area offering only a small amount of daylight and air, made without thought for health or local climate (Plates 236). However the interior open centralised courtyards in buildings from both the 18th and early 19th centuries were often large and well-planned with good finishing and shading (Plates 76-82).

The open courtyard became a substantial interior architectural feature for human comfort and the main source of air and daylight for the interior rooms that surrounded it. Architecturally, it served as a vertical duct, at night the courtyard usually obsorbed cool air and allowed it to enter downstairs rooms. While during the day, it carried warm air upwards and allowed cool air to enter through, doors windows and apertures to the adjoining living areas and make them comfortable. Therefore, the inhabitants from this period gave it serious consideration when building their houses. Its location, its pattern of distribution within the building and its positioning in relation to the adjacent space made it, in reality, one of the most vital interior features of Najdian mud-brick buildings. This was not only because of its socio-economic functions, but also because of its important function as a natural breathing space for residents. For that reason it was usually located close to living areas. Najdian interior gardens which usually appeared either within the courtyards (plate 77) or surrounding the buildings themselves also played an effective role in the early mud-brick buildings of Najd. Apart from the aesthetic aspect, giving the interior an attractive appearance, they helped decrease the air temperature, purifying it from the dust and sand, and providing shade and coolness for the interior spaces. Golany shows the significant environmental role of a green area within the interiors:

23- M. 'A. al-Sattar 'Uthman, op. cit.,1991, p 35. See also 'Uthman, op. cit.,1988, p 198.

...The addition of trees within the arid urban space improves ambient air temperature because vegetation absorbs radiation and converts it to chemical energy through the photo synthetic process. [24]

The advantages of interior gardens were, in reality, unlimited. Therefore, both the traditional architects and the inhabitants tended to increase the number of interior gardens in residential buildings as well as developing their form and organisation. In fact, during the early 19th century you could not find any house in the al-Qasim area without an interior garden. Even poorer houses were provided with this significant interior feature.

Concerning the design and orientation of Najdian building in general, and courtyard and plants in particular, William Facey provides an interesting description, showing the advantages and functions of these architectural features in Najdian mud-brick buildings:

The advantagees of building in sun-dried mud can be augmented still further by choice of building plan and orientation, and it is here that the courtyard house proves itself a winner. Quite apart from the social benefits to the Muslim family of a courtyard house, in terms of the privacy and enclosed open-air space that it affords, the atrium plan so characteristic of Najdi building has a number of distinct environmental advantages. First at night the courtyard acts as a sink for the cooler air on the roof, helping the cooling of the downstairs rooms, which have plenty of doors and other apertures opening onto the courtyard. During the day, of cource, the courtyard heats up quickly when the midday sun strikes the courtyard floor. Then the heating of the air within the courtyard creates a chimneyeffect: hot air rises, pulling ari through the rooms from the outside and setting up a breeze. If this air has already passed through an irrigated palm grove on its way into the house, the cooling effect will be increased. [25]

3- PORCHES AND VERANDAS

Both the colonnaded interior porch and the veranda (Plates 69, 76 & 8, no. 21 in Fig. 58 & no. 9 in Fig. 59) have played an effective role in providing human physical comfort. These interior features can be considered as very important sources of shade and for the movement of cool air in mud-brick houses in Najd. Their extended roofs offered shields against both solar radiation and rain and, at the same time, provided shade for the floors. They also protected neighbouring rooms and their openings from extreme heat and the glare of solar radiation.

24- Golany, op. cit., p 11.

25- William Facey, op. cit.,1997, pp74 & 76.

In the hottest hours of both the day and the night, a person could sit and sleep on the floors of these features, enjoy cool breezes and feel physically comfortable. Scientific climatic studies indicate that both these interior features acted as horizontal conduits for the flow of cool air in buildings. It is therefore likely that it was the significant climatic role of these features which led to their increase use in houses and palaces from the 19th century onwards. By increasing their spaces horizontally and surrounding them with low mud-brick walls, whose upper areas were decorated with rows of wonderful geometrical crenellations, these features were gradually improved. All of these elements helped to cool interior spaces by providing shade for the floors and by directing the air flow towards other interior areas (Figs. 63 & 67).

Also, William Facey shows us the significant of porches in Najdian building. He states:

> *The courtyard will always have a shady side, but care is taken, by the addition of a colonnade, to shade the inward-facing walls of the house from the direct light of the sun, so improving the coolness of the rooms.* [26]

4- WIND-CATCHERS

For further natural ventilation, the traditional architects of Najd developed wind-catchers in their buildings (Fig. 271). In the late 18th and 19th centuries, the numbers of these features increased particularly in the houses of the upper classes; indeed, most were built and developed for wealthy houses and palaces from the late 19th. and early 18th. centuries. Wind-catchers provided the interiors with good air circulation This style of interior air circulation was used to help cool both the covered interior spaces and the open ones in Najdian mud-brick buildings during even the hottest day.

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26. William Facey, op. cit., p 76.

3.2.1.f. DEVELOPMENTS IN SPATIAL DIVISION AND ORGANISATION

From the viewpoint of new archaeology spatial division is an essential feature in building. Thus, to define and reconstruct the thoughts, activities and other parts of lifestyle of early Najdian man, we must study and analyse the spatial archaeology of Najdian mud-brick buildings, including spatial function and relationships and spatial division and arrangement. Regarding this, David L. Clarke provides an excellent description defined with the meaning of spatial archaeology:

> *Spatial archaeology might be defined as-the retrieval of information from archaeological spatial relationships and the study of the spatial consequences of former hominid activity patterns within and between features and structures and their articulation within sites, site systems and their environments: the study of the flow and integration of activities within and between structures, sites and resource spaces from the micro to the semi-micro and macro scales of aggregation. Spatial archaeology deals, therefore, with human activities at every scale, the traces and artefacts left by them, the physical infrastructure which accommodated them, the environments that they impinged upon and the interaction between all these aspects. Spatial archaeology deals with a set of elements and relationships.* [27]

Spatial developments in the interior architectural design of mud-brick buildings in the Najd were of two kinds: (a) the arrangement of spaces and (b) their sub-division. The first was concerned with the order, variations in scale and interconnection of spaces within the building; the second with how those spaces might themselves be suitably modified by the introduction of internal division, both high and low. Both were an apt response to a desert climate and this is their real *raison d'être.*

1- SPATIAL ARRANGEMENT

Throughout Najdian buildings, examples will be found of spaces which, together, may be thought hierarchical, i.e. where interconnecting spaces form gradated sequences, such as entrance hall - corridor - reception room or, indeed, within a reception room itself, which might be subdivided into two or three parts, thereby creating another hierarchical sequence. The hierarchy might be to do with levels of privacy; or to do with relative size; or both. Whichever it was, there was an aesthetic benefit as a result of the variation and the way in which spaces appear and then disappear as one moves

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27. David L. Clarke, *Spatial Archaeology*, Acadimic Press, London, New York and San Francisco, 1977, p 9.

through them. John Lund Kriken outlines this system in the interior design of some traditional houses in the Middle East, which belong to hot and arid land:

> *The organization of urban spaces into a hierarchy of manifest and hidden spaces establishes a unique perception of the house. The house can be viewed as a sequence of spatial elements which change from manifest to hidden as viewed from vantage point.* [28]

But there were practical advantages too. The changes in scale between one space and the next, and their interconnection, assisted the flow of air through the building; and the greater the shaded, internal surface area over which the air was forced to flow, the cooler both it and the interior became. Thus the building as a whole was designed to release heat by way of the ventilating air currents.

2- SPATIAL SUB-DIVISION

The micro-climatic effects of spatial arrangement concerning the Najdi house were further enhanced by the ways in which main spaces were themselves divided, both horizontally and vertically. Thus, typically, there were large numbers of partitions, varying both in size and form in all manner of spaces; protective parapets, both high and low, particularly associated with porches and balconies; and on the roof, low dividing walls. All played their part in the slowing, channelling and cooling of air currents. Although the initial admission of air was the function of apertures in external walls, its distribution internally was largely dependent on the geometrical characteristics of the interior itself. In essence, the entire building was conceived as a baffle and, although they all had other functions, its component parts also combined, by virtue of their size, position and thermal mass to regulate the interior temperature.

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28. John Lund Kriken, op. cit., pp from 97-120.

3.2.2. THE IMPORTANCE OF RELIGIOUS FACTORS

INTRODUCTION

Throughout history, religious factors have greatly affected the organisation of both interior and exterior spaces and have played an influential role in human life. They have determined everything including the human individual's life and his relationships with others. In other words they have determined the social and economic system of society. The culture of an Islamic society is regulated by Islamic law which relies on the Holy Qur'an, the traditions of the Prophet (s) and the viewpoints of Muslim jurists and savants. Therefore, Islamic Society has a huge juristic heritage in cultural matters through which it regulates and develops building design and the relationships between people, both in the indoor and outdoor environment. Concerning this Copplestone declares:

> *The nature of Islam is to adhere closely to the original text of the Q'uran. It governs its entire social and domestic life according to the Hadith, the recorded saying of the 7th-century Prophet.* [29]

Basim Hakim expands on the above by stating:

> *The basic principles and guidelines of the building process and its framework were derived from the essence and spirit of Islam. It can safely be asserted that the development of these basic principles and guidelines started in 1 Ah or 622 AD when the Prophet Mohammed settled in Medina* [30]

The Central Mosque (*Jami'*) was the basic starting point for dividing the space of each Najdian mud-brick settlement and planning the framework of roads, houses and centres of trade and industry. It was the principle feature in developing exterior spaces and the core of the settlement's design. The small district mosques also played an influential role in the development and distribution of exterior spaces in the settlement. Close to each of these mosques was a developed open area, where some shops were usually located. People used to meet each other in this area and these shops and hold various social and economic activities. As in early Islamic settlements,

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29. Trewin Copplestone (ed.), *Art in Societies.....* op. cit., 1983, p 133.
30. Besim Selim Hakim, *Arabic-Islamic Cities. Building and Planning Principles*, Kegan Paule International Ltd., London and New York, 1988, p 15.

the rest of the Najdian settlement was typicaly laid-out according to the position of these mosques (Fig. 34).

With few exception, the extension of the building structure was usually within the vertical space. This was so that it did not intrude upon neighbours but did provide privacy for the residents. Developments in all of the interior features followed Islamic law.

The most important considerations in Islamic law which led to many more interior developments were; the order of the veil between males and females, who belong to different families, within the interior; the order of separating the sleeping places of males and females in a family; and finally the order of realising the rights and privacy of neighbours.

3.2.2.a. THE PRINCIPLE OF THE NECESSITY OF THE SCREEN

Islamic law ordered the inhabitants of Najd region to use screens between males and females, and to make sure men and women did not mix (with the exception of family members). This led to a development of the interior spaces as well as of the division of the house into two parts; one devoted to men, and the other to women. Each of these two sections was completely separate from the other (Figs. 56-61).

These measures were according to the simple Islamic principles based on the Holy Qur'an which orders the use of a veil:

> *You believers, never enter homes that are not your own homes until you ask permission and greet the owners of the home, that is better for you, if you were to know. If you do not find anyone inside, never enter till you are permitted to enter, if you were asked to turn back, you have to go back, that is better for you, for Allah knows what you do.*
>
> *Say to the believers that they should lower their gaze and guard their modesty, that will make for greater purity for them, and God is well acquainted with all that they do*[31]

31- The Holy Qur'an, Surat al-Nur, Ayat 27, 28 & 30, al-Madina, 1413 AH.

And also on the traditions of the Prophet Muhammad (s):

> *Beware of talking to women, for never should a woman be left alone with a man that is not a near relation who is prohibited from marrying her like a brother or a father, or her own husband* [32]

Moreover, it was said by Abi Kabsha that:

> *That he (the Prophet) hates to let women look at men, and he hates men to look at women.* [33]

According to Islamic law, both of the men's and women's sections should also be divided up into smaller areas and developed internally. The section for women is divided into three suites (each having several rooms) for the family, one for the children, the other two for wives and for servants. Some of the rooms should be exclusively male and others exclusively female. One or two of them are built as reception rooms for female guests and there should be a bathroom and a kitchen. The men's section is considered as a guest area and, within it, the most important spatial developments appeared. A special place was created within this section to receive guests. There was a reception room (*al-Majlis*) (no. 3 in Fig. 70 & no. 2 in Fig. 72, Figs. 84 & 85) with its annex including a special dining room (*al-Mukalt*), bedrooms and a bathroom with an area for ablution (*wudu*). In fact, all of these architectural features were intentded to separate men from women and to respect the privacy of the family in accordance with Islamic principles.

The men's reception rooms were originally incorporated into buildings as a good way of separating men and women. They represented the *Majalis*, the assembly halls where discussions took place. The Prophet (s) ordered Muslims to sit in the *Majalis* and not in the streets and thus harm women by looking at them outdoors. Therefore, the inhabitants developed *al-Majalis* according to these Islamic orders which also tell us who a person should sit with and where he should sit. The Prophet (s), in this case, noted that the *Majlis* should, preferably, be rectangular, spacious and with defined places for every person; and that the wise men, the *shayukhs* and the elders should sit at the head of the *Majlis*. Younger and less important people should sit in other places, and the host should sit near the fireplace, so that he can serve

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32. Ahmad Bin Hanbal,*Musnad al-Imam Ahmmad*, vol. 2, al-Maktab al-Islami, Dar Sader, Beirut, ND, p 400. See also al-Imam Ibn al-'Arabi al-Maliki,*Sahih al-Turmudhi*, part 10th, Dar al-Kitab al-'Arabi, Beirut, ND, p 131.

33. Bin Hanbal, op. cit., ND, p 400.

everyone present with tea or coffee (Plate 301). The social custom of the separation between men and women in the Najdian area has also affected the development of interior decorating in mud-brick buildings. Islam has made it clear that the house should be extensive and not tiny or narrow, in accordance with the sayings of the Prophet (s).

Following the Islamic commandments, known as *al-hajib* or *al-hajiz* (pl. *hujub* or *hawajiz*) or al-satir (pl. *sawatir*), a screen between men and women was created and developed in the Najdian home. In order to separate women from men and give them more privacy, the architect created a number of screenings to break the line of vision. The first and foremost one was in the main entrance-hall of the house which was usually created in the form of a 'broken' entrance (winding entrance) with either a T or an L shape (Plate 59) (Fig. 277). Sometimes it was found in the form of two separate main doors leading to two separate sections, one on the right for men, the other on the left for women (no. 13 & 26 in Fig. 60, Fig. 273), sometimes in the form of one main door leading to two separate internal parts (Fig. 272). These doors were always placed according to religious orders which demand that the entrance doors of a certain house not face the entrance doors of another. This is to stop the owner of one house seeing into the inside of the house facing him.

The second was an interior screen built in the middle of the building (on both the ground and the first floor) separating the men's and women's sections (Plate 211, no. 12 in Fig. 68, no. 32 in Fig. 58, no. 16 in Fig. 59 & no. in Fig. 60) (Figs. 274 & 275). This was created in the form of a zigzag corridor (with an L or a Z shape) leading to the interior of both sections. These features permit people to pass but do not allow them to see what is inside the women's section. Thus the male visitors cannot see the females of the household. Even the owner of the house cannot see his wife unless he enters through the central zigzag corridor or unless he comes out of the men's door and goes in the direction of the women's door. Thus are the laws of Islam obeyed by the organisation of the building.

Both these features were very important architectural elements within traditional Najdian residential buildings. They played an effective architectural role in dividing and organising the interior spaces of the building. Architecturally, the former one is known as an interlocking area and the latter

as an intermediate area. The size and location of these features, in addition to the open and closed interior courtyards, determined the location and design of the other interior architectural features. During the era of the Second Sa'udi State and the early part of the Third Sa'udi State, these features were developed into all mud-brick buildings, whether from an aesthetic or a practical, architectural aspect.

The third screen that was built in small houses was a wall separating the space of reception room and dining room (*al-Mukalat*) (Plates 203, 205, 208 & 210, no. 30 in Fig. 58 & no. 37 in Fig. 60, Fig. 276). The fourth, which was called *tarma* (pl. *turmat*) (spying-eye) (Plates 62-65 & 326-328, no. 12 in Fig. 61), [34] The fifth was created in the form of high walls surrounding the roofs so as to veil them from sight (Plates 103 &104). Thus people were not able to see the women who sometimes worked or sat on the roofs.

3.2.2.b. THE PRINCIPLE OF SEPARATING THE YOUNG IN SLEEPING PLACES

The young people of the Najd, both boys and girls, slept separately from each other according to Islamic law:

> *teach your children the basic principles of the prayer and tell them to pray when they are seven, and punish them for not doing it when they are ten, and give the boys separate beds from the girls*[35]

Otherwise the girls slept with their mother and the boys with their fathers. Some may think that this principle has not had an effect in developing the interior architectural design but, in reality, it has had a great effect and caused changes in the organisation of interior space and decoration. A broad study is needed in order to ascertain the actual role that it has played. The mere fact of segregation between girls and boys, and the allocation to each of them of certain sleeping places, has resulted in the existence of more architectural functional elements inside the building such as wall recesses, niches, windows, cupboards, and other such things for the children. These have, in turn, influenced the design and organization of other interior places. Wealthy

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34. It was a kind of wooden box, or small half-dome made of mud and stucco or a polygonal decorated shape, and was usually built over the main entrance doors to veil someone inside from someone outside.

35. Abi Dawood, Kitab al-Sala, op. cit.,vol. 1, p 332. Al-Maliki, op. cit., vol. 2, p 259.

families sometimes brought in artists to decorate the surfaces of these features.

The effect on the interior space organisation of separating beds appears, in the houses of al-Rabi'a and al-Tuwayjari found in al-Majma'a town, not just in the rooms but even in the available areas on the roof (Fig. 69). For this important purpose the owner of the house divided the roof space into smaller areas through the use of walls, the height of which does not exceed 1.5m. He then allocated certain areas for the girls, and other ones for the boys as well as a separate one for him and his wife. This style of space organisation, in fact, affected the distribution of the whole of the roof space, which was also used for other functions. It also led to marked changes in the appearance of the roof.

3.2.2.c. RIGHTS AND PRIVACY OF NEIGHBOURS

Both the Holy Qur'an and traditions teach us more about the virtues and importance of privacy in Muslim life. The rights and the privacy of neighbours have a special and important place in Islamic law.[36] Islamic families should take into account the significance of good social relationships with all their neighbours. This kind of relationship governed the social system of Najdian society, especially those social relations with close neighbours. Islamic law urges the Muslim to maintain a good neighbourhood and to deal well with his neighbours. The Prophet (s) in this sense shows the importance of good relationships with neighbours and society in this tradition (hadith):

> *To God, the best friends are those who are good to each other and the best neighbours are those who are good to each other.* [37]
>
> *The angel Gabriel kept exhorting me about the neighbour to the point that I thought he would grant him the right of inheritance.* [38]

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36. In general, both Christian and Muslim families in most Islamic countries are interested in privacy indoors, Lidia Sciama discussed this phenomenon in her research 'The Problem of Privacy in Mediterranean Anthropology', pp 87-111, in the book of Shirley Ardener (ed.), *Women and Space. Ground Rules and Social Mapes*, revised edition, Berg Publishers Ltd., Oxford, UK, 1993.

37. Al-Maliki, op. cit., p230.

38. This Hadith narrated by Isma'il bin Abi 'Uwis via Malik via Yahia bin Sa'id via Abu Baker bin Muhammad via 'Amra via 'A'isha, al-Imam Abi 'Abd Alla Muhammad bin Isma'il al-Bukhari, *Sahih al-Bukhari, Mwsu'at al-Suna lil-Kutub al-Sita wa Sharhuha*, 2nd edition, vol. 7, published by Sha'ban Qaurt and Dar Sahnout, Çagri Yayinlar, Istanbul, 1992, p 78.

Via Aisha, who asked the Prophet: O Messenger of God, I have two neighbours, to which one I should give this present?' The Prophet said: To the one whose door is nearest to yours. [39]

Of happiness: a good wife, a spacious home, a good neighbour, and a good mount.[40]

In the case of the mud-brick buildings of Najd, social relationships with neighbours have had a direct influence on the development of interior planning and design. This progress can be clearly seen through the planning of interior architectural features and spaces as well as by the diversity of design in the interior elements. This process, in fact, resulted from people trying to avoid harming their neighbours or causing them physical discomfort. The guidance for this form of social relationship comes from the verses of the Holy Qur'an and the grand Prophetic traditions in distributing and planning spaces. The Prophet (s) declared:

Do not harm others or yourself, and others should not harm you or themselves. [41]

He is not believer, abi Shourih said who Ya *Alla Messenger?, the Prophet said: He whose neighbour is not safe from his harm and dishonesty, and will not enter Paradise.* [42]

He who believes in God and the *Judgment Day should not hurt his neighbour.* [43]

The meaning of this led inhabitants to try not to harm themselves or their neighbours in any way, for instance, by smoke, bad smells, jarring, or building on the foundations of the neighbours, houses etc. These restrictions on both residents and neighbours led to more developments in the interiors. The need for both physical comfort and good relationships with neighbours led the owners of houses in Najd to carefully plan the location of the baking pit carefully, likewise the kitchens, the bathrooms, the stables and the shops, as these features might create odours offensive to the neighbours (Figs. 51 & 60).

Noise, whether from children, animals or hand-tools such as wheat grinders or other shop tools, was disallowed. As a result of this, the owner usually positioned the children's rooms in the middle of living places and the stable at the far end of the house close to the back door (which led to the back open

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39. This Hadith narrated by Hajaj Ibn Minhal via Shu'aiba via Abu 'Umran via Talha via 'A'isha. See al-Bukhari, op. cit., vol. 7, 1992, p 79.
40. Ahmad Ibn Habban, op. cit., p911.
41. Ibid, p210.
42. This Hadith narrated by 'Asim bin 'Ali via Ibn Dhib via Sa'id Abi Shuraih. See al-Bukhari, op. cit.,1992, p 78.
43. This Hadith narrated by Abu Huraira. See al-Bukhari, op. cit.,1992, p79.

courtyard of the women's section), in a place not adjacent to the neighbour's wall. Women usually used the wheat grinder within the women's open courtyard. Likewise, the district's shops (especially the shops of carpenters and blacksmiths), were often located within the structure of the house in the centre of the street facade, and the wall, which faced across the street, would be blank in order to protect the privacy of those living inside.

The constructional rights of neighbours have also influenced both the design and location of some of the interior architectural features such as niches, wall recesses and beams. One could not build the former two elements in the wall of a neighbour should they cause him harm, unless the neighbour's permission was receved, or if the wall was thick enough to accommodate these elements. The beam of a room could enter the wall of the adjacent neighbour if did not affect the load-bearing structure of the neighbour's building. About this architectural matter, the Prophet (s) declared

> *A neighbour should not forbid his neighbour to insert wooden beams in his wall.* [44]

Because they were able to separate the parts of the house so easily, the inhabitants of the Najd spent much time in the inside of their house where the family could live in privacy. This was why the inside of the house had to be comfortable and satisfy all needs. This is also why the inside space is divided according to the demands of religion.

Respect for one's neighbour's privacy is considered one of the most important social phenomena found in Najdian society. It also helped in improving and developing the form of both the architecture and the interior. Privacy in Najdian buildings determined and controlled the social relationships of inhabitants. Everyone regarded it as the core of the social system, as it is one of the basic elements of Islamic law. Both the Holy Qur'an and the Traditions teach the virtues and importance of privacy in Muslim life. Besim Hakim shows the important of this issue:

> *The family is the main concern in visual privacy, particularly the importance of protecting female members from the eyes of male strangers. Overlooking is considered harmful and is therefore an offence in Muslim law, and must be avoided.*[45]

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44. This Hadith narrated by Abu Huraira. See al-Bukhari, op. cit., vol. 3., ND, p 458.
45. Besim Hakim, op. cit., p36.

The shape of the mud-brick buildings of Najd gave both men and women full privacy, the freedom to do whatever they wanted within their own houses. They did this in such a way as to not harm others or be harmed themselves. Privacy in Najd, meant avoiding spying on their neighbours in order to discover the identity and working habits of the residents. It also prohibited eavesdropping. These bad habits were not allowed in early Islamic societies or in Najdian society. The Prophet (s) describes the kind of harm that these bad habits cause as well as the punishments for them:

> *To those who have accepted Islam orally but are not yet believers at heart: do not hurt Muslims, and do not pursue their faults, because he who pursues the faults of his Muslim brother, then his faults will be pursued by God, and if God wants to expose somebody's faults, He will do so even if the person in his house.* [46]
>
> *If a man pushes aside a curtain and looks inside without permission, he has then reached a point which he is not allowed to reach.* [47]
>
> *On the Day of Resurrection lead will be poured in the ears of anyone who eavesdrops on others who dislike him.* [48]

The privacy of neighbours in Najdian buildings was achieved by three methods of construction : Firstly by the choice of a suitable size and location for the openings and controlling the way in which these openings were operated; secondly by the existence of screens; thirdly by choosing acceptable locations for staircases and tall structure such as minarets of mosques.

The ground floor structures of those mud-brick buildings from the 17th and 18th centuries were usually built without external windows. They had only a few rows of high apertures situated in either the North or the South side. Therefore, family members could not be seen from the outside. However, the ground floors of some of the buildings from the early 19th century were built with windows overlooking the outside. But most of these windows were placed above the head level of a standing man so that, even if he were inside or outside, he could not see through. However, these windows would not have been allowed in Najdian buildings if they opened in the lower part of a wall. The windows of upper floors were also built to be above the head level of a standing man, and every window which overlooked the streets usually

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46- This Hadith narrated by Abi Shuraih. See al-Bukhari, op. cit.,vol. 8, 1992, p 79.

47- This Hadith narrated by both Anas bin Malik and Abu Huraira. See al-Maliki, op. cit., vol. 9, p 250.

48- This Hadith narrated by Abu Huraira. See al-Bukhari, op. cit., vol. 8, ND, p 361. See also A. H. Siddiqi, op. cit., p 1180.

opened inward with shutters to avoid people looking in. Because these windows were high on the wall the occupants used cords to open and close the shutters.

The roofs of buildings were always surrounded by high walls, and those which faced the roofs and interiors of neighbours were designed without windows. This type of structural requirement for high walls without openings screened the person on the roof from his neighbours below. This is in conformity with the orders of the Prophet (s) that forbade standing, sitting or sleeping on roofs that are not surrounded by walls:

> *Via Jabir said that the Prophet prohibited a person from sleeping on an unscreened roof or terrace.* [49]

The structures of the stairways leading to the roofs in Najdian mud-brick buildings were also punctured with a few small apertures formed above the head level of a standing man and placed so as not to face the interior spaces of neighbours. They were built in such a way that when a person goes on to the roof, he can do so without looking directly towards them.

The tapering minarets of mosques were often built without windows and at a distance from neighbouring houses. These features were usually lit by a few apertures created to be above the head level of a standing man (Plates 29-31). Therefore, the man calling the prayer (*al-Mu'dhn*), when climbing the minaret of a mosque, could not see the interiors of nearby houses. However if, for some reason, there were houses close to the minaret and there was a possibility that this type of high minaret might allow the *Mu'dhn* to see directly into the houses, then the inhabitants would usually ask the *shaykh* to build a short minaret, one which was lower than their buildings' roofs (Plates 32 & 33).

All of these previous features were used in order to submit to Islamic law, not to harm the neighbour and to help the inhabitants of a house protect their privacy and honour as well as the honour of their neighbour. However, Islamic law which led to these regulations directly influenced the interior space and its features, its size and organisation. As a result, the owner cared greatly for the inside and often neglected the outside. Because of this, most houses

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49. Al-Termedhi notes that the design implication is that all roofs and terraces used for sleeping should be screened. See Besim Hakim, op. cit., 1986, p20-151.

were built with unremarkable façades but with great artistry revealed in the distribution of the space and the decoration of the elevations inside.

3.2.3. THE EFFECT OF HUMAN BEHAVIOUR

A place, whether indoors or outdoors, is very much affected by human behaviour which, in turn, is influenced by the nature of that place, its cultural materials, and the actions and reactions of other people in which he lives. Andrew Baum states:

> *...Indeed, the tremendous variations in distancing behaviours and reactions that occur across different cultures, times, situations, personalities...A person's experiences and his behaviours are shaped by those with whom he is intimately involved. If the social milieu in which he lives holds together, he holds together; if it breaks down, he breaks down. This means that we ought to interested in how communities and neighbourhoods influence individuals access to people and the character of their organic, significant social relations.* [50]

From the point of view of archaeology, the study of utilised space indicates tentatively a place's function and its occupants situations and status.[51] However, the way a person deals with space is controlled by him and the elements which affected him. David L. Clarke says:

> *The behaviour involved producse a classification of space.* [52]

In Najdian mud-brick buildings, the interior spaces existed as a natural result of the different needs within the social and economic system of society and were organised by several other internal and external factors. The behaviour of early Najdians can be seen by making a study of space and the main factors that led to the appearance of its main fixed divisions; for example, in the social system, a family in Najd followed Islamic law. The children did not enter their parents' bedroom and they always slept separately from each other, there was no mixing between the sexes. The males slept in one room, and the females in the other. Male strangers were usually hidden from the females via screens within another part of the building.

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50. Andrew Baum (ed.), *Advances in Environmental Psychology. The Urban Environment*, vol. 1, Lawrence Erlbaum Associates, Publishers Hillsdale, New Jersey, 1978, pp 130 & 140.
51. David L. Clarke, op. cit., p 48.
52. Ibid., p49.

In order to study the interior space divisions and to understand the effect of Najdian behaviour in terms of developing space, knowing the signs that characterised earlier generations, the spaces that each person used and kept his special objects: for example, his boxes of money and jewellery, his furnishings and his tools of his crafts, becomes crucial the need to know how these are distributed within the space, what their measurements are, what type of objects they are, how many there are and what they are made of; the need to know the significe of their positions in comparison with the places of other interior architectural features as well as being aware of the relationships between a person and his manufacturing tools; the need to be cognisant of the social and economic relationships of a person with his family members and other people including his neighbours; must be addressed. All these features and measures reveal the changing behaviour of the individual.

Similarly, human behaviour is revealed by study of human space and remains of cultural materials within the framework of society in definitive historical contexts. For example, the distribution of space through the objects and tools left behind may inform us about the identity of the persons who used them, their mental capacities and the extent of sociability and general behaviour: in terms of prude, ostentation, intelligence, power, etc. However, in some cases, each cultural material within a space may indicate different meanings but, will still reveal something of human behaviour. Ian Hodder explains this point:

> *It became clear that material culture was often not a direct reflection of human behaviour, rather it was a transformation of that behaviour...Artifacts might mean different things in these different contexts, but the meanings from one realm might be related, in distorted way, to the meaning in other realms.* [53]

He continues:

> *In particular, town and house architecture clearly channels and acts upon later behaviour. On the other hand, material culture of itself do anything: it does 'act back' on society it must do so within the frameworks of meaning within the society itself...The relationship between behaviour and martial culture depends on the actions of individuals within particular cultural historical contexts.*[54]

The decoration of space is an expression of mental needs, it reveals the artistic tastes (artistic behaviours) of both owner and artist, indeed, it does not

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53. Ian Hodder, *Reading the Past. Current Approach to Interpretation in Archaeology*, 2nd edition, Cambridge University Press, 1991, pp 2 & 5.
54. Ibid., pp 8 & 13.

so differ from the other physical needs of man. According to Rudolf Arnhein, the difference between mental and physical needs is "less self-evident" than it might appear. All physical requirements of man express themselves as mental needs.[55]

The varied forms of Najdian decoration in the space and space arrangement reveal many aspects of human behaviour. For instance, a study of the interior of al-Tuwayjari house in al-Majma'a reveals the domestic pattern of the al-Tuwayjari family. A study of the reception room (*majlis*) of a prince demonstrates his importance and status. This can be observed in the kind and decoration of covers he uses for seat furnishings (such as mattresses and cushions); by the form and size of his carpets and rugs; by the number of teapots and coffee jugs; by the size and decoration of both the fireplace and coal brazier and the materials they are both made of (iron, copper, etc.); by the type of decorations on the walls and items of woodwork such as doors, windows and beams as well as the kind of materials used to make them; by the size of the storage area in the *majlis* (especially the storage of palm-dates) and number of boxes there; by the number of niches, recess-walls and wall-cupboards and the style, form and finishing of their decorations; and finally by a study of the distances between all these remains. In this setting, David L. Clarke states:

> *...archaeological remains are spatially patterned as the result of the patterned behaviour of the members of an extinct society, thus the spatial structure is potentially informative about the way the society organized itself.* [56]

By relying on the physical appearance of these interior features, researchers today can study the habits and lifestyle of the owner, for example, Prince Sultan Bin Saliman Bin 'Abd al-'Aziz, through an analysis of the interior space division, space arrangements and decoration of his new mud-brick house at al-'Udhaibatt farm (located on Wadi Hanifah south of al-Dir'iyya). The interior architectural design of this house shows the impact Prince Sultan's behaviour, habits and lifestyle had in developing the interior architectural features and decoration. Similarly, through an examination of this house, the effect the designer's work in developing traditional mud-brick buildings can be noted.[57]

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55. Rudolf Arnhein, *The Dynamic of Architectural form*, University of California Prss, Berkely, Los Angeles, London, 1977, p 248.
56. David L. Clarke, op. cit.,1977, p 18.
57. The traditional designer and builder of this house was Abdulla al-Hamad. For more information on the magnificant new traditional inspired interior architecture design and decoration see William Facey, op. cit., pp 37-120.

The impact of variation in spatial density (space size and physical appearance) on human behaviour was also a very important issue in early Najdian mud-brick buildings:[58] in other words, the language of vision and its impact on human self, which is self-evident in some Najdian interiors.[59] For instance, spacious houses, like the houses of al-Suba'i in Shaqra, al-Tuwayjari in both al-Majma'a and Burayda[60] al-Suwayan in 'Unayza, and palaces such as those of the al-Sa'ud family in al-Riyad al-Kharj, all had a psychological effect on the behaviour of the residents and those who saw them. The language of vision in the interiors of some Najdian buildings played an influential, communication role when connected together the mind, eye and space. The occupants of Najdian interiors enjoyed being generous and entertaining guests while the guests found the place comfortable and in turm enjoyed themselves. The spaciousness of the house and the great number of rooms also allowed the inhabitants to feel at ease and develop good manners. This attitude has prevailed until the present day. On the other hand, someone living in a small house with few rooms may feel like a prisoner and become irritable and rude. For this reason Muslims have always wanted their places of worship to be wide and expansive, with rich decoration and high domed ceilings to give the place the impression of a yard and garden (*al-hush wa al-hadiqa*) and inspire comfort and silence.

Another example of this is the al-Dir'iyya settlement in the north of al-Riyad city, whose culture has been studied by both Hassan Fathy and Muhammd 'Abd al-Sattar 'Uthman, by examining the social and economic life of the early people; their methods of building construction, and the underlying reasons and causes of decay. These studies show some factors that affected the nature of both internal and external spatial arrangements of this settlement while illustrating the behaviour of the early people of Najd, in general, and that of the people of al-Dir'iyya communities in particular.

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58. Baum steadied the effect of the variations in spatial density on the behaviour of humans, especially the size of rooms. See Reuben M. Baron,'Personal Control as Mediator of Crowding', Andrew Baum, op. cit., pp 145-190.

59. Gyorgy Kepes shows the importance of vision language. He states: "*The language of vision, optical communication, is one of the strongest potential means both to reunite man and his knowledge and to reform man into an integrated being...Visual communication is universal and international...it can interpret the new understanding of the physical world and social events*". See Kepes, *Language of Vision*, Paul Theobald and Company, Chicago, 1969, p 13.

60. See the rich plaster and wood decoration of the house al-Tuwayjari at Burayda in plates 128-131 in Geoffrey King, op. cit., 19998, which in fact reveals the artistic mentality of the owner and artistic ability of the artist.

3.2.4. THE EFFECT OF SOCIAL AND ECONOMIC ACTIVITIES

INTRODUCTION

Human social activities are demonstrated in Najd by both internal and external relationships. These relationships, whether they take place indoors or outdoor, have played an influential role in developing architecture and interior architectural design. Relationships originally start with the family structure, showing the individual's domestic and social behaviour with others, including his relationships with his family members and his relationships with his neighbours. Therefore, both the internal and external social relationships of a certain family demonstrate the culture of that family. On the other hand the social relationships of families when they get together reveal the culture of that particular society.[61]

The society of Najd originated from different tribes. Each tribe had its own habits and traditions, and the heads *Shuyukhs* of each tribe usually divided the land available to him into smaller areas and offered them to the families within his tribe. Each family planned and divided its own land according to traditions and its interpretation of Islamic law.

As a result, the social relationships of a family are shown by the way it divides up its space to suit its own needs, by what connection these areas have with each another, and by the way in which these spaces consider both the social and constructional aspects. For example, the spatial connection between the areas on the ground floor and those of the upper floor, or that connecting inside with outside. All these inquiries lead the investigator to an analysis of the effect of human social relationships on the development of interior architectural design.

61- The culture of society usually presented by the social systems include the language, religion, politics and morality and also family economy, ethics, kinship, habits and tradition. See Wasfy, 'Atif, *al-Enthroubologya al-Thaqafiya*, Dar al-Nahdah al-'Arabiyat lil-Tiba'ah wa al-Nashir, Beirut, 1971, p 28.

3.2.4.a. INTERNAL SOCIAL RELATIONSHIPS

The Najdian man usually married two, three or four women and they either lived together in one house, where each wife had her own room (*Rawshan*) or in separate houses.[62] In Najd, the economic situation of the husband generally determined the form of the wives' residence. However, the final decision usually relied on the state of the relationships between the wives. Therefore, if they got on well with each other they often prefered to live together, even if their husband was wealthy. The impact of the social interrelationships between the husband and his wives on the one hand, and the relationships between the wives themselves on the other, led to more developments in the interiors of mud-brick buildings of Najd.

The force of the close and secure inter-social relationship between a wife and her husband, whether she lived within a room or in a separate house, strongly affected the interior architectural design. This social relationship was affected by degrees of jealousy between the wives. This sometimes came because of their personal beauty and sometimes because of the beauty of their interior design. Likewise, there was a rivalry between the wives in making their houses beautiful for their husbands and visitors. This has had a tremendous influence on the form of buildings in general, and interiors in particular. Moreover, the relationships between brothers, and between married brothers and their original family, also played an important role in developing interior architectural features.

1- THE CUSTOM OF RIVALRY AND PRIDE

Architecture and art throughout the ages, have been closely connected with need on the one hand, and luxury on the other and this could lead to rivalry and pride. In spite of the simplicity of the houses and palaces of the inhabitants of Najd in comparison with other houses and palaces found in both the West and South of Sa'udi Arabia, some husbands, urged on by their wives, were prone to rivalry and pride in their architecture and interior

62. Islamic law allows the Muslim man to marry not merely one woman only, but four at the same time, no more than that. However, he can marry again if he divorces one of his four wives. But the justness between the wives is the most important issue in Islamic law, if, for example, a man can not create a kind of justness between his wives, in this case, it is better for him to marry only one wife.

architectural design. They therefore might build large residences with many storeys and with highly decorated and magnificently furnished rooms.

A person examining a building from the outside might not anticipate the beauty that lies inside. Some inhabitants plastered the walls with decorated stucco on most of the interior elevations of rooms. They demonstrated their wealth and taste with wall-recesses, and wall-cupboards decorated in various ways; by the width of their reception-rooms, and the decorated trims or frames of projecting stucco in them; with deep and projecting decorations; with fine wooden works, and with various other ornamental architectural elements.

Large decorated interiors became a familiar features in Najd, especially since many of the inhabitants were merchants whose trading ventures reached Syria, Iraq and Egypt. Through contact with the people of these countries they became familiar with their buildings, including internal decoration space division and organization. Then they chose, for their own buildings, unique works of art and space arrangements.

When referring to Islamic law (Shari'a) we find warnings against this custom, because the Prophet (s) disliked high buildings constructed for glory, saying:

> *Do not built unnecessary building, otherwise will be reflected negatively on your life*[63]

Ibn Khaldoun condemned exaggeration in building and excessive spending on it and its results, mentioning two opinions from the second Rightly Gaided Caliph 'Umar Ibn al-Khattab, who said:

> *Never build high buildings and exaggerate them, but stick to the tradition." He also said: "Never build building that exceeds the value which it is built for." They asked him, "What is its value ?" He said, "What is not necessary and cost you too much and distract you from the functional purpose of this building.* [64]

Despite the many negative consequences of this custom, it played a part in developing the interior structural features and decorative arts in the Najd region. Buildings that remain in Najd region, such as the houses of al-Suba'i at Shaqra town and al-Tuwayjari in the town of al-Majma'a, were somewhat organized well internally and provided with the most beautiful ornaments.

63- Abi Dawood, op. cit., p 403.

64- Ibn Khaldoun, *al-Muqadima...*, op. cit., p 11. See also H. Mu'nis, op. cit., p 34.

2- SOCIAL RELATIONSHIPS BETWEEN BROTHERS

The relationships between siblings in early Najdian families were also based on Islamic law. Each sibling respected the other and observed his privacy. The younger always esteemed the older, and they all revered their father and mother. As mentioned above, this type of internal relationship between brothers led to more interior architectural developments in buildings. The expansion of a family often led to some of its members leaving the house and establishing themselves elsewhere. This increase in available space suited the new size of the family.[65] This phenomenon was common in most Najdian families: when a son got married, he built a new house; his brother would do the same. However, the social relations between them and their father would continue and the two brothers would share a local site, developing areas of mutual usage such as a bridge-room, a bridge-alleyway or a winding corridor between their two houses. These sometimes existed between the houses of the brothers and the house of the father as well. These intermediate and interlocking areas were jointly developed and shared between them.[66]

3.2.4.b. EXTERNAL SOCIAL RELATIONSHIPS

Theoder Waitz states:

> *The social relations beyond the family extend chiefly to patriarchal hospitality, which diminishes and disappears with the progress of civilization. The original motive for hospitality is the desire for society, curiosity, and the sympathy for the helpless, derived from bitter experience.* [67]

The Najdian, whether man or woman, was a sociable person. He was marked by high bred social characteristics, which distinguished the society of Najd from other societies in Sa'udi Arabia. Throughout history, the Najdian has been well-known for his peacefulness, compassion and hospitality. The last was offered to all his guests even if they were strangers.

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65. Clark, op. cit., p 54.
66. The bridge-room as an architectural type is also found in the architecture of Aden and in the buildings south of Sa'udi Arabia. See Walter E. Dostal, *Ethnographic Atlas of Asir*, Academic Der Wissensecheften Wien, 1983, p 87.
67. Wiaitz, op. cit., 1863, p350.

There were daily evening meetings of men (of various families) around the fireplaces in the guest-rooms *majalis and rawashin*, and in open sitting places either in the courtyards *al-fina'at* or *al-ahwash* (s. *al-fina*, *al-hush*) close to the gardens or on the roofs *al-sutuh* (s. *al-satih*). Here they discussed the social, agricultural, economic and political considerations of their settlements and these meetings indicated the higher level of the social relationships between families. The daily encounters between men in mosques, district shops, markets and the fields represented the other face of the social relationships among Najdian males.

Daily meetings between the women living in a neighbourhood occurred continuously. They met in closed-off sitting and reception areas *al-Misbah* and *al-Kuba*, and talked, drank tea and coffee, sewed clothes, made furnishings, spun wool and discussed their own special matters. Women gathered for their daily work either in the open courtyards around looms, weaving rugs, carpets, cushions, pillows, saddlebags and other necessary materials, or in the open backyard for animals, milking and making cream, butter and fat. Both these phenomena represent important parts of the social relationships between Najdian females.

However, the higher level of social relationships in Najdian society became apparent during large family assemblies. This occurred at significant public occasions such as: the wedding ceremony; the evening party; the circumcision party; the farewell party of traders on long trips and others. These occasions often gathered all the families of the settlement together, the females in the women's section and the males in the men's section. In fact, the influence of a family's relationships between men and women had a very profound and unlimited effect on the interior spatial development of Najdian mud-brick buildings. This was because these social gatherings led to prolonged sitting indoors. Therefore, these encounters obliged occupants to increase the size of their rooms, to arrange them well and to decorate with various styles of elements and motifs fit for these varied social gatherings. As the years passed they developed these interior features so that they were suitable for guests as well.

The inhabitants of Najd became interested in developing the physical appearance of their interior architectural features, including the reception and sitting rooms, the open central courtyards and backyard and the roofs. These

areas were considered the most important interior parts of the Najdian mud-brick building. The most important developments that appeared in these features were the development in space division and organization; the increase in size and number of the necessary interior architectural features and their elements; the development in decoration and provision of good furnishings.

3.2.4.c. ECONOMIC ACTIVITIES

Traditional male and female crafts, whether within houses or shops, were the most important economic activities in mud-brick buildings. These crafts played an influential role on the development and planning of interior spaces in these mud-brick buildings. Various kind of traditional crafts appeared in both the houses of the poor and wealthy. The tools and materials that have been left behind within the interiors of these buildings indicate the high level of economic activities. The remains of these crafts showed that there was a strong connection between space and the tools and other objects artisans used in crafts. Each item of Najdian crafts has different value and position in relation to space, and also different effects on the other objects, and all in turn led to the development of interior space. In this sense, Shirley Ardener notes:

> *Items take their value, not only in relation to the value of other objects, and the absence of other object (scarcity) but also from the place in relation to them...Objects affected by the place in space of other objects.* [68]

From the point view of the archaeology, tools, raw materials and objects are very important and significant features in the archaeological context. All show the level and system of socio-economic culture of group in the past and the history of artifacts. Lewis R. Binford states:

> *Every item has its history within a sociocultural system - its phases of procurement of raw material, manufacture, use, and final discarding. There is every reason to expect that the empirical properties of artifacts and their arrangement in the archaeological record will exhibit attributes which can inform on different phases of artifact's life history...This means that data relevant to most, if not all, the components of past sociocultural system are preserved in the archaeological record.* [69]

68- Shirley Ardener, op. cit, pp 15 & 20.

69- Lewis R. Binford, *An Archaeologcal Perspective*, Seminar Press Inc., New York and London, 1972, pp 94 & 95.

1- MEN'S INDOOR ACTIVITIES

The impact of traditional crafts on the development of interior places obviously needs further clarification. The areas indoors were arranged and organized according to the type of crafts practised by the occupant. The size, form and numbers of tools needed for each craft led the workmen to create suitable places for these and for themselves. They also put aside areas for keeping and preparing the primary materials as well as for storing their products. The more tools and products within a building the more need for interior spaces. Examples of these tools were the wooden wheels and boxes of pottery workshops, the wool, wooden loom and other small pieces of wood used in weaving and used in other handicrafts. These tools really influenced the developing and increasing of the interior spaces of some mud-brick buildings.

Carpentry (*nijara*) was one of the most important traditional crafts which influenced the interior spaces of small mud-brick houses in the Najd. The conventional carpenter (*najar*) usually used part of his house as a workshop. He could reach the courtyard of his house through a small door situated between the shop and the house. He could also communicate with the outside world and with his customers through a bigger door opening on to the street. He sold wooden products such as the shutters of windows and doors, bird cages, mirror frames, wooden boxes for keeping bread and pastry, and beams which were used in constructing roofs. To make all these objects and materials the carpenter used many tools such as chisels, saws, nails, vices and others. All of these tools needed special areas, in addition to the space needed for storing the wood. Other areas were needed for keeping the products until they were taken away by the customers. All these areas fulfilled the purpose they were designed for and led directly to the development of some of the living areas in the house.

The craft of leather tanning (*dibagha*) also caused the owner to arrange the space necessary for this type of work. Therefore, he (*dabagh*) would set up a large open courtyard within his house and provide it with good ventilation, which was essential for the preparation and salting (curing) of leather. He could also carefully organize the spaces on his roof for drying and use other semi-covered areas. The manufacturing of leather shoes (*sina'it al-ahdhiya al-jildiya*) was a handicraft which was complementary with tanning leather.

The shoemakers (*al-hadha'*) usually made sandals known locally as *kilsha* or *ni'al* (s. *klash*). This particular craft often needed more than one area and, because of that, it had a large influence on the development of the interior spaces of artisans' houses. The requirement was for a separate shop plus a dedicated inner area in the courtyard *al-haoush* and also in some of the other rooms. The interior space of the shop was usually divided into smaller parts according to the number of people who ran the business (*suna'*) and according to the production stages each one had to carry out. One had to pierce the leather and cut it and so he occupied a special area: another had to soak the leather in water and this usually needed a larger area for the water tanks; other areas were allocated for the gathering of the product and another for the owner of the shop, who commonly used to shape and decorate the leather on the upper parts of the sandals and then attach them to the soles. There was also a certain part of the shop where the customers' feet were measured.

Grocers (*al-baqalin* or *al-samaneen*, s. *baql* or *saman*) usually used small parts inside their houses as shops. They also used some parts of their houses as storage areas, and the areas in front of their shops (*basta*) for displaying their products. The areas on the sides of the shop were used for piling sacks of grain, different utensils and the equipment for coffee.

The stucco craft (*al-jisasa*) may be the most important traditional handicraft to appear in each Najdian mud-brick settlement. The stucco workshops (*al-majasat*, s. *majasa*) were usually built within small houses located at a distance from residential districts, close to the edge of the settlement. The stucco craftsmen (*al-jasaseen*, s. *al-jasas*) usually needed a lot of space. Therefore, they occupied most of the interior rooms of their houses, where they used to prepare the stucco and store it. Inside the rooms stucco kilns were built. These were mud constructions in which the materials used to create stucco were burnt. Other rooms were designed as storage areas for the stucco.

2- WOMEN'S INDOOR ACTIVITIES

In the absence of wood, the making of *al-Jala* in the backyard of the women's section was one of the daily female activities taking place in poorer houses in

Najdi mud-brick settlements. The housewife was accustomed to make discs of animal dung, called in Syria *al-Jala*. These discs were usually stacked in a specific place and dried in the sun. Later on, the discs were burned by the women in a kiln or in a fireplace under an iron sheet *al-Saj* for the baking of bread. This required a lot of work and preparation; first the woman had to clean the grain, (either wheat or corn) then grind it on a handmill, knead it into pastry in a special large tray and finally place it in a wooden box to leaven. These preparatory stages require large areas, starting from the kitchen and ending in the *Hush*. Sometimes all the women of the neighbourhood gathered to bake bread, and the space had to accommodate both them and their equipment. Similar traditional socio-economic activities are still practised in some Gulf countries such as al-Kuwait, where the women used to sit together cooking and making bread in the courtyard. Jennifer M. Scarce states:

> *Cooking occupied the rest of the morning, taking a long time in the absence of labour-saving devices; rice for example had to be picked over and cleaned several times, bread had to be baked fresh for every meal. All these processes were treated as sociable activities which the women did in groups, interrupted by breaks for drinking glasses of sweet tea which they shared with neighbours who dropped in for a visit..*[70]

Wives who lived together in the same house generally worked together, although each wife had her own areas to move around in, and her own living quarters. They did however carry out certain activities in the open courtyard with the other wives. These included the preparation of cheese, butter and fat. These activities sometimes needed a large part of the woman's area and this obliged the wives to use the women's guest room *al-Kuba* for these chores. During the summer the women used to store both the grain and dates on a daily basis as well as produce molasses from *al-Jassa*. The molasses would be gathered in big earthenware pots. Afterwards these jars were usually stored in other rooms. When the husbands returned from the fields with their tools (such as ploughs, forks and spades) they left them in specific areas on the ground floor, this was because they were valuable and might be stolen if they were left in the gardens.

The interior spaces of the women's section also indicated many economic activities created specially for Najdian women. One of these was weaving, because rugs and other materials were used in every Najdian house. A

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70. Jennifer M. Scarce, op. cit., 1985, p48. For more information about the socio-economic activities of both urbanite and nomad in Kuwait, see pp 45-60 from this reference.

special area was set aside for this kind of traditional craft. This was either in the open courtyard or within the women's sitting hall. Sometimes the housewife and the women of the neighbourhood did their weaving together. When this happened a large area was needed for all those women and their hand looms.

3.2.6. CONCLUSION

Interior architectural design of Najdian building developed as the result of several environmental, spiritual and practical factors. As indicated above, these elements can be classified as either climate and religion; or the social and economic aspects of man and the use to which space is put.

The extreme climatic conditions in Najd caused the people to build their mud-brick buildings in such a way as to protect themselves and so realize physical comfort indoors. Every single architectural element or feature, either indoors or outdoors, shows the relationship between climate and architecture. Islamic law, based on the Holy Qur'an and the traditions of the Prophet, governed the social system of Najdian society and had an effect on the division of interior space. Examples include the screen between males and females and the existence of separated sleeping areas for the young, as well as the rule of respecting the rights and privacy of neighbours.

The behaviour of a Najdian man and his social and economic activities which were governed by Islamic law also played an influential role in the development of interior space. The archaeological evidence of Najdian buildings shows the strong relationship between the behaviour of a Najdian man and the design of space on the one hand, and between his social and economic activities and the place on the other. The function of interior space also has a strong impact, not merely on the development of interior spaces, but also on their decoration. In Najdian interiors, the function of each space often defined its location, size, design, decoration and the types of furnishings and other objects found within it.

SUMMARY OF CONCLUSION AND SUGGESTIONS

Three major architectural issues have been dealt with in this thesis. Those are the classification, analysis and development of traditional mud-brick architecture and interior architecture designs in Najd. The thesis aims to promote a better understanding of the physical appearance of this form of traditional architecture which today is close to extinction. It attempts to achieve this not only by studying present-day example of forms of this architecture, but also by interviewing traditional architects, artists and the older people of Najd. These people reveal those socio-cultural attitudes of Najdian society which had a profound effect on the physical appearance of both interior and exterior features of mud-brick buildings in Najd.

Prior to the discovery of oil in March 1938, there were three complementary ways of life in the Najd: nomadism, settled agriculture and urbanism. The Najd is a sea of desert land with isolated mud-brick settlements forming its islands. This geography has moulded the life of its inhabitants for millennia. In ithe past, the inhospitable geography divided the population into thinly inhabited enclaves distributed throughout separate areas: the southern area (Arid, al-Yamamah, al-Huta and al-Aflaj), the central area (Sudayr); and the northern area (al-Qasim). Immediately subsequent to the large-scale production of oil new concrete settlements appeared close to the sites of the old mud-brick settlements. This closeness indirectly helped to preserve a large numbers of mud-brick settlements.

This thesis demonstrates that the building materials used by the traditional architects of Najd were simply mud, stone, stucco and wood. These were produced and treated locally within each Najdian settlement. The techniques used in building walls, ceilings, roofs, columns and floors were varied and local architects and labours tended to use their own methods. There were three basic forms for mud-brick settlements in Najd: compact, semi-compact and scattered. With few exceptions, both the interior features were similar to those found in early Islamic settlements. Architecturally, the traditional mud-brick buildings of Najd were divided into three categories: religious buildings represented by the Central mosque (*Masjid al-Jami'*) and the smaller mosque (*masjid al-kham*); defensive buildings such as defensive walls and towers (*al-judran wa al-abraj al-difa'iya*), watch towers (*abraj al-muraqaba*) and

fortresses (*al-husun*); secular buildings which include administrative buildings (*al-idariya*), commercial buildings (*al-tigariya*) and residential buildings (*al-sukaniya*).

The form in which the typical, traditional mud-brick house of Najd was built evolved through a set of historical circumstances and functions specific to their period, and the product of thought and hundreds of years worth of learning and modification. Requirements of Islamic Law, local tradition, habits, lifestyles and other socio-economic needs have later been taken into account. Thus both privacy and rights of the occupants as well as of neighbours had an effect on the interior design of the building. The houses were built with high bulky walls and two separate sections, one for men and the other for women. Every interior architectural feature and element in the typical house of Najd seems to have been created in this natural way.

Most of the available surfaces, both those overlooking the interior spaces and those on the outside were embellished with three main types of decoration: botanical motifs, geometric motifs, and symbolic ones. The traditional artists formed these decorative shapes with an aim to their being acceptable both visually and spiritually. They used two different artistic styles when creating shapes of the first type: the semi-realistic; and the modified. Botanical motifs of semi-realistic type however had little chance to develop and survive, only a few examples which are still found in mud-brick buildings of Najd. However, the use of modified botanical type and geometrical motifs were much more widely-spread especially on the surfaces of stucco and timber. They, along with symbolic motifs, were also very common on interior and exterior surfaces. The traditional artists of Najd realized these motifs by using various techniques of ornamentation including: carving; painting; incision; pyrography and stamping.

The interior elements of mud-brick buildings in Najd, including scale, texture, colour, daylight, ventilation, furnishing and furniture, were all extremely well-designed. Even though, there are some positive and negative aspects to their appearance and utility, they are still more acceptable and better-suited than those interior features found in other traditional buildings in both the western and eastern areas of Sa'udi Arabia, such as Najran, 'Asir, Tihamah, al-Ihsa', al-Qatif and Tarut.

Both the internal and external decorative motifs whether they are botanical, geometrical or symbolic, demonstrate how valuable and important these particular shapes were to the early inhabitants of Najd, and the degree to which traditional artists were interested in learning the techniques used to create and form them. However, after an analysis of these decorative shapes which were either formed in simple or complex artistic compositions, it became obvious that there were stages of development. There were factors which contributed to their development. These effective factors arise from the effect of social criteria, the importance of workmen, the immigration of labourers, the significance of materials and tools and the importance of trade and religion. These factors played an influential role in developing both the interior and exterior decorative compositions. Each factor had a different effect, but all helped to develop and preserve the appearance of these decorative elements and motifs. Various surviving decorated surfaces in the mud-buildings of Najd show simple changes in the main ornamental forms but not in the original shape of either the decorative elements or motifs. However, by studying these slight changes carefully, as demonstrated by this thesis, the range of the effect of these development factors can be ascertained. These changes often differ from place to place and house to house.

The main form, division and organization of mud-brick buildings in the Najd came as a result of several natural and popular factors. The climate itself was one of the most important factors to affect the development of traditional mud-brick buildings in Najd. In order to achieve physical comfort indoors and keep out the extreme heat, the brilliant sunlight and dust storms the traditional architects utilised suitable local materials and construction techniques then formalised and employed their own architectural ideas. In fact, the traditional uses of building materials and the architectural solutions employed in Najdian mud-brick buildings reflect common sense and simplicity in planning and design. Solutions included the use of harmony, consistency and balance in forms, and the use of prominent and sunken areas and elements on both the internal elevations and external façades. The climate also gave rise to a unity in the scales of openings, colours and textures on both interior surfaces and the outside of the building. The effect of this natural phenomenon on the external mud façades is very attractive and no anomalous features are visible, as they are apparent with concrete buildings of new Najdian settlements. The façades of each mud-brick building or those of several

adjacent buildings had similar architectural patterns that easily joined together with similar colours and textures, and all show the connection between them, between man and Nature.

Islamic Law had a considerable effect on outdoors space division and organization. Both types of Najdian mosques, the *Masjid al-Jami* and *Masjid* al-Khams, played an influential role in the planning and development of the framework for roads and building-sites in mud-brick settlements in Najd. The *Masjid al-Jami'* was the basic starting point for the division of a town, while districts were divided around the *Masjid al-Khams*. As far as the interior of buildings was concerned, Islamic law, human behaviour and the social and economic activities of the early people of Najd all played a part in the arrangement and use of space. The climate and these factors caused a large part of the life of a Najdian to be spent indoors. The houses were divided into areas to serve visitors, the occupants and their livelihoods. By analysing indoor and outdoor spaces in Najdian mud-brick settlements it is obvious that the city or the village is a architectural phenomenon. Each house within it formed an effective unit and worked in a natural way with the other parts of the settlement. The interior design provides clear evidence of the impact of human behaviour and social and economic activities. Each single place shows the relationship between a man and his surroundings and clarifies the action and reaction of a man. The fixed spatial arrangement,[71] the interior architectural design (in addition to the decoration and furniture), and the continued use of spaces in accordance with Islamic law, traditions and customs in the typical Najdian mud-brick house have all played a part in its development as opposed to that of the modern Najdian concrete house. These important advantages are apparent on both a religious and social level and have been mostly lost in modern concrete buildings.

SUGGESTIONS AND RECOMMENDATIONS

Firstly, the writer recommends a return to the use of early planning and design methods as used in the interiors of the traditional Najdian mud-brick house, which well served the principle religious and socio-economic considerations of its inhabitants for hundreds of years. Even if the

71- For example, in reception and dining rooms, in open centralized courtyards and roofs, as well as in internal-connected and intermediate spaces.

construction of houses from concrete and metal is continued, traditional ideas of space division can be adapted. Concerning open, centralized, interior courtyards provided with small gardens, walled roofs and large openings overlooking the courtyard, together with small high apertures overlooking the streets, should become essential components of a contemporary architectural design vocabulary.

Secondly, the writer would like to profit from the result of the practical experiments carried out in Sa'udi Arabia and other countries on a new mixture made of mud and special sand and which is used to coat external façades in concrete buildings.

Thirdly, the writer would like to urge archaeologists, historians and those interested in traditional architecture to study and document the remaining traditional mud-brick buildings and decorative ornaments.

Fourthly, the writer calls for the preservation in each Najdian city of some of the important old mud-brick buildings such as the palaces and mosques. The larger ones should ideally be changed into small museums to enable people to see examples of early Najdian interior architectural design.

Fifthly, the writer suggest the creation of special museums for traditional popular heritage. They would contain traditional plain and decorated objects, stucco works, woodworks and other artifacts.

Sixthly, after examining the collection of Pitt Rivers and studying Najdian applied art, the writer found some common origins between the creators of both. The writer recommends future researchers on this topic.

Lastly the writer would like to recommend that researchers systematically interview surviving traditional architects and artists, in this way, their works and accounts and those of earlier traditional workmen can be documented for posterity and for future reference.

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160- Detail of carved decoration of small wooden piece of street door of a house at Huraymila'.

161- Two symbolic, carved swords of stucco in reception room of a house at Shaqra'.

162- Two symbolic, geometrical shapes of stucco on the elevation of al-Rawshan of al-Tuwayjari house at al al-Majma'a.

163- Interior wooden door in a house at Burayda, with painted and incised geometrical, symbolic motifs.

164- Symbolic, decorative elements carved on broad stucco frieze in reception room of a house at Shaqra'.

165- Symbolic, decorative composition of domestic vessels (coffee kettle, gas lantern and teapot) carved on the façade of the entrance to a reception room of a house at al-Majma'a.

166- Random carving decoration on mud façade of a house at al-Dira district in al-Riyad.

167- Random carved decoration used as a foundation for another smooth layer of mud (inscribed decoration leaving semi-circular lines on the façade), at al-Riyad.

168- Wave inscribed lines (wooden comb decoration) on a façade of a house at Burayda.

169- Interior elevation of a house at al-Riyad painted randomly in polychrome, matt colours.

170- External façade of a house at al-Zulfi decorated with geometrical elements in matt colours.

171- A stucco dado with crenellation in reception room of a house at Thadiq.

172- A stucco dado in the reception room of a house at Milhim, decorated with crenellation, carved friezes and niches.

173- Coffee hearth and decorated dado of the reception room in a house at Milhim.

174- Part of a stucco frieze carved with right, angle engraving style at Rughba.

175- Ornamentation on a stucco frieze carried out with oblique engraving style (at 45°), at al-Majma'a.

176- Ornamentation on a stucco frieze surrounded a niche (*Kuwa*) carried out with oblique engraving style (at 45°), at 'Unayza.

177- Part of stucco surface decorated with modified botanical and geometrical elements carried out with deep, oblique engraving style (at 45°), at al-Majma'a.

178- Decorative patterns carved into a thin layer of stucco frieze at right angles at Aushaqir, representing the technique of "solid and void ornamentation".

179- 'Abd Alla al-Hamid carrying out stucco ornamentation using incising style, at Qasr al-Masmak in al-Riyad.

180- Circular and semi-circular designs on a stucco frieze of a house at Rughba, carried out by incision.

181- Zigzag, horizontal and vertical incised lines within square shapes on stucco of the reception room in a house at Shaqra'.

182- Incised straight, oblique and zigzag lines on stucco frieze, at Aushaqr.

183- Punctured stucco partitions (grille work) fixed within window frame of the bridge-room (*Sabat*) of a house at Huraymila'.

184- Interior decorated face of the door to a house at 'Udat Sudayer.

185- Pierced partition of stucco, at Hutat Sudayer.

186- Pierced partition of stucco, at Shaqra'.

187- Pierced partition of stucco, preserved in Traditional Museum at al-Riyad.

188- Pierced partition of stucco, preserved in Traditional Museum at al-Riyad.

189- Symbolic, modified botanical shapes at the palace of al-Murab' (these figures carved on stucco and later painted dark blue on light blue background).

190- Wooden ledge of street door carved at right angles.

191- Plain street door of the Dar al-Imara of Ibrahim al-'Asker at al-Majma'a, surrounded with stucco friezes decorated by saw-tooth decoration.

192- Upper ledge of a street door of a house at Burayda, painted with polychrome, geometrical elements.

193- Street door of a house at Sadus, painted with monochromatic bands (across the top, middle and bottom).

194- Street door of a house at Shaqra', painte with polychrome, geometrical motifs.

195- Muhammad 'Abd al-Hadi al-Tuwayjari by interior decorated door at the house of al-Tuwayjari at al-Majma'a.

196- The author.

197- Detail of the decoration of interior door of the house of al-Tuwayjari at al-Majma'a.

198- Painted and burned decorative band on a street door of a house at al-Majma'a.

199- Traditional tool used to burn the decorative elements into the wood.

200- Internal façade with triangular apertures overlooking the open courtyard in a house at al-Dir'iyya.

201- Openings of various sizes and forms, facing North, in a wall of a house at Thadiq.

202- Triangular and square apertures over the garden of a house at al-Dir'iyya.

203- Plaster decoration carried out on interior partition between reception room and dining room of a house at 'Unayza.

204- Detail of the plaster decoration of interior partition of a house at 'Unayza.

205- Interior partition of a house at Shaqra' with plaster decoration.

206- Detail of the plaster decoration of the interior partition of a house at Shaqra'.

207- Detail of the plaster decoration of the interior partition of a house at Aushaqir.

208- Interior partition between the reception room and dining room of a house at al-Riyad.

209- Detail of the plaster decoration of the interior partition of a house at al-Riyad.

210- Interior partition between two room in a house at Shaqra'.

211- Interior partition between the men's section and women's section in a house at Huraymila'.

212- Column with capital decorated by incised lines, at Hutat Sudayer.

213- Column with neck and capital decorated by incised zigzag lines, at 'Attar village.

214- Columns with capitals decorated by incised crossed lines, at Rawdat Sudayer.

215- Plain column with stepped capital in reception room of a house at Sadus.

216- Plain columns with round neck and capital in a house at Jalajil.

217- Capital decorated with carved stucco, in the *rawshan* of al-Tuwayjari house at al-Majma'a.

218- Column with pyramidicl, decorated capital in the *rawshan* of al-Tuwayjari house at al-Majma'a.

219- Column with square, decorated capital in the *rawshan* of al-Tuwayjari house at al-Majma'a.

220- Column with square, decorated capital and beam in the *rawshan* of al-Tuwayjari house at al-Majma'a.

221- Columns with decorated capitals in a house of al-Dahu district at al-Riyad.

222- Plain columns with capitals (bulbous form) in the house of al-Dikheel at al-Riyad.

223- Painted, wooden beams of the portico roof carried on plain column, in the house of al-'Rafi at al-Riyad.

224- Detail of the painted decoration of the wooden beams of portico in the house of of al-'Rafi at al-Riyad.

225- Plain capital with decorated neck in the house of al-Suwayan at Shaqra'.

226- The lower decorated part of a column in the *rawshan* of a house at Rughba.

227- Triangular and square openings in a wall of a house at Huraymila'.

228- Triangular openings in a wall of a house at al-Dir'iyya.

229- Apertures of various sizes and forms executed in a wall of the reception room of a house at 'Udat Sudayer.

230- Triangular openings in a wall of a house at al-Dir'iyya.

231- Apertures of various sizes and forms executed in a wall of the reception room of a house at Huraymila'.

232- Triangular openings high in a wall of a house at al-Dir'iyya.

233- Door way with semi-circular arch, at 'Unayza.

234- Door way with semi-circular arch and saw-tooth decoration, at Shaqra'.

235- Semi-circular arches of the first floor portico overlooking the open courtyard of a house at Burayda.

236- Semi-circular arches of the ground floor portico overlooking the open courtyard of a house at Burayda.

237- Reception room of a house at Thadiq, painted with multi-colour and primitive, abstract shapes.

237, a- Stone, semi-circular arch of a building in al-Murab' district, at Al-Riyad.

238- Wall-recess for storing large furnishing objects.

239- Porch with two columns, street door (for the men) of a house at al-Dahu district in al-Riyad.

240- Remains of the porch building, street door (for the women) of a house at al-Dahu district in Al-Riyad.

241- Detail of the painted decorative composition of the women's street door of a house at al-Dahu district in al-Riyad.

242- Interior, plaster frieze with crenellation surrounding the entrance of a reception room of a house at Milhim.

243- Interior, carved plaster frieze surrounding the entrance of the reception room of the al-Suba'i house at Shaqra'.

244- Lobated arch of a staircase overlooking the open courtyard in the guest palace of King 'Abd al-'Aziz at al-Kharj.

245- First-floor small, street windows provided with stuccoed sunshades of a house in al-Dira district at al-Riyad.

246- Detail of the sunshade of the street window of a house in al-Dira district.

247- Square stuccoed sunshade surrounding with small, street window of a house at 'Udat Sudayer.

248- Small, street window surrounded by geometrical shapes of stucco, of a house at al-Majma'a.

249- Small, street window surrounding with plain, square shape of stucco of a house at al-Majma'a.

250- Interior face of a window surrounded by carved, stucco friezes, in the reception room of the house of al-Rabi'a at al-Majma'a.

251- Interior face of a window surrounded by carved, stucco friezes, in a *rawshan* of a house at al-Dahu district in al-Riyad.

252- Small opening surrounded by carved, plaster friezes, in a reception room of a house at Rughba.

253- Small opening surrounded by carved, plaster friezes, in a reception room of a house at al-Dahu district in al-Riyad.

254- Triangular aperture surrounded by carved, plaster frieze, in a reception room of a house at Rughba.

255- Ceiling of a small mosque at 'Unayza constructed of joists covered with a layer of small, flat stones, which in turn is covered with a layer of mud-mix.

256- Detail of the ceiling of a small mosque at 'Unayza, constructed of joists, stones and mud-mix.

257- The upper part of street door of a house at Jalajil, decorated with painted geometrical and botanical (clover-leaf pattern) shapes.

258- The upper part of street door of a house at al-Riyad, decorated with painted geometrical and botanical shapes.

259- Detail of the painted decoration (dots, circles, grape and camel neckband shape) of a street door of a house at al-Riyad.

260- Street, wooden door of two shutters of a house at Huraymila', painted green and provided with iron knocker and additional carved wooden objects.

261- Street, wooden door of two shutters of a house at al-Hair, painted light blue and provided with thin, wooden frames.

262- Street, wooden door of a house at 'Unayza, painted with monochromatic geometrical elements (dots, bands, straight and crossed lines) on natural background.

263- Interior, wooden door of two shutters of a room in a house at al-Riyad, painted with black and orange.

264- Wooden lintel of street door of a house at al-Dir'iyya, painted with geometrical elements of two colours.

265- Wooden lintel of street door of a house at al-Dir'iyya, painted with geometrical elements of two colours.

266- Part of the upper section of street door of a house at Jalajil, painted with geometrical and botanical decorative elements (dots, lines and sun-flower pattern).

267- Wooden lintel of street window of a house at al-Dir'iyya, painted with geometrical elements of two colours on coloured background.

268- The upper section of a street door of a house at Jalajil, painted with monochrome, decorative motifs on natural background.

269- Wooden lock (*al-Daba*) of a street door of a house at 'Unayza, decorated with monochrome, geometrical decorative elements.

270- Remains of interior elevations of a room of a house at al-Riyad, painted with multi-colours.

271- Craftsmen at the traditional market of al-Janadriya weaving palm-mats.

272- Artisan at the traditional market of al-Janadriya weaving the seat (cords made of palm-fibre) of wooden bench.

273- Handicraftsman at the traditional market of al-Janadriya, with his traditional hand tools carving wooden boxes.

274- Primitive wooden box in a house at Thadiq, painted with monochrome geometrical elements.

275- Painted, traditional doors and boxes in both sides of the entrance-door of a shop at the traditional market of al-Janadriya.

276- Iron box with large key, at the traditional market of al-Janadriya.

277- Craftsmen weaving rug on traditional loom, at the traditional market of al-Janadriya.

278- Traditional kitchen objects, at the traditional market of al-Janadriya.

279- Leather bag for storing dry food, at the traditional market of al-Janadriya.

280- Leather bag for storing butter and fat, at the traditional market of al-Janadriya.

281- Sieve and wooden dish, at the traditional market of al-Janadriya.

282- Leather bag for making butter, at the traditional market of al-Janadriya.

283- Traditional vessel made of palm-fibre, at the traditional market of al-Janadriya.

284- Decorated, palm-mat, at the traditional market of al-Janadriya.

285- Small, kitchen vessel (dry ground) on palm-mat, provided with a cover and ropes for hanging, at the traditional market of al-Janadriya.

286- Kitchen cupboard made of palm-branches and small pieces of wood for keeping food (provided with rope for hanging), at the traditional market of al-Janadriya.

287- Wooden saddle with traditional woollen saddlebag on woollen rug, at the traditional market of al-Janadriya.

288- Cradle made of palm-branches, at the traditional market of al-Janadriya.

289- A man carrying decorated cradle made of leather, at the traditional market of al-Janadriya.

290- Main view of cradle of leather and rope, at the traditional market of al-Janadriya.

291- Plain wall-cupboard of the coffee hearth in the reception room of a house at Huraymila'.

292- Wall-cupboard of the coffee hearth in the reception room of a house at Rawdat Sudayer, decorated with carved stucco.

293- Part of the cupboard of the coffee hearth in the reception room of a house at al-Majma'a, adorned with simple decoration.

294- Main view of the wall-cupboard of the coffee hearth in the reception room of the al-Tuwayjari house at a-Majma'a.

295- Front view of the wall-cupboard of the coffee hearth in the reception room of the al-Tuwayjari house at a-Majma'a.

296- The wall-cupboard and coffee hearth in the ground-floor reception room of the al-Suba'i house at Shaqra'.

297- The wall-cupboard and coffee hearth in the reception room of a house at Burayda.

298- The wall-cupboard and the remains of the coffee hearth in ground-floor reception room in the palace of the al-Murab' at al-Riyad.

299- The wall-cupboard and the remains of the coffee hearth in ground-floor reception room in the palace of the al-Murab' at al-Riyad.

300- Reconstructed wall-cupboard and coffee hearth with coffee kettles, teapots and other traditional vessels used in traditional reception rooms, at al-Riyad.

301- View showing parts of the wall-cupboard, coffee hearth and the traditional vessels within a reconstructed reception room, at al-Riyad.

302- Two different angles of wall-cupboard and coffee hearth (after restoration) of a reception room in the palace of al-Masmak at al-Riyad.

303- Restored wall-cupboard and coffee hearth of reception room in the palace of al-Masmak at al-Riyad.

304- Composition of various angles of the first-floor reception room of a house at Rughba, showing the plaster decoration of the wall-cupboard, niches and the remains of a coffee hearth

305- Detail of the plaster decorative elements of a reception room of a house at Rughba.

306- Flat wooden dishes, at the traditional market of al-Janadriya.

307- Basalt, hand mill, at the traditional market of al-Janadriya.

308- Stone quems, at the traditional market of al-Janadriya.

309- Stone basin, at the house of al-Rabi'a at al-Majma'a.

310- Stone mortars with wooden handles, at the traditional market of al-Janadriya.

311- Basalt, small mortars, at the traditional market of al-Janadriya.

312- Composition of symbolic, decorative elements with raised rectangular frames, carved on the interior elevation over the main entrance into a reception room of a house at al-Majma'a.

313- Detail of symbolic decorative elements in a reception room of a house at al-Majma'a.

314- Symbolic decorative elements, with raised rectangular frames, carved on the interior elevation facing the main entrance of a reception room of a house at al-Majma'a.

315- Symbolic decorative elements, with raised rectangular frames, carved on the interior elevation of a reception room of a house at al-Majma'a.

316- Symbolic decorative elements, with raised rectangular frames, carved on the interior elevation of a reception room of a house at al-Majma'a.

317- Plaster decoration on the top of the main entrance of a house at Rawdat Sudayer.

318- Detail of decoration on stucco frieze, carved at the top of the main entrance, street door of a house at al-Riyad.

319- Porch with plaster decoration of a street door of a house at al-Riyad.

320- Plain porch with columns of a street door at al-Riyad.

321- Two symbolic figures of stucco, carved on the interior elevation over a dado facing the main entrance of a reception room of a house at Shaqra'.

322- Detail of symbolic figure in the reception room of a house at Shaqra'.

323- View of ruined house at Shaqra', showing an symbolic, abstract shape of stucco. This form carved on the main interior elevation, close to wall-cupboard of the coffee hearth of the first-floor reception room reception .

324- Detail of symbolic figure in the reception room of a house at Shaqra'.

325- New, symbolic painted shapes on the north elevation of the main reception room of the palace of King 'Abd al-'Aziz at al-Kharj.

326- The *al-tarma* building (pl. *turam*) on the top of the main entrance door of a house at 'Unayza.

327- The *al-tarma* building (with V-shape decoration) of a house located in 'Asir.

328- The al-tarma (with plaster decoration) of a house located in 'Asir.



Plate 1



Plate 2



Plate3



Plate 4

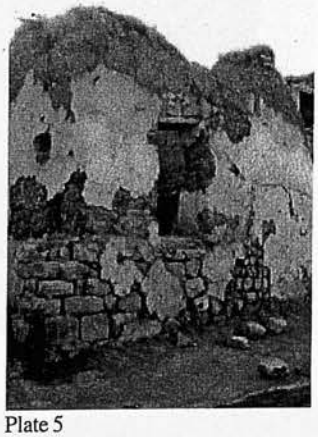


Plate 5



Plate 6



Plate 7

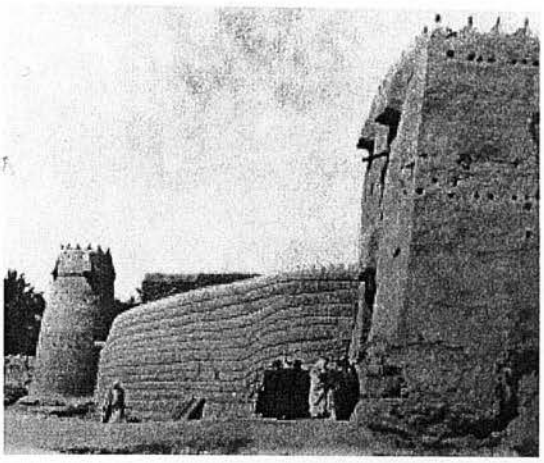


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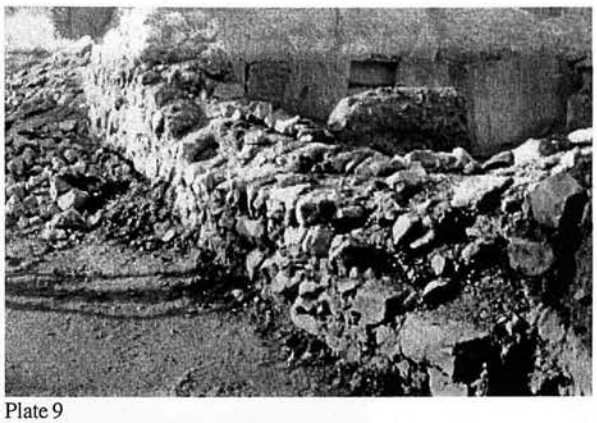


Plate 9



Plate 10

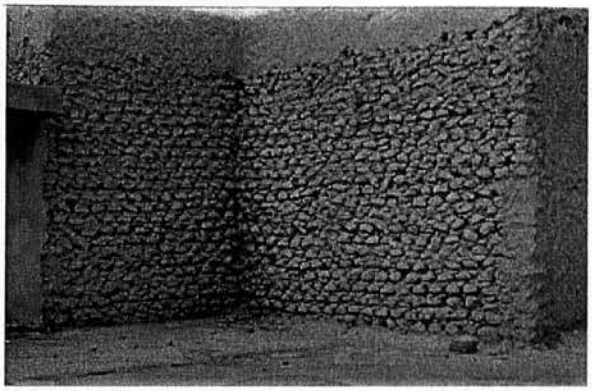


Plate 11



Plate 12



Plate 13



Plate 14



Plate 15

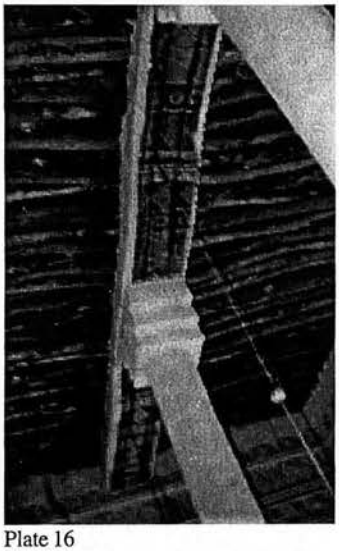


Plate 16



Plate 17



Plate 18

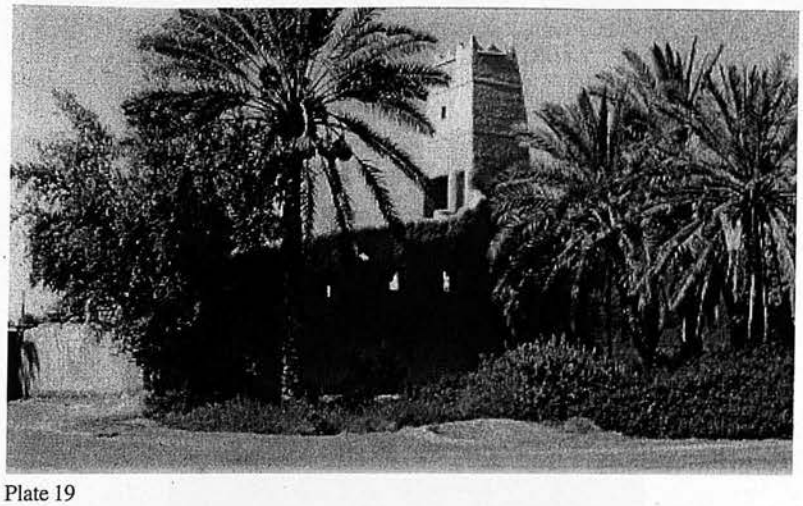


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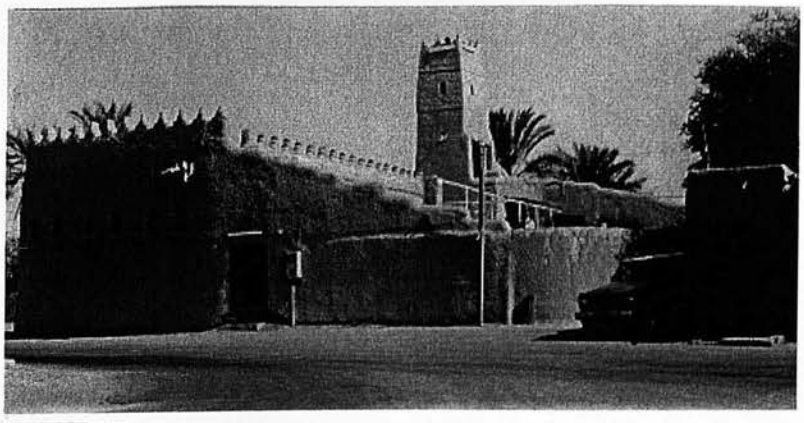


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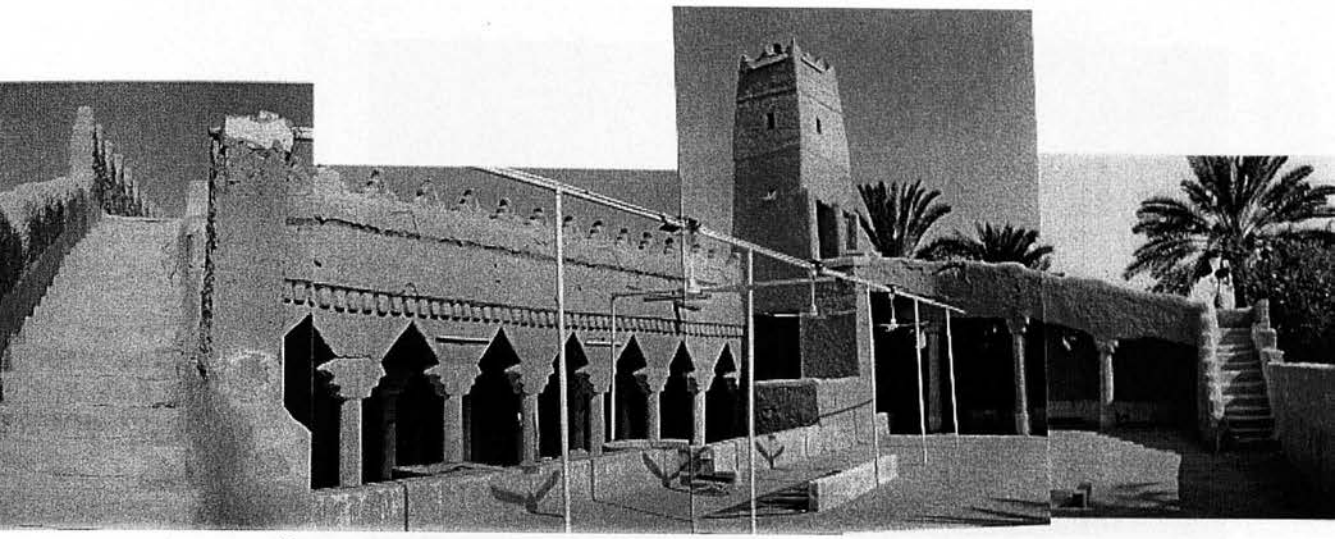


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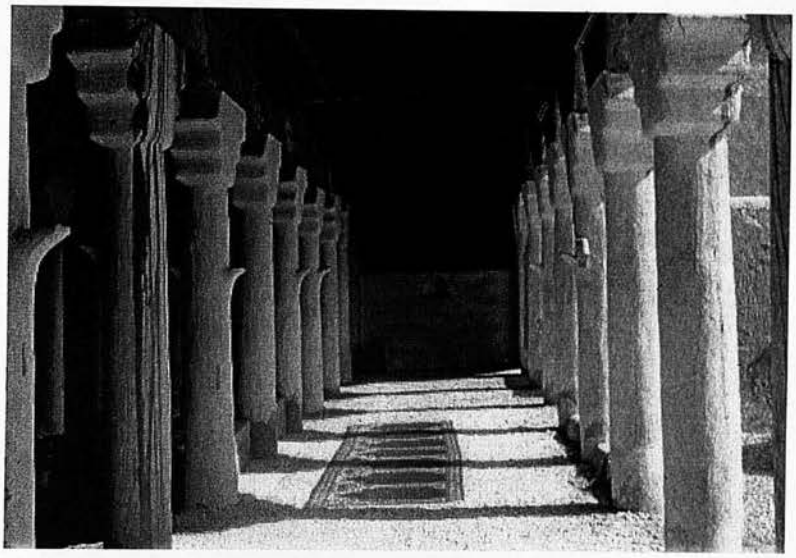


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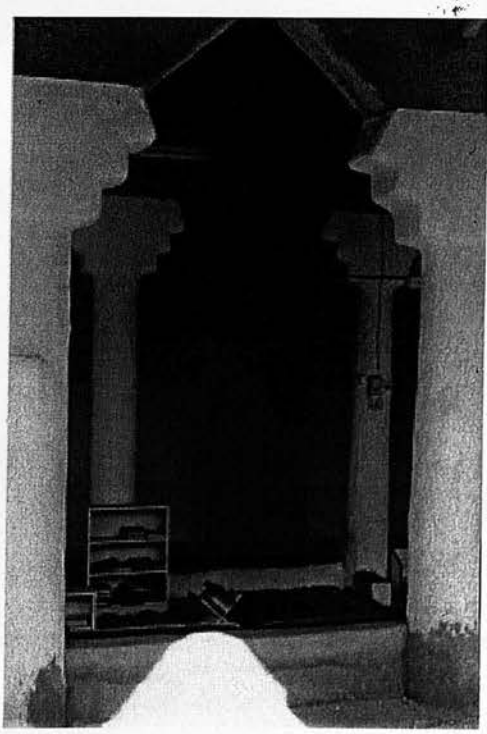


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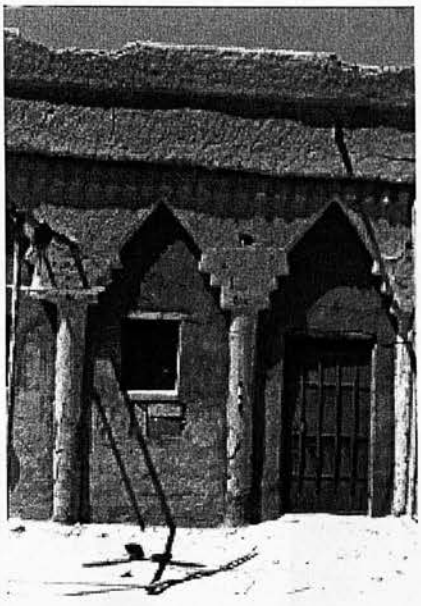


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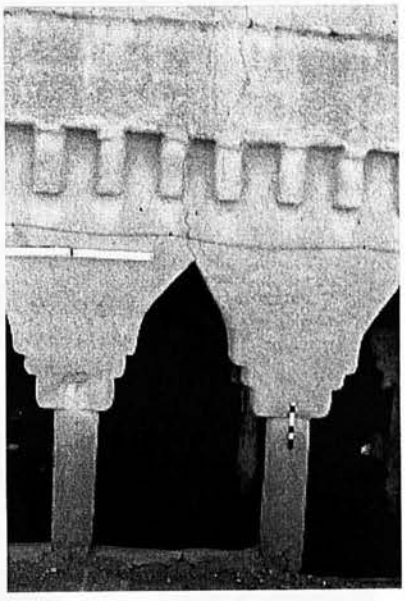


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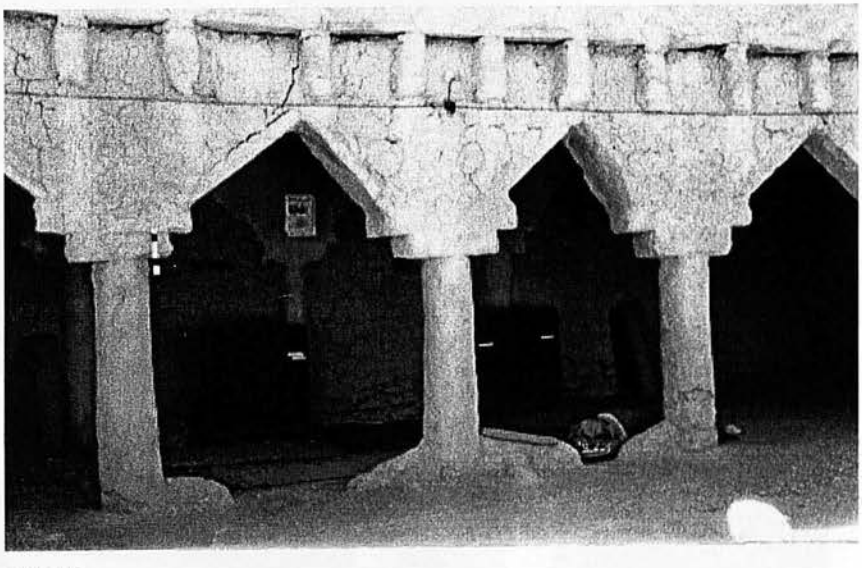


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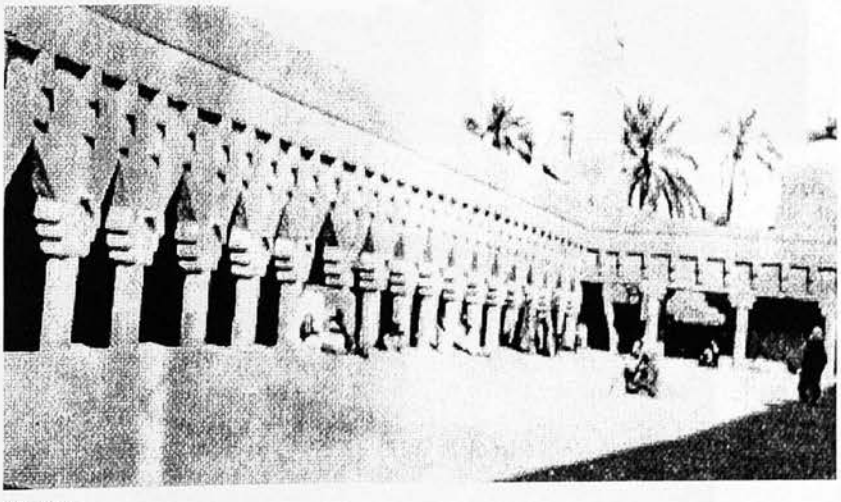


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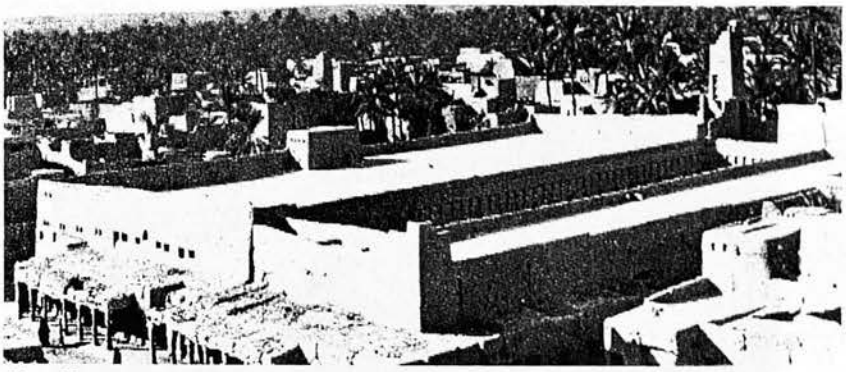


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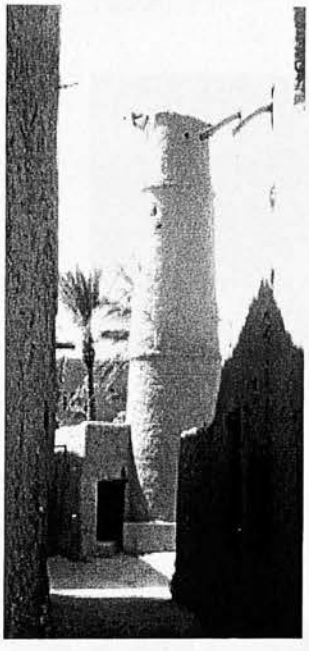


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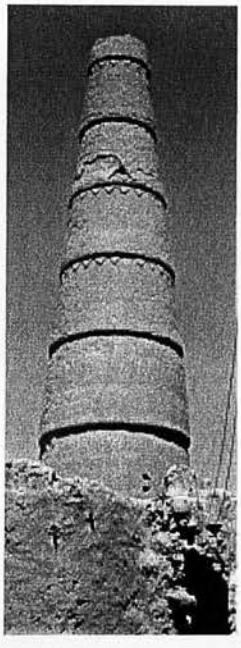


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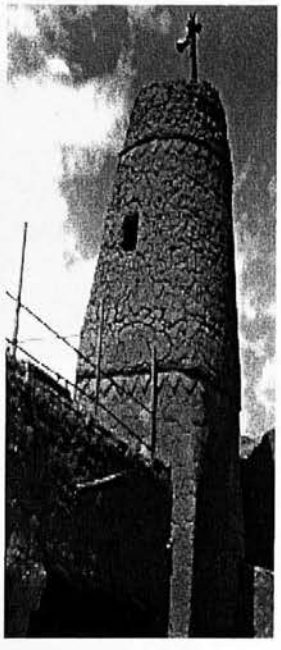


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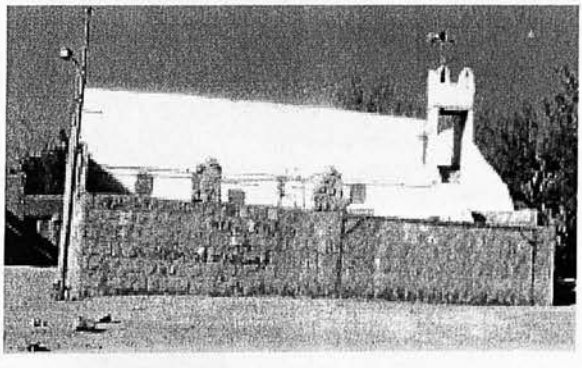


Plate 32



Plate 33

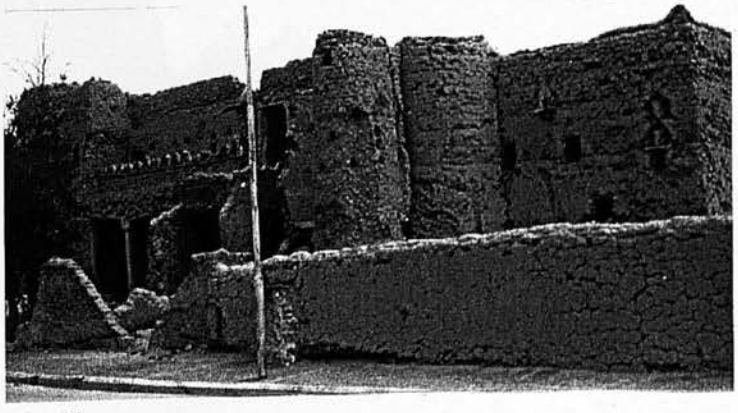


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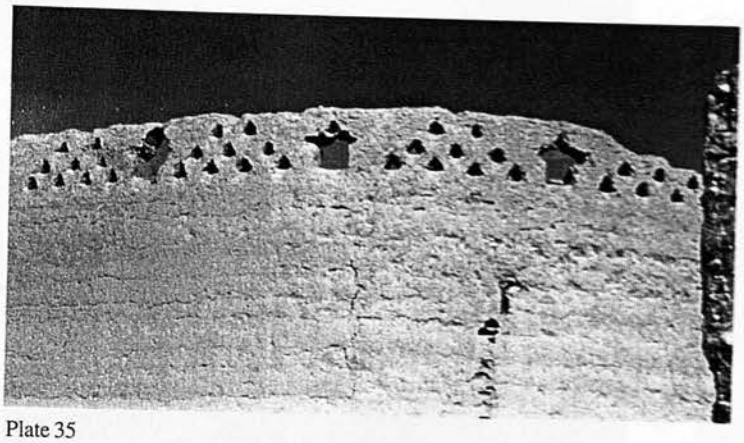


Plate 35



Plate 36

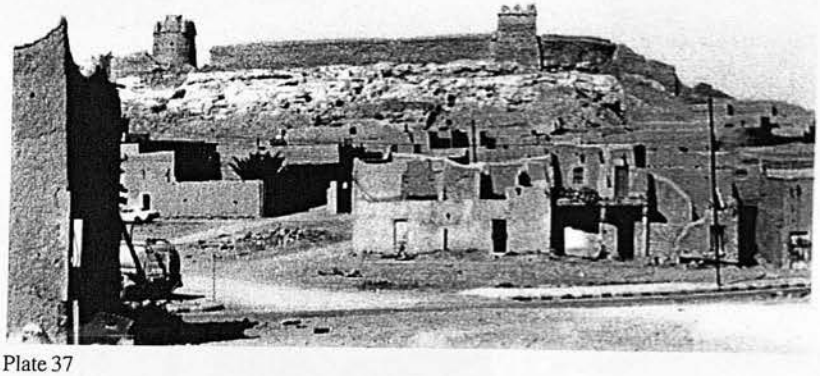


Plate 37

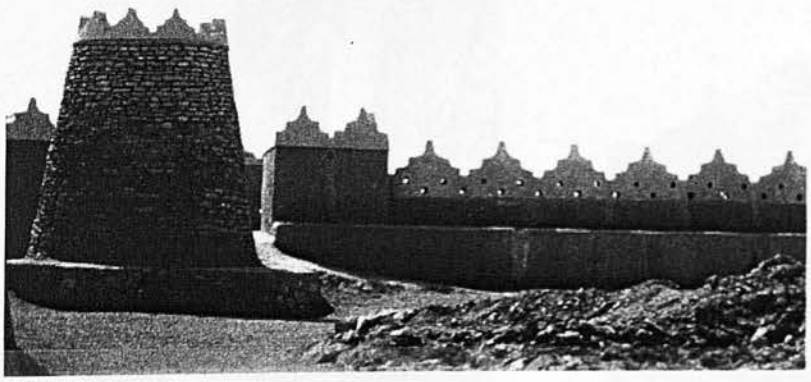


Plate 38

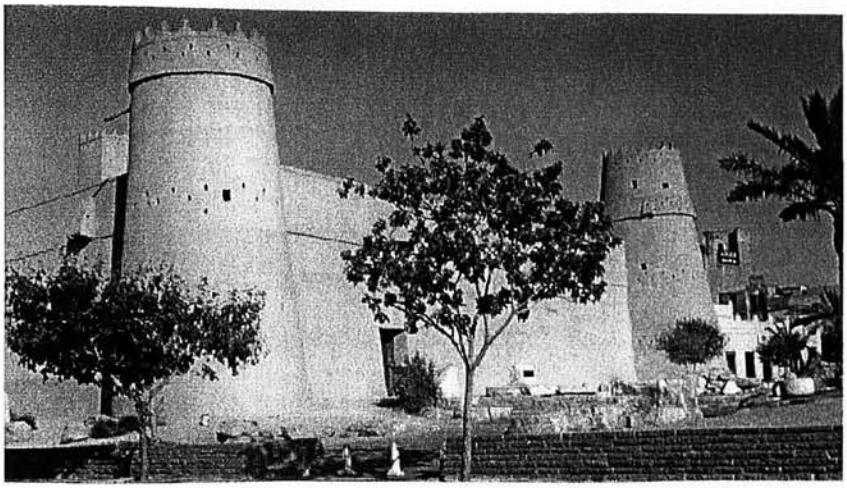


Plate 39

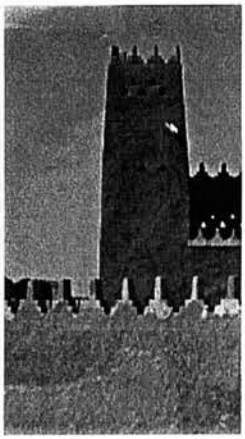


Plate 40



Plate 41



Plate 42

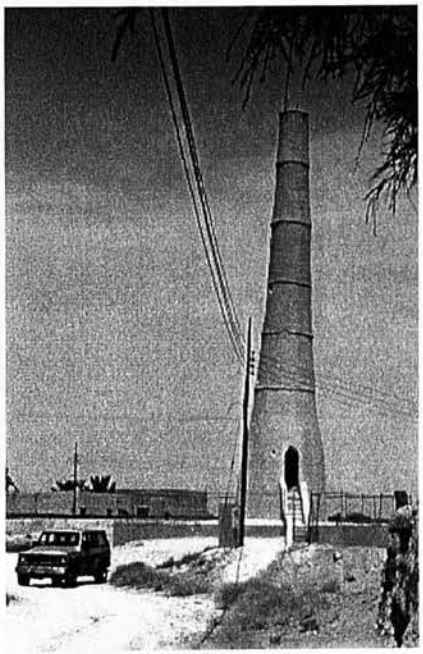


Plate 43



Plate 44



Plate 45

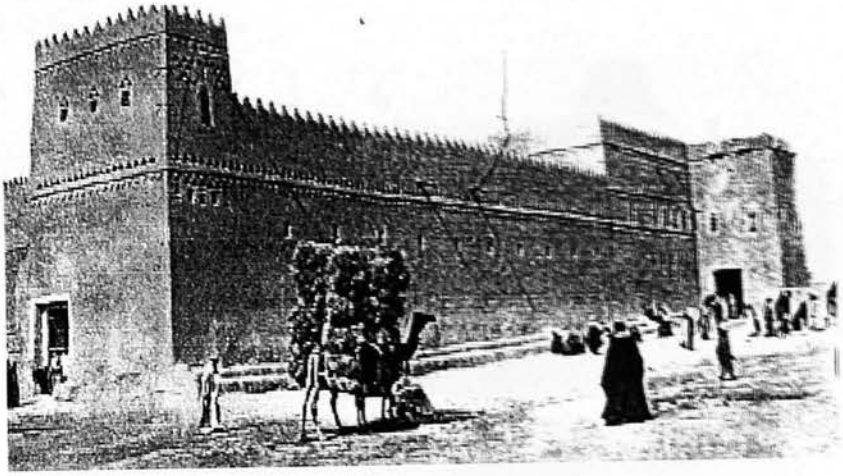


Plate 46

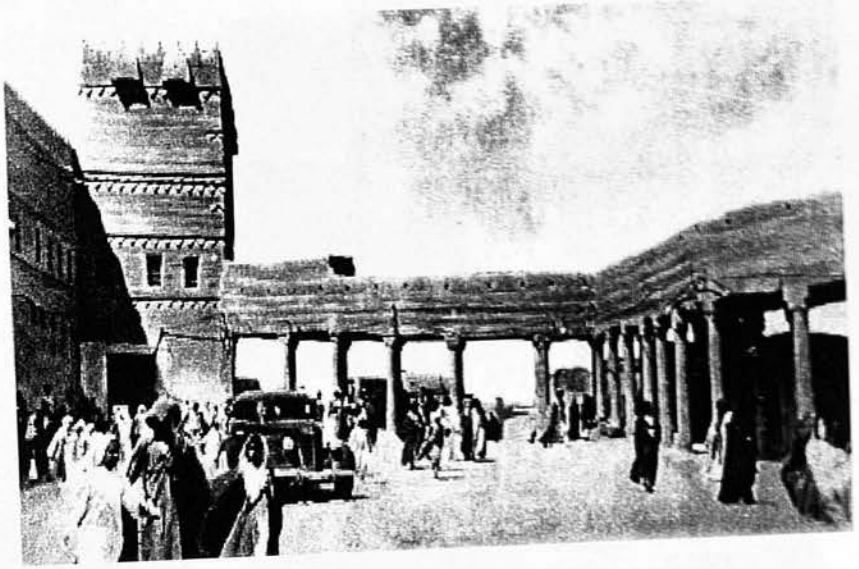


Plate 47



Plate 48



Plate 49

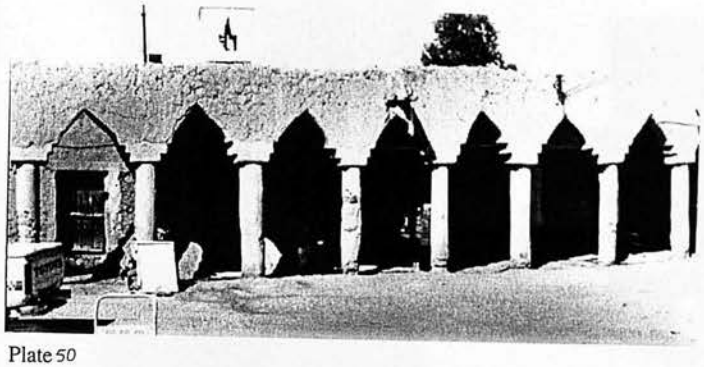


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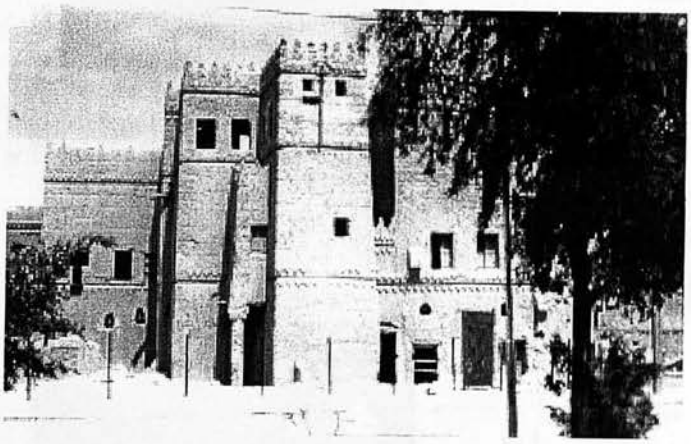


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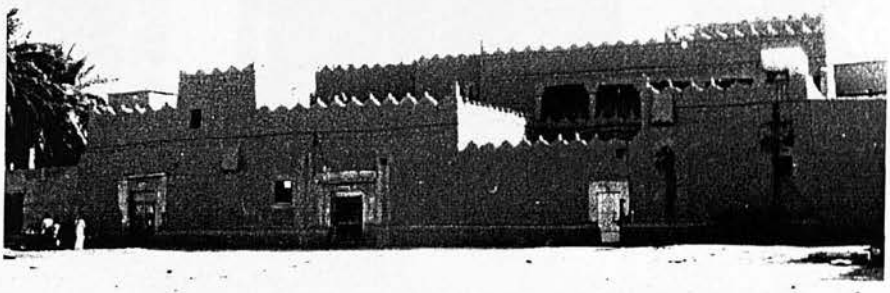


Plate 52



Plate 53



Plate 54



Plate 55



Plate 56



Plate 57

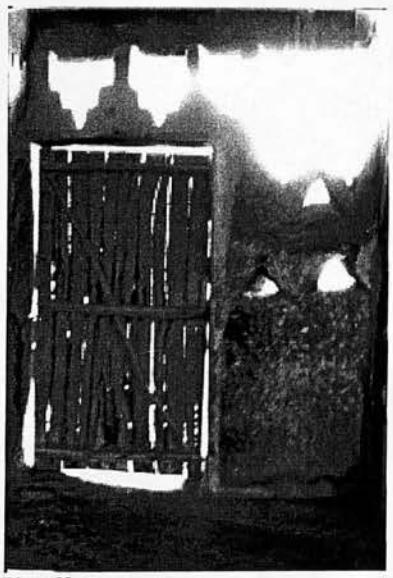


Plate 58



Plate 59

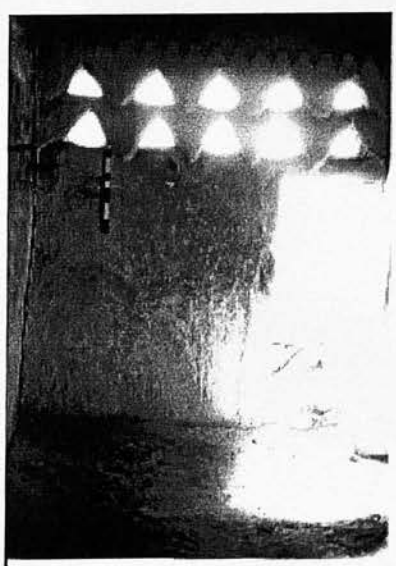


Plate 60



Plate 61



Plate 62



Plate 63

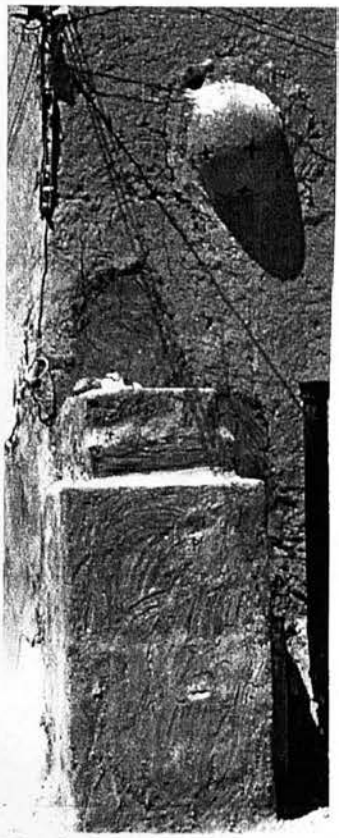


Plate 64

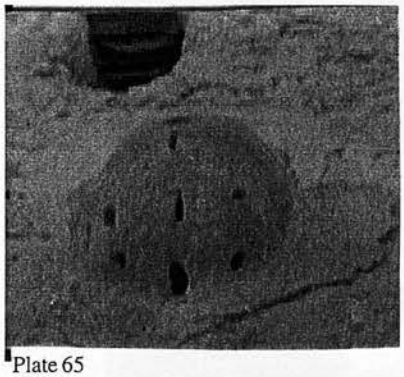


Plate 65

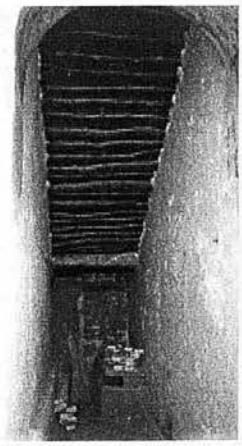


Plate 66



Plate 67

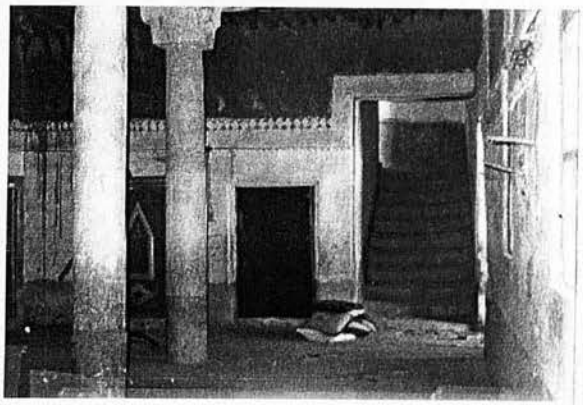


Plate 68

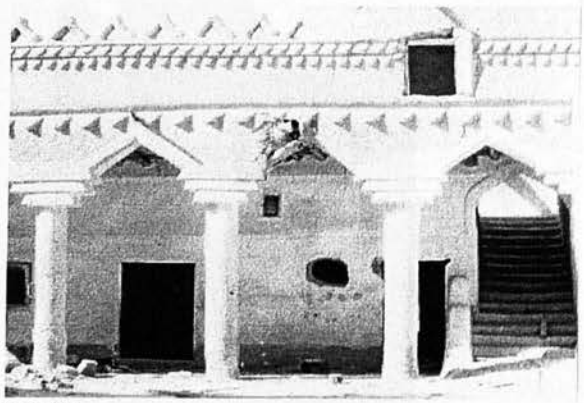


Plate 69

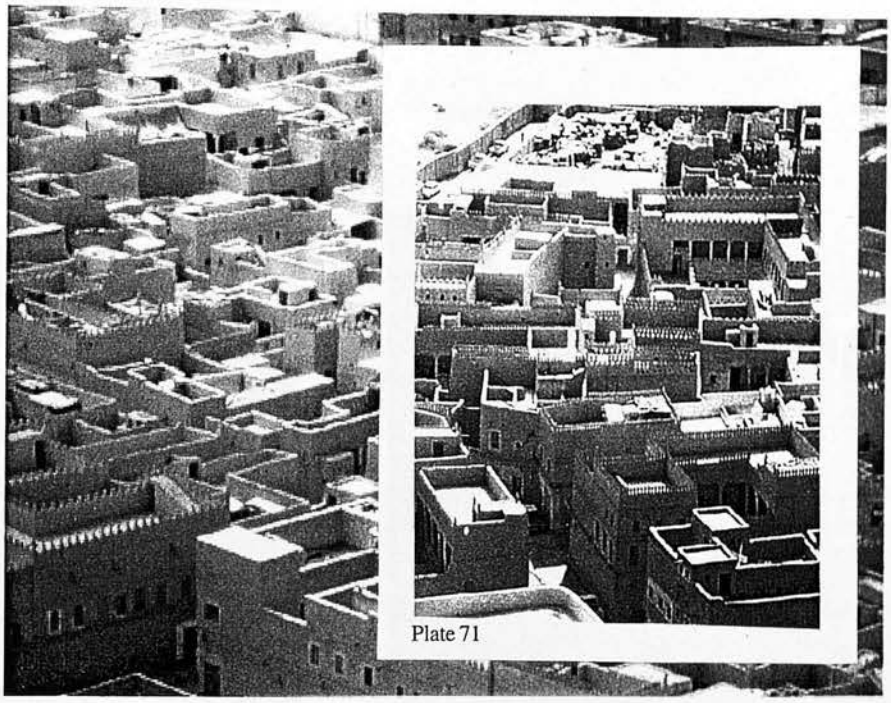


Plate 71

Plate 70

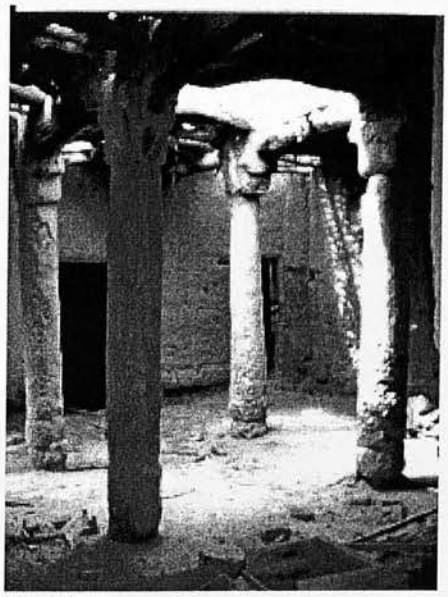


Plate 72



Plate 73

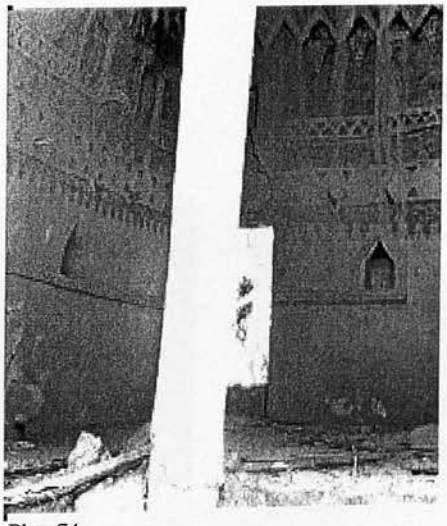


Plate 74



Plate 75

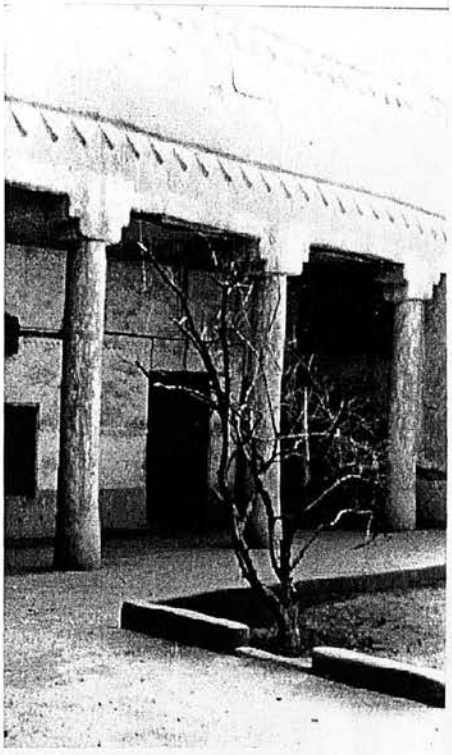


Plate 77

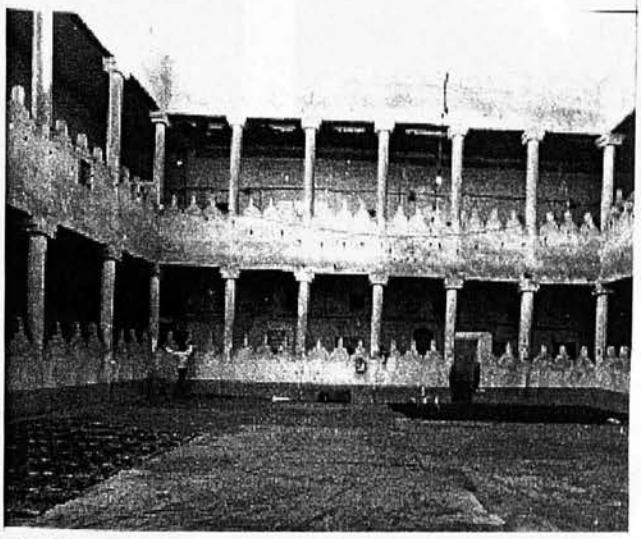


Plate 76



Plate 78

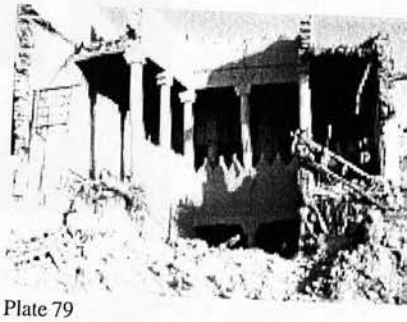


Plate 79



Plate 80

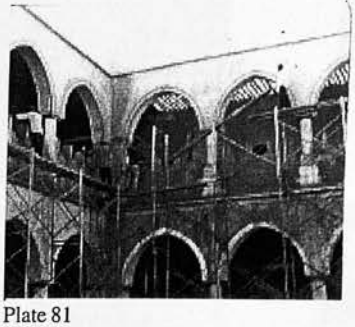


Plate 81

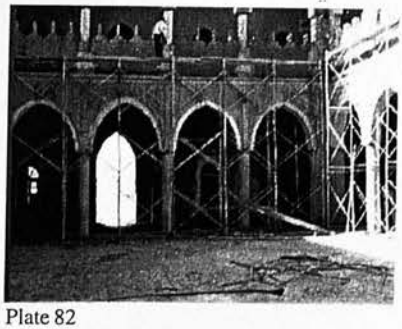


Plate 82



Plate 83

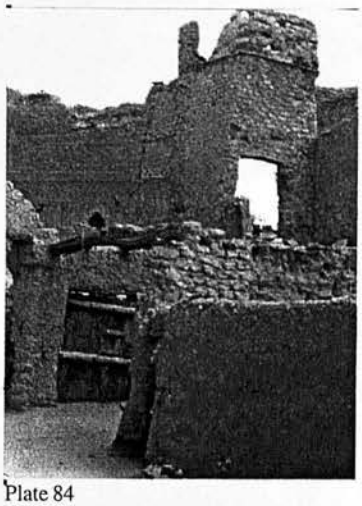


Plate 84



Plate 85



Plate 86



Plate 87



Plate 88



Plate 89



Plate 90



Plate 91



Plate 91 (a)

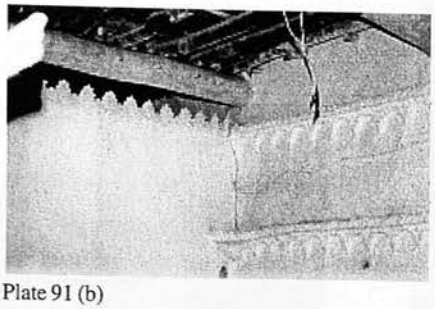


Plate 91 (b)

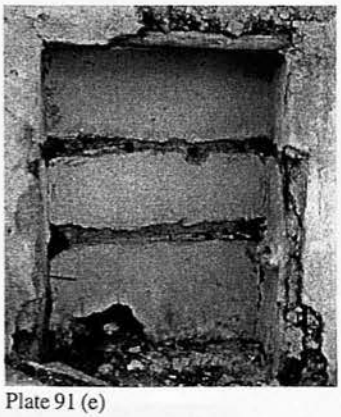


Plate 91 (e)

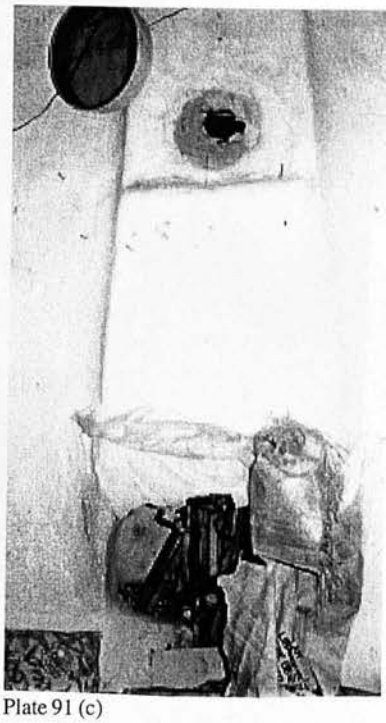


Plate 91 (c)



Plate 91 (d)



Plate 92



Plate 93

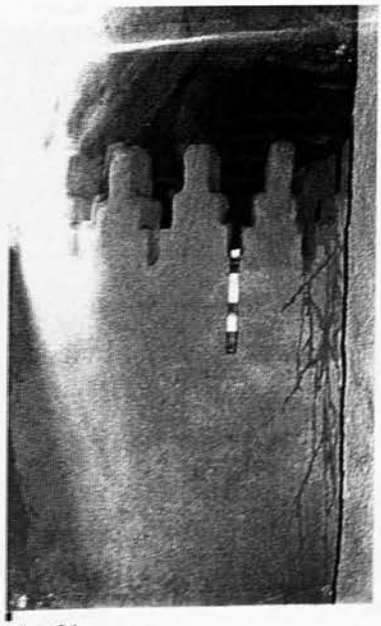


Plate 94



Plate 95



Plate 96

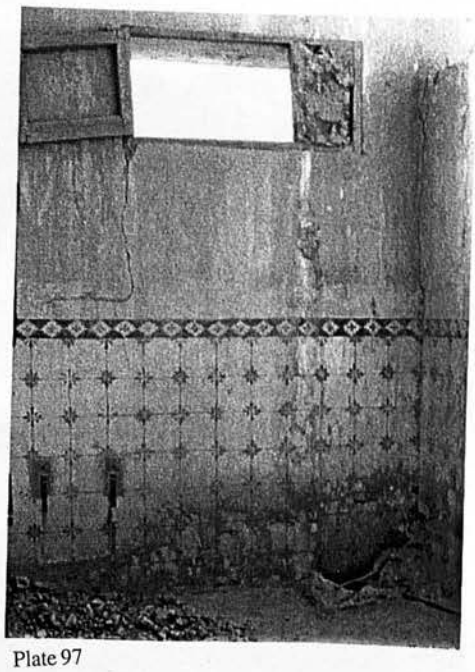


Plate 97

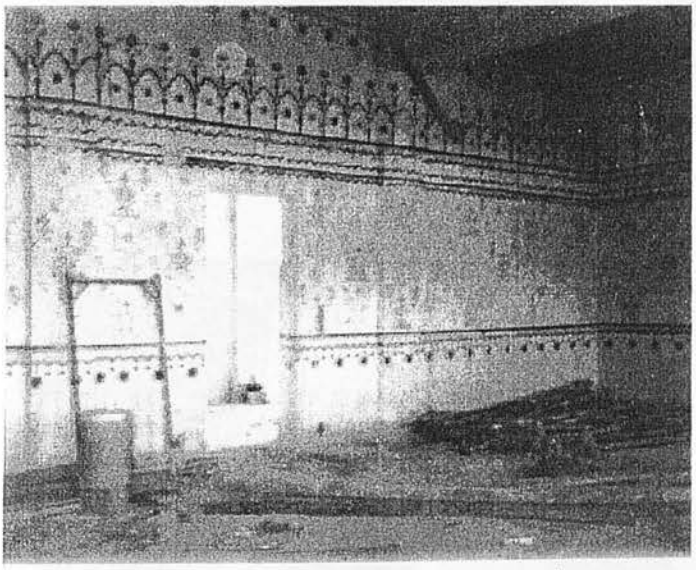


Plate 98

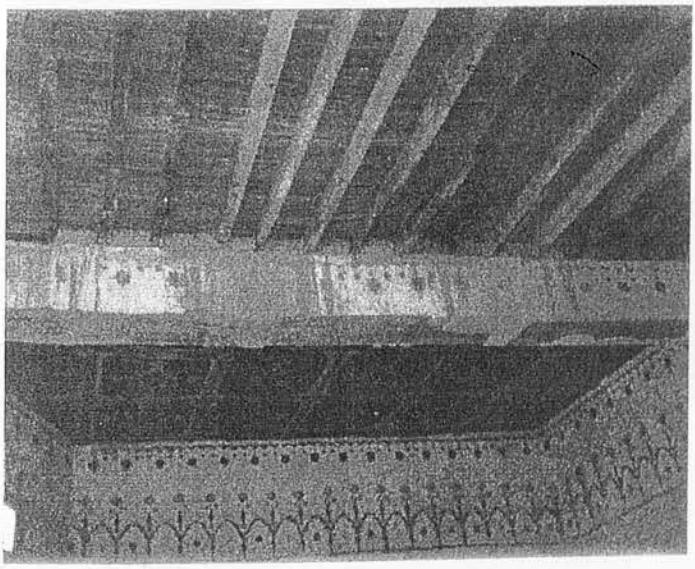


Plate 99

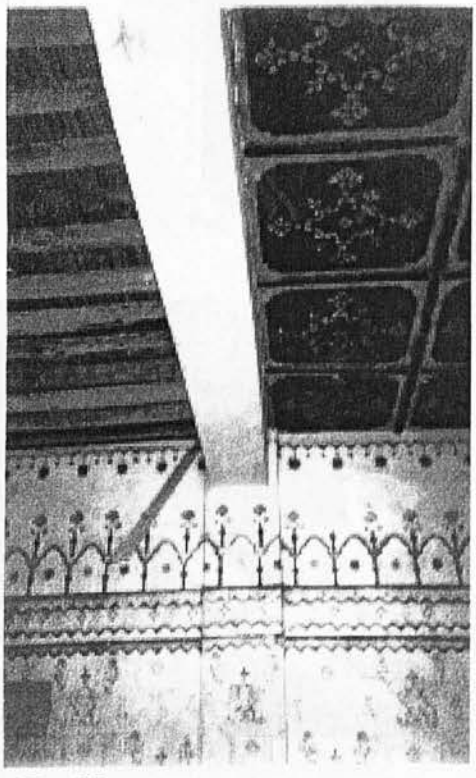


Plate 100

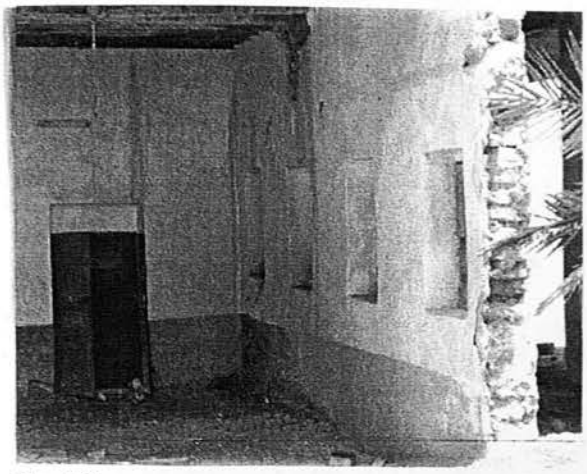


Plate 101



Plate 102



Plate 103

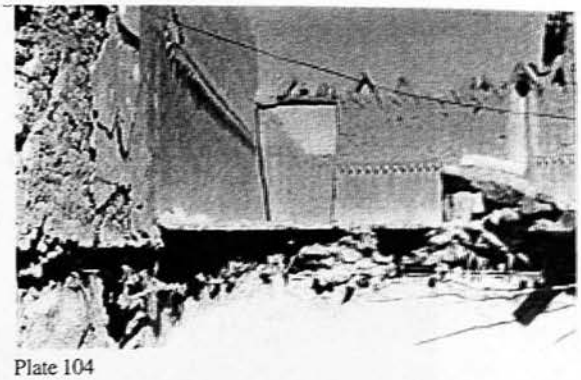


Plate 104

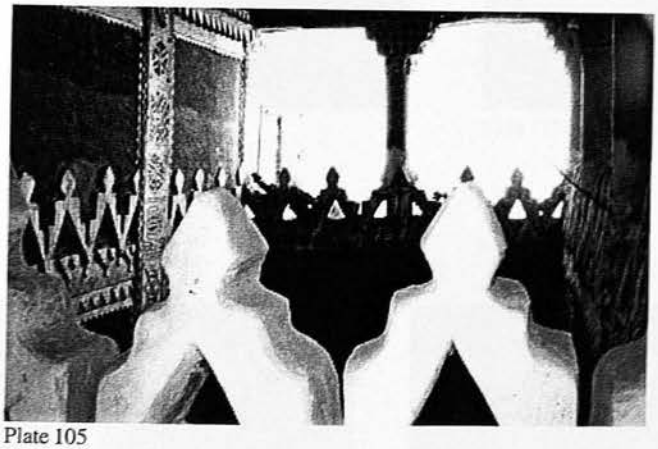


Plate 105



Plate 106



Plate 107

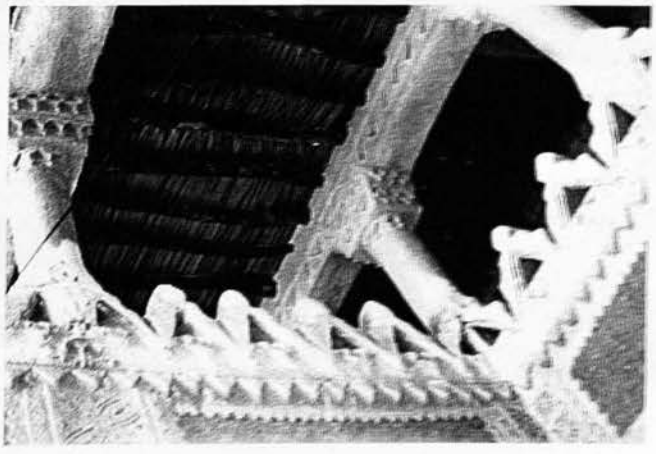


Plate 108

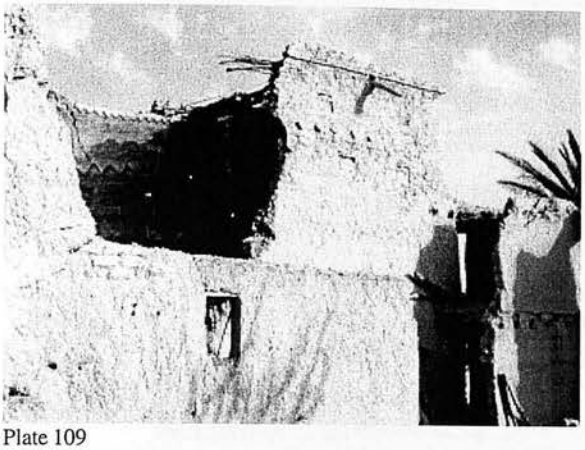


Plate 109



Plate 110



Plate 111

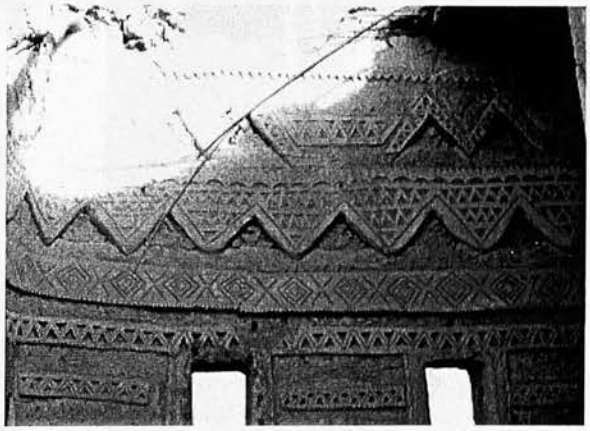


Plate 112

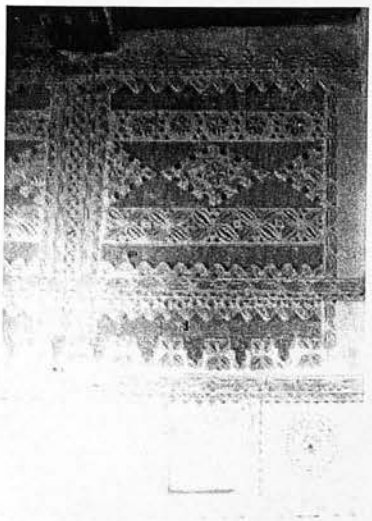


Plate 113

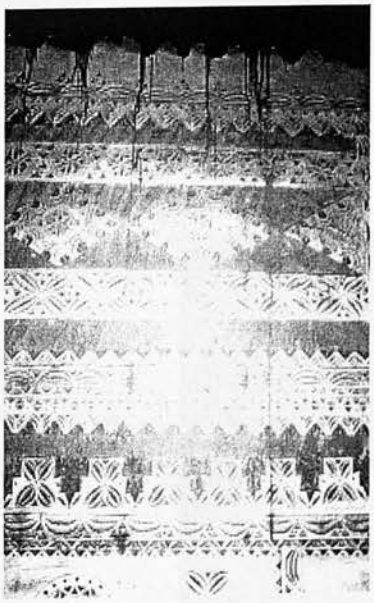


Plate 114

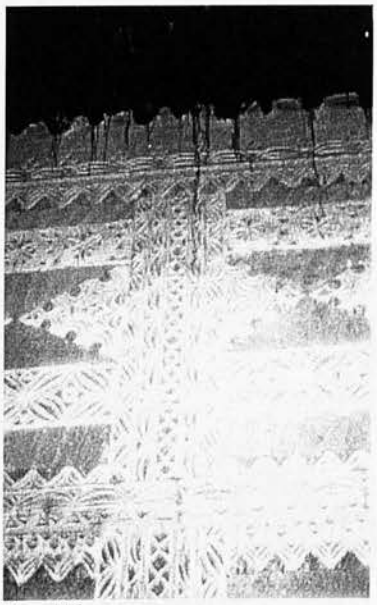


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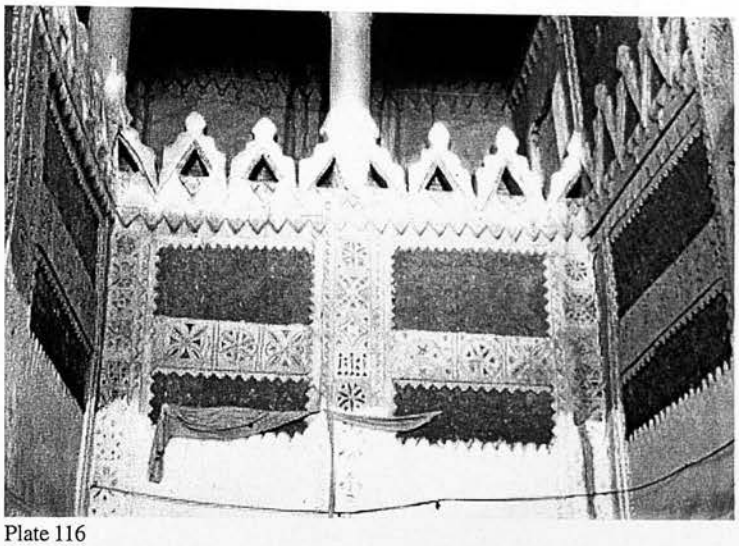


Plate 116

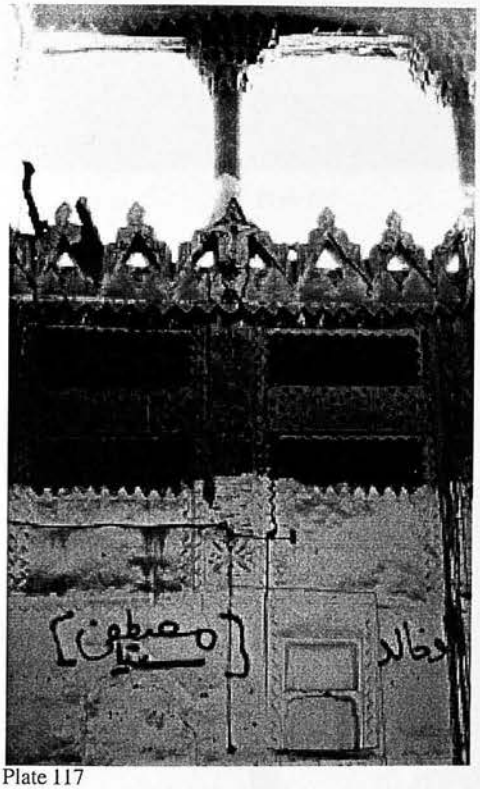


Plate 117



Plate 118



Plate 119



Plate 120

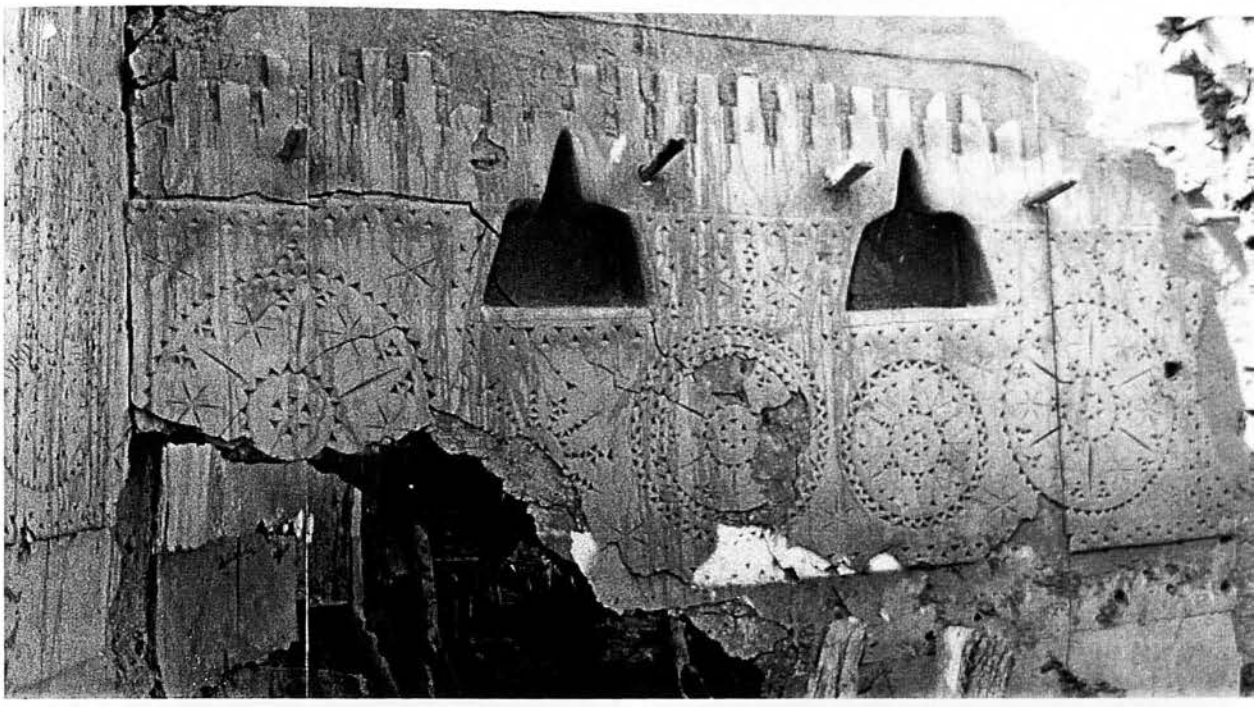


Plate 121

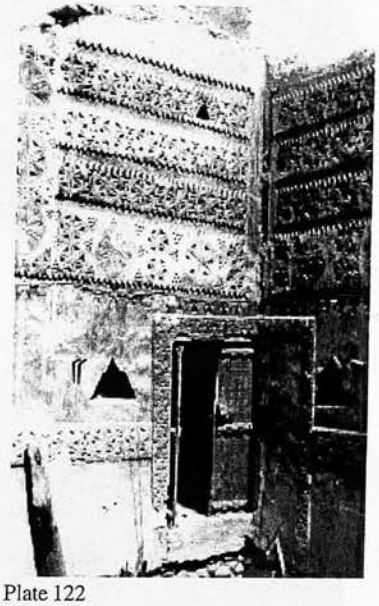


Plate 122



Plate 123



Plate 124



Plate 125

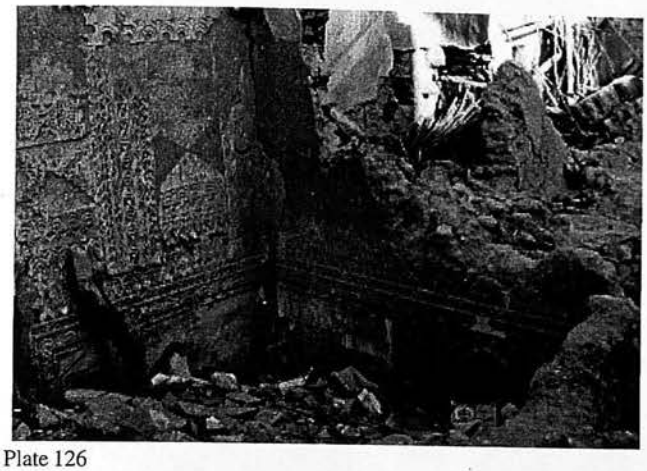


Plate 126

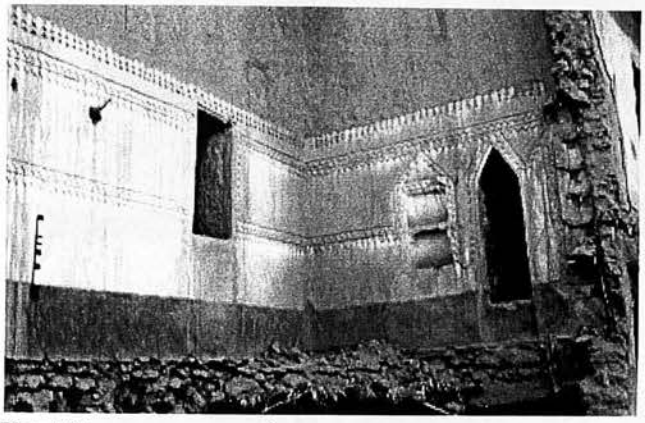


Plate 127



Plate 128

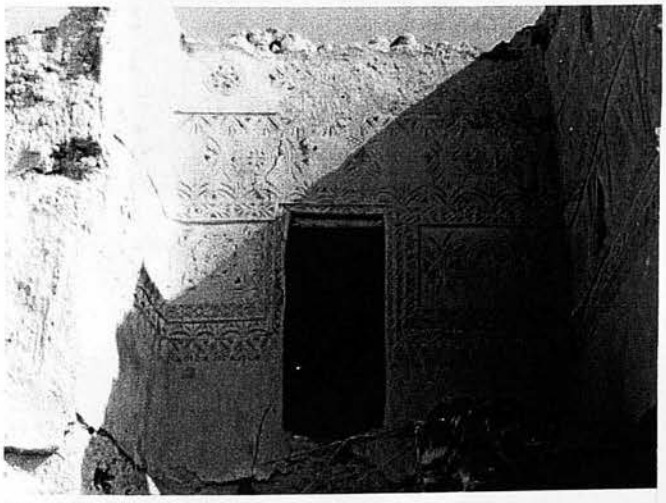


Plate 129

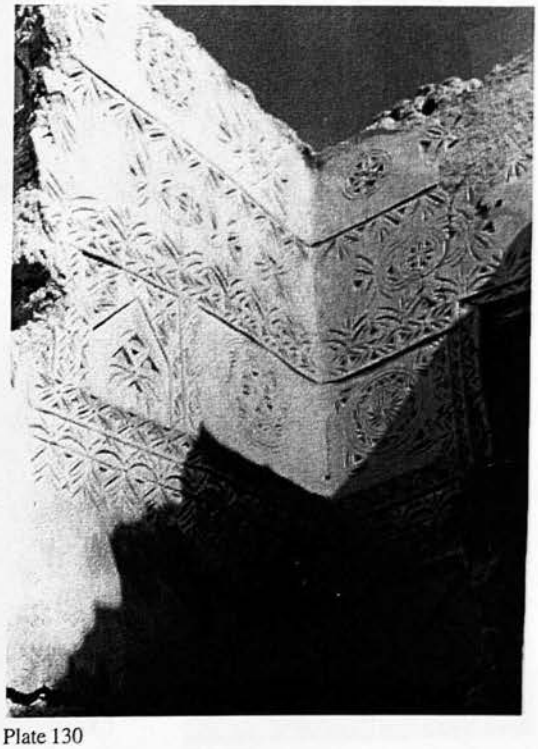


Plate 130

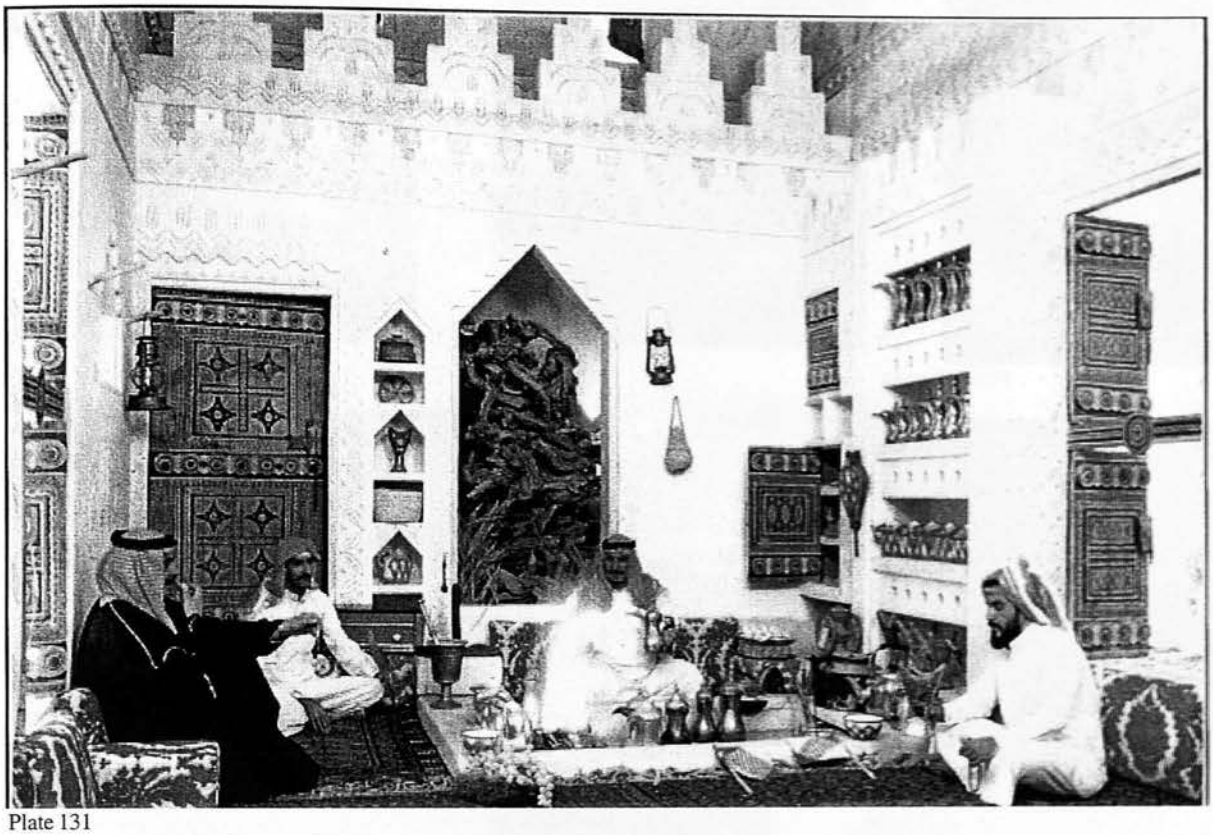


Plate 131

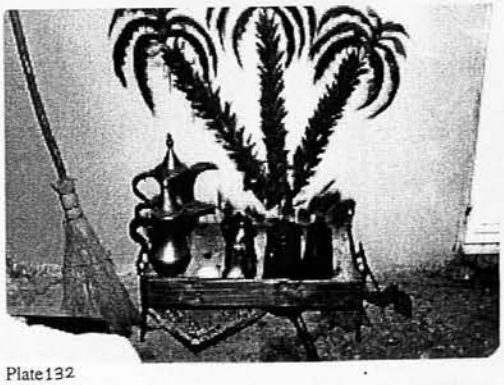


Plate 132

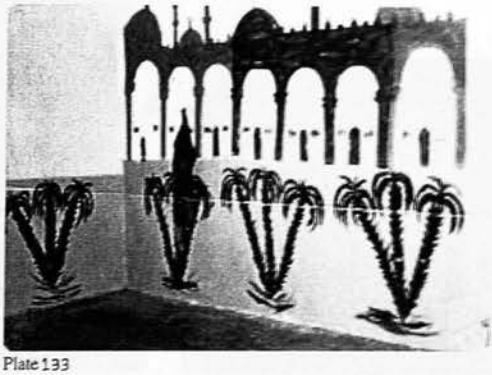


Plate 133

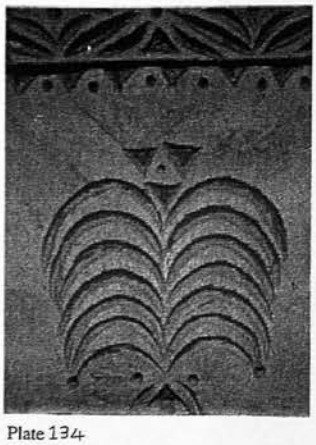


Plate 134



Plate 135



Plate 136



Plate 137



Plate 138



Plate 139



Plate 140

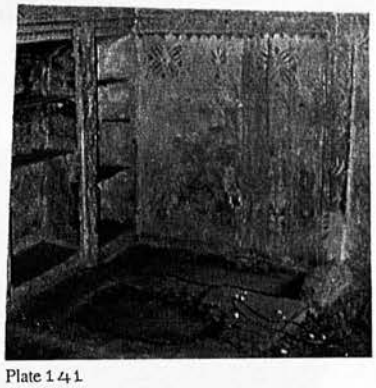


Plate 141

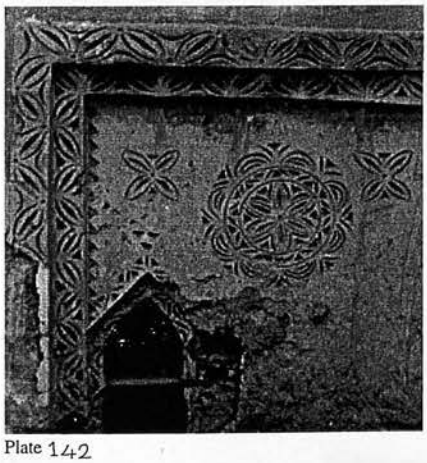


Plate 142



Plate 143



Plate 144



Plate 145



Plate 146



late 147

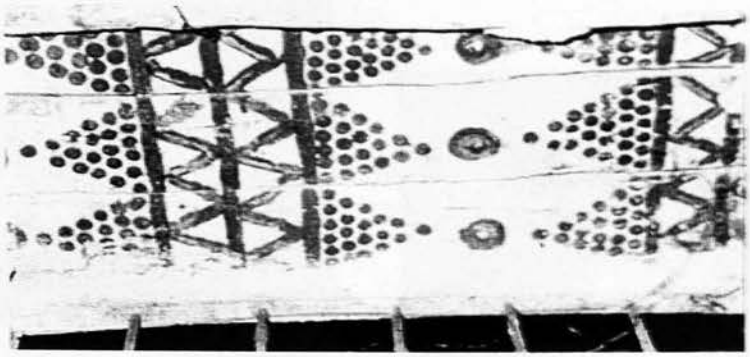


Plate 148

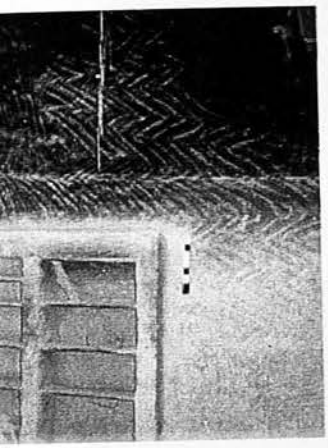


Plate 149



Plate 150

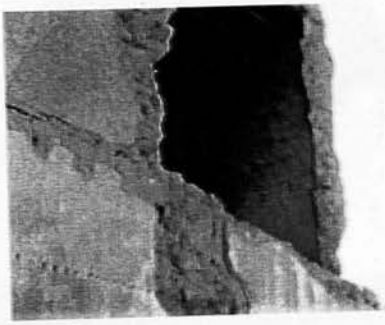


Plate 151

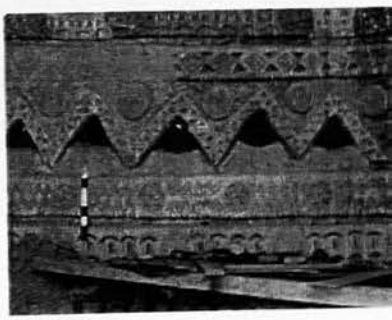


Plate 152



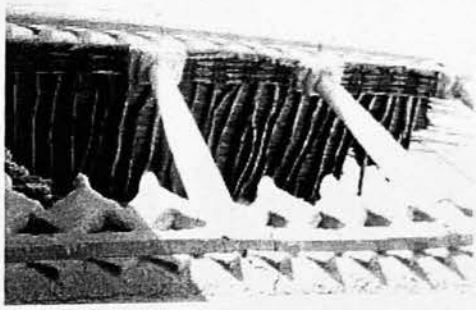


Plate 154



Plate 155



Plate 153

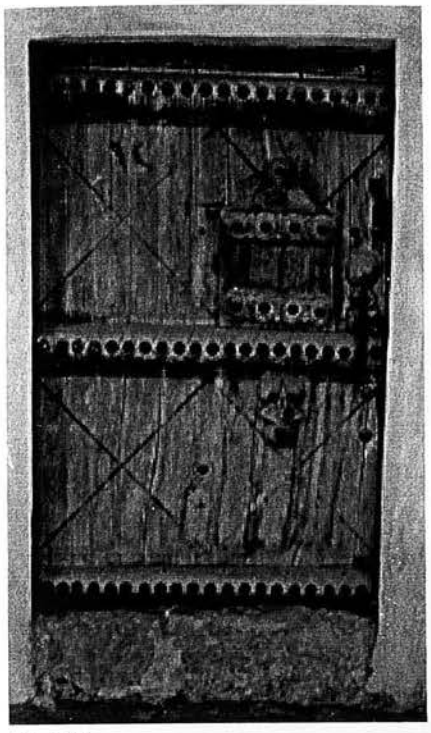


Plate 156



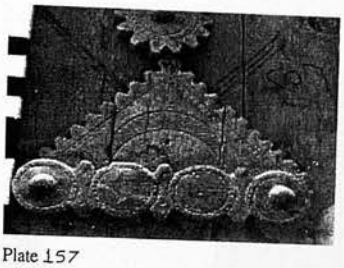


Plate 157



Plate158

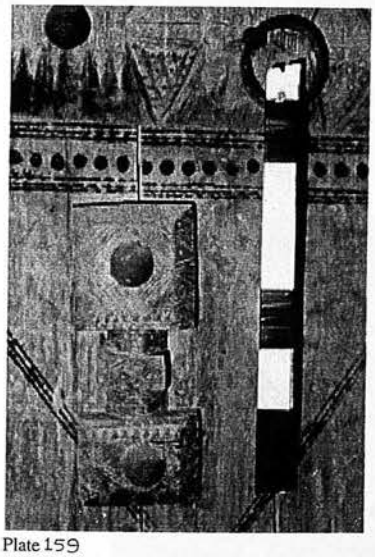


Plate 159

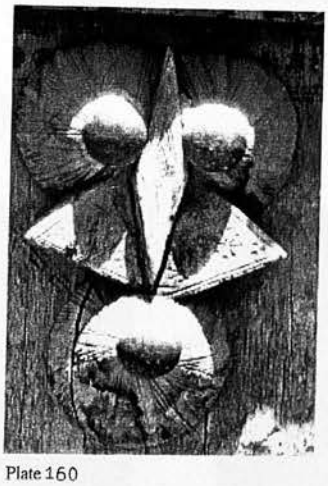


Plate 160



Plate 161

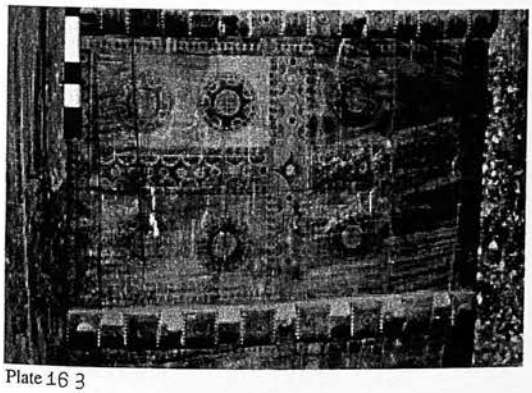


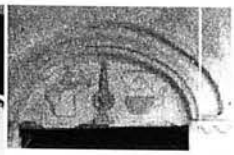
Plate 163



Plate 164



te165



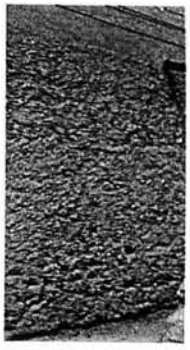


Plate 166

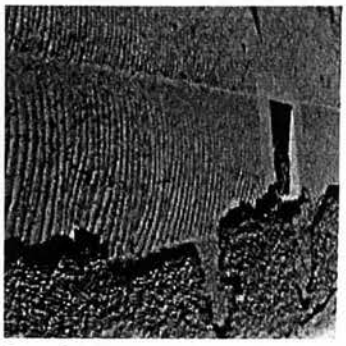
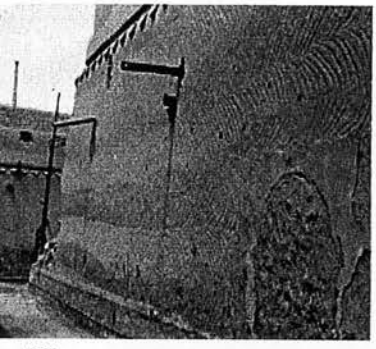


Plate 167



ate168

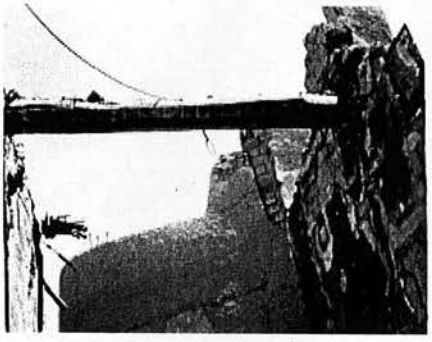




Plate 169

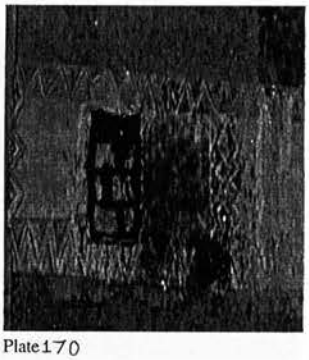


Plate170



Plate171



Plate172



te173

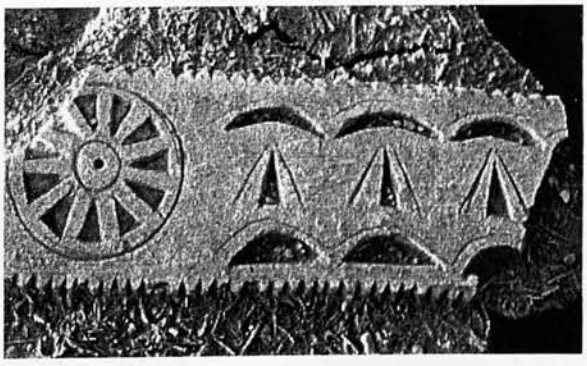
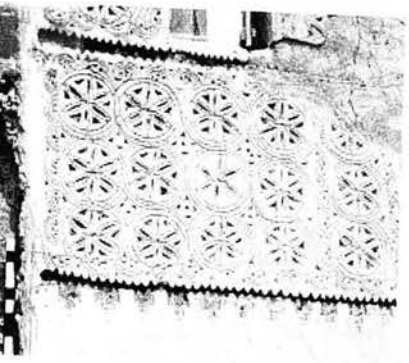


Plate174



e175

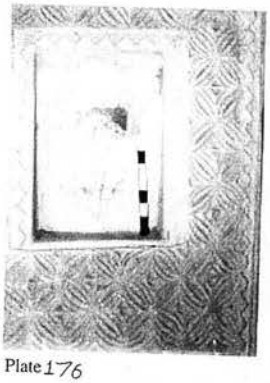


Plate 176

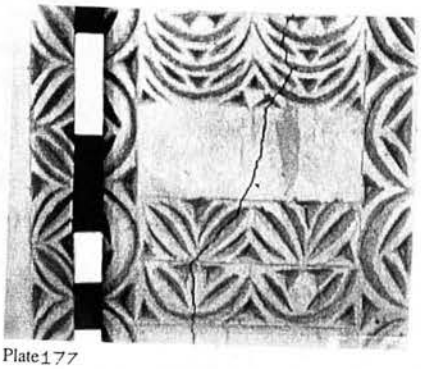


Plate 177



Plate 178



Plate 179

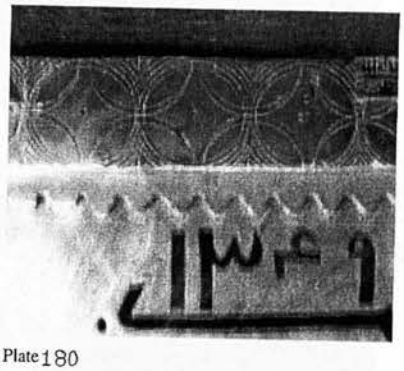
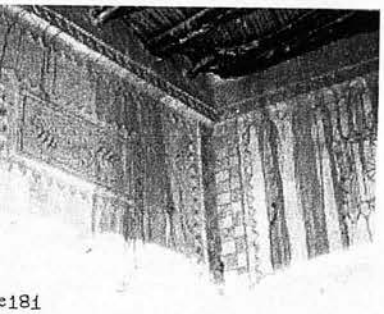


Plate 180



e181

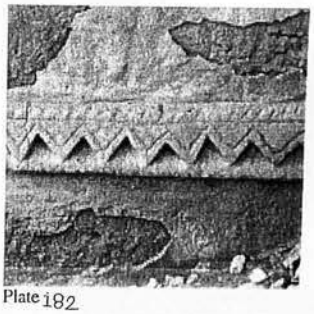


Plate 182

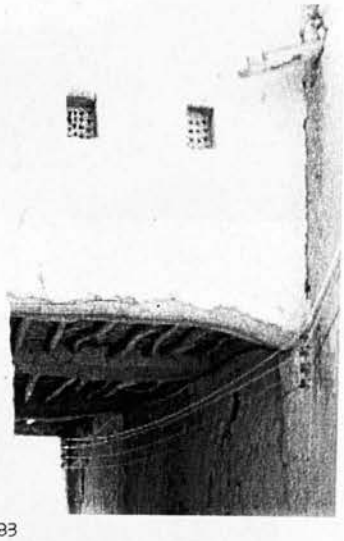


Plate 183



Plate 184

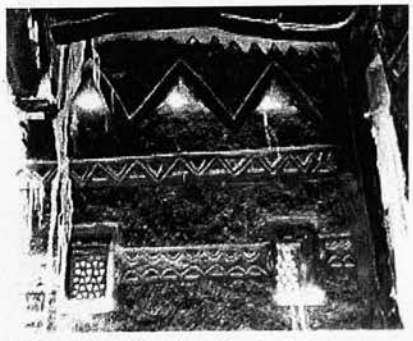


Plate 185

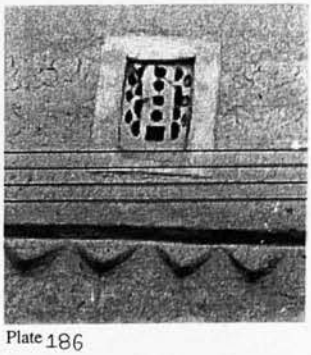


Plate 186

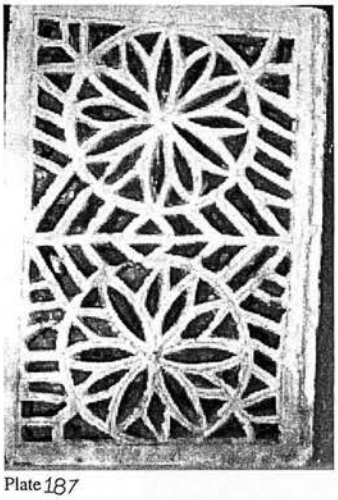


Plate 187

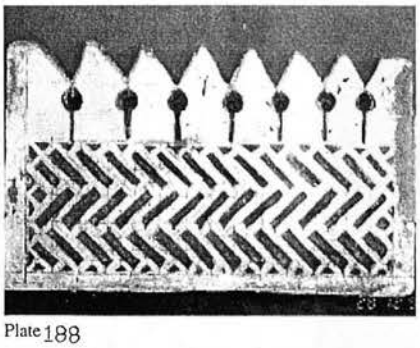


Plate 188

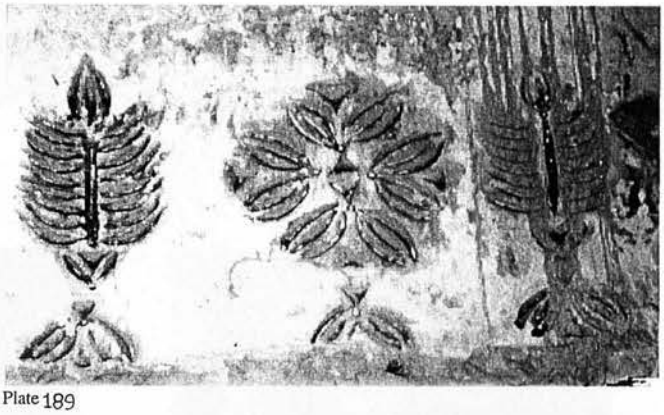


Plate 189



Plate 191

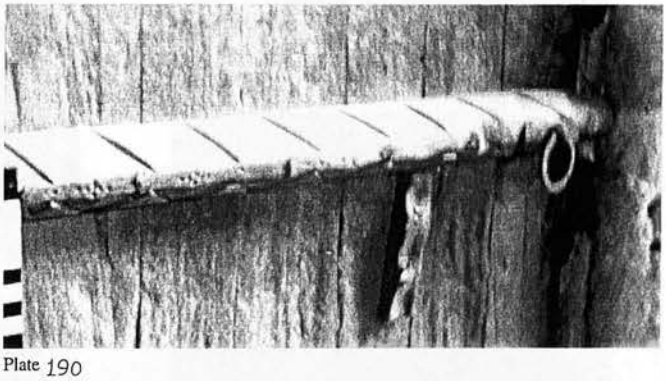


Plate 190

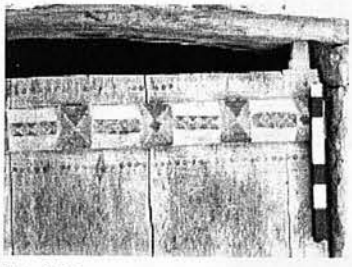


Plate 192



Plate 193



Plate 194



Plate 195



Plate 196



Plate 197



Plate 200



Plate 201

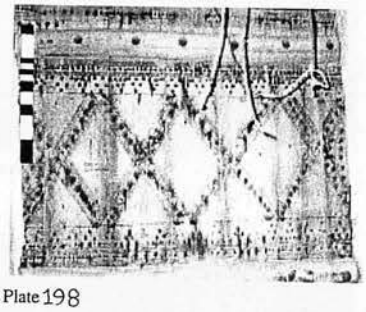


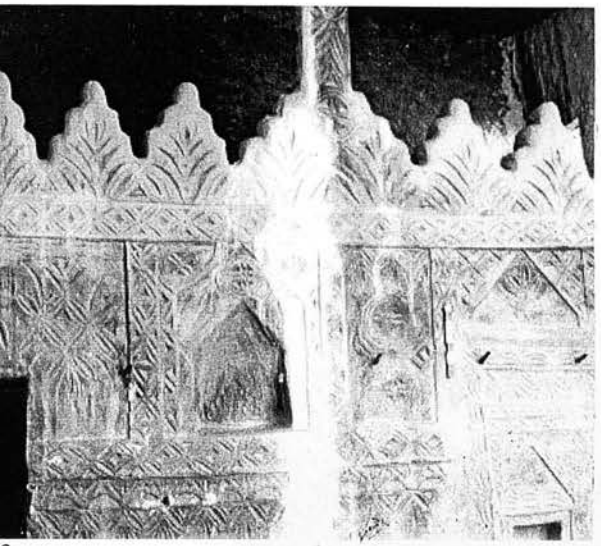
Plate 198



Plate 199



Plate 202



3



Plate 204

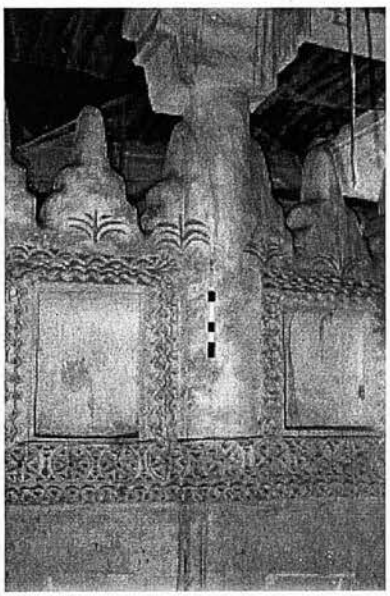


Plate 205

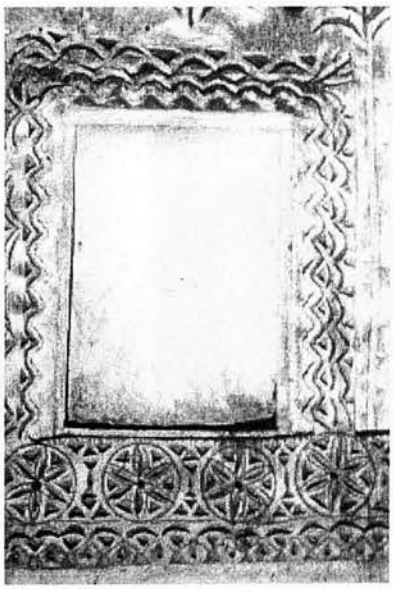


Plate 206



Plate 207



Plate 208



Plate 209



Plate 210

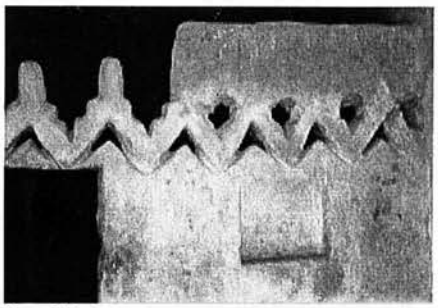


Plate 211



Plate 212

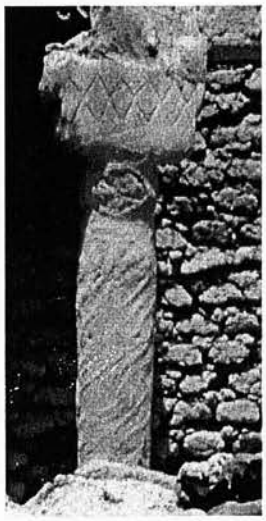


Plate 213

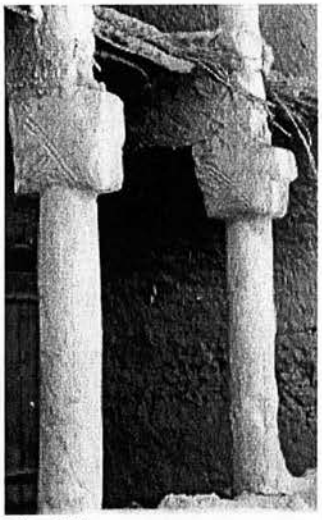


Plate 214

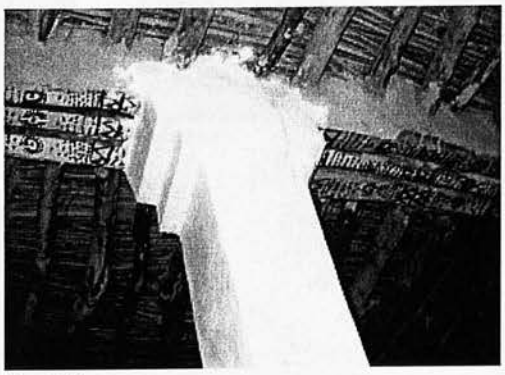


Plate 215

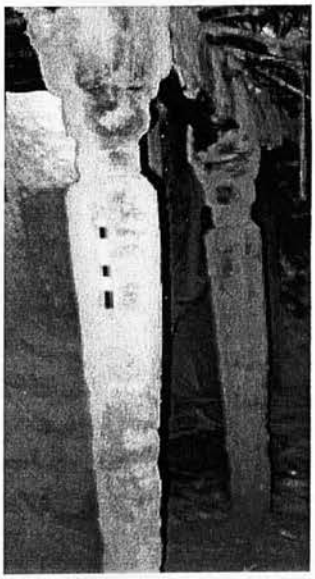


Plate 216



Plate 217



Plate 218



Plate 219



Plate 220

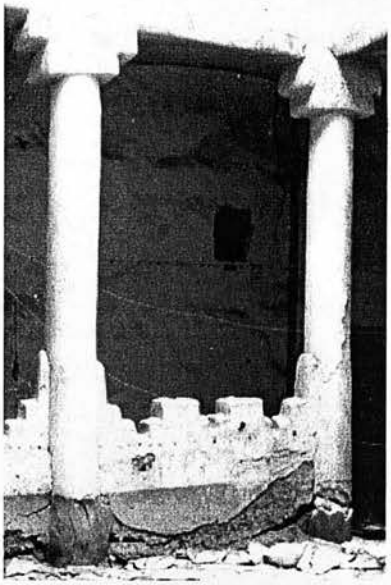


Plate 221



Plate 222



Plate 224



ate 223

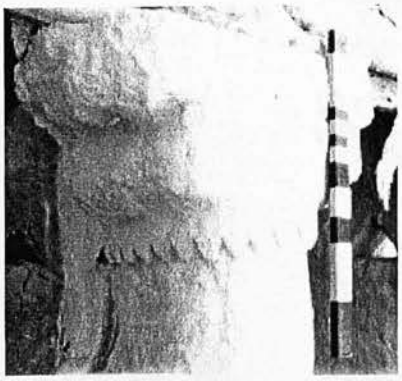


Plate 225

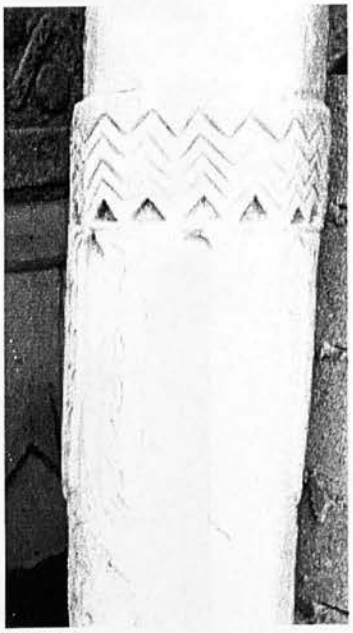


Plate 226

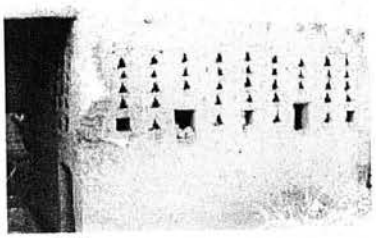


Plate 227

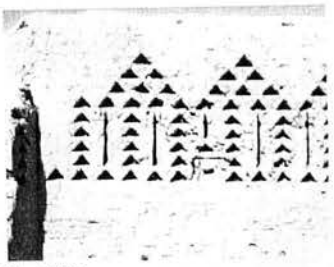


Plate 228



Plate 229

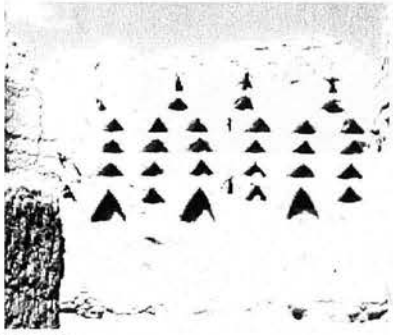


Plate 230

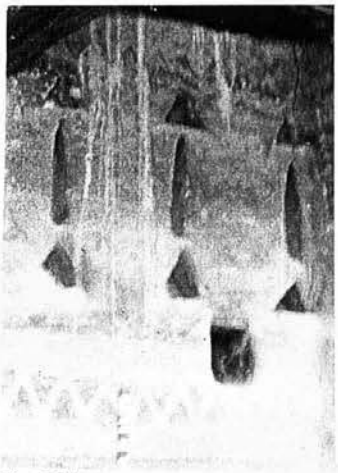


Plate 231



Plate 232



Plate 233



Plate 234

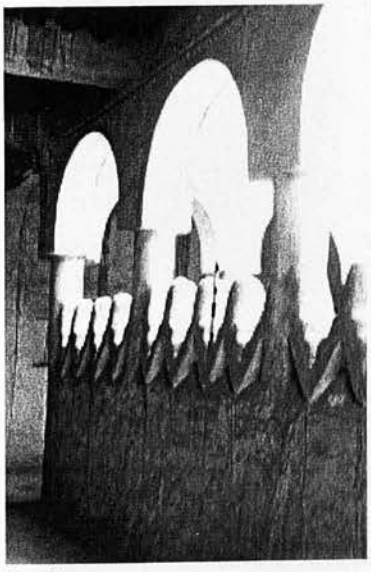


Plate 235

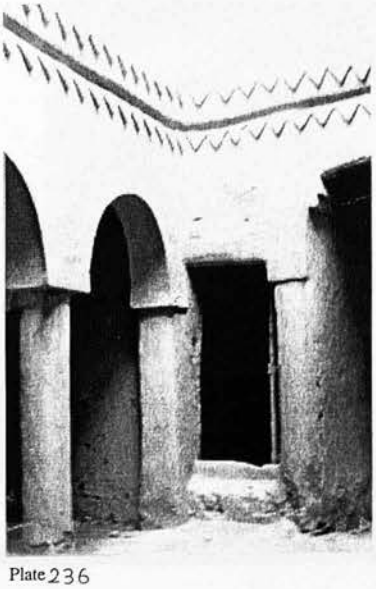


Plate 236

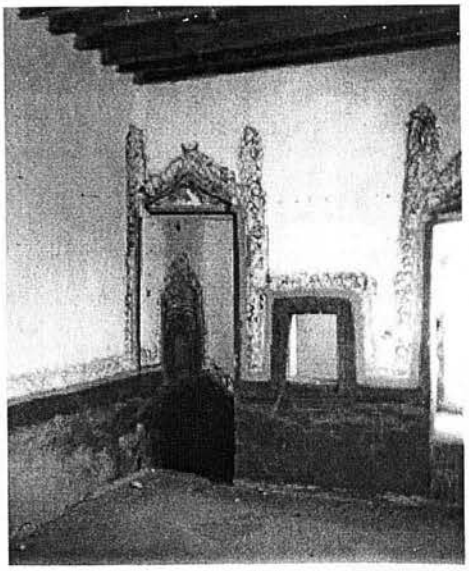


Plate 237



Plate 237, a.



Plate 238



Plate 239



Plate 240

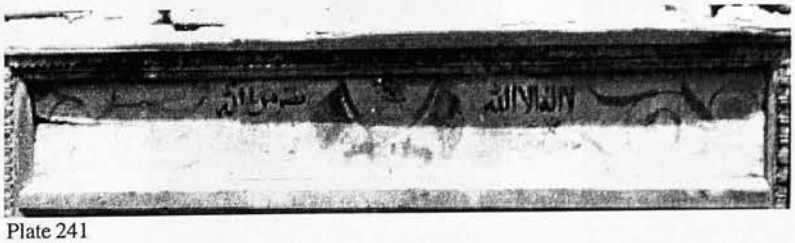


Plate 241

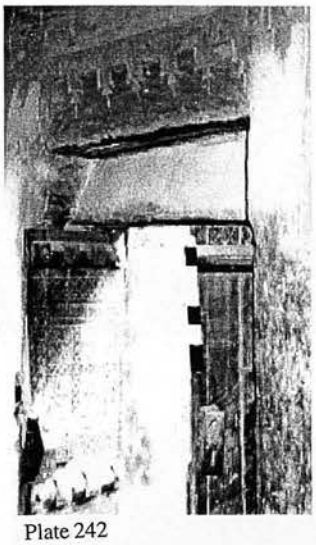


Plate 242

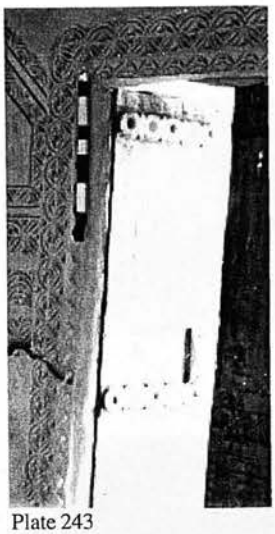


Plate 243

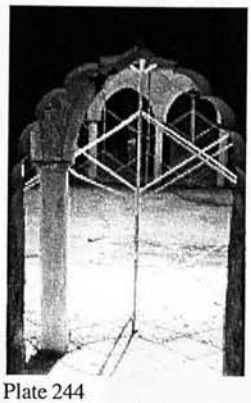


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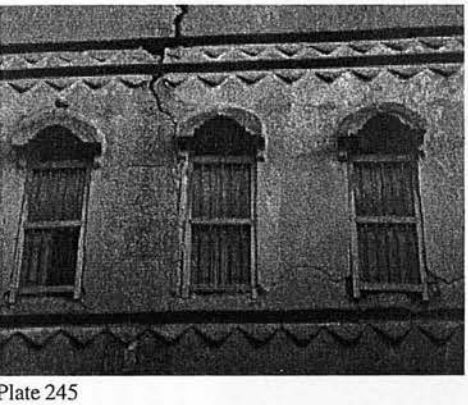


Plate 245



Plate 246



Plate 247

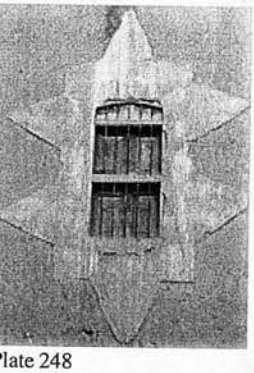


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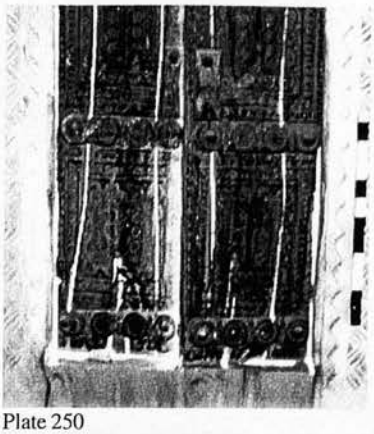


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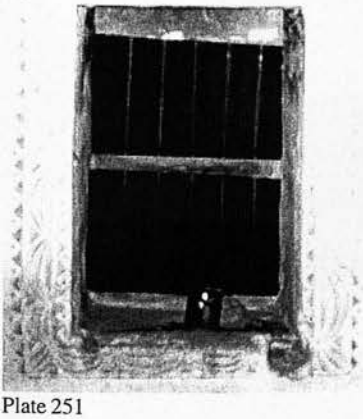


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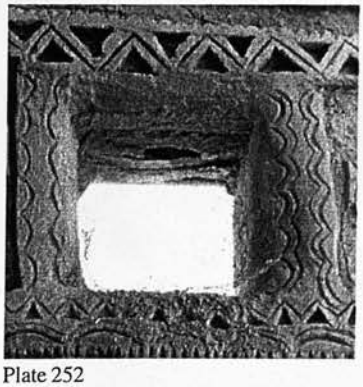
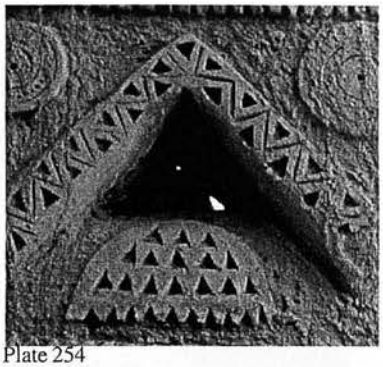
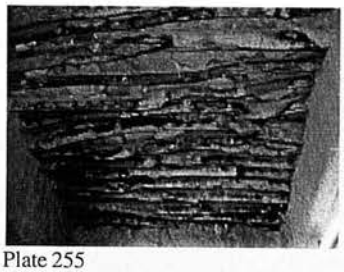


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Plate 255

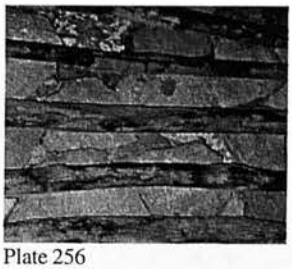

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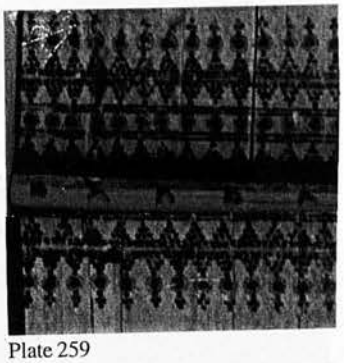

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Plate 261

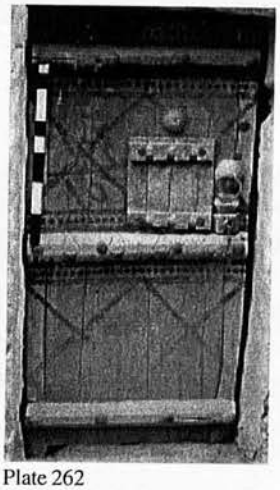
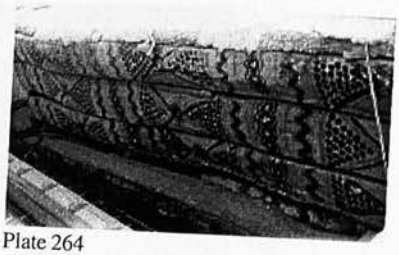
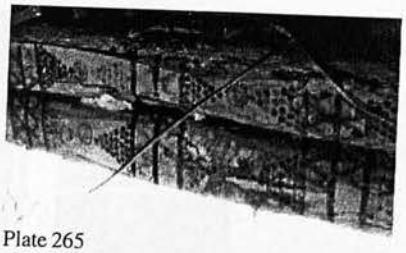

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Plate 265

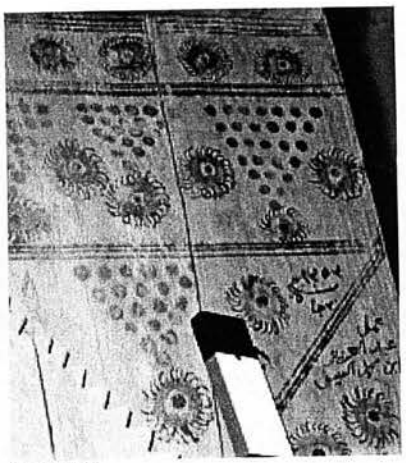


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Plate 267

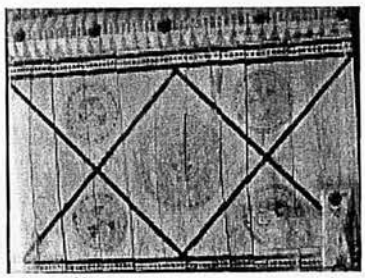


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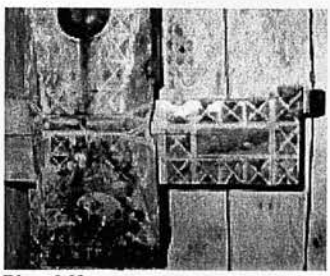


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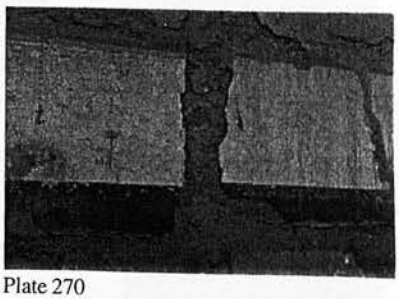


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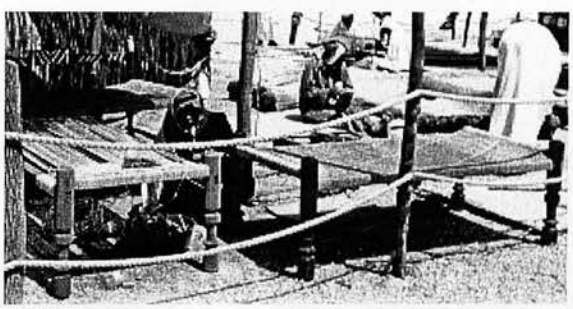


Plate 272



Plate 273

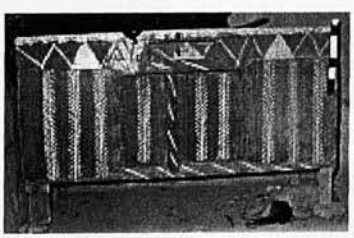


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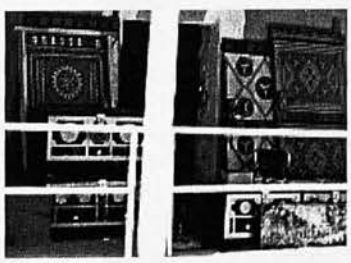
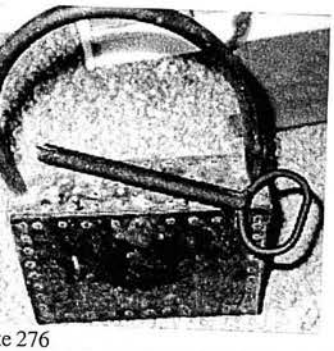


Plate 275



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Plate 277



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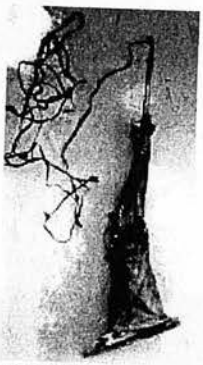


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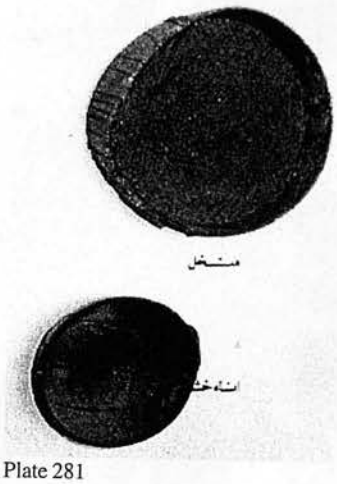
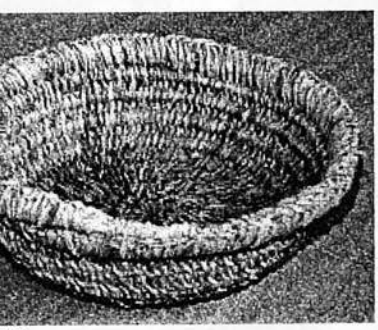


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Plate 282



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Plate 284



Plate 285



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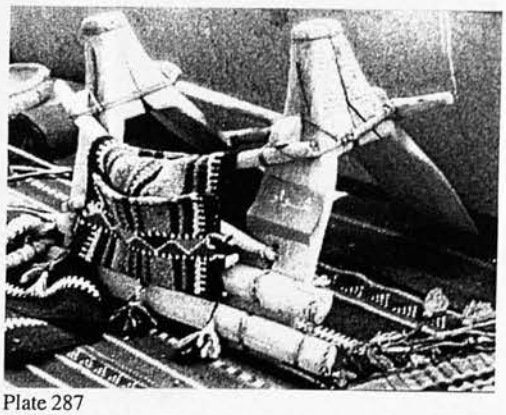


Plate 287



Plate 289

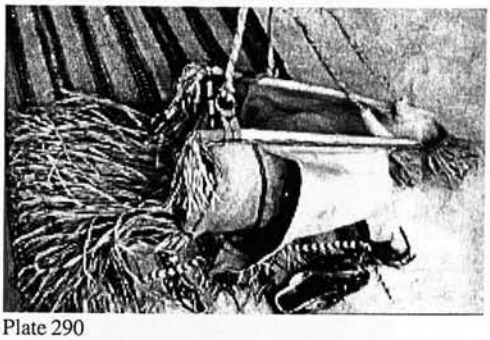
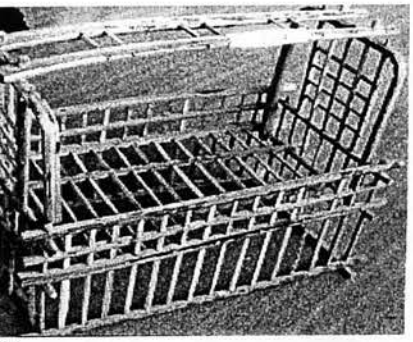
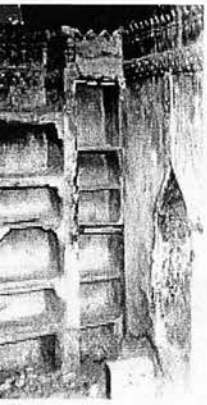


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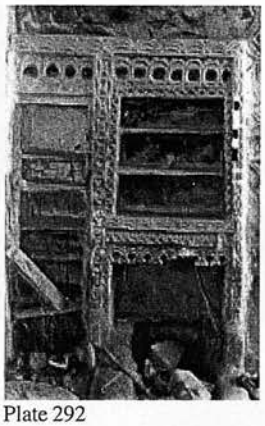


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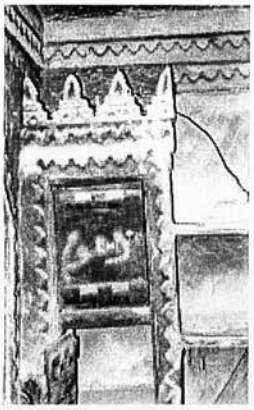
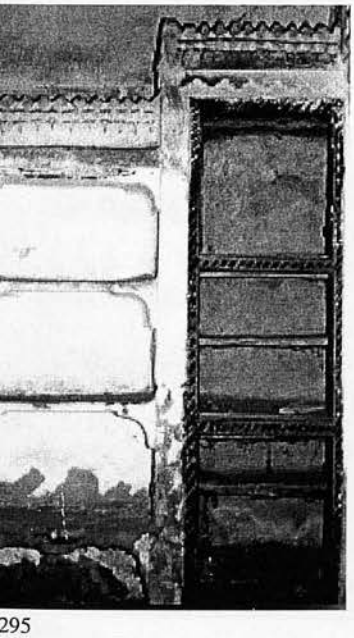


Plate 293



Plate 294



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Plate 296

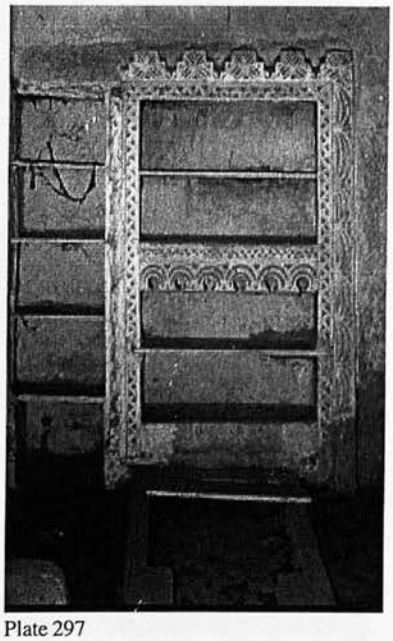


Plate 297



Plate 298

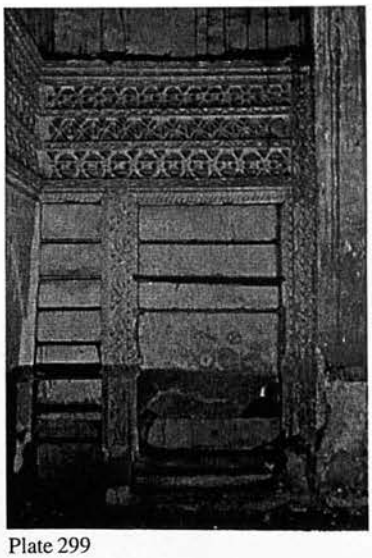


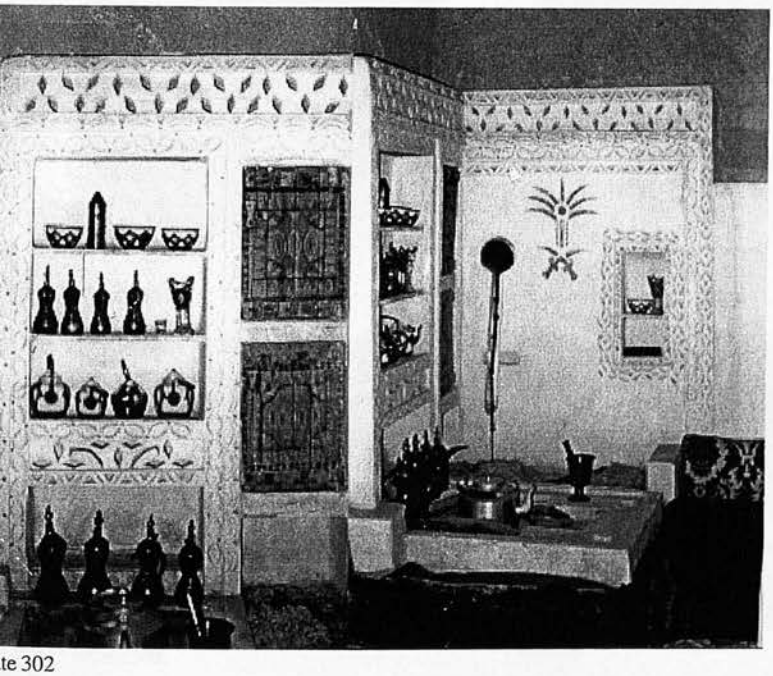
Plate 299



Plate 301



Plate 300



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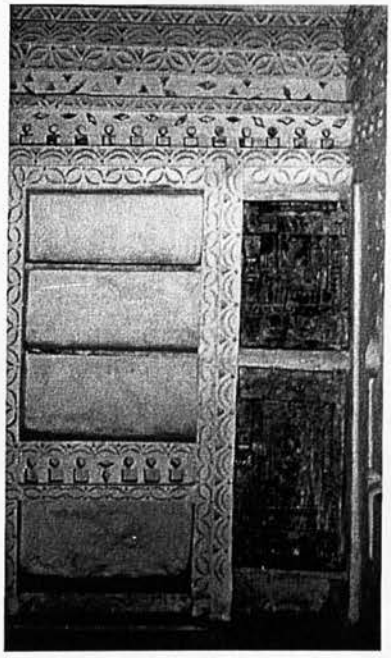


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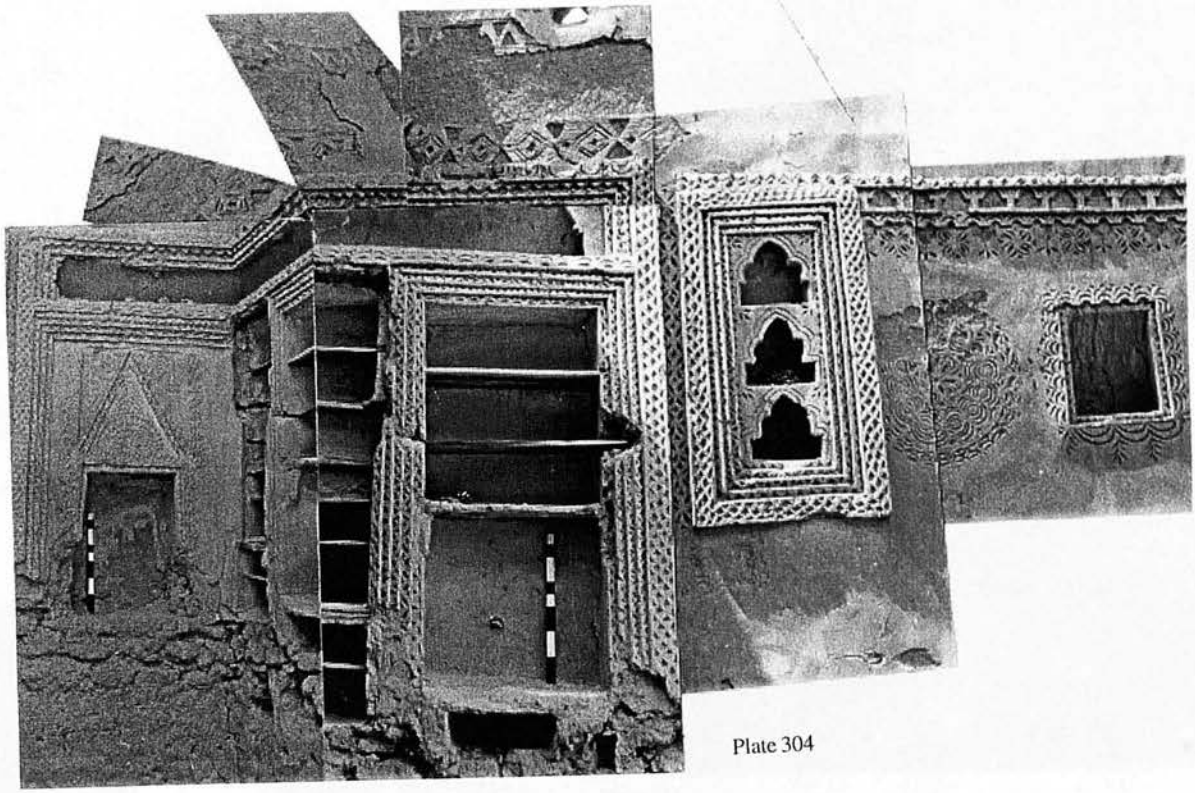


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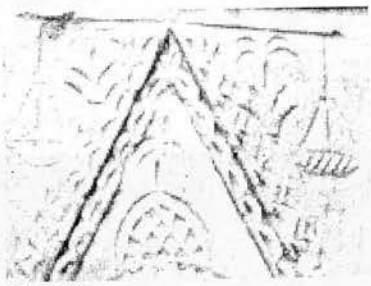


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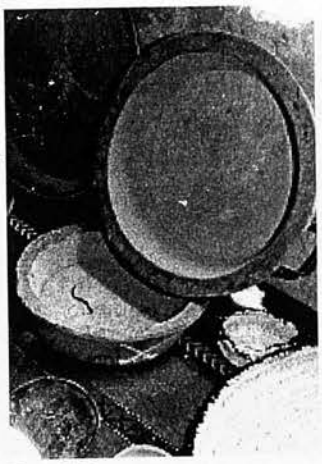


Plate 306



Plate 308

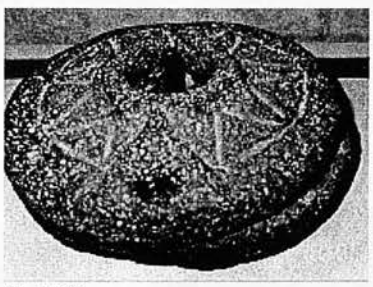


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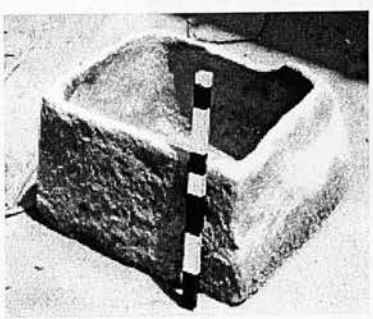


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Plate 310



Plate 311

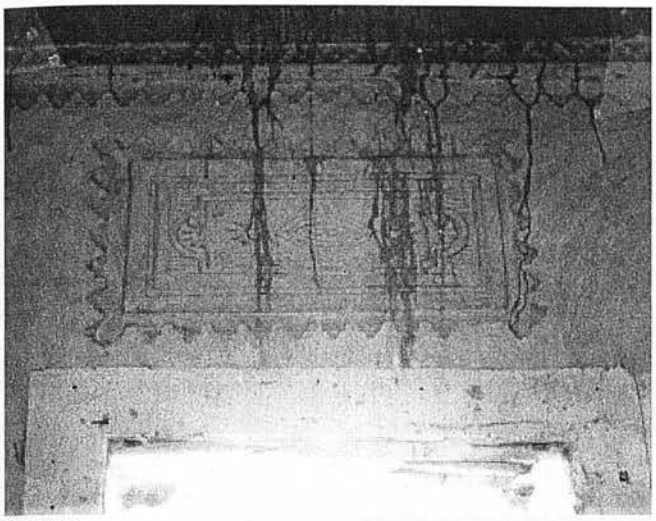


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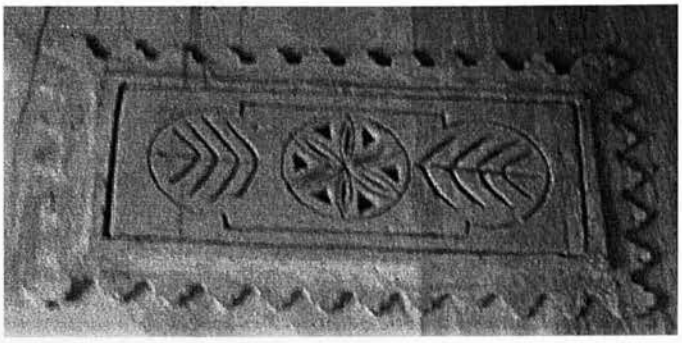


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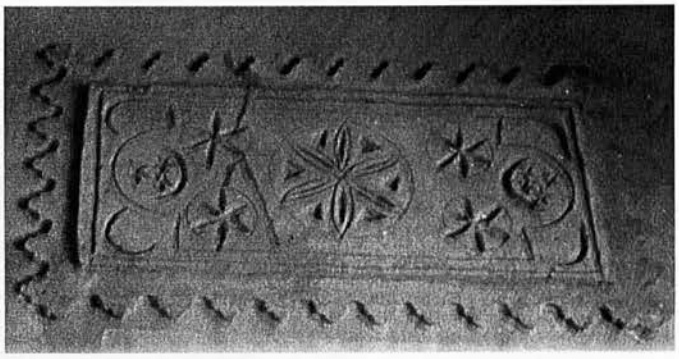


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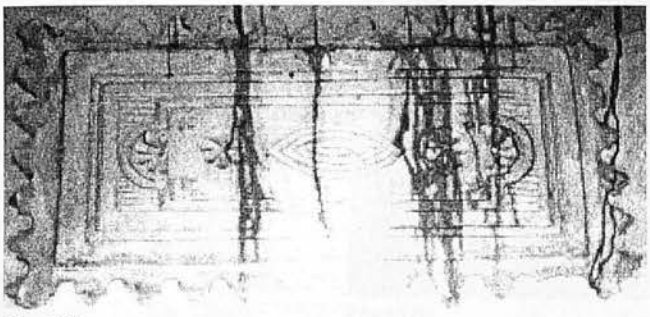


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Plate 314

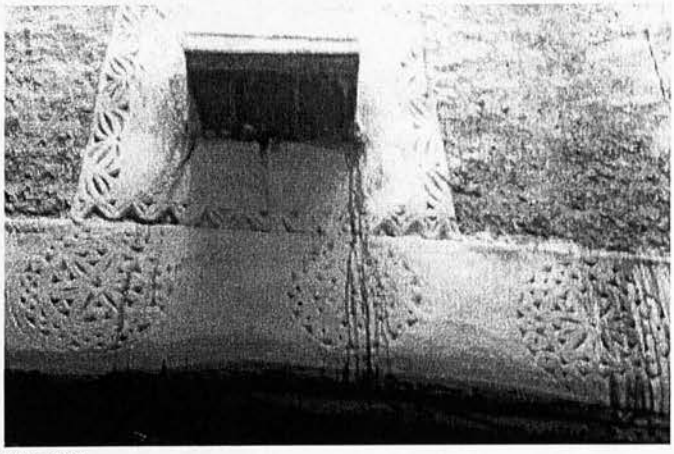


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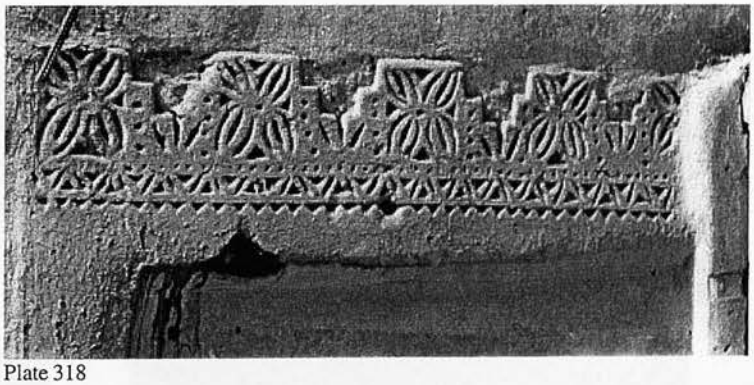


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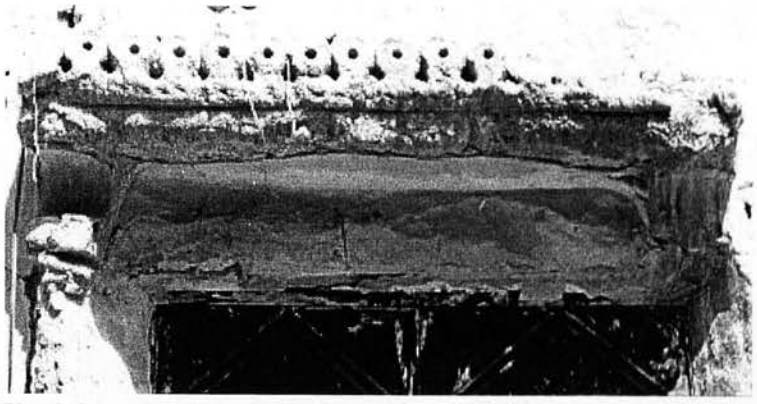


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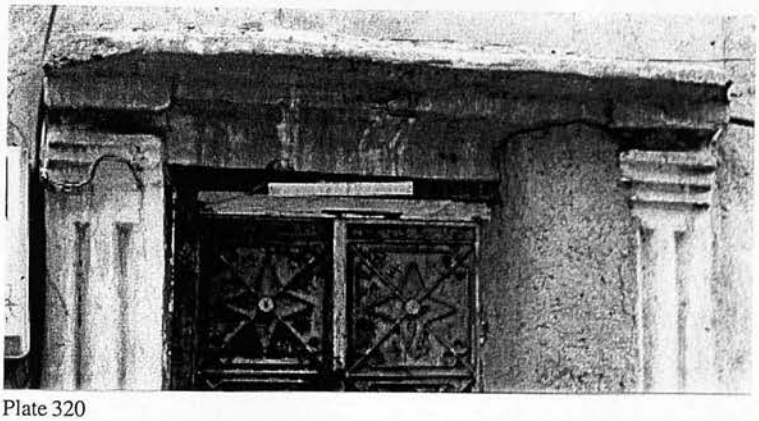


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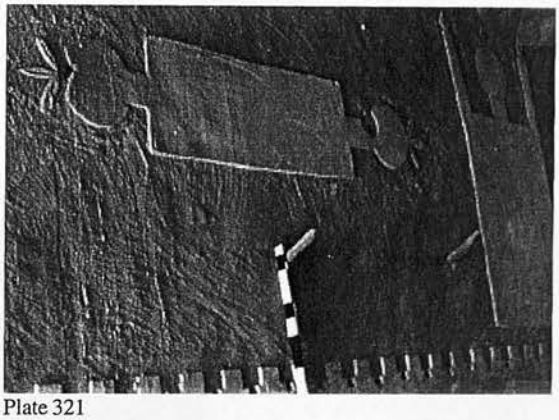


Plate 321



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Plate 323

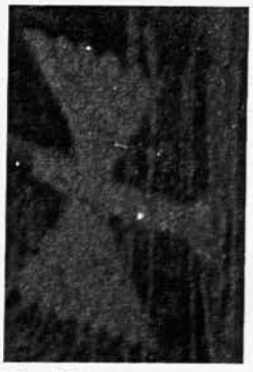


Plate 324



Plate 325

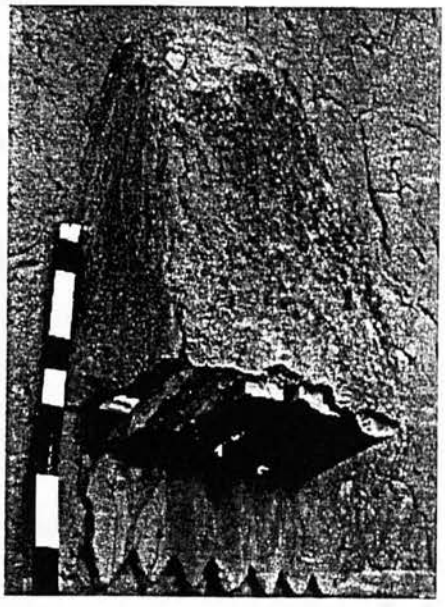


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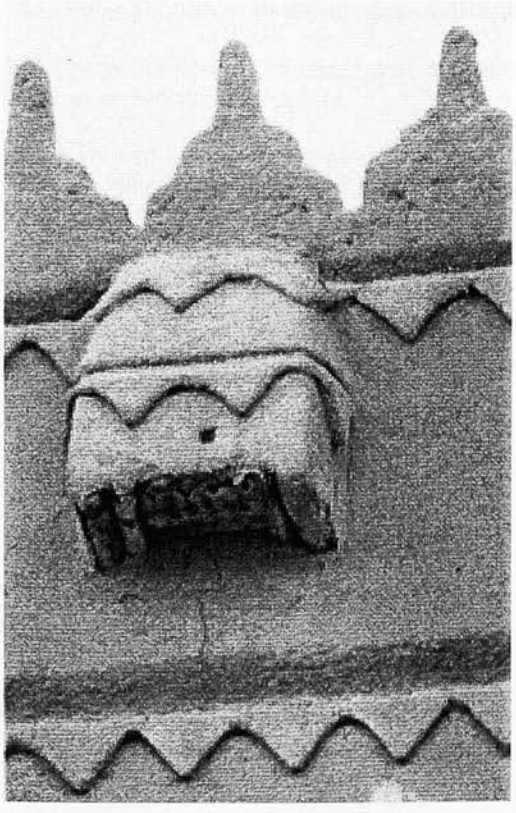


Plate 327 (From Stacey International, P 46)

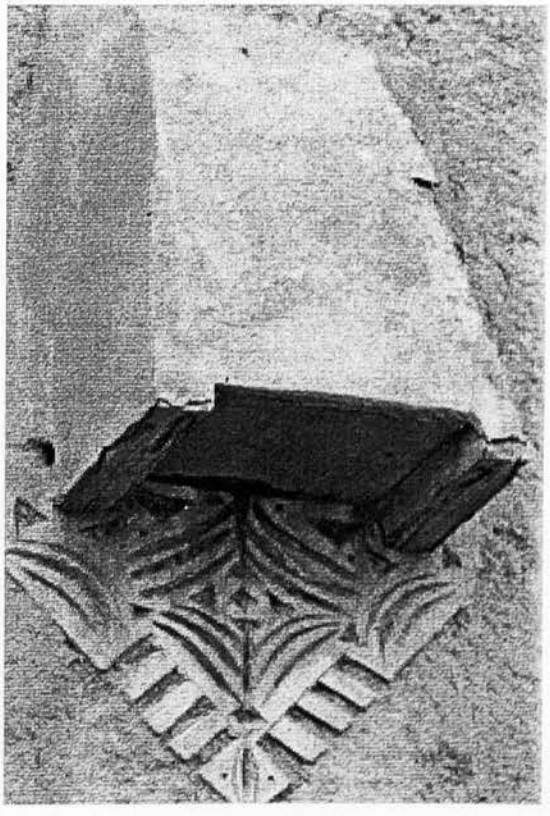


Plate 328 (From Stacey International, P 46)

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12- Cross-section in external stone and mud-brick wall.

13- Cross-section in external mud-brick wall.

14- Cross-section in external mud-brick wall.

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21- Cross-section through ceiling, wall, window and floor.

22 to 24- Methods of ceiling construction.

25 to 26- Details in the ceiling construction of typical reception room.

27- The main internal trade routes of Najd.

28- The main trade and haji routs.

29- Sadleir's route through Central Arabia.

30- Palgrave's route through Central and Eastern Arabia.

31- Pelly's route.

32- Guarmani's route in Northern Arabia.

33- Doughty's route Central and western Arabia.

34- The urban element of traditional Islamic city.

35- Site plan of the old town of al-Majma'a.

36 & 37- Site plan of the old town of Huraymila'.

38- Plan of al-Riyad (old town, 1862, Palgrave).

39- Plan of al-Riyad (old town, 1917-18, Philby).

40- Reconstructed plan of the Prophet house/ mosque at al-Madina.

41 & 42- Ground and basement plans of al-'Uqda's mosque at al-Majma'a.

43 & 44- Section and main plan of al-'Uqda's mosque at al-Majma'a.

45- Plans of various major early open mosques.

46- Ground floor of covered mosque at al-Riyad.

47 & 48- Typical, square defensive tower.

49- Typical, circle defensive tower.

50- Ground-floor plan of al-Masmak fortress at al-Riyad.

51- Ground-floor plan of the Imarat of Ibrahim al-'Asker at al-Majma'a.

52- First-floor plan of the Imarat of Ibrahim al-'Asker at al-Majma'a.

53- Cross-section of the covered market at al-Majma'a.

54- Ground-floor plan of the covered market at al-Majma'a.

55- Ground-floor plan of the covered market at Shaqra'.

56 & 57- Section Isometric and cross section of a typical Najdian house.

58- Ground-floor plan of the house of Souliman al-'Ajeel at Burayda.

59- First-floor plan of the house of Souliman al-'Ajeel at Burayda.

60- Ground-floor plan of the house al-Dikheel at 'Unayza.

61- First-floor plan of the house al-Dikheel at 'Unayza.

62- Details of the main street-door of the house al-Tuwayjari at al-Majma'a.

63 to 65- Façade and plans of the house of Mohammad Khalid al-Thabit at al-Majma'a.

66- Interior perspective in the women's section.

67- Interior perspective in the open courtyard.

68- Ground-floor plan of the house al-Tuwayjari at al-Majma'a.

69- First-floor plan of the house al-Tuwayjari at al-Majma'a.

70 & 71- Cross-section in the house al-Tuwayjari at al-Majma'a.

72- Isometric section of *al-rawshan* and *al-majlis*.

73 to 83- Elevations of niches of various sizes and forms.

84- Interior perspective of a typical reception room.

85- Plan of a typical reception room.

86 to 93- Botanical decorative elements and applications.

94 to 109- Modified botanical decorative elements of palm-tree shapes.

110 to 119- Semi-realistic and modified palm-tree and leaves of various shapes.

120 to 131- Modified decorative flowers of various forms and sizes.

132 to 137- Decorative flowers of various shapes.

138 to 142- Fruit- based shapes.

143 to 175- Geometrical decorative elements.

176 to 195- Geometrical symbolic elements.

196 to 200- Materialist symbolic shapes.

201 to 205- Traditional methods of a wall surface treatment.

206 & 207- Denticulate decoration.

208 to 214- Decorated columns of various sizes and forms.

215 to 220- Plain columns of various sizes and forms.

221 & 222- Detail of a decorated column.

223- Plain columns of various sizes and forms designed with pyramidical capitals.

224 to 229- Decorated capitals.

230 to 235- Plain capitals of various sizes and forms.

236- Plain, pyramidical capitals of various sizes.

237 to 239- Architectural details of some Najdian columns.

240 to 244- Traditional decorative arches.

245 & 246- Details of the construction of door and window.

247- Describing colours.

248- Wall-recess decorated with hanging, decorated cloth.

249- Decorated, woven rugs (*qata'*)

250- Children's leather cradle hung by a rope from a ceiling beam.

251- Wooden food board hung by a rope from a ceiling beam.

252- Low upholstered mattress with two cushions.

253- Hand-rest made of an wooden saddle.

254- Hand-rest made of an upholstered cushion and pillows.

255- Rocking wooden cradle.

256- Stationary wooden cradle.

257- Metal cradle.

258- Small wooden table and its structure.

259- Wooden bed.

260- Wall-cupboard.

261- Decorated bellows.

262- Decorated wooden censer.

262, a- Iron roaster with its spatula.

263- Wooden sloop with handle used to cool coffee beans.

264- Iron tongs.

265- Water jar with wooden frame.

266 to 270- Plans of square buildings.

271- Cross-section of Najdian wind-catcher (air shaft type).

272 to 277- Some traditional types of interior screens.

278 to 281- Plans showing the types of interior spaces of Najdian buildings.

282- Façade of Najdian building.

283- Examples of plans of early Najdian square mud-brick buildings.

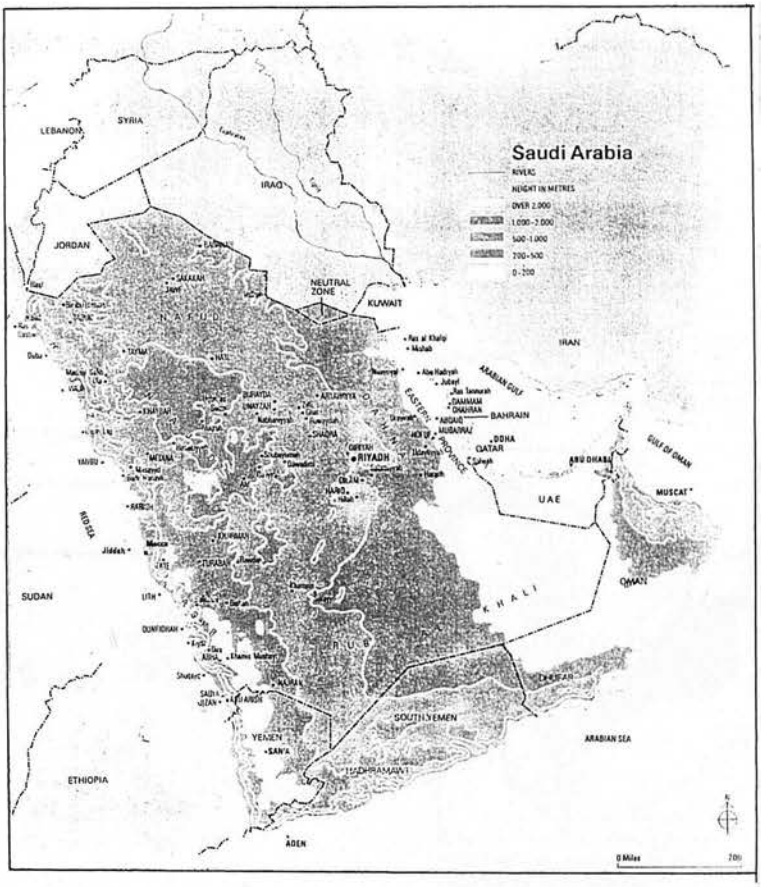


Fig. 1 Map of Saudi Arabia Kingdom (source, The Stacey International)

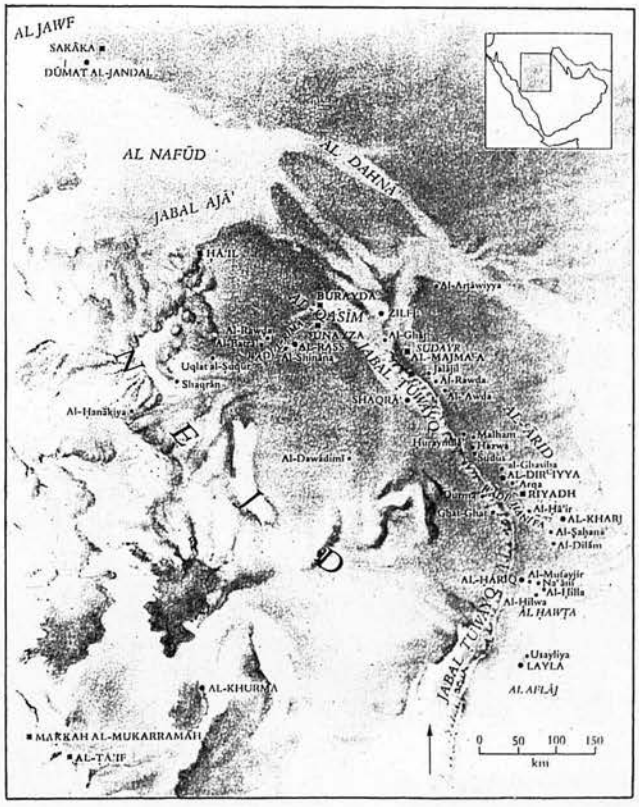
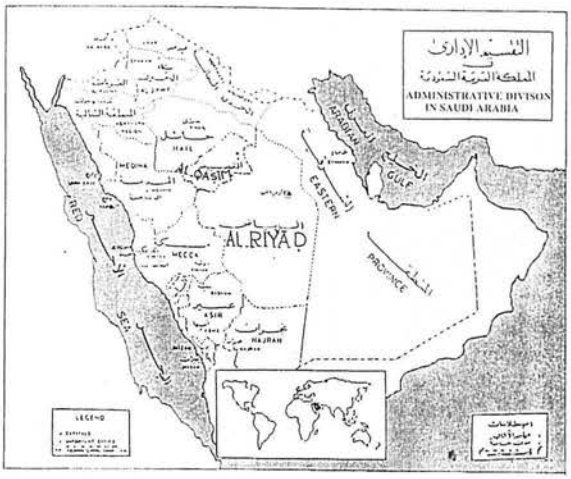


Fig. 2 Map of Najd, the central region (source, Geoffrey King)



Najd area according to the new administrative division.

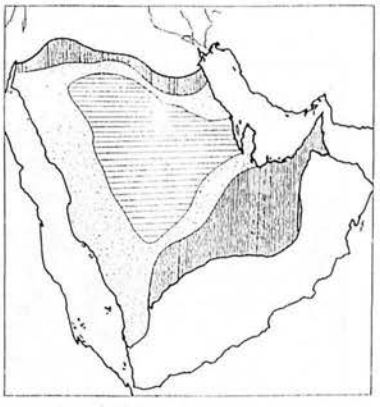
Fig. 3 Map showing the administrative division in Saudi Arabia Kingdom.

The 1st. Sâûdi State 1745-1818	1818-1824	The 2nd. Sâûdi State 1824-1890	1890-1902	The 3rd. Sâûdi State 1902-1932 1932-to date
Mohammad Ibn Sâûd: 1745-1765 'Abdul Aziz Ibn Mohammad Ibn Sâûd: 1765-1803 Sâûd Ibn 'Abdul Aziz Ibn Mohammad Ibn Sâûd: 1803-1814 'Abdullah Ibn Sâûd Ibn'Abdul-Aziz Ibn Mohammad Ibn Sâûd: 1814-1818.	Najd was controlled by the Egyption during this period. However, members of al-Saud family who were loyal to them managed to rul for some years.	Turki Ibn'Abdullah Ibn Mohammad Ibn Sâûd: 1824-1834 Faisal Ibn Turki Ibn'Abdullah Ibn Mohammad Ibn Sâûd *1834-1838 1843-1865 'Abdullah Ibn Faisal Ibn Turki ** 1865-1871 1873-1889 Sâûd Ibn Faisal Ibn Turki: 1871-1874 'Attaal Rahman Ibn Faisal Ibn Turki: 1874-1875 1889-1890	During this period Ar-riyadh was ruled by Ibn Rasheed.	'Abdul Aziz Ibn 'Abdul Rahmân Ibn Faisal Ibn Turki: 1902-1953 Sâûd Ibn'Abdul Aziz: 1953-1964 Faisal Ibn'Abdul Aziz: 1964-1975 Khalid Ibn'Abdul Aziz: 1975-1982 Fahad Ibn'Abdul Aziz: 1982-.....

* Faisal Ibn Turki was forced by the Egyption to leave to Cairo between 1838-1843. They appointed two loyal members of the Saud family to rule the region on their behalf for few years.

** The three sons of Faisal Ibn Turki 'Abdullah, Sâûd and 'Abdul Rahman had serious confrontations. They exchanged the governorate of Najd between 1856-1890.

Fig. 4 Chronological table of the Sâûdi States and rulers.
(Source: I. Jumaa, al-Atlas al-Tareekhi)



First Sâûdi State
Second Sâûdi State
Third Sâûdi State
The Kingdom of Saudi Arabia

Fig. 5 Map of the Kingdom of Saudi Arabia showing the area of each Sâûdi State.

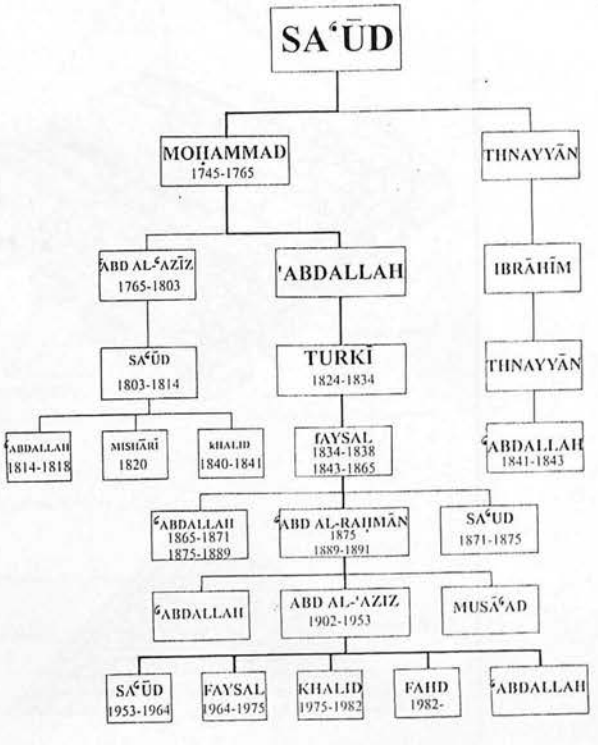


Fig. 6 Family tree of the house of Sa'ūd.
(Source: Aramco and its world, p122. re-designed by the researcher).

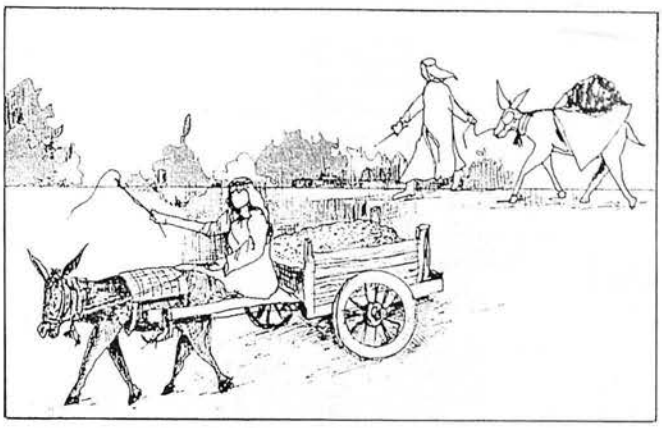


Fig. 7 Traditional methods that used to carry both stucco and earth raw material.

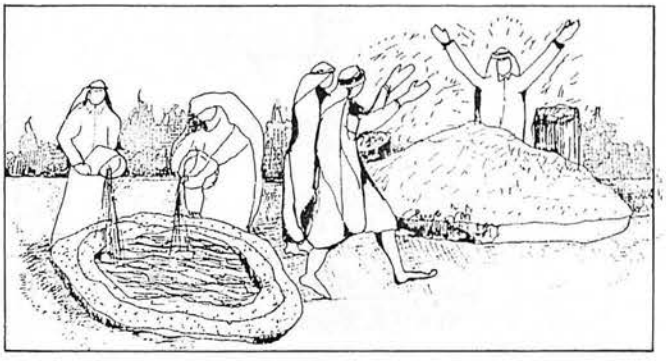
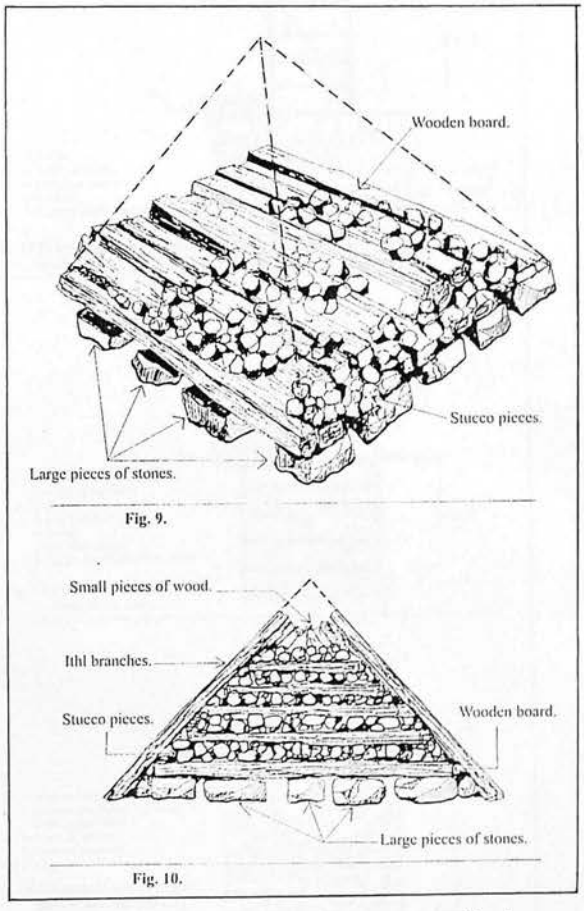
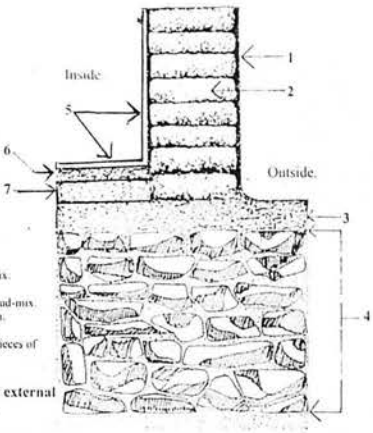


Fig. 8 Scattering straw to the earth and adding water to the earth-straw mix.

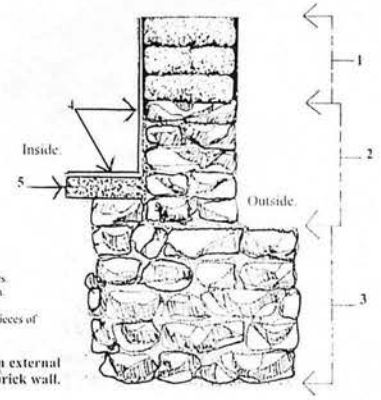


Isometric and cross-section drawings showing the traditional way used to prepare stucco raw material.



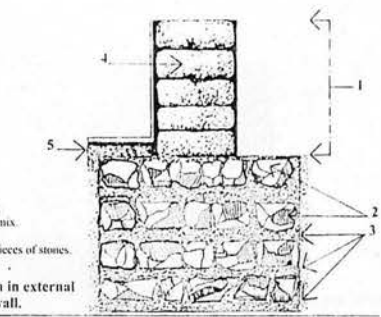
1- Layer of mud-mix.
2- Adobe.
3 & 6- Layers of mud-mix.
4- Stone foundation.
5- Layer of plaster.
7- Layer of small pieces of stones.

Fig. 11 Cross-section in external mu-brick wall.



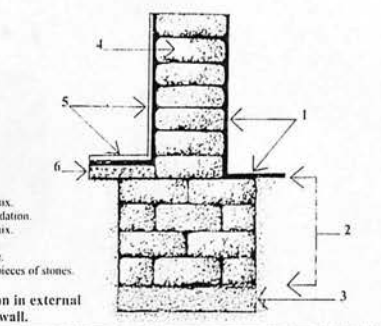
1- Adobe.
2- Uncovered stones.
3- Stone foundation.
4- Layer of plaster.
5- Layer of small pieces of stones.

Fig. 12 Cross-section in external stone and mu-brick wall.



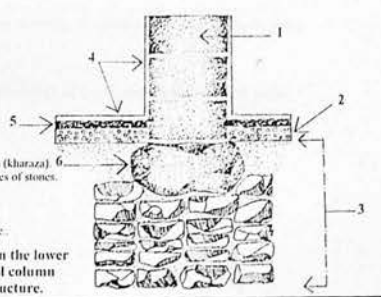
1- Adobe.
2- Layers of stones.
3- Layers of mud-mix.
4- Adobe.
5- Layer of small pieces of stones.

Fig. 13 Cross-section in external mud-brick wall.



1- Layer of mud-mix.
2- Mud-brick foundation.
3- Layer of mud-mix.
4- Adobe.
5- Layer of plaster.
6- Layer of small pieces of stones.

Fig. 14 Cross-section in external mud-brick wall.



1- Stone column drum (kharaza).
2- Layer of small pieces of stones.
3- Stone foundation.
4- Layer of plaster.
5- Layer of mud-mix.
6- Large piece of stone.

Fig. 15 Cross-section in the lower part of internal column showing its structure.

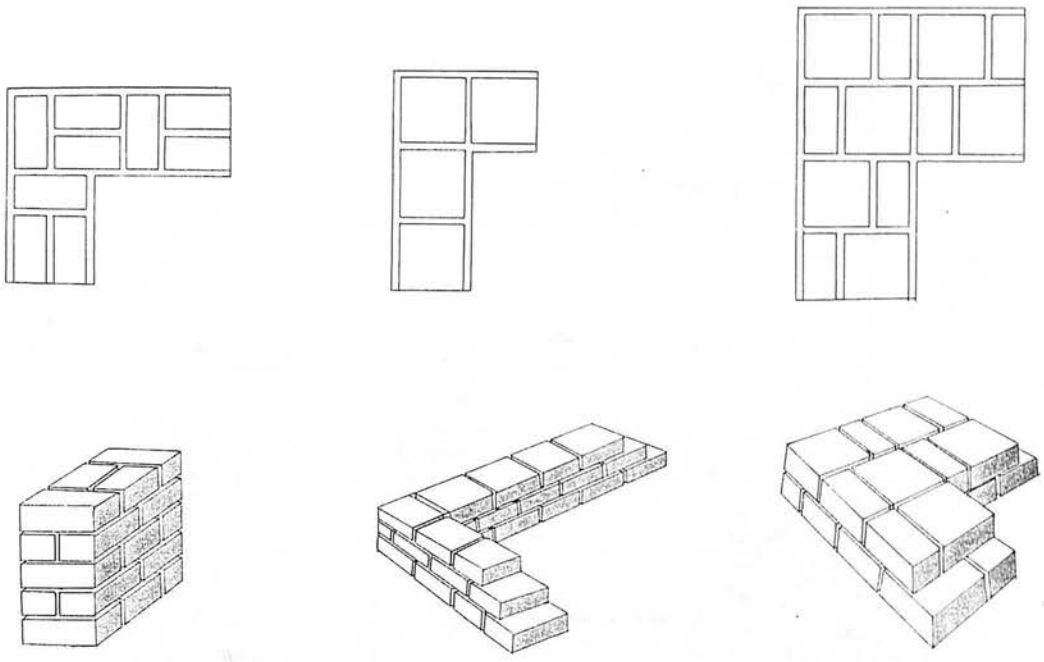


Fig. 16 Plans and isometric drawings showing some traditional types of wall's construction by using adobe.

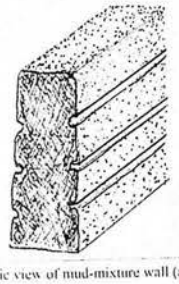


Fig. 17 Isometric view of mud-mixture wall (al-madamic type).

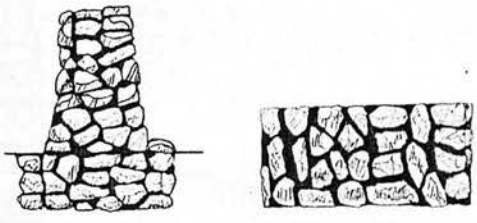


Fig. 18 Cross-section and plan of mud-stone wall.

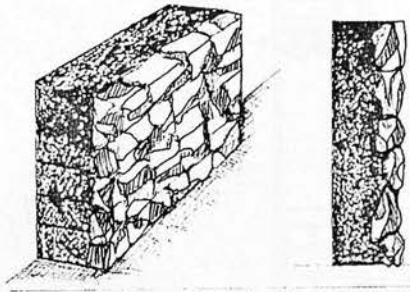


Fig. 19 Isometric and cross-section drawings of a mud-mixture wall facing by stones.

Isometric and cross-section drawings of some traditional types of walls.

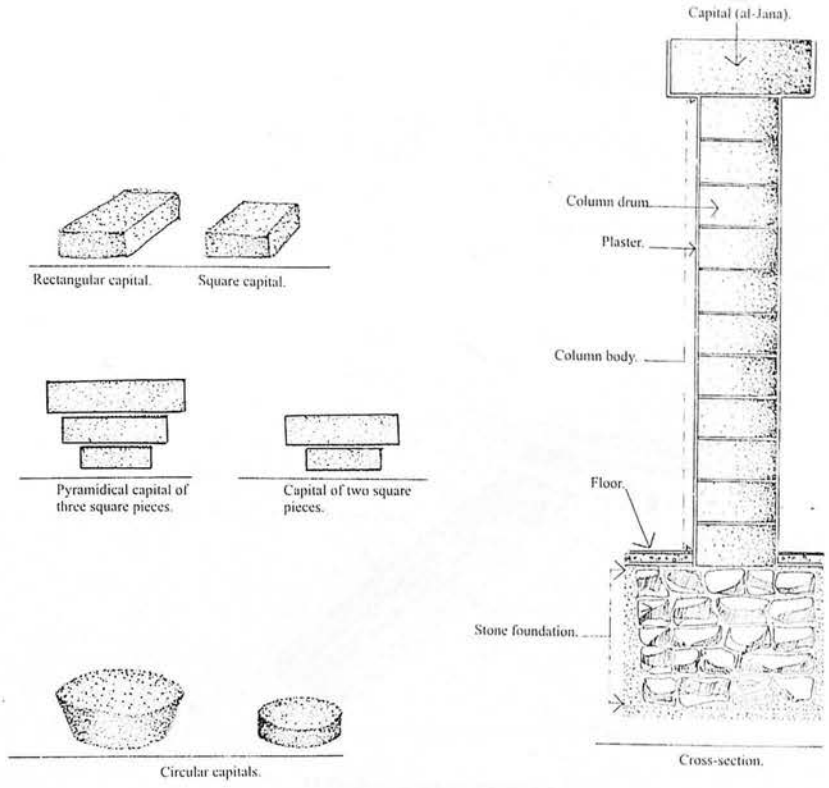


Fig. 20 Drawings showing various capitals and cross-section in column and its foundation.

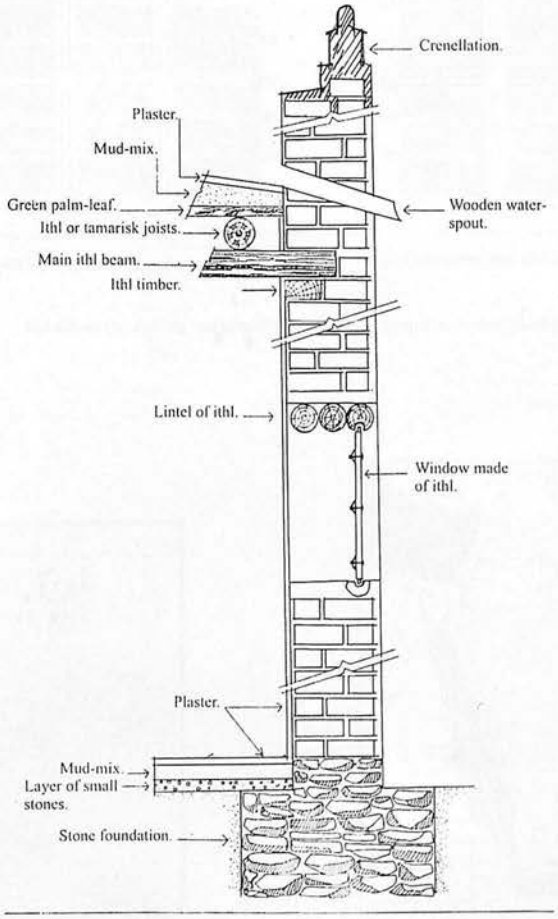


Fig. 21 Cross-section through ceiling, wall, window and floor.

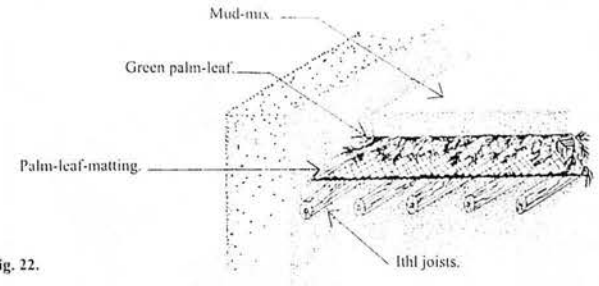


Fig. 22.

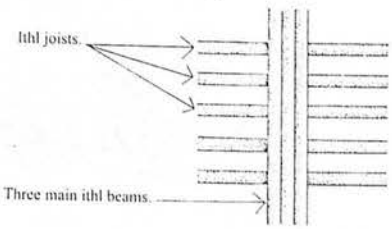


Fig. 23.

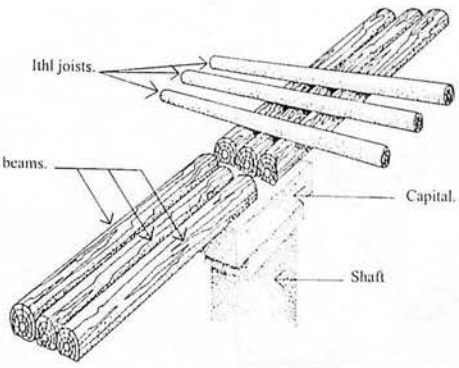


Fig. 24.

Methods of ceiling construction.

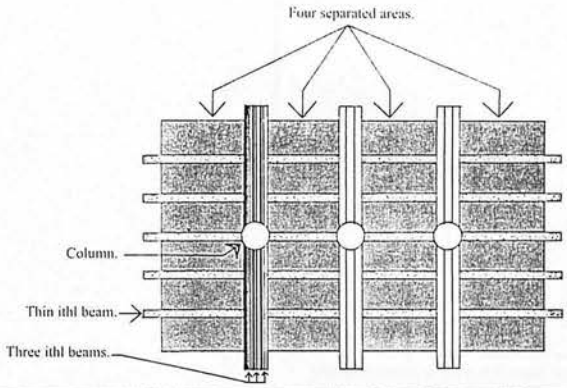


Fig. 25 Ceiling designed with four separated areas on three columns.

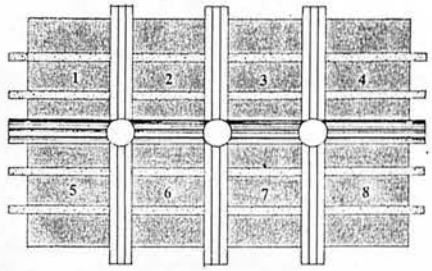


Fig. 26 Ceiling designed with eight separated areas on three columns.

Details in the ceiling construction of typical reception room (al-majlis).

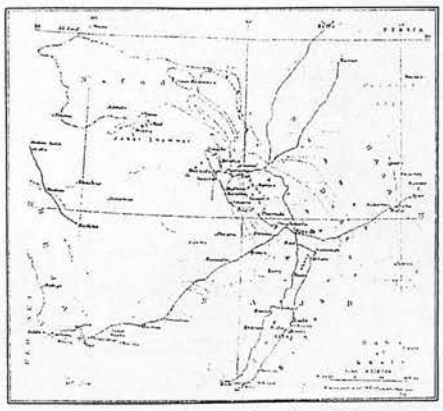


Fig. 27 The main internal trade routes of Najd.
(Source: I. Jumaa, Atlas al-Tarekh).

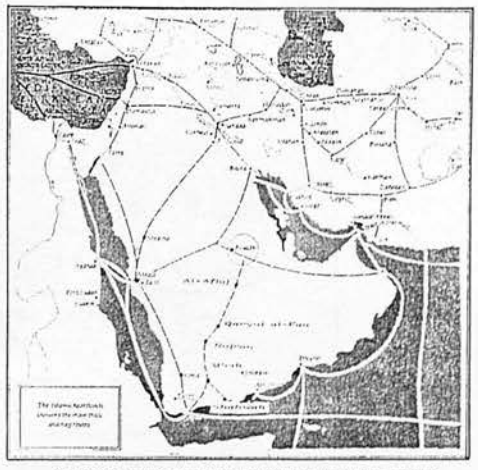


Fig. 28 The Islamic heart land showing the main trade and hajj routes. (Source: Adapted from both Architecture of Islamic World, pp 8-9 and al-Ansary Qurya at al-Faw

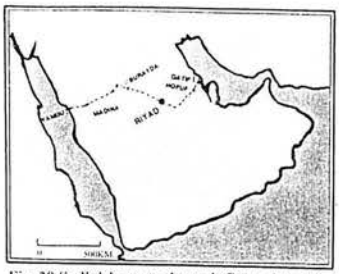


Fig. 29 Sadleir's route through Central Arabia (1819).
(Source: Masâlek al-Jazira al-Arabia, 1985, map n. 1.)

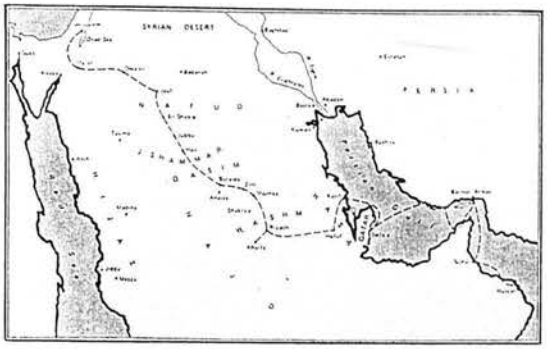


Fig. 30 Palgrave's route through Central and Eastern Arabia (1862-3).
(Source: Zahra and Winston, 1978, p 145.)

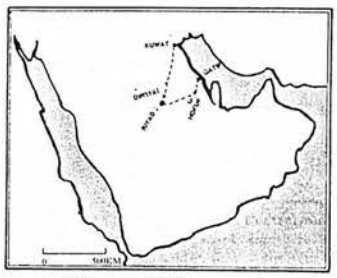


Fig. 31 Pelly's route (1865).
(Source: Masalek al-Jazira al-Arabia, 1985, map n. 2.)



Fig. 32 Guarmani's route in Northern Arabia.
(Source: Guarmani, 1938, p xxvii)

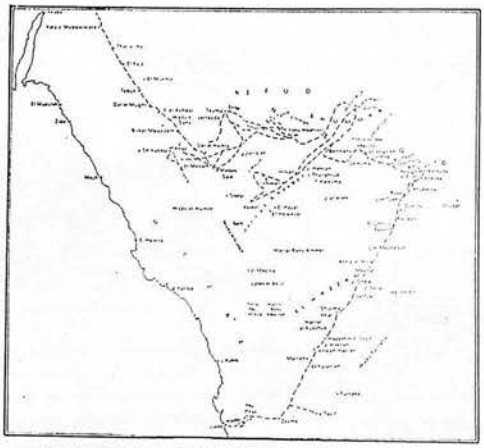


Fig. 33 Doughty's route in Central and Western Arabia.
(Source: Zahra and Winston, 1978, pp 226, 227)

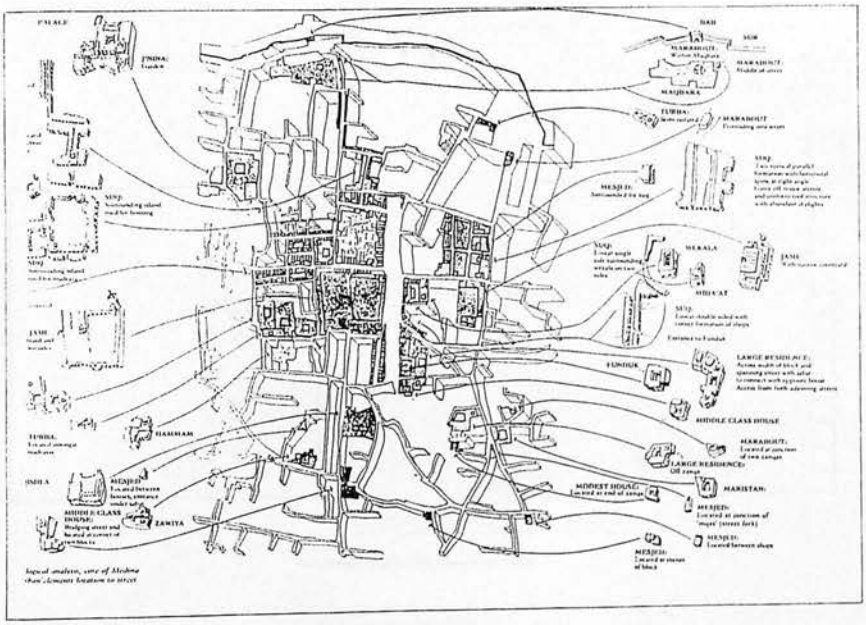


Fig. 34 The urban elements of traditional Islamic city (example al-Medīna).

Source: Basim Hakim

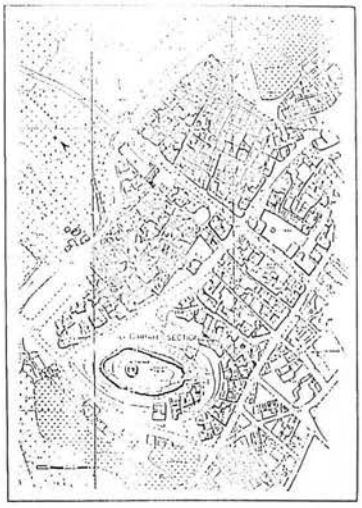


Fig. 35 Site plan of the old town of al-Majmaʿa.

Source: Municipality of al-Majmaʿa.



Fig. 36.

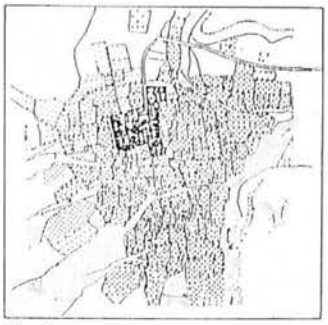


Fig. 37.

Fig. 36 & 37 Showing tow sit-plan of the old town of Ḥuraīmlāʾ.

Source: Municipality of Ḥuraīmlāʾ

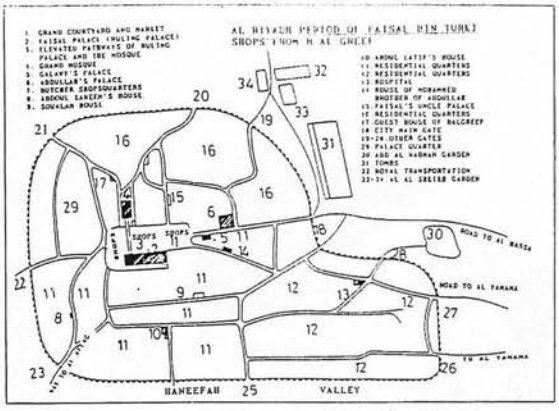


Fig. 38 Plan of al-Riyāḍ (old town, 1862, draw by Palgrave).

Source: Palgrave, vol 1, face p 389



Fig. 39 Plan of al-Riyāḍ (old town, 1917-18, draw by Philby).

Source: Philby, vol 1, face p 70

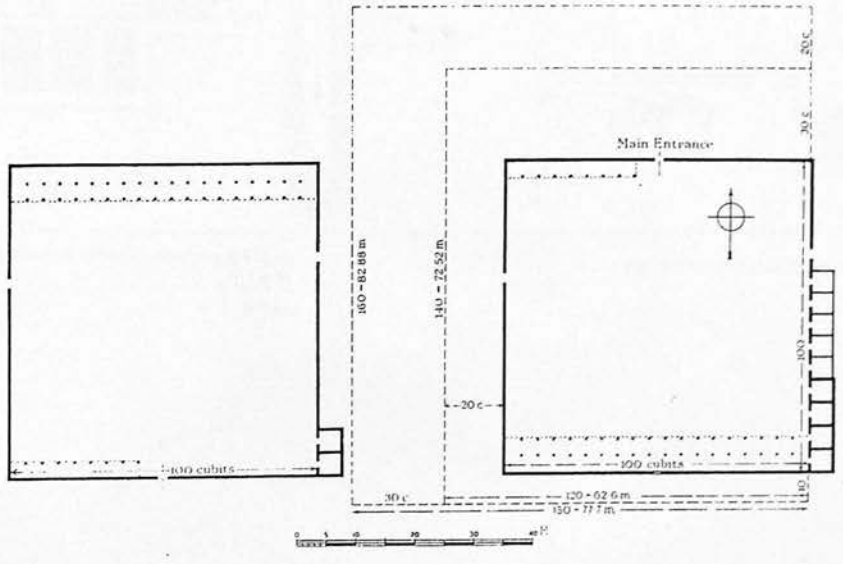


Fig. 40 Madīna, Prophet house/mosque, reconstructed plan.

(Source, Oleg Grabar, 1973, plate 22).

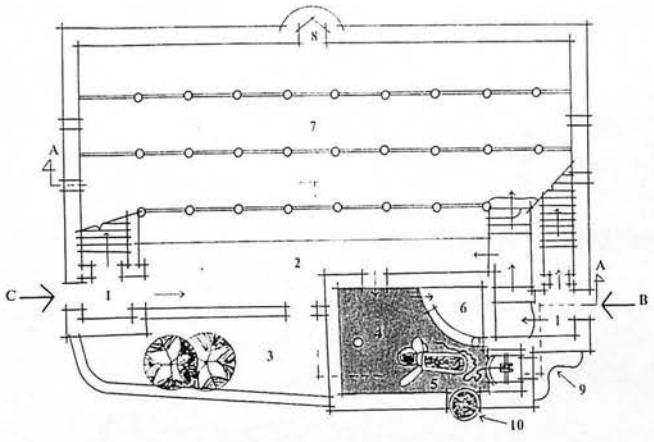


Fig. 41 Ground floor plan of al-ʿUqda's mosque at al-Majmaʿa.

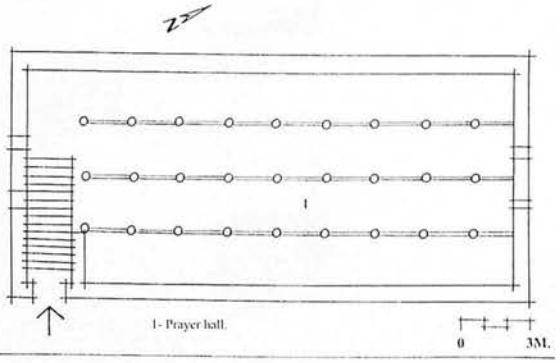


Fig. 42 Basement plan of al-ʿUqda's mosque at al-Majmaʿa.

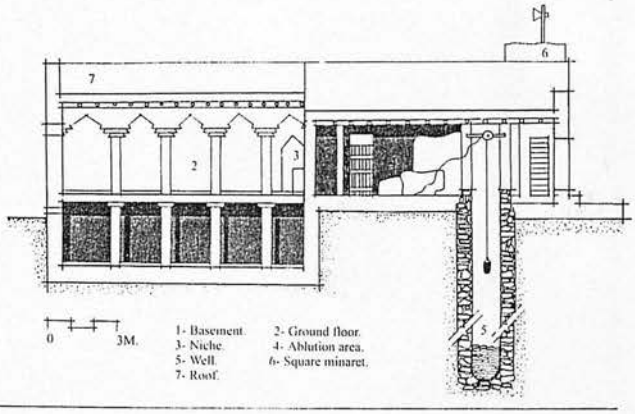


Fig. 43 Section AA, al-ʿUqda's mosque at al-Majmaʿa.

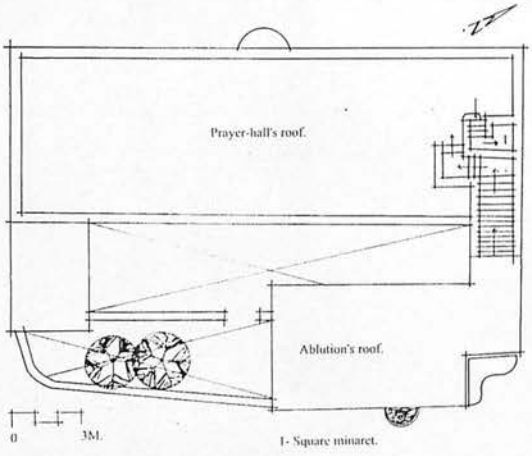


Fig. 44 Main plan of al-ʿUqda's mosque at al-Majmaʿa.

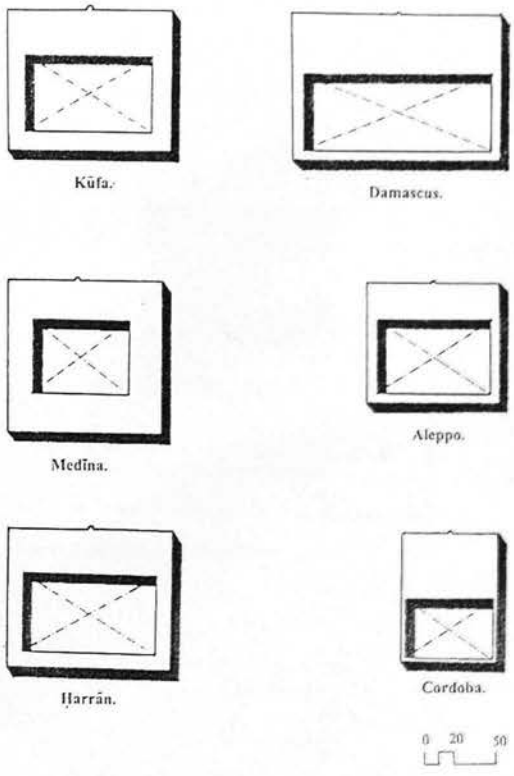


Fig. 45 Plans of various major early open mosques.

Source: Basim Hakim, free-hand drawings. (These illustrations are re-designed and coloured by the researcher).

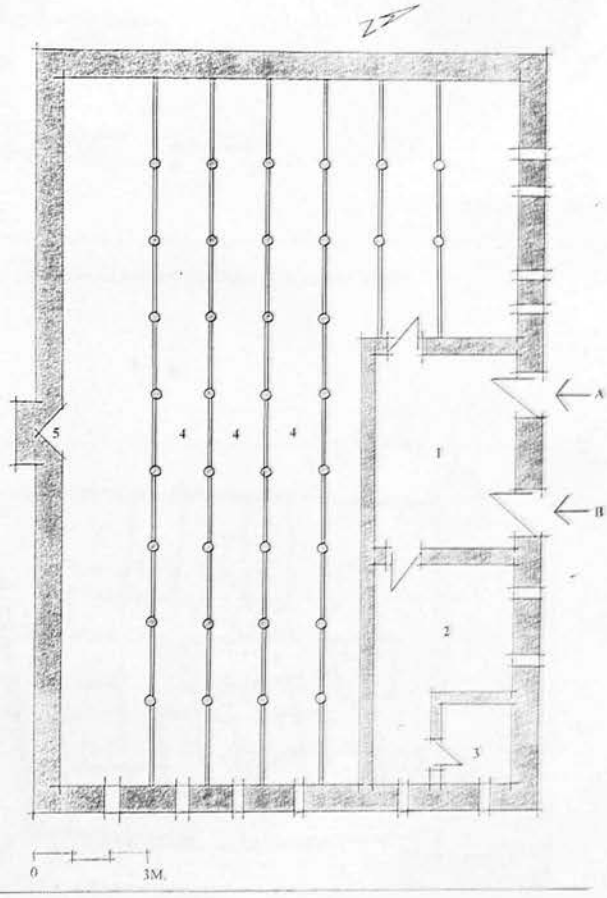


Fig. 46 Ground floor plan of covered mosque at al-Riyāḍ.

A & B- Entrance doors.
2- Ablution area.
4- Prayer hall.
1- Entrance hall.
3- Bathroom.
5- Niche.

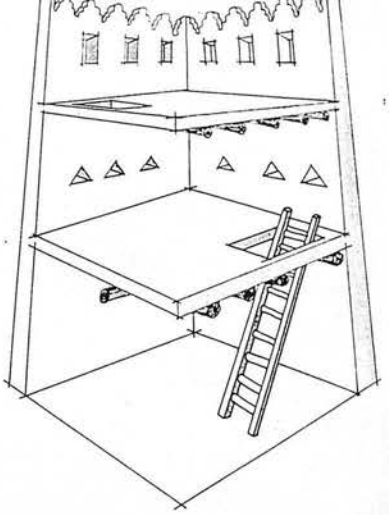


Fig. 47 Interior perspective.

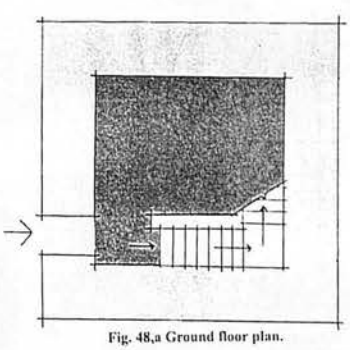


Fig. 48,a Ground floor plan.

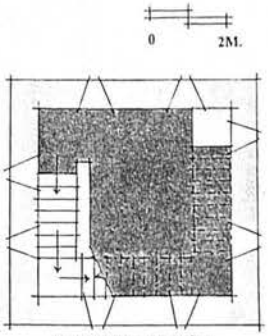
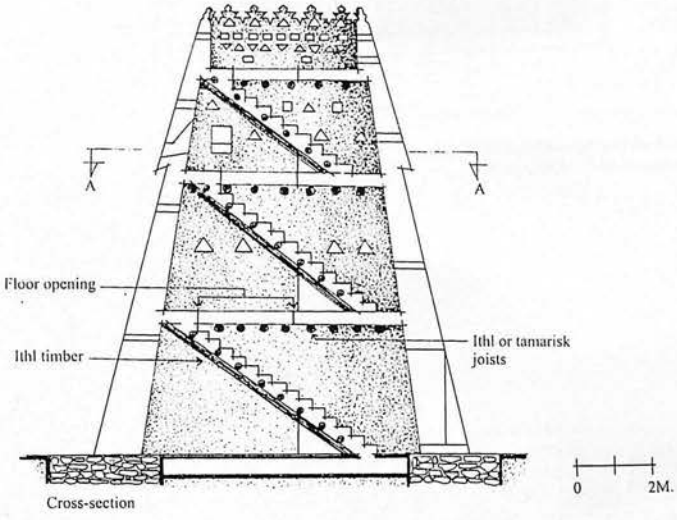
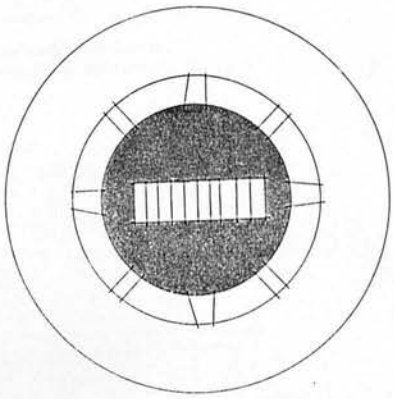


Fig. 48,b First floor plan.

Typical details of square defensive tower.





Second floor plan (from section AA).

Fig. 49 Typical details of traditional circle defensive tower.

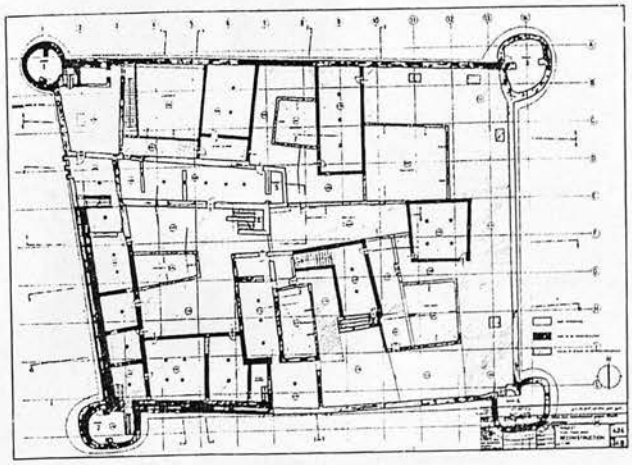


Fig. 50 Ground-floor plan of al-Masmak fortress at al-Riyāḍ, scale, 1/100.

Source: M. Albini, from the drawings of the supplementary articles.

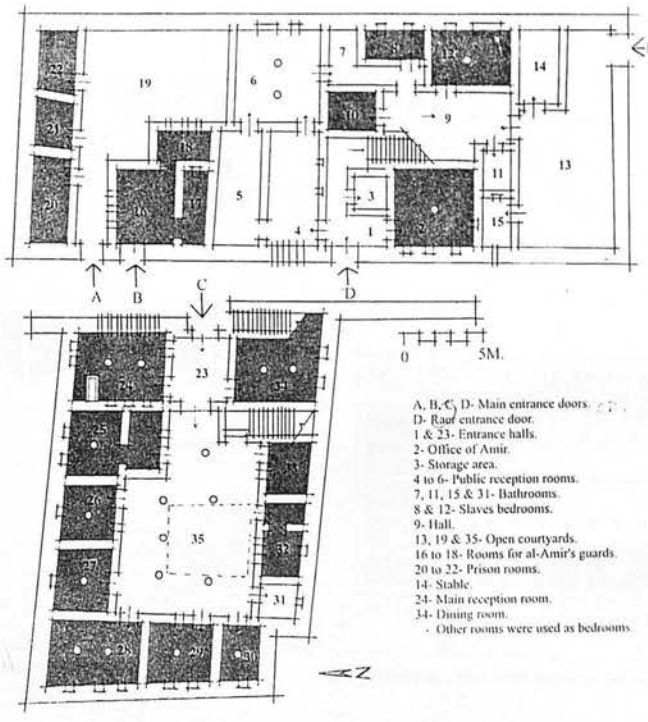


Fig. 51 Ground floor plan of the Imarat of Ibrāhīm al-ʿAsker at al-Majmaʿa. (Source: Municipality of al-Majmaʿa, re-drawn by the researcher)

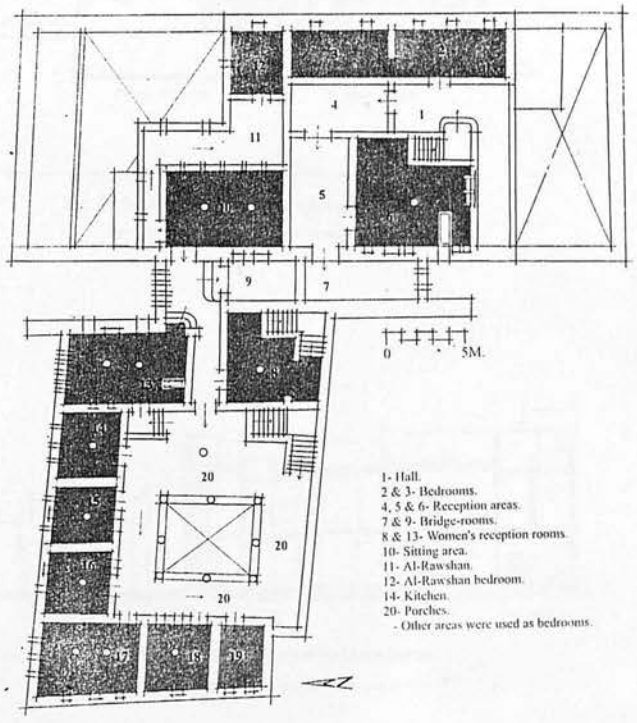


Fig. 52 First floor plan of the Imarat of Ibrāhīm al-ʿAsker at al-Majmaʿa. (Source: Municipality of al-Majmaʿa, re-drawn by the researcher).

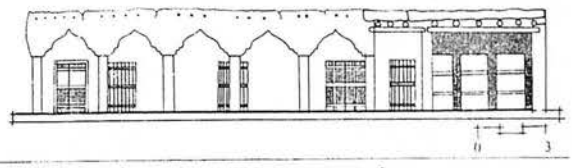


Fig. 53 Cross-section AA, the covered market at al-Majma'a.

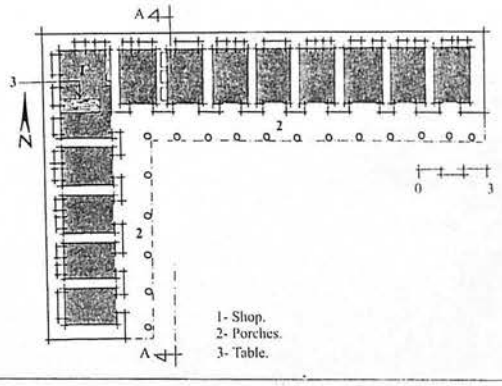


Fig. 54 Ground floor plan of the covered market at al-Majma'a.

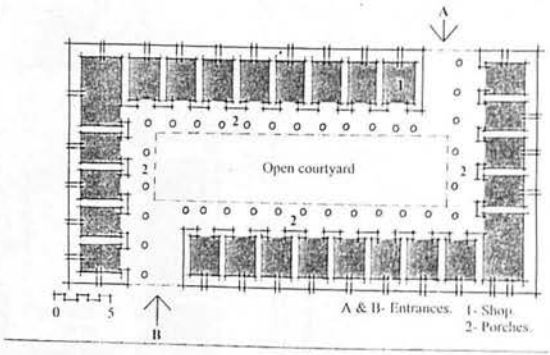


Fig. 55 Ground floor plan of the covered market at Shaqra'.

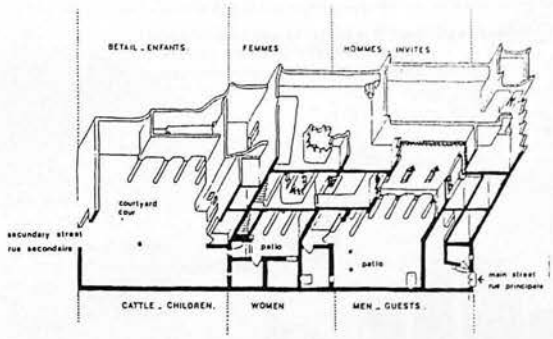


Fig. 56 Section isometric of a typical Najdian house.

Source: M. Albini, from the drawings of the supplementary articles

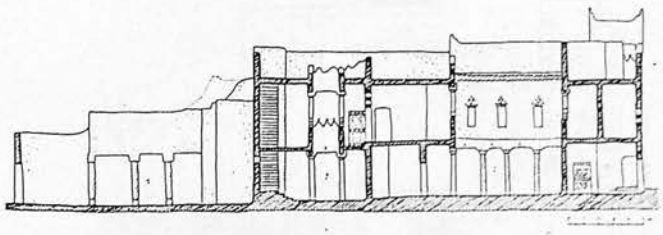


Fig. 57 Section of a typical Najdian house.

Source: M. Albini, from the drawings of the supplementary articles

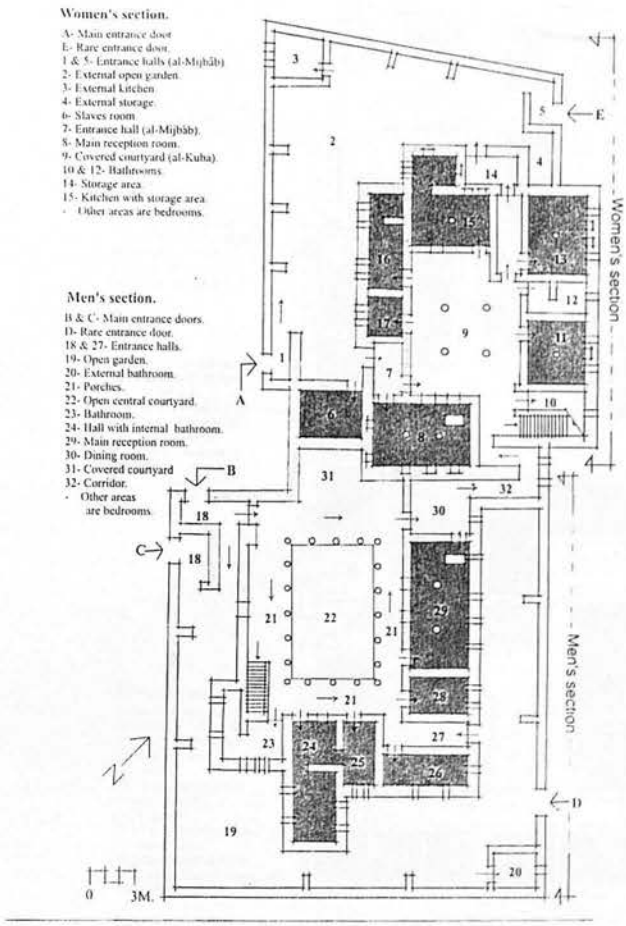


Fig. 58 Ground floor plan of the house of Soulīmān al-ʿAjeel at Burayda (from early 19th. century).

(Source: Burayda Municipality, re-drawn by the researcher).

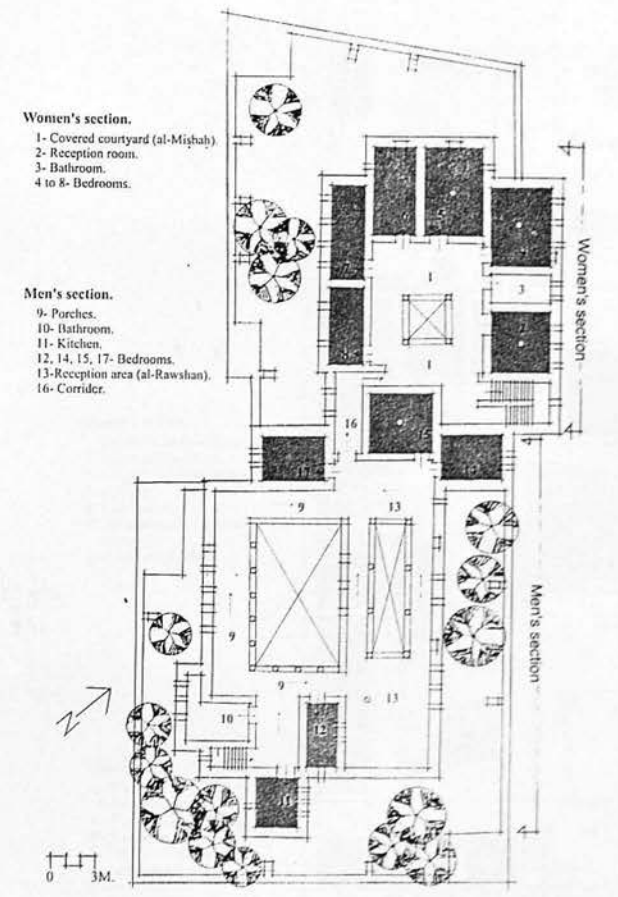


Fig. 59 First floor plan of Soulīmān al-ʿAjeel house at Burayda (early 19th. century).

(Source: Burayda Municipality, re-drawn by the researcher).

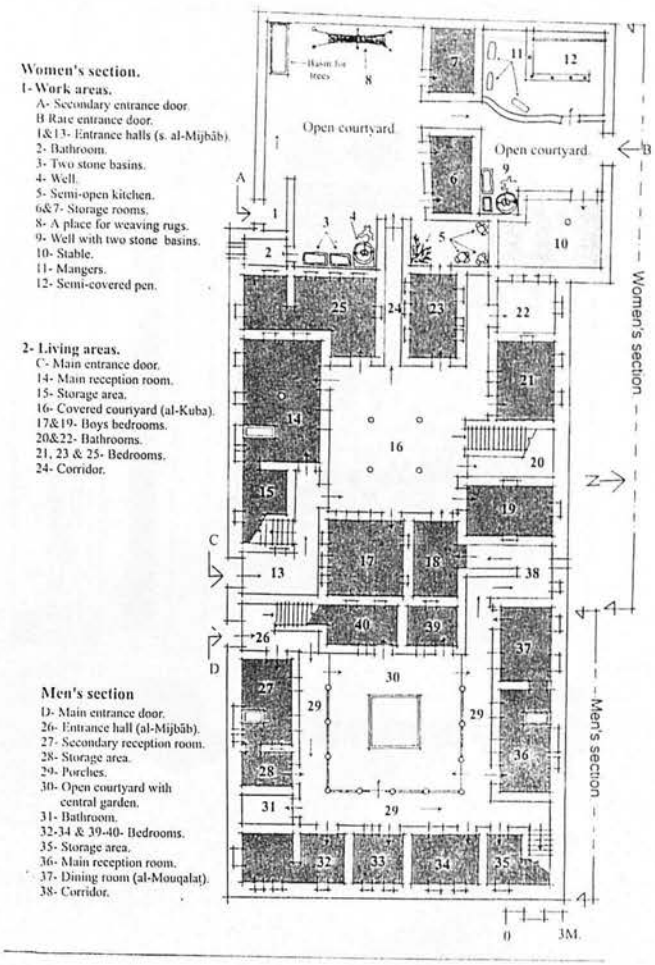


Fig. 60 Ground floor plan of the house al-Dikheel at'Unayza showing a typical Najdian house of the early 19th. century.
(Source:'Unayza Municipality, re-drawn by the researcher)

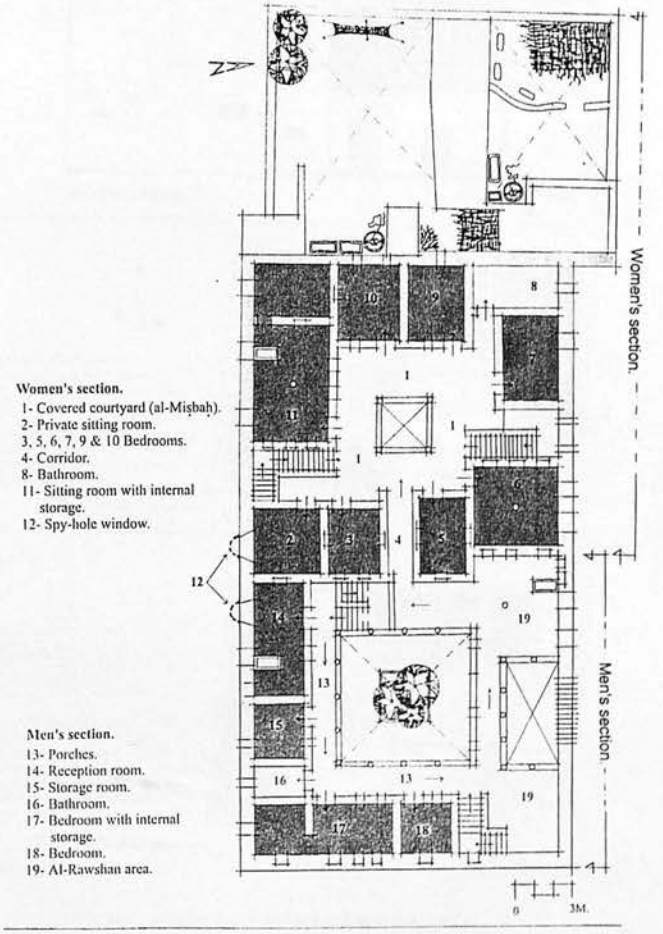


Fig. 61 First floor plan of the house al-Dikheel at'Unayza showing a typical house of the early 19th. century.
(Source:'Unayza Municipality, re-drawn by the researcher)

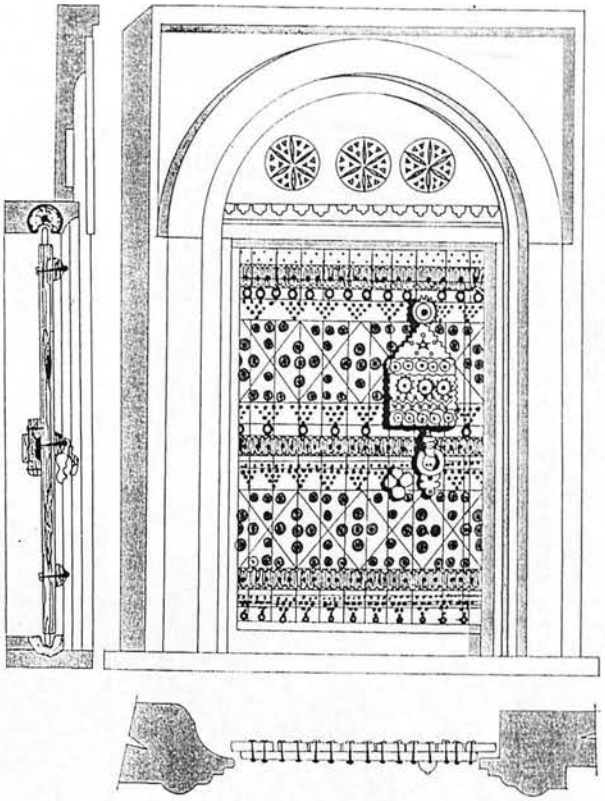


Fig. 62 Details of the main street door of the house al-Tuwayjarī at al-Majmaʿa.

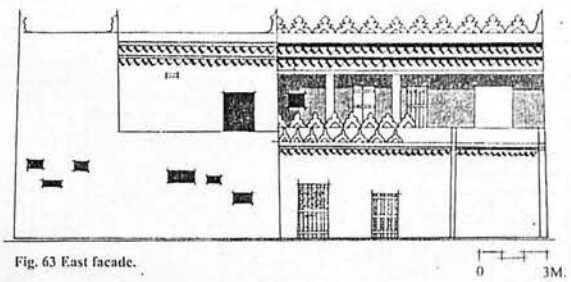
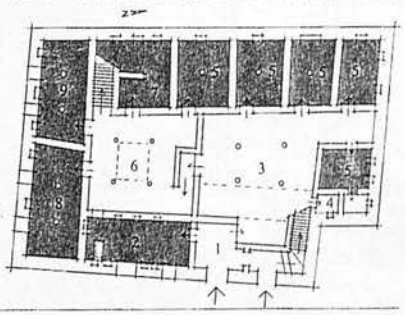
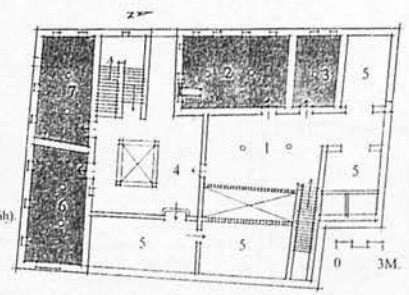


Fig. 63 East facade.



1- Entrance hall (al-Mijbāb).
2- Reception room (Majlis for men).
3- Covered courtyard (al-Kuba for men).
4- Bath room.
5- Bed rooms.
6- Covered courtyard (al-Kuba for women).
7- Bath room.
8- Reception room (Majlis for women).
9- Sitting room for women.

Fig. 64 Ground floor plan.



1- Veranda (al-Kāshif for men).
2- Reception room (Majlis for men).
3- Dining room for men (al-Moukalat).
4- Covered courtyard for women (al-Mishāh).
5- open areas on the roof surrounded with low walls built as sleeping places for summer nights.

Fig. 65 First floor plan.

The house of Mohammad Khalid al-Thābit at al-Majmaʿa.

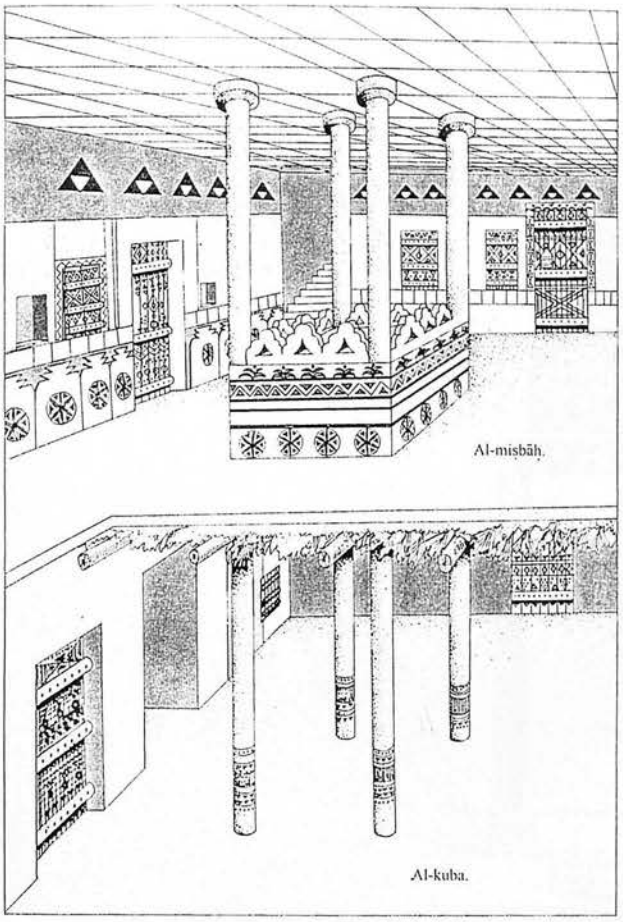
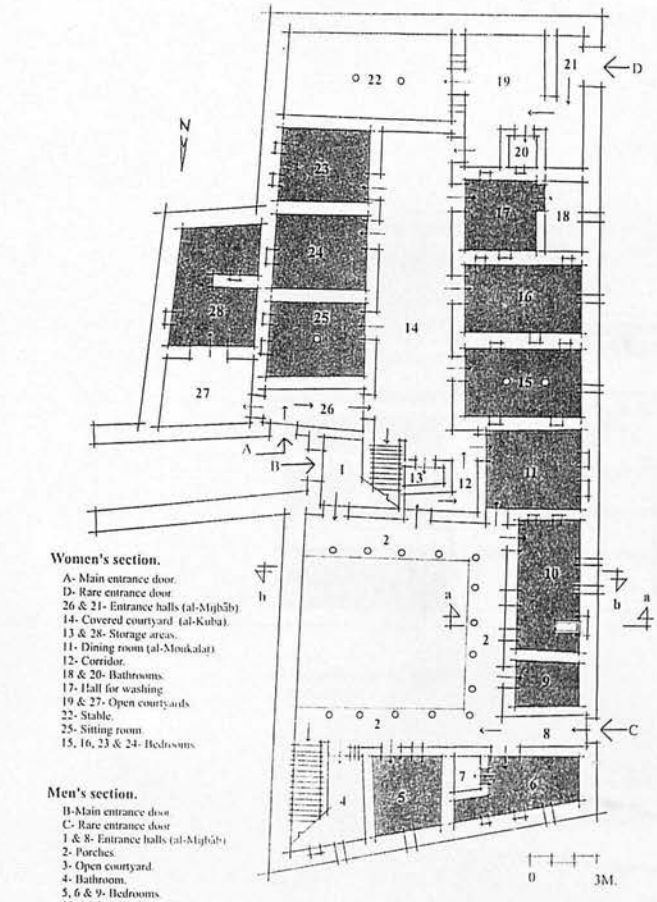


Fig. 66 Interior perspective in the women's section showing the area of both ground-floor covered courtyard *(al-kuba)* and first-floor covered courtyard *(al-miṣbāḥ)*.



Fig. 67 Interior view showing an open central courtyard and some of its architectural features.



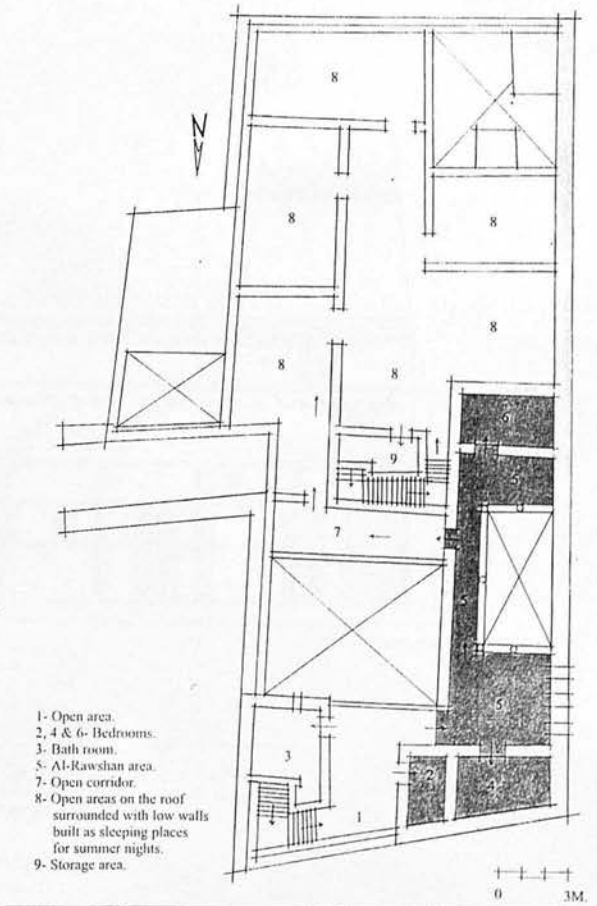
Women's section.

A- Main entrance door.
D- Rare entrance door.
26 & 21- Entrance halls (al-Mjbāb)
14- Covered courtyard (al-Kuba).
13 & 28- Storage areas.
11- Dining room (al-Moukalat)
12- Corridor.
18 & 20- Bathrooms.
17- Hall for washing.
19 & 27- Open courtyards.
22- Stable.
25- Sitting room.
15, 16, 23 & 24- Bedrooms.

Men's section.

B-Main entrance door.
C- Rare entrance door.
1 & 8- Entrance halls (al-Mjbāb)
2- Porches.
3- Open courtyard.
4- Bathroom.
5, 6 & 9- Bedrooms.
10- Main reception room.

Fig. 68 Ground floor plan of the house al-Tuwayjarī at al-Majmaʿa.



1- Open area.
2, 4 & 6- Bedrooms.
3- Bath room.
5- Al-Rawshan area.
7- Open corridor.
8- Open areas on the roof surrounded with low walls built as sleeping places for summer nights.
9- Storage area.

Fig. 69 First floor plan of the house al-Tuwayjarī at al-Majmaʿa.

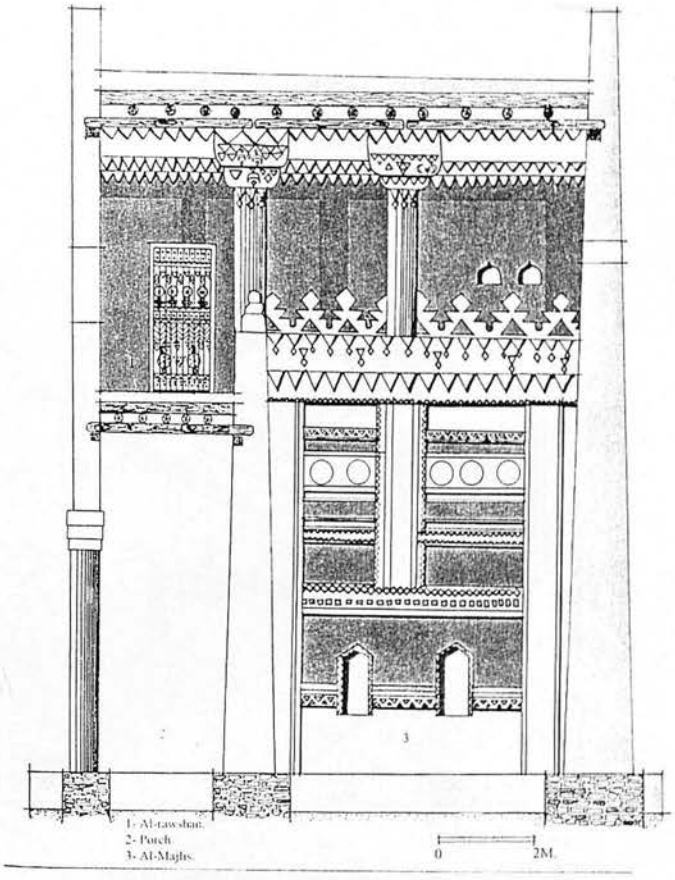


Fig. 70 Cross-section AA in the house of al-Tuwayjarī at al-Majmaʿa showing the south elevation of both the upper gallery (al-rawshan) and the main reception room.

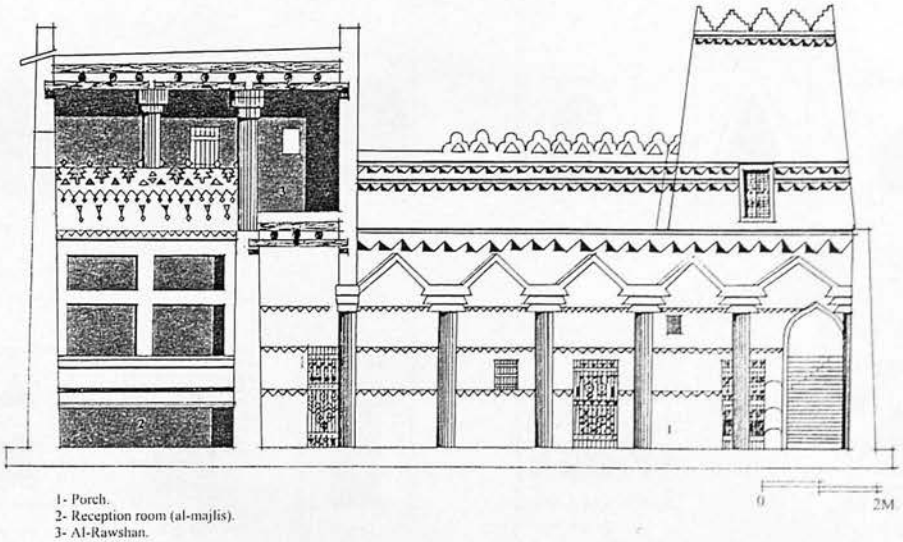


Fig. 71 Cross-section BB in the house of al-Tuwayjarī at al-Majmaʿa showing the north elevation of the upper gallery (al-rawshan), the main reception room (al-majlis) and the courtyard.

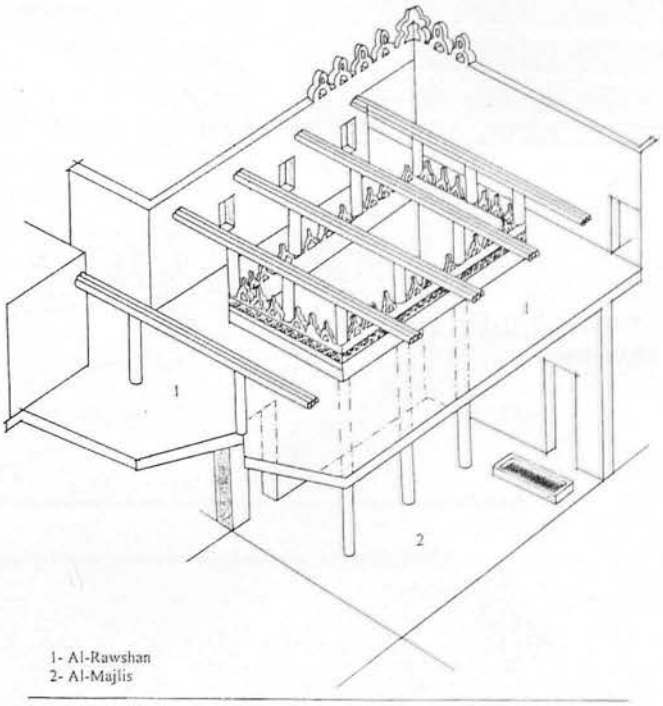


Fig. 72 Isometric section showing the area of the upper gallery (al-rawshan), the main reception room (al-majlis), and also ceiling construction.


Fig. 73


Fig. 74


Fig. 75

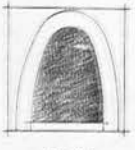

Fig. 76


Fig. 77


Fig. 78


Fig. 79


Fig. 80

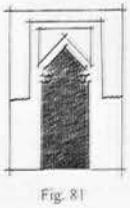

Fig. 81


Fig. 82


Fig. 83

Elevations of niches of various forms and sizes.

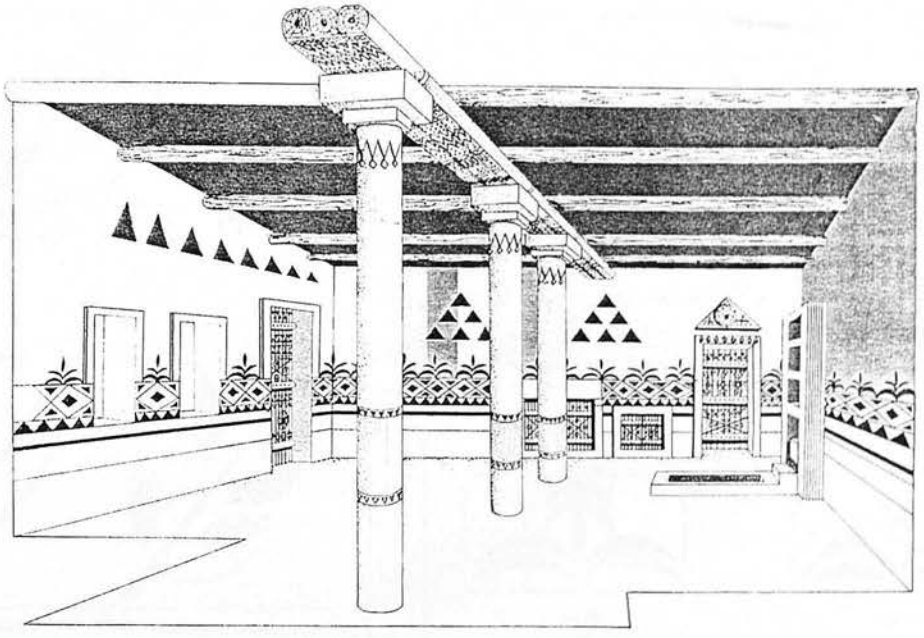


Fig. 84 Interior perspective of a typical reception room *(al-majlis)*.

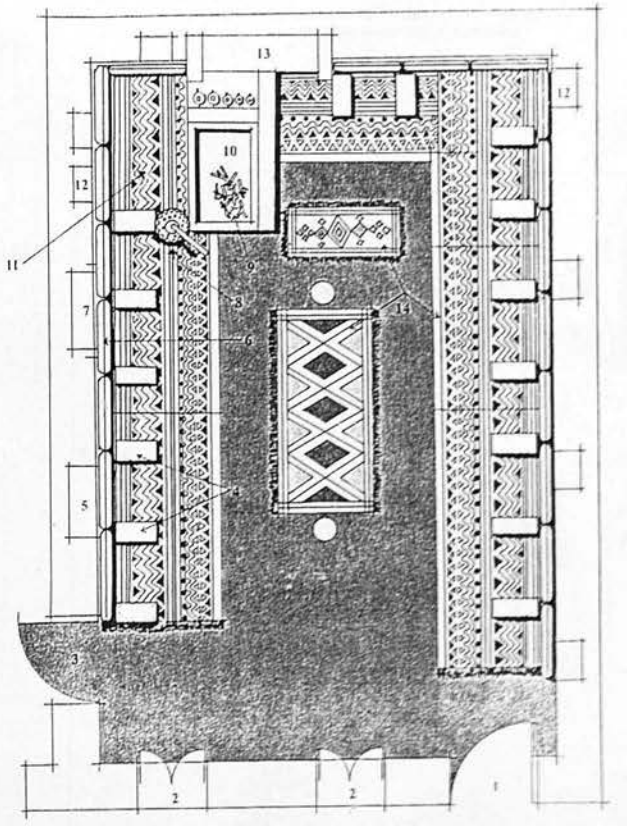


Fig. 85 Plan of a typical reception room (al-majlis) showing its architectural features and furnishing.

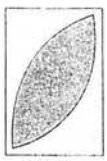


Fig. 86
Solid oblate leaf.



Fig. 87
Punctured oblate leaf.



Fig. 88
Bland leaf.



Fig. 89
Needle leaf.

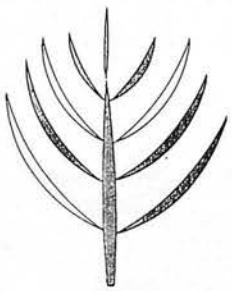


Fig. 90 Needle leafs applications



Fig. 91 Solid oblate leafs application



Fig. 92 Needle and punctured leafs applications

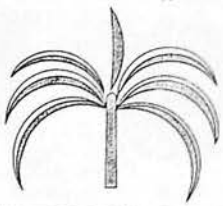


Fig. 93 Bland leafs applications

Botanical decorative elements and applications



Fig. 94



Fig. 95



Fig. 96



Fig. 97



Fig. 98

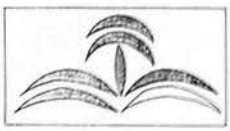


Fig. 99

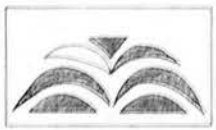


Fig. 100



Fig. 101



Fig. 102



Fig. 103

Modified botanical decorative elements showing some of the simple shapes of palm-tree



Fig. 104



Fig. 105



Fig. 106



Fig. 107



Fig. 108



Fig. 109

Modified botanical decorative elements (palm-tree shapes).



Fig. 110



Fig. 111



Fig. 112



Fig. 113



Fig. 114



Fig. 115



Fig. 116



Fig. 117

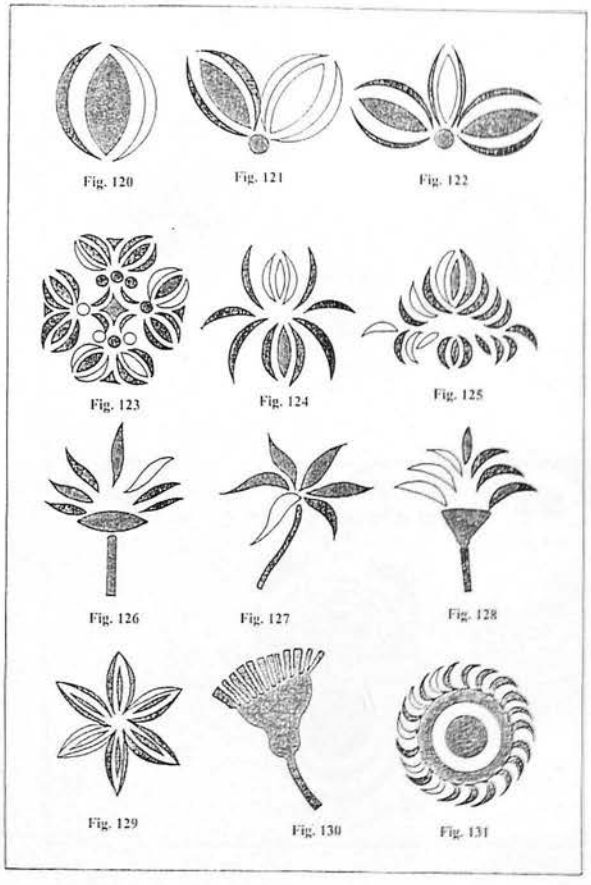


Fig. 118

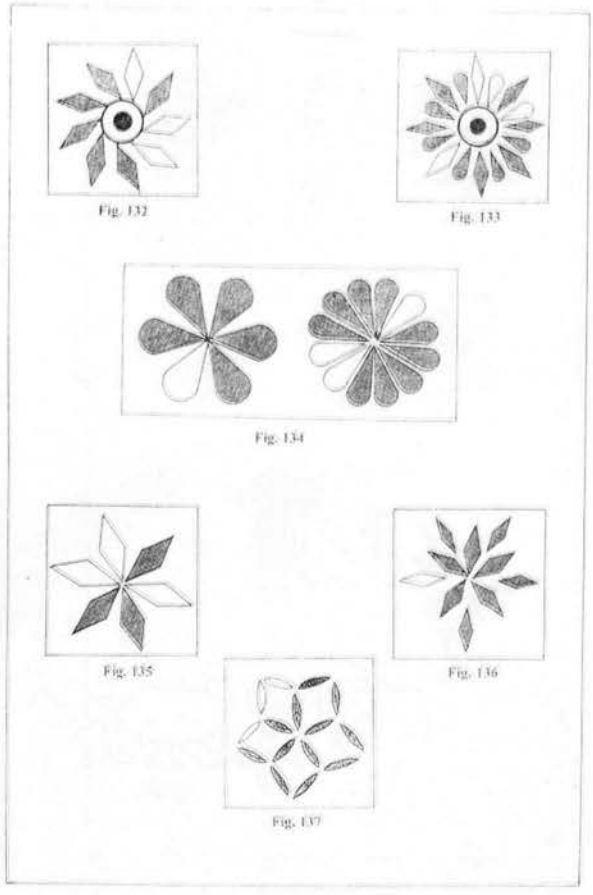


Fig. 119

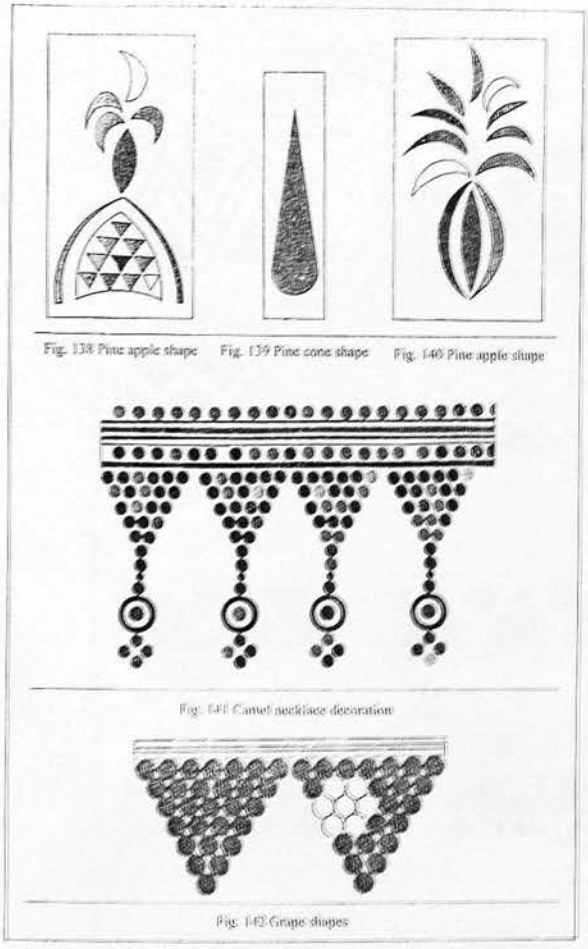
Semi-realistic and modified palm-tree and leaves of various shapes



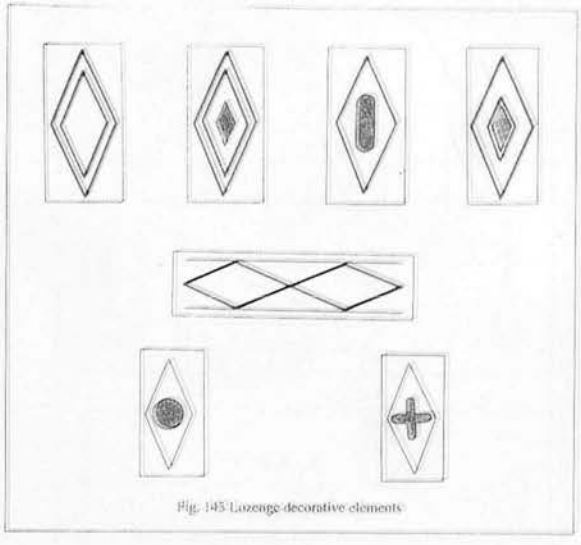
Modified decorative flowers of various forms and sizes.

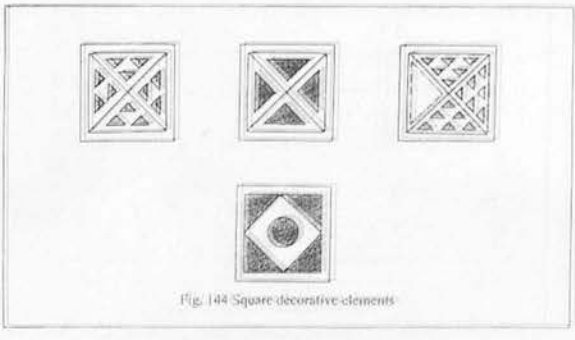


Decorative flowers of various shapes.

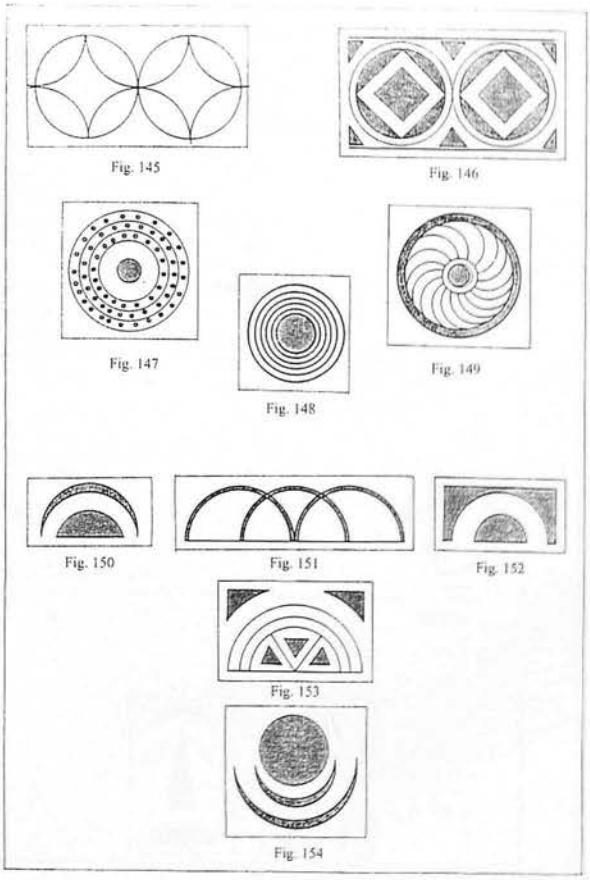


Fruit-based shapes

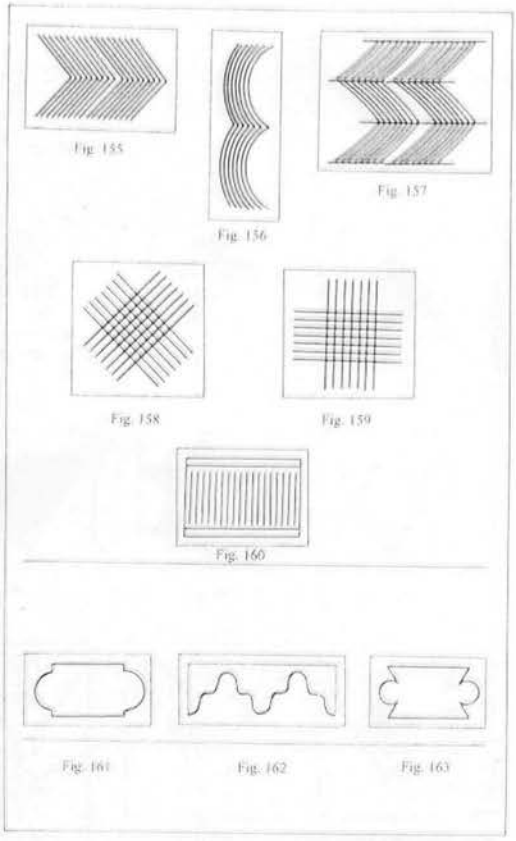




Geometrical decorative elements



Circular and semi-circular decorative elements



Various applications of decorative lines

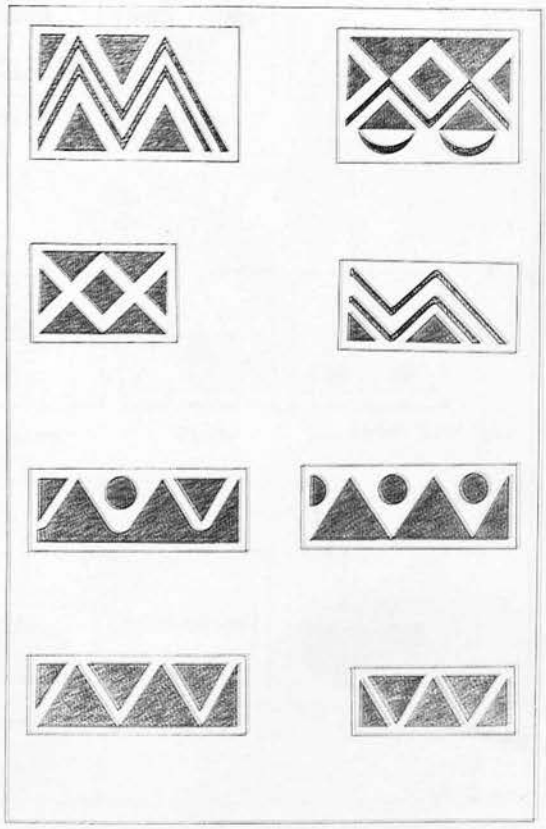


Fig. 164 Geometrical decorative friezes of various forms and sizes

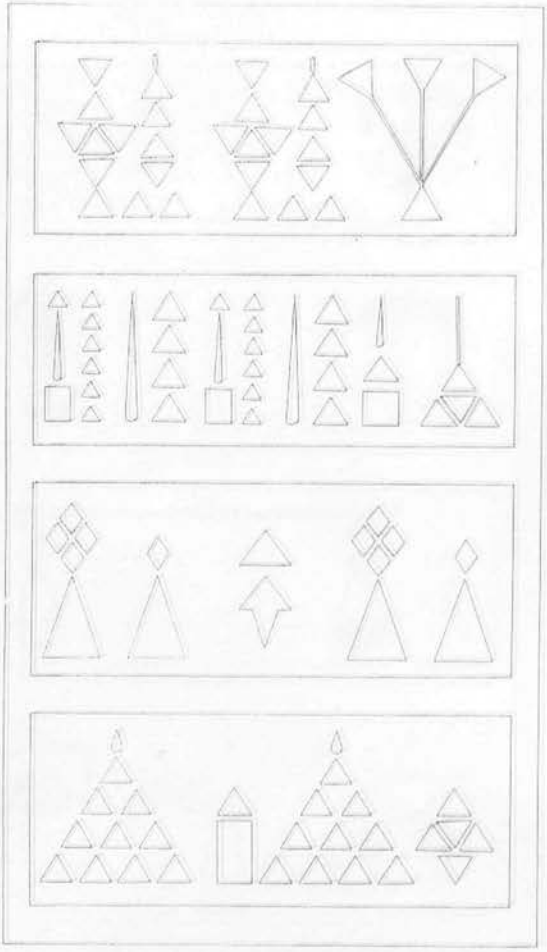
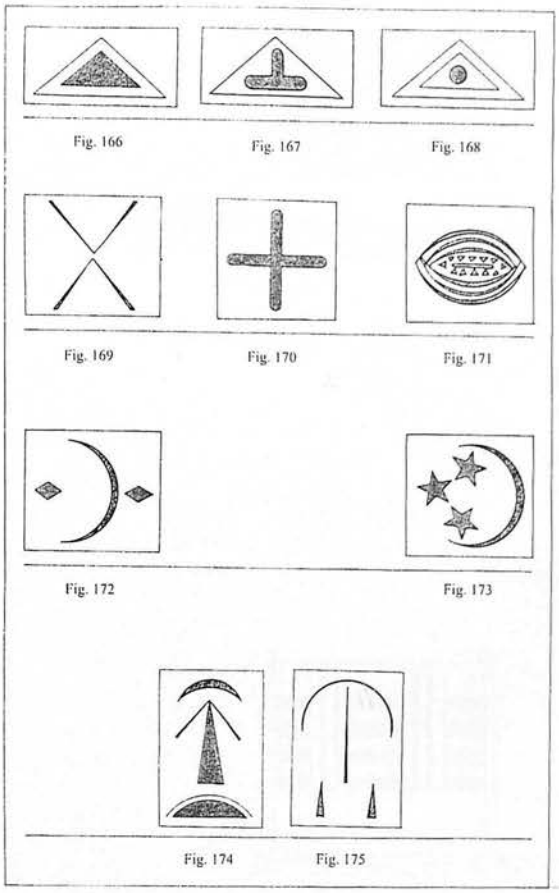
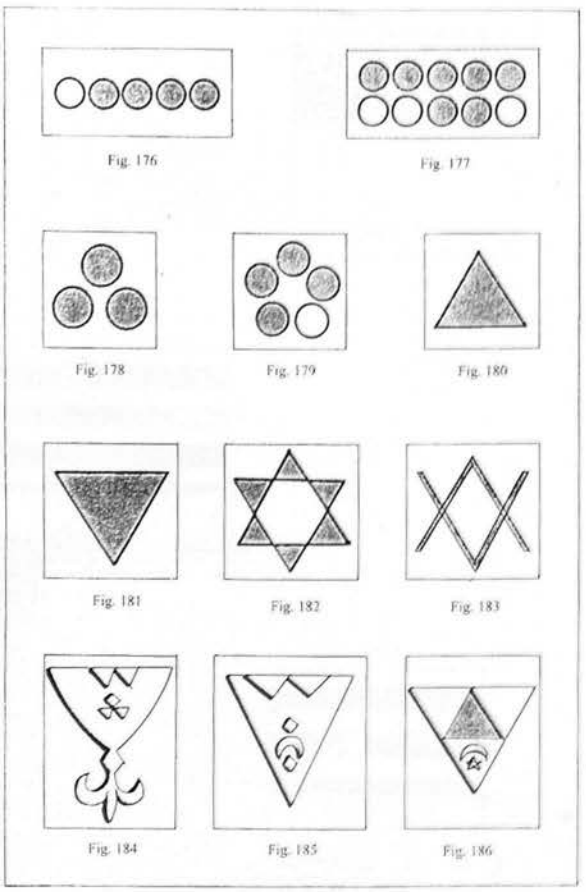


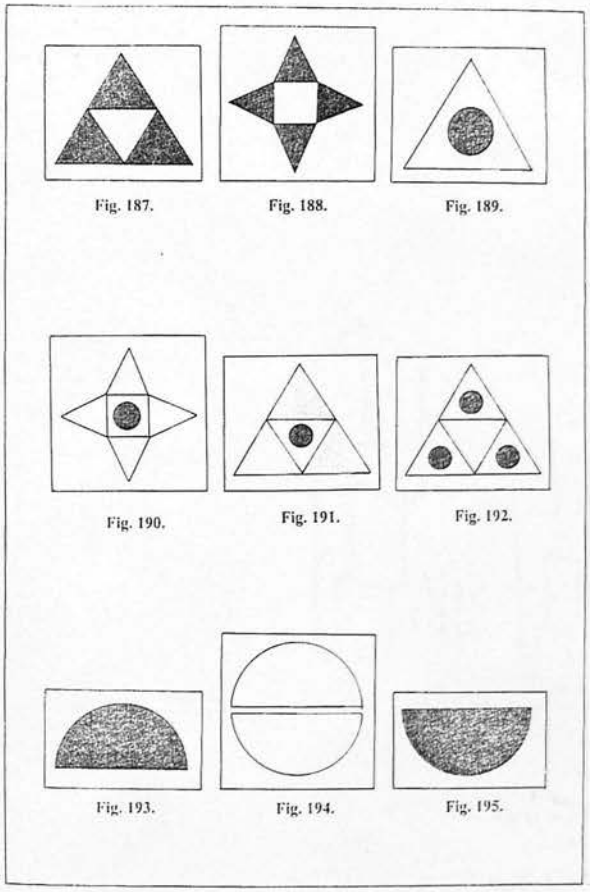
Fig. 165 Geometrical decorative openings



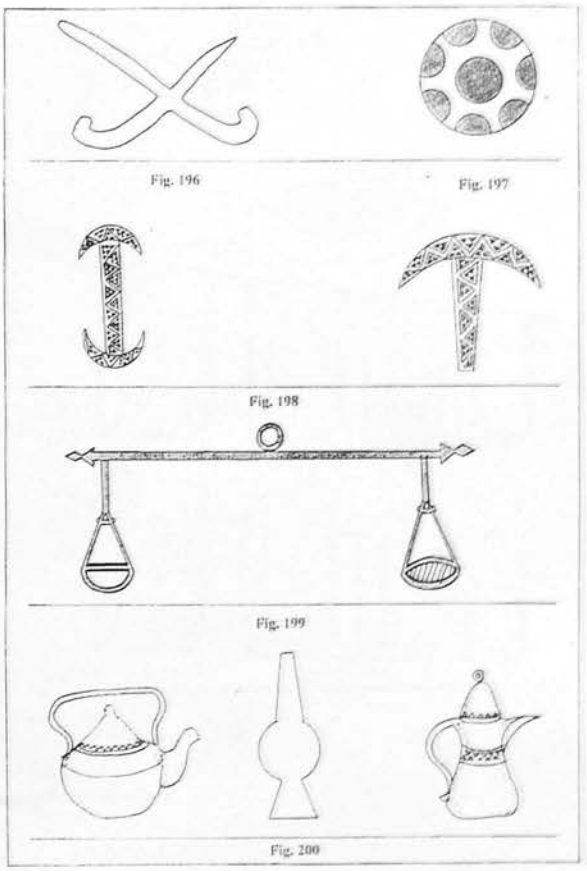
Geometrical decorative elements



Geometrical symbolic elements



Geometrical symbolic decorative elements.



Materialist symbolic shapes

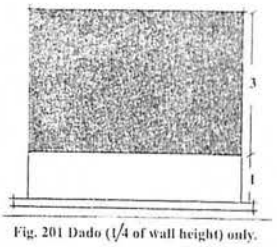


Fig. 201 Dado (1/4 of wall height) only.

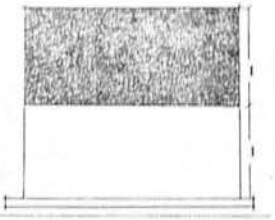


Fig. 202 Dado (1/2 of wall height) only.

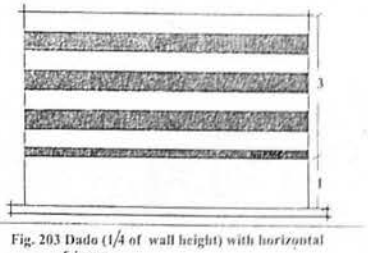


Fig. 203 Dado (1/4 of wall height) with horizontal friezes.

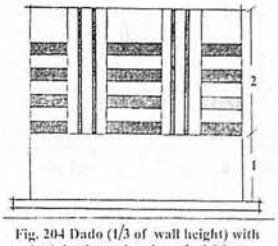


Fig. 204 Dado (1/3 of wall height) with both horizontal and vertical friezes.

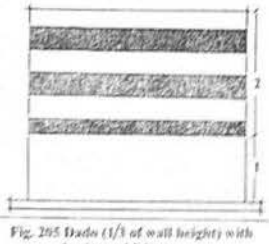


Fig. 205 Dado (1/3 of wall height) with horizontal friezes.

Traditional methods of treating walls surfaces.

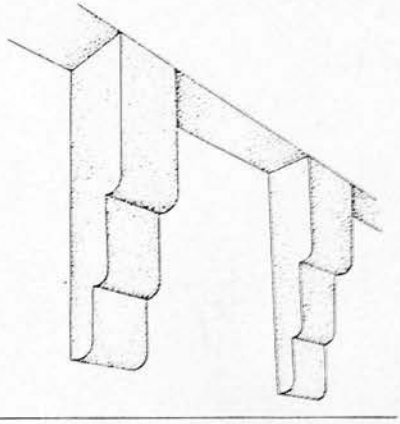


Fig. 206.

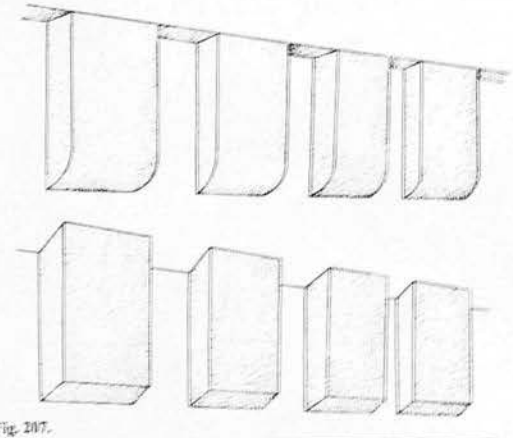


Fig. 207.

Three forms of denticulate decoration.

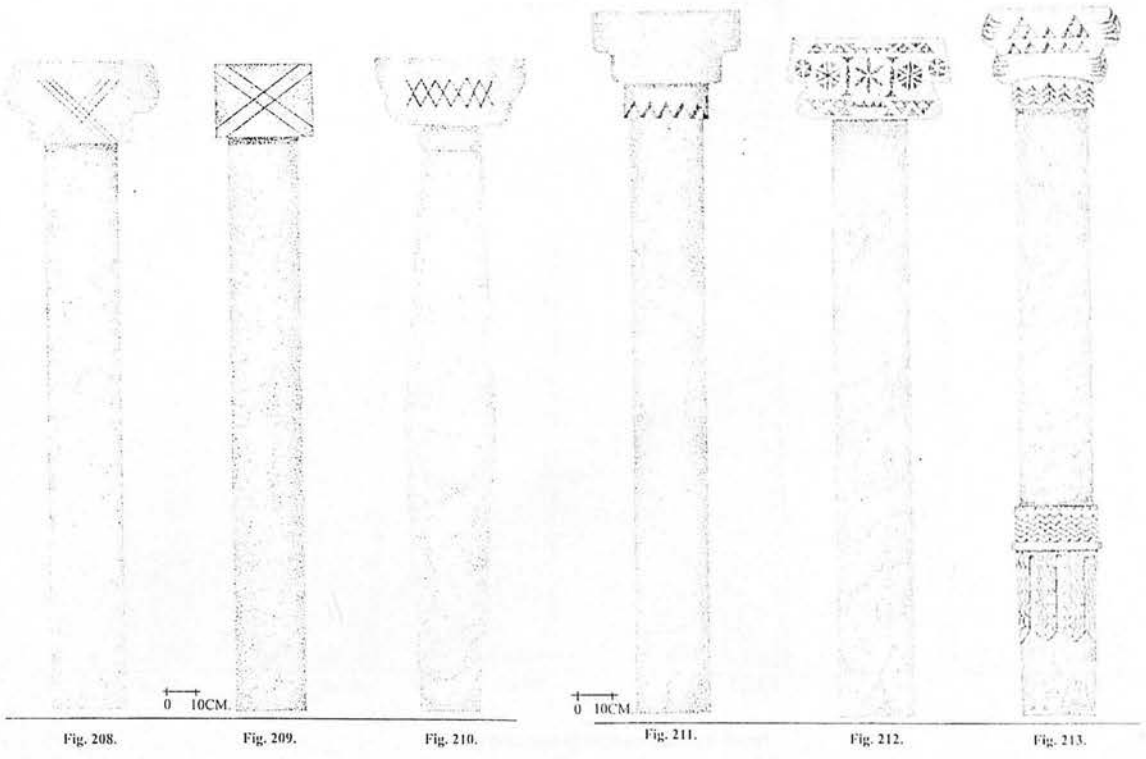


Fig. 208. Fig. 209. Fig. 210. Fig. 211. Fig. 212. Fig. 213.

Columns of various sizes and forms decorated with carved stucco.

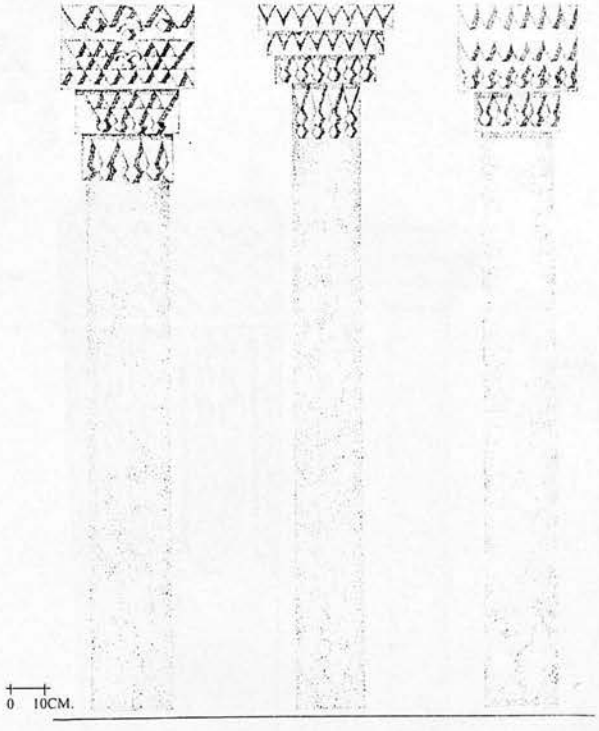


Fig. 214 columns of various sizes and forms decorated with carved stucco.

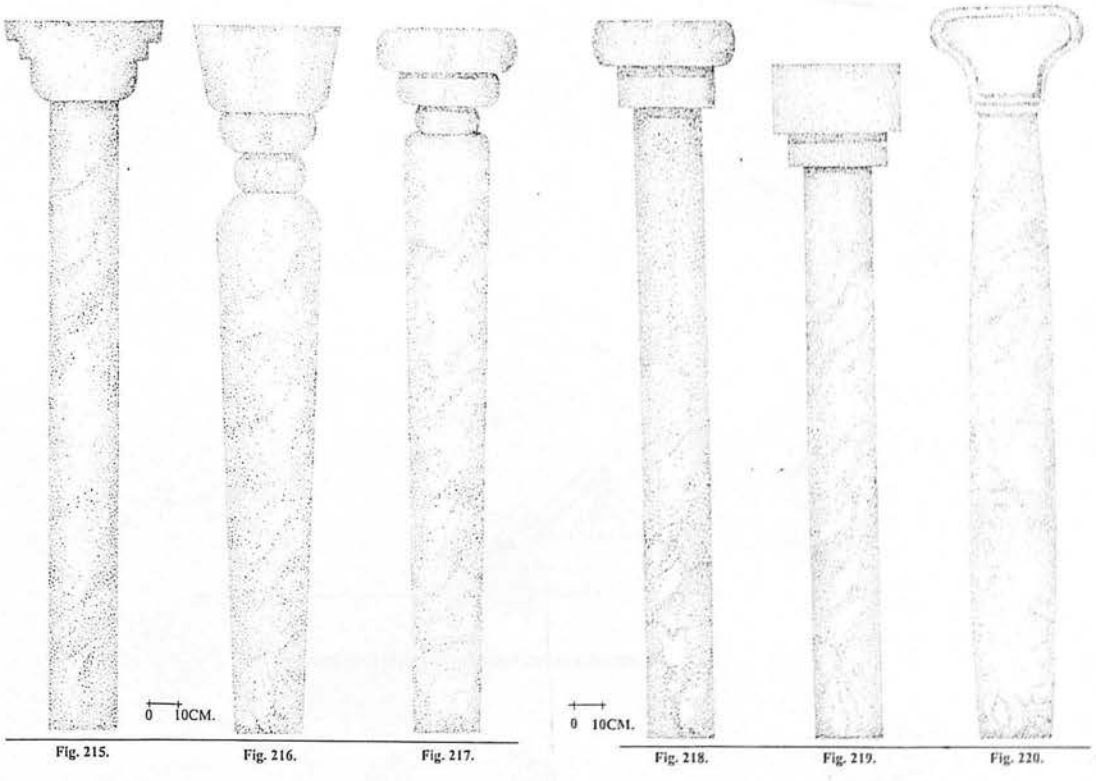


Fig. 215. Fig. 216. Fig. 217. Fig. 218. Fig. 219. Fig. 220.

Plain columns of various sizes and forms.

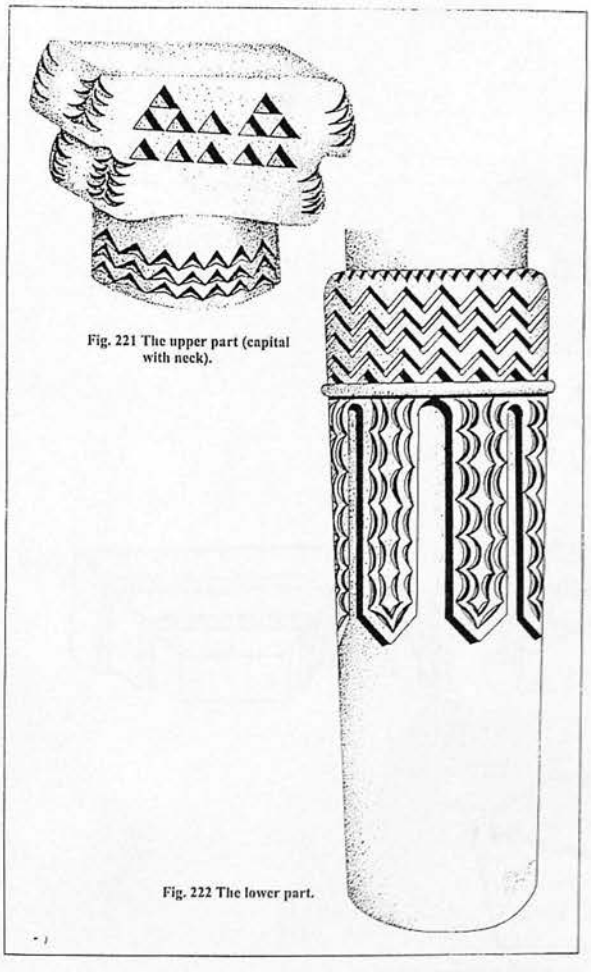


Fig. 221 The upper part (capital with neck).

Fig. 222 The lower part.

Details of the upper and lower parts of a column decorated with carved stucco (Roghha).

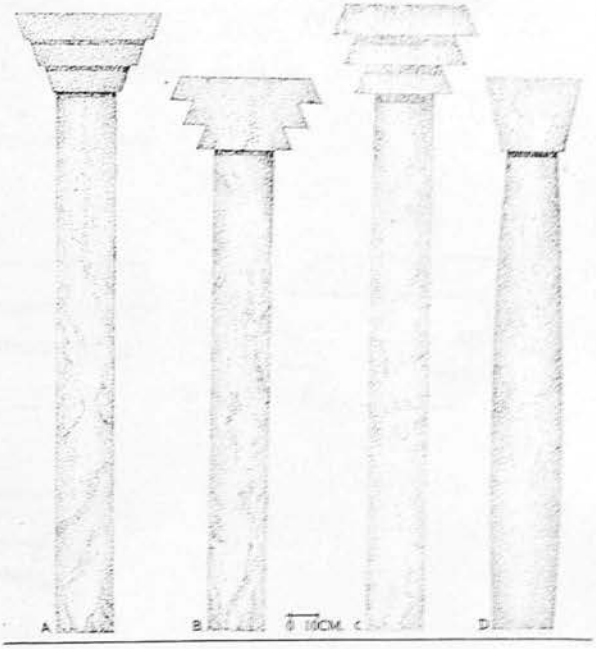


Fig. 223 Plain columns of various sizes designed with pyramidical capitals.

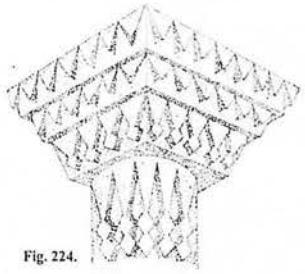


Fig. 224.

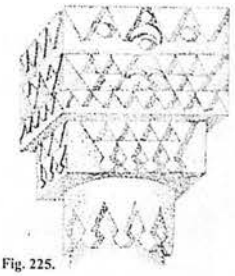


Fig. 225.

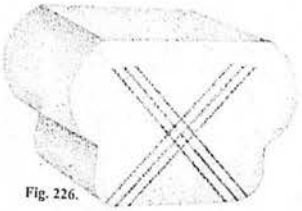


Fig. 226.

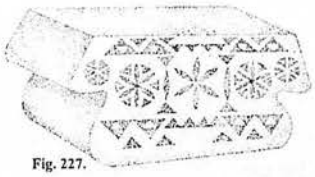


Fig. 227.

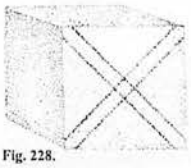


Fig. 228.

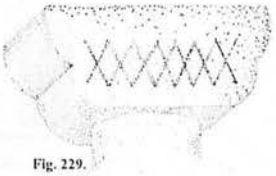


Fig. 229.

Decorated capitals of various sizes and forms.

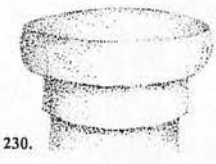


Fig. 230.

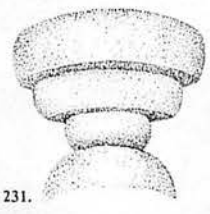


Fig. 231.

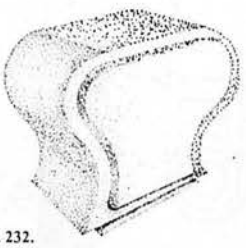


Fig. 232.

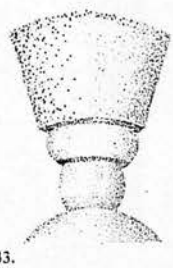


Fig. 233.

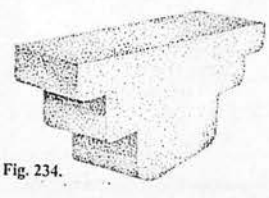


Fig. 234.

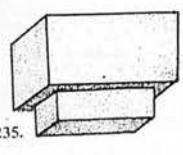
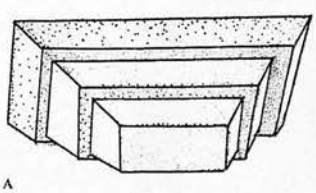
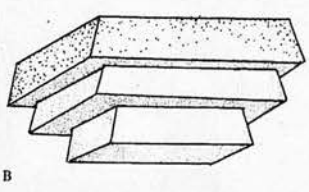


Fig. 235.

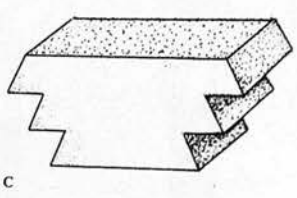
Plain capitals of various sizes and forms.



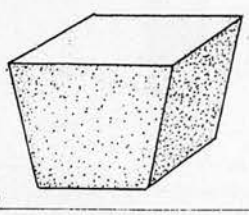
A



B



C



D

Fig. 236 Plain, pyramidical capitals of various sizes.

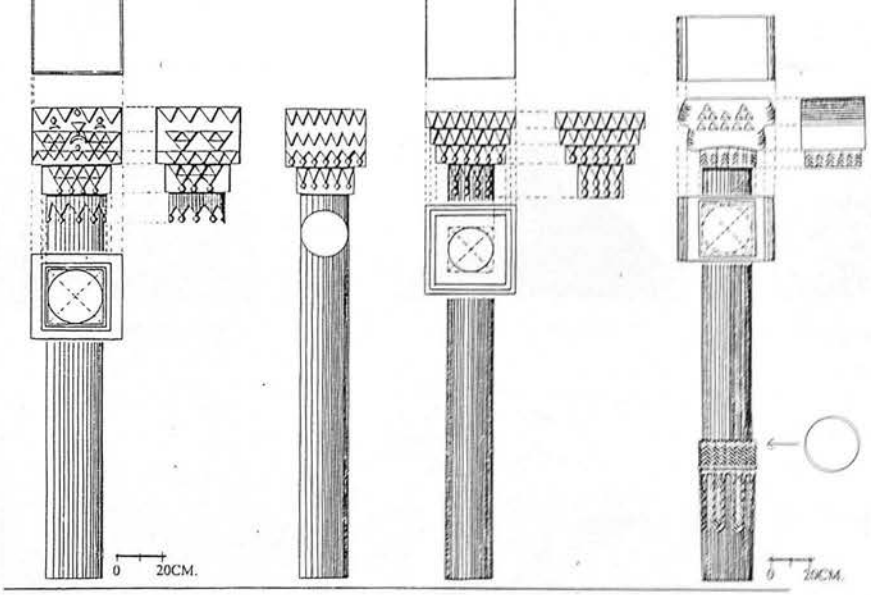


Fig. 237 Architectural details of some Najdian columns showing various scale of their capitals (front, side, upper and lower elevations) and shafts (heights and diameters of stone-drums).

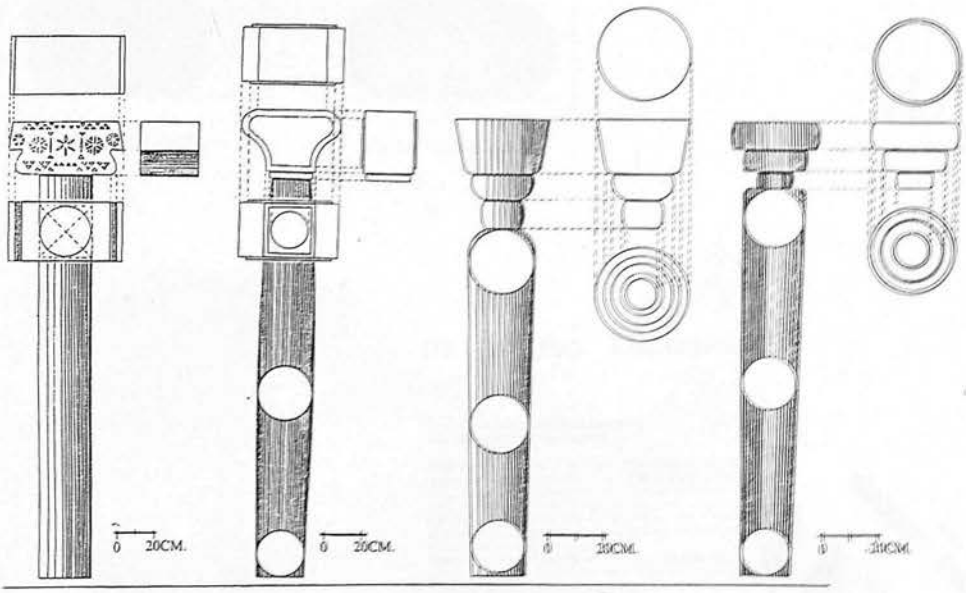


Fig. 238 Architectural details of some Najdian columns showing various scale of their capitals (including the front, side, upper and lower elevations) and the scales of the diameters of the stone-drums of their shafts.

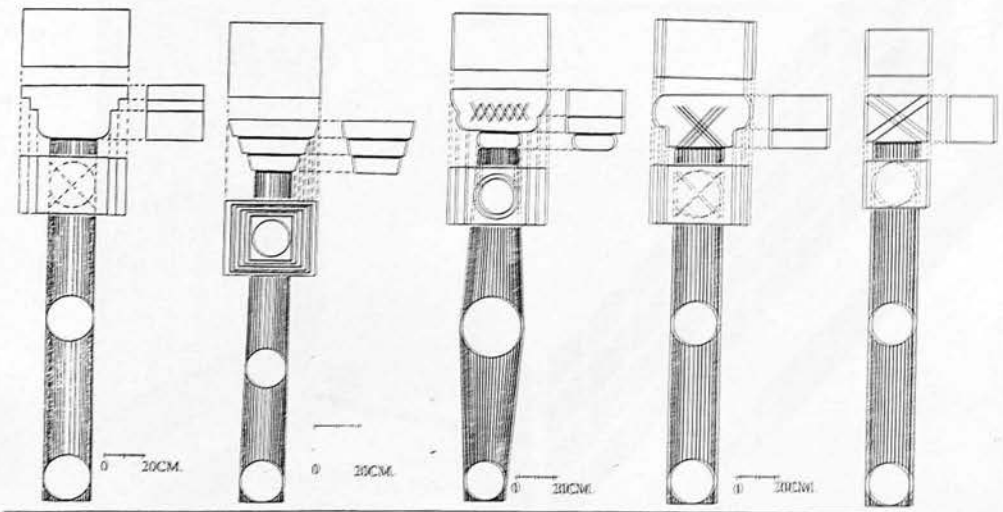


Fig. 239 Architectural details of some Najdian columns showing various scale of their capitals (front, side, upper and lower elevations) and shafts (heights and diameters of stone-drums).

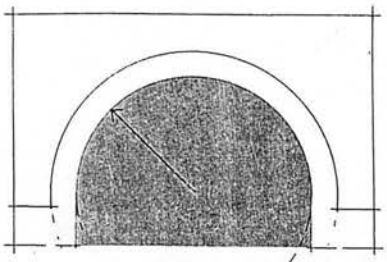


Fig. 240 Semi-circular arch

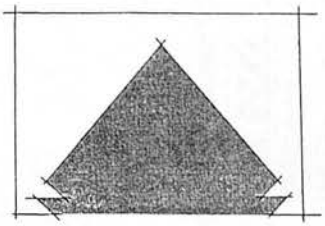


Fig. 241 Straight pointed arch.

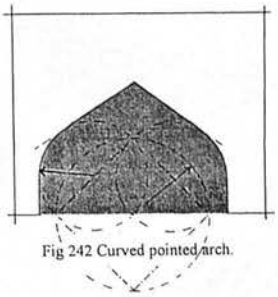


Fig 242 Curved pointed arch.

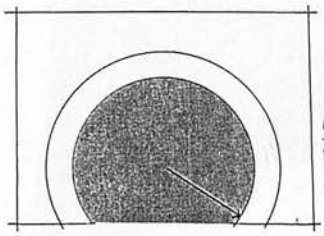


Fig. 243 Horse-shoe arch.

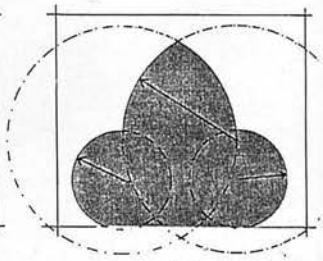


Fig. 244 Trilobate arch.

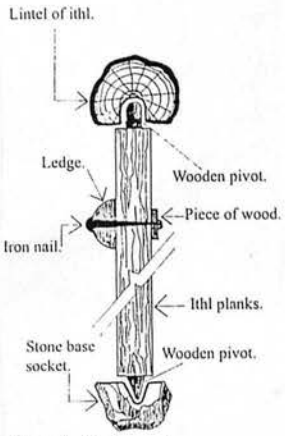


Fig. 245 Window construction.

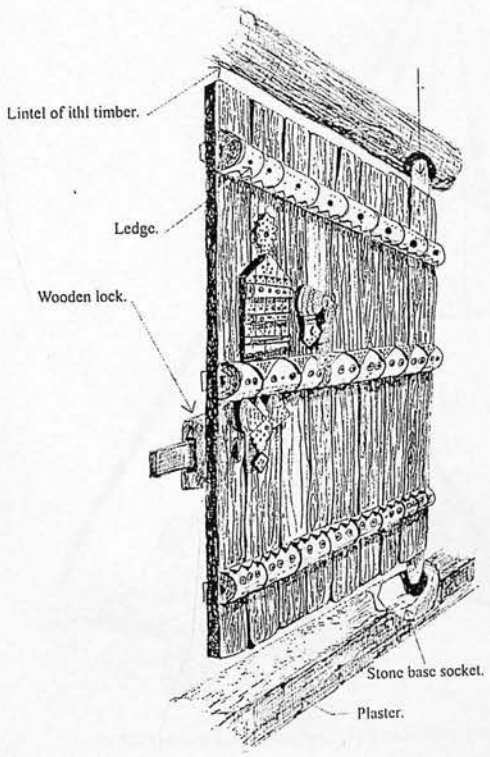


Fig. 246 Door construction.

DESCRIBING COLOURS

A colour is defined by three attributes: hue, saturation and brightness.

Hue = the attribute of a colour that determines its everyday name, such as *red, orange, yellow, green, blue, indigo and violet* as well as intermediate colours such as *yellow-green*. Hues are all pure, spectral colours, i.e.are to be found when white light is split into a visible spectrum. Hues are fully saturated (see below) and contain no black.
Saturation describes the amount of white present in a colour: the less white*, the more saturated and v.v.
*whether as white pigment or white light.

Brightness describes the amount of black present in a colour: the more black† the less bright and v.v.
†whether as black pigment or as the *absence* of white light

Hue and saturation together are sometimes referred to as a colour's ***chromaticity*** - not to be confused with *chroma* which is an alternative term for saturation only.

Other alternative terms are shown on the accompanying diagram.



Fig. 247 (Source Michael Stuart Green).

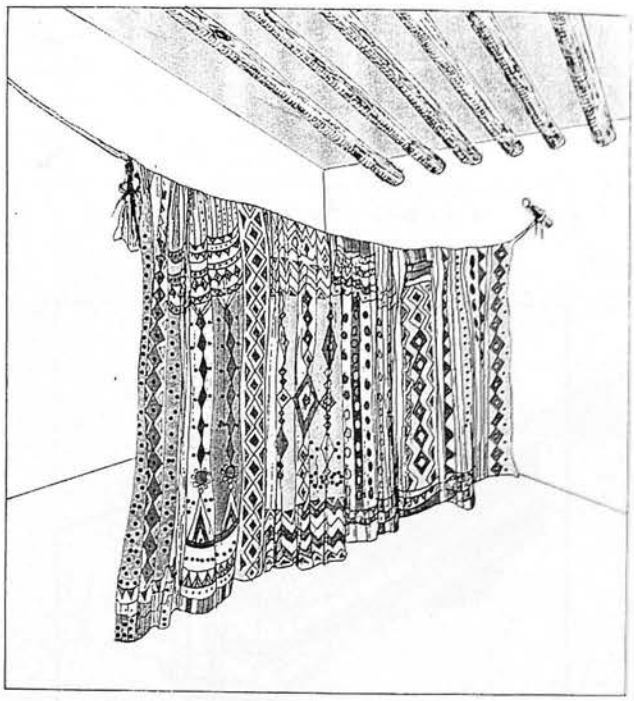


Fig. 249 Large, decorated, woven rugs were assembled from many, narrow strips. Known as 'qāṭṭ' these rugs were used to divide bedrooms in poorer houses into two areas.

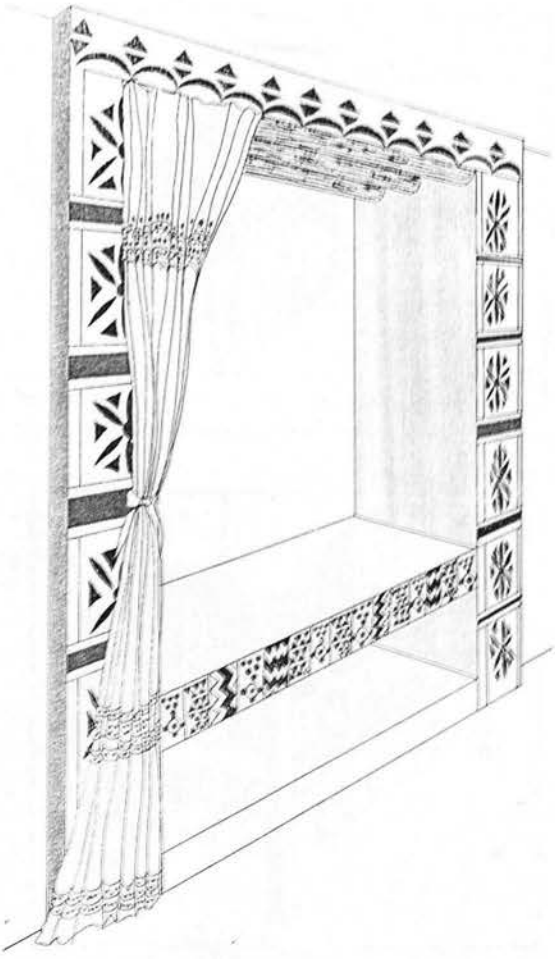


Fig. 248 Wall recesses were usually covered with pieces of hanging, decorated cloth made either of cotton or wool, known locally as al-shīf.

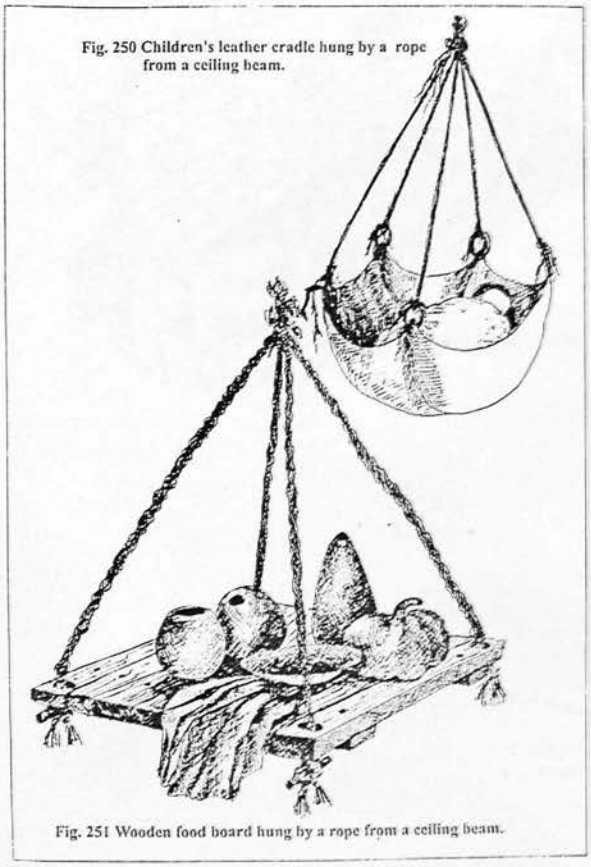


Fig. 250 Children's leather cradle hung by a rope from a ceiling beam.

Fig. 251 Wooden food board hung by a rope from a ceiling beam.

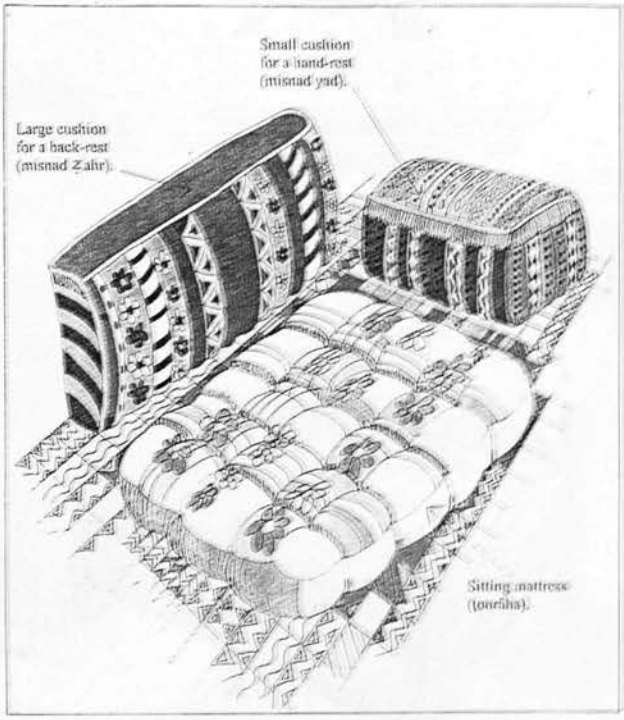


Fig. 252 Low upholstered mattress with two cushions.

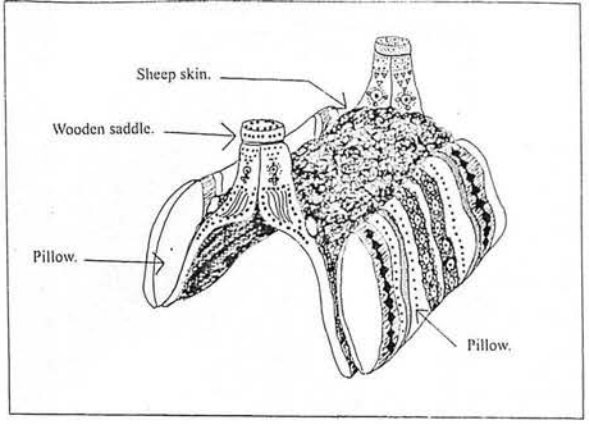


Fig. 253 Hand-rest made of an wooden saddle.

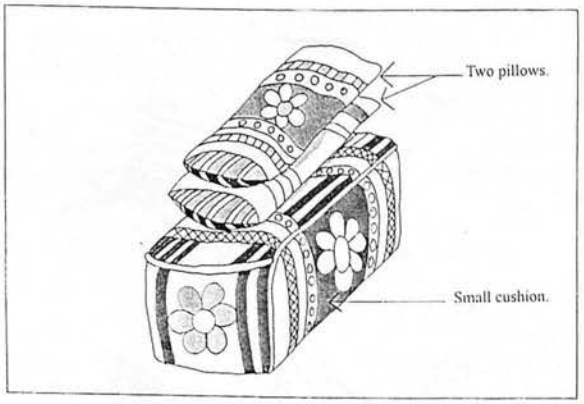


Fig. 254 Hand-rest made of an upholstered cushion and pillows.

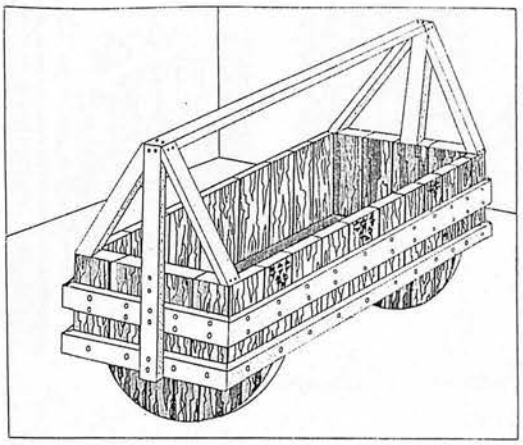


Fig. 255 Rocking wooden cradle.

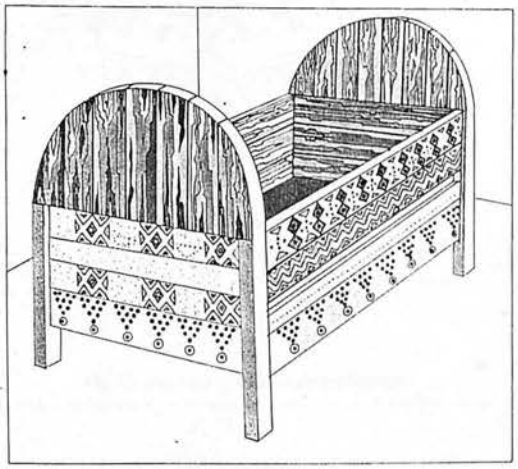


Fig. 256 Stationary wooden cradle.

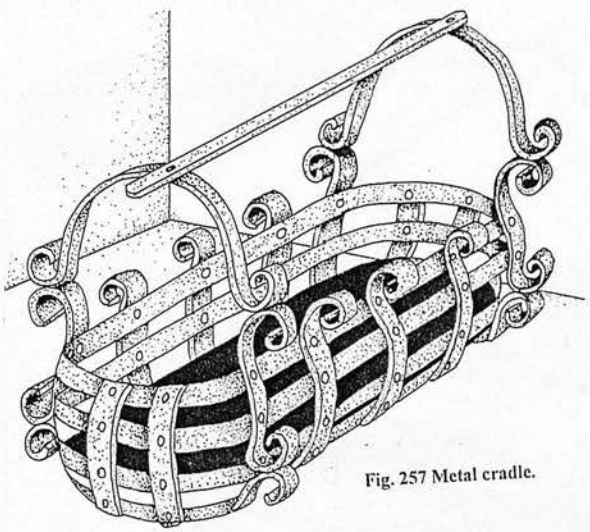


Fig. 257 Metal cradle.

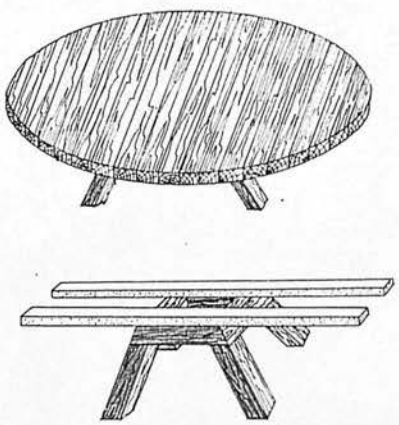


Fig. 258 Small wooden table and its structure.

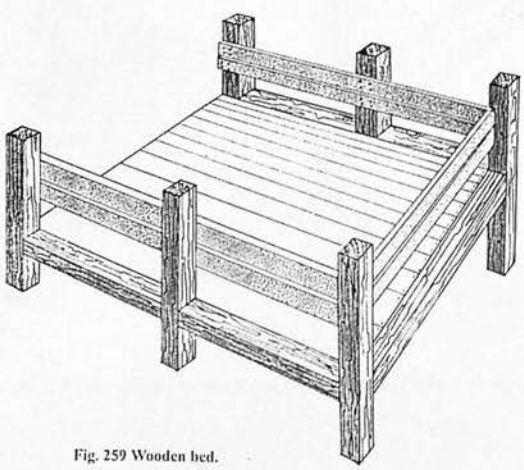


Fig. 259 Wooden bed.

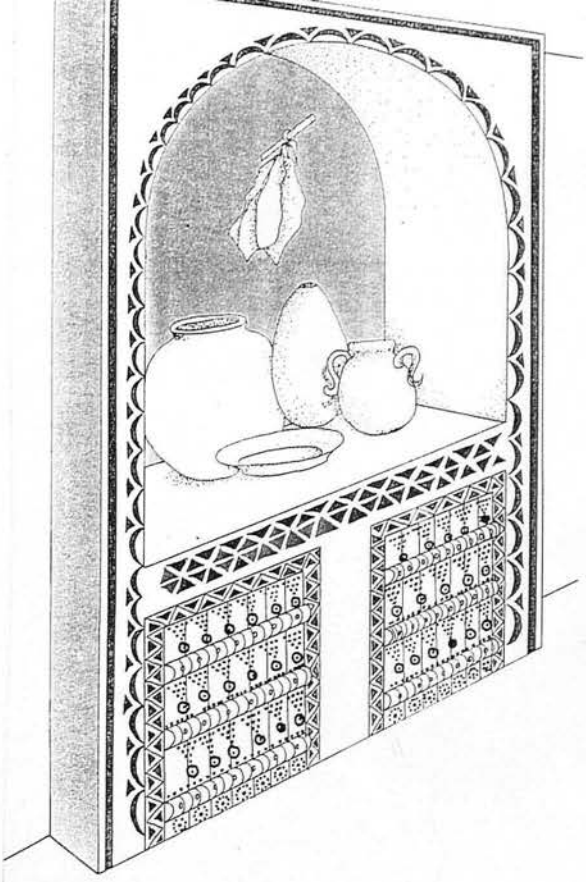


Fig. 260 Wall-cupboard.

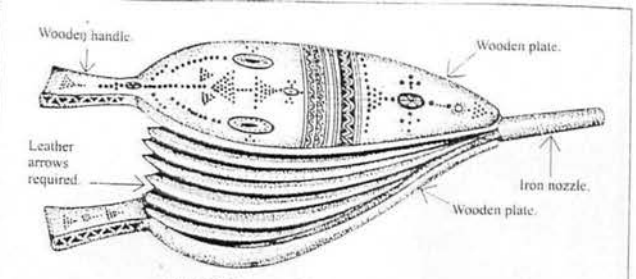


Fig. 261 Decorated bellows *(minfākh)*.

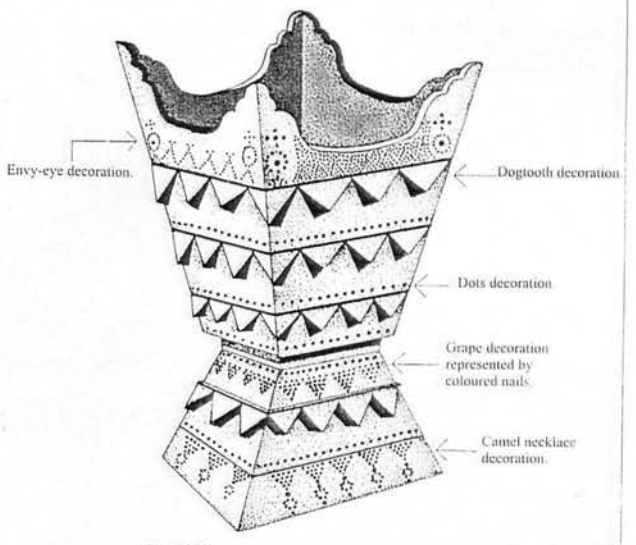


Fig. 262 Decorated wooden censer *(mibkhara)*.

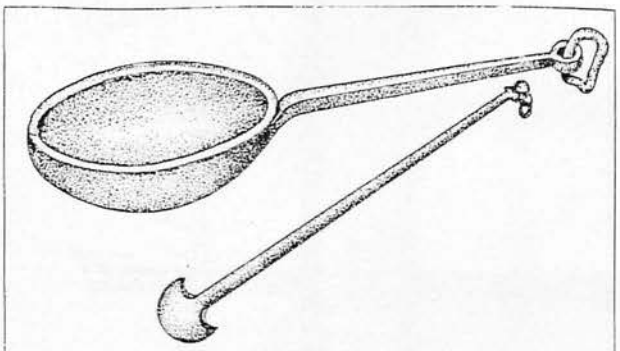


Fig. 262,a- Iron roaster with its spatula *(al-miḥmāsa wa yaduha)*.

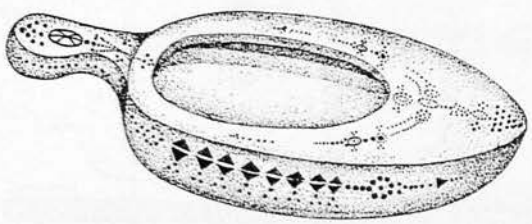


Fig. 263 Wooden sloop with handle used to cool coffee beans *(al-mubared)*.

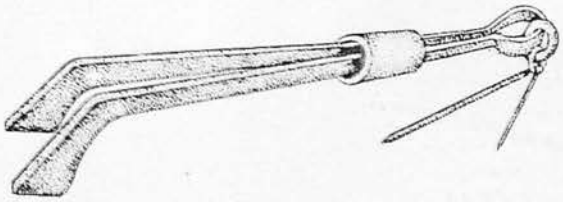


Fig 264 Iron tongs *(al-mīqaṭ)*.

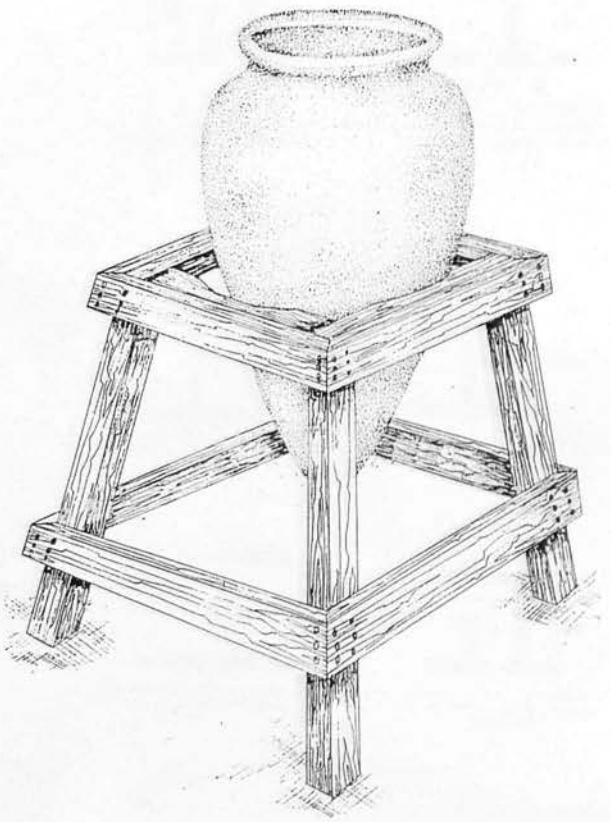


Fig. 265 Water jar with wooden frame, known locally as *khābīa or zīr mā'*.

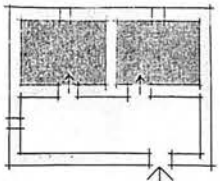


Fig. 266 Plan of square building built without courtyard.

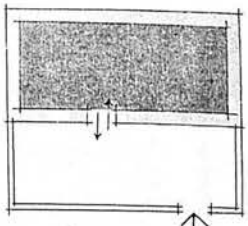


Fig. 267 Plan of rectangular building built with one open courtyard.

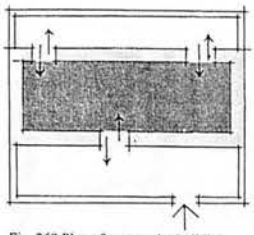


Fig. 268 Plan of rectangular building built with two open courtyards.

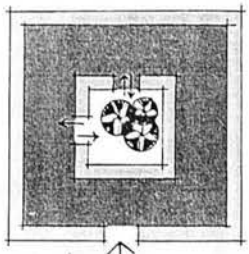


Fig 269 Square building built with centralized open court-yard (space within space).

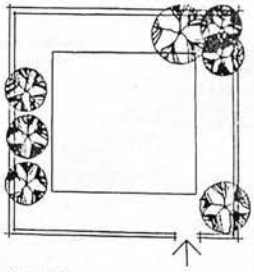
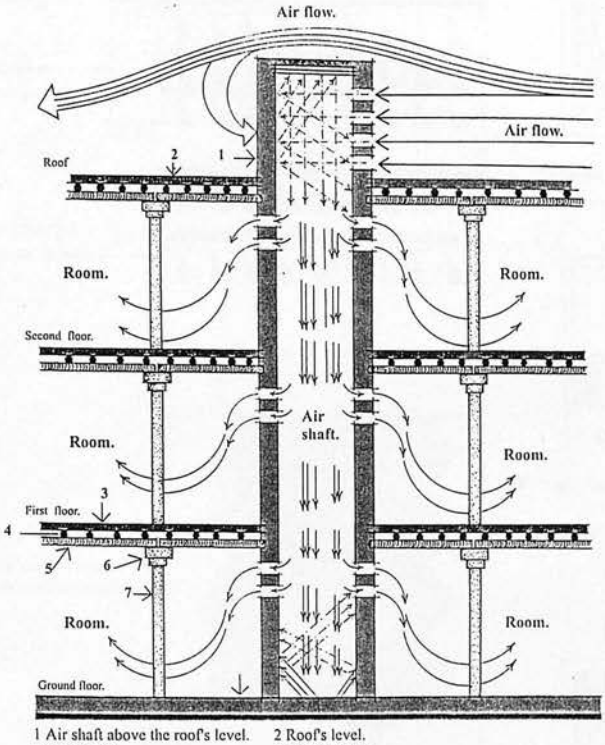


Fig. 270 Square building surrounded by open garden (space within space).



1 Air shaft above the roof's level. 2 Roof's level.
3 Floor level. 4 Ceiling joists.
5 Main beam of ceiling. 6 Capital of column.
7 Column.

Fig. 271 Cross-section of Najdian wind-catcher (air shaft type).

(This drawing is analysed from photograph of the air shaft , plate n 132, p 146, G. King, 1998).

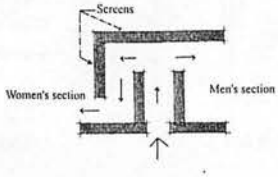


Fig. 272 A house built with one entrance door

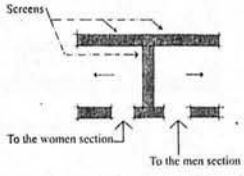


Fig 273 A house built with two entrance door

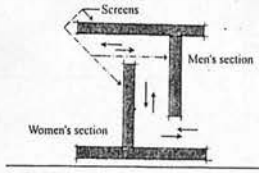


Fig. 274 Interior corridor built with right angle plan

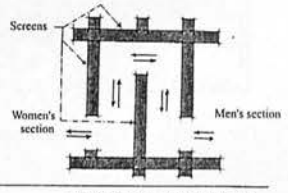


Fig. 275 Interior corridor built with zigzag plan

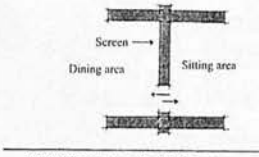


Fig. 276 Screen separating dining room and sitting room

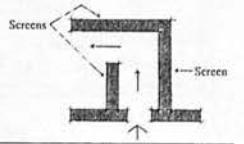


Fig. 277 Screens built in the main entrance hall

Some types of interior screens

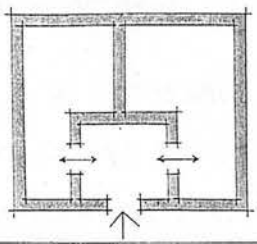


Fig. 278 Interlocking space presented by the entrance hall of a building.

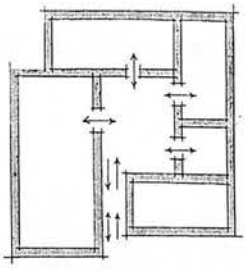


Fig. 279 Interlocking space presented by theopen space located among some buildings.

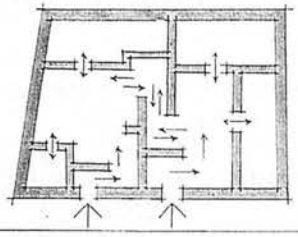


Fig. 280 Intermediate space presented by interior corridor, and adjacent spaces are appear between the interior rooms of a building.

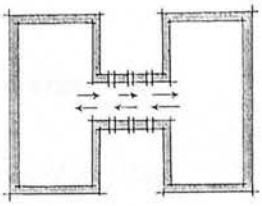


Fig. 281 Intermediate space presented by bridge-room connecting two buildings.

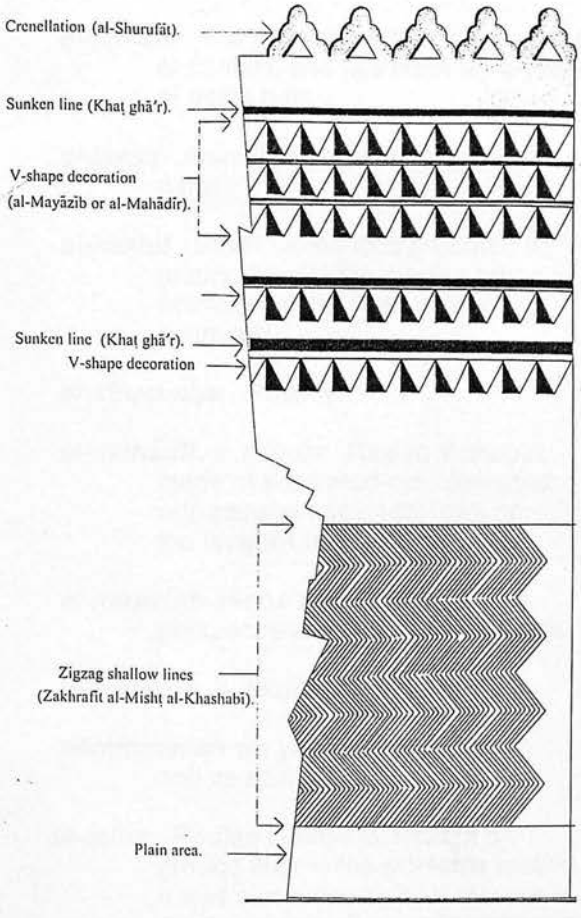


Fig. 382 Facade of Najdian mud-brick building adorned with crenellations, V-shape decoration, sunken lines and zigzag shallow lines.

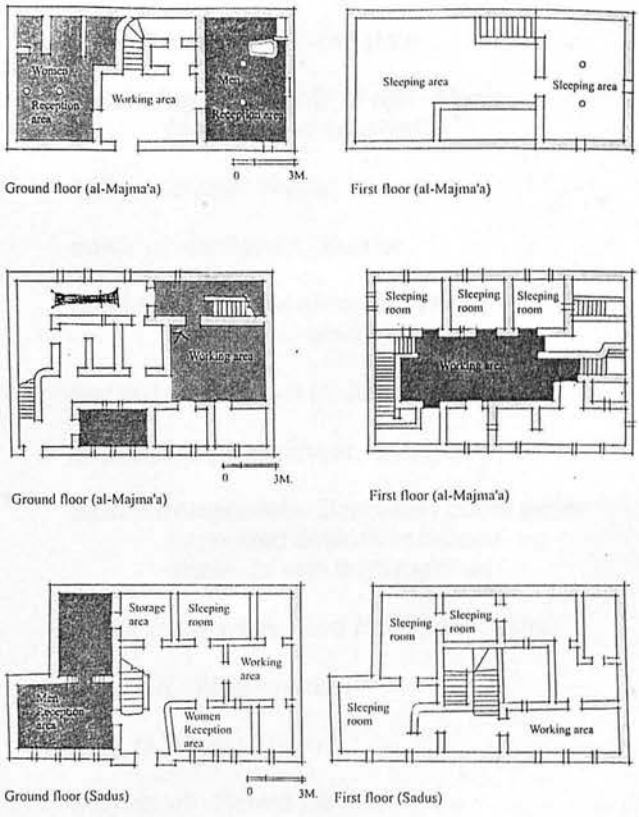


Fig.283 Examples of plans of early Najdian square mud-brick buildings.

GLOSSARY

Some traditional Najdian building and decoration terms.

'abd, pl. ***'abīd*** The slave.

ādhān To call to prayer.

al-binah bi al-madamīc, s. *midmak*; or ***al-binah bi al-'urūq***, s. *'irq* Building by mud-mix courses. This type of building known in European buildings as "pisé" or "rammed earth".

al-ghanāma The semi-nomads who used to live around cities and villages in simple mud-brick dwellings during summer and in tents surrounding settlements in winter. They were shepherds mainly grazing flocks of sheep and goats.

al-jamāla The pure nomads who graze flocks of camels, and use black tents made of goats hair.

al-jassa A small storage building for palm-dates.

al-kashif Small roofed lobby, located on ground floor in the men's section, overlooking the open central courtyard.

al-khususiya Privacy.

al-mahādīr, s. *mihdār* Raised V shapes made of plain mud-mix, designed with parallel horizontal rows on the façades of buildings.

al-mawrūth al-sha'bī al-zukhrufī The popular inherited decorative motifs.

al-mayāzīb, s. *mizāb* See *al-mahādīr.*

al-mihmāsah wa yadhah Iron roaster and its spatula.

al-quba Roofed courtyard, located on ground floor in the women's section. It was surrounded with a number of rooms. Locally, it was also known as majma' al-nisa or majma' al-harim, a place where women gather together' (lit. sitting together).

al-Qur'ān al-Muqadas The Holy Qur'an.

al-safa or *makhzan al-hayawanat* Animal storage room.

'aliyat Najd The highest area of the Najd plateau.

āmīr Prince.

'āmud, pl. *'imdan* or *a'mida* A column, built of stone drums, one on top the of the other, mortared with stucco or mud.

'aqd, pl. *'uqūd* Arch.

ārḍiyya, pl. *arḍiyyāt* A floor.

āsās Foundation.

bāb, pl. *abwāb* Door.

bāb khashabī Wooden door.

bāhit al-rijāl, pl. bāhāt al-rijāl Men's open, central courtyard.

baīt, pl. *biyoūt* House.

banā, pl. *banāyeen* Builder.

baqādīr or ***malqaf al-hawā*** Wind-catcher; air-shaft type.

bardah or ***brdayah*** pl. *pardāt* Door curtain.

baṭāniyah, pl. *baṭāniyāt* Blanket.

bibān mnaqashah Decorated doors either by painted colours or incised motifs, or with both together.

bibān mzayanah See *bibān mnaqasha.*

bsāṭ suf Woollen rug.

burj, pl. *ābrāj* Tower.

burj da'irī Round tower.

burj difā'ī Defensive tower.

burj mraqaba' Watch-tower.

burj murab' Square tower.

burj, pl. *abrāj*: mean a tower The toilet as in Sudayer area.

buwābah Gateway.

dalāt al-qahwa, pl. *dylāl al-qahwa* Coffee kettle.

dalāyyātt Projecting rectangular or square mud shapes, designed on the internal façade of prayer-hall of a mosque.

dalu Leather water-bucket.

daq Tattooed motifs.

dār, pl. *dūr* House.

dār al-hukum, pl. *dūr al-hukum* The governors building.

dār al-imāra, pl. *dūr al-imārāt* See dar al-hukum.

daraj, pl. *adrāj* Staircase.

ḍarfaht al-bāb Door shutter.

dibāghah Leather tanning; ***dabāgh*** A man who practices leather tanning.

dīn Religion.

dirisha A window.

diwāniyyah, pl. *diwāniyyāt* Reception room, sitting room.

diyāfaḥ Entertainment.

drajit al-silam, pl. *darājāt al-silam* A step on a staircase.

ḍū al-nahār Daylight.

dukān, pl. *dakakin* Shop.

dushaq, pl. *duwashiq* See frash.

falālih, s. *falāh* Farmers.

farjah Small aperture in the wall for ventilation and light.

farsh Furnishings.

finā' al-rijāl, pl. *finā'āt al-rijāl* Men's open, central courtyard.

finjān al-qahwa, pl. *fanājīn* Coffee cup.

frāsh, pl. *firsh* Sleeping mattress.

frāsh sifīr Sleeping mattress filled with straw.

frāsh sūf Sleeping mattress filled with wool.

ftāsh An opening in the ceiling for venting smoke from fire-place in the sitting-room. The fatash has a wooden cover with a cord passing over a small wheel to ease its operation. The end of the cord is within reach of the person in the sitting-room.

funduq, pl. *fanādiq* Hotel.

ghaṭā Outer bag made of canvas, used either for mattresses or pillows.

ghurfa mnaqashah bljus A room adorned with engraved and incised stucco.

ghurfah m ṭayanah A room covered with a layer of mud-mix.

ghurfah mjaṣaṣah A room covered with a layer of plaster.

ghurfat al-istiqbāl Reception room.

ghurfat al-nūm, pl. *ghuraf al-nūm* Bedroom.

girbat al-zibd Leather skin for storing butter.

ḥadha' Shoemaker.

ḥadiqa, pl. *hadāyaq* Garden.

ḥajar Stonel.

ḥājiz, pl. *hawājiz* Screen.

ḥalq bāb mjaṣaṣ wa mnaqash Stucco, engraved frieze surrounding the opening of a door.

ḥammām, pl. *hamāmāt* The typical, local name of the toilet in Najdian settlements.

ḥammām Public bath in pure Arabic.

ḥaṣīr qash Straw mat.

ḥaṣīr mn līf al-nakhal Mat made of palm-tree fibre.

ḥaṣīr mn sa'f al-nakhal Mat made of palm-tree leaves.

ḥaṣīr mnaqash Ornamented mat, coloured motifs.

ḥaṣr A water well.

hāwin Iron mortar.

ḥaẓirah, pl. *ḥazā'ir* Stable for any kind of animal.

ḥaẓr The urbanised tribes.

ḥā'it, pl. *hawā't* or ***jidār***, pl. *judrān* A wall.

ḥjāb or ***ḥijāb***, pl. *ḥujub* or *aḥjuba* Guard.

housh, pl. *ahwash* Courtyard.
ḥoūsh al-nisah Women's open courtyard.

ḥoūsh al-rijāl Men's open, central courtyard.

ḥrūr Warm.

ḥur Tribal man who has pure blood.

ḥusn al-diyāfah Hospitality.

ḥuṣn, pl. *huṣūn* Fortress.

ibrīq, pl. *ābārīq* Iron pitcher.

ibrīq al-shai, pl. *abārīq* Teapot.

ifrīz or ***shirīṭ*** Frieze.

ithl Tamarisk wood.

janāya, pl. *janayat* Column capital.

jār, pl. *jirān* Neighbour.

jaṣāṣ, pl. ***jaṣāṣīn*** The stucco craftsman.

jihād Holy Islamic war.

jiṣāṣah Stucco craft.

juṣ Stucco; gypsum plaster; jus originally was a Persian word.

kamar, pl. *kumur* Wall-cupboard, with multi-decorated shelf in the al-majlis, used for storing the utensils for making tea and coffee.

kanīf The toilet as known at al-Riyad and Burayda.

kāsit al-shāī, pl. *kasāt al-shāī* Tea cup.

kharaza, pl. *kharāzāt* Column stone drum.

khashab Wood.

khaẓirī, pl. *khaẓiriyeen* A man who born from a white woman and a black man.

khraz āzraq Blue beads.

khṭūṭ mitāznah or ***mitwāznah*** Symmetrical lines.

khṭūṭ mit'arjah Zigzag, waved or winding lines.

kīs khām Canvas bag.

klāsh, pl. *kilshah* Sandal.
kuba, pl. *kubab* Dome.

kuwa, pl. *kuwāt* A hole in the wall.

labān Mud-brick maker.

layt Artificial light.

lḥāf, pl. *lihif* Quilt.

libn Sun-dried mud-bricks.

lūn, pl. *alwān* Colour.

mabānī ḥukūmiyyah Administrative buildings.

mabānī mitrāṣa or ***mabānī mtlāṣiqa*** Compact buildings.

mabānī mutafariqa Scattered buildings.

mabānī shibih mitrāṣa Semi-compac buildings.

mabānī sukāniyyah or ***ahliyah*** Residential buildings.

mabānī tijāriyyah Commercial buildings.

madīnah City.

madkhal, pl. *madākhil* The entrance.

madkhal al-harīm Women's entrance.

madkhal al-rijāl Men's entrance.

madkhal jānibī Side entrance. This is a semi-private entrance, it was used only by the owner of the house and his male relations.

madrasa, pl. ***madāris*** School.

maḥal tijāri, pl. *maḥalāt tijāriyyah* Shop.

maḥālah A wooden pulley.

majaṣah, pl. *majaṣāt* The stucco workshop.

majlis, pl. ***majālis*** Reception room or sitting room.

makhbaz Bakery.

makhzan, pl *makhāzin* Storage area.

makhzan al-shāī wa al-qahwa wa al-tamur Recess wall (100 x 80 x 40) in the reception room, provided with many wooden shelves and two, small, decorated wooden shutters. It was used as a storage place for tea, coffee and dates.

makhzan al-'aīla The family storage room.

malban Wooden mould for making un-fired mud-bricks.

manāmiyah Large wooden bed. The bed was simple and rectangular in shape, often raised about 100cm. of the floor on four, heavy square legs.

manārah, pl. *manāyir* or *manārāt* Minaret , pl. in Arabic ***manā'r***.

maqla' al-juṣ, pl. *maqāli' al-juṣ* Stucco stone quarry.

masālīt Small defensive galleries were commonly built at the upper part of a defensive wall, in pure Arabic known as al-saqatat.

mashab al-nār Fire-place in the majlis.

masjid, pl. *masājid* A mosque.

masjid al-jāmi' Friday Mosque or Great Mosque. It is used for the five daily prayers through the week and also for the Friday noon prayer and sermon (*khutba*), which is delivered by *al-Imam* (*shiekh al-masjid* or religious leader).

masjid al-khams Small mosque. Small mosques were built at strategic points among the housing districts of Najdian settlements. They were used for the five daily prayers through the week.

maṣtabah, pl. *maṣātib* Bench of mud-brick or stone at base of wall, covered with a layer of mud and sometimes stucco . It was usually built adjacent to the men's entrance-door and served as a sitting area the for social gathering of men.

maṭbakh, pl. *maṭābikh* Kitchen.

mawa'īn al-maṭbakh Kitchen vessels.

ma'zabah See majlis.

mibkharah Censer.

mifakh Bellows.

mifrash, pl. *mafārish* A circular mat woven from palm-fiber or leaves, usually this mat placed on floor where food was arranged.

miḥrāb, pl. maharib Niche constructed in the middle area of al-qibla wall in the mosque.

mijbāb The entrance hall to the house (covered way). Bahu or rudha in pure Arabic.

milqat Tongs for handling hot cinders.

minbar, pl. *manabir* Wooden or mud pulpit designed on the right side of the niche (*al-mihrab*) in the mosque.

miq'd khashab, pl. *maqā'id* Wooden bench.

mirāth aljdād The inheritance of grand-fathers; in pure Arabic mawruth al-ajdad or al-mawruth al-sha'bi.

mirqāb or ***al-manārah*** High watch-tower, built either within or outside the settlements.

miṣbāh, pl. *maṣābīh*: which means 'morning' Roofed courtyard, located on first floor in the women's section, it designed for women's meetings.

misnad yad, Cushion, hand-rest.

misnad ẓahir, pl. *misānid* Back-rest.

miṣtawṭanah Settlement

miṭraqat al-bāb or ***qaṣaht al-bāb*** Door knocker.

mi'bar, pl. *ma'ābir* Open bridge above the street.

mi'dhanah, pl. *ma'ādhin* Minaret.

mnajid, pl. *mnajidīn* Upholsterer.

mubarid Trays with handles.

muda'ah Ablution place.

muqalat Dining-room.

mu'alim Master-worker.

mu'adhin A man who gives the call for prayer.

najmah Star

nakhīl or ***nakhl*** Palm-trees.

naqsh, pl. *nuqūsh* Ornamentation on stucco or wood by using incised or engraved motifs.

nijārah Carpentry; *najār* the carpenter.

nijir See hawin.

'nsur zukhrufi Decorative element.

n'āl See klash.

qabila Tribe.

qabilī See hur.

qabu Basement.

qadīm Old.

qahwah, pl. *qahāwī* See majlis.

qariya Village

qaṣaba Column shaft.

qaṣr Palace.

qibla Direction to which Muslims turn in prayer (toward the Ka'ba at Makka al-Mukarama).

qiṣarriya Covered market.

qiṣirī Adjacent neighbours.

quraiya Small village.

qūs, pl. *aqwās* See *'aqd*.

qyās, pl. *qyāsāt* Scale

raf, pl. *rūfūf* Shelf.

rashaa Thick rope.

rawshan, pl. *rawāshin* A special gallery (hall) on the first floor of a house used as reception area.

riwāq, pl. *arwiqah* or *riwaqāt* Porticoes overlooking the open, central courtyard of a house.

riwāq al-salāt, Prayer hall.

sābāṭ, pl. *sabatat* Enclosed-bridge above the street.

ṣafārī, pl. *ṣafāriyeen* A man from the yellow' ethnic group.

ṣaḥin, pl. *suḥūn* The open courtyard of a mosque.

ṣāj Domed iron sheet used for the baking of bread. It was put over a fireplace.

ṣalab, s. *slubī* Gypsies; *rajil ṣlubī* A gypsy man.

samāwah See *ftash*.

ṣandūq, pl. *ṣanādīq* Chest.

ṣandūq mnaqash balṣdaf Ornamented chest with shells.

ṣanī', pl. *ṣunā'* The workman who used to practice traditional craft.

saqf, *suquf* A ceiling.

sāriyya, pl. *sawārī* See *'amud*.

saṭih, pl. *sutūḥ* or *asṭiha* Roof.

saṭih msawar Walled roof.

sātir, pl. *sawātir* See *ḥājiz*.

sawākif or ***taskīf*** The timber construction of the ceiling, including the main beams and joists.

shamāsat, in pure Arabic Window, perforated partitions (grille work).

shibāk A window.

shibābik mdahanah Painted windows.

shif Hanging, decorated cloth made of cotton or wool. It was used to cover a wall-recess or wall-cupboard.

shurofātt Crenellations.

sibāq al-hijn Camel racing.

sijādit ṣalāt, pl. *sijājīd* Prayer tapestry.

silam, pl. *salālim* See daraj.

sinā'āt al-aḥdhiya al-jildiya The manufacturing of leather shoes.

sirīr, pl. *sarāyir* or *āsirah* Bed.

sitrah Parapet wall round the roof.

ṣtabil Stable for horses.

stārah, pl. *satāyr* See *bardah*.

sūq, pl. *aswāq* Market.

sūq al-dīra The main market in the settlement.

sūq al-harīm, Women's market.

sūq al-manākha Open market. Market for selling animals and heavy objects.

sūq wāqif Open market.

sūr, pl. *aswār* Enclosure wall.

sūr difā'ī, pl. *aswār difā'iyya* Defensive wall.

ṭabaqa, pl. *ṭabaqāt* layer.

takhmīr al-ṭīn To ferment the mud-mix "fermentation". The mixture is usually left for several days before using it for adobe production.

takht, pl. *tukhūt* See *sirīr*.

takwīn zukhrufī Decorative composition.

talyyis (v.), *liyasah* (n.) To cover a wall or floor with smooth finishing layer of either mud or stucco.

ṭaq, pl. *tūq* Deep, rectangular recess (80 x 90 x 40) in the reception room, used as a storage place for fire wood.

ṭaqah, pl. *ṭaqāt* Small window or opening.

ṭaqāt maftuha, Openings; see *farjah*.

ṭaqs ḥār Hot climate.

ṭarma A distinctive projecting enclosure with peepholes, that covered the area of a small window constructed above the main house entrance door. It was made either of mud and stucco or wood (box).

tibn Straw.

tijārah The trade.

ṭīn Mud; earth mixed with water.

ṭīn mutaban Mud; earth mixed with straw and water.

ṭūb Mud-bricks.

turāb Earth (raw materia)l.

ṭurāhah or ***miq'ad*** Seating mattress.

ustād See ***mu'alim***.

washm Tattooed motif.

wasm Branded motif.

wazrah mjaṣaṣah Stuccoed dado.

wihdah zukhrufiyah Decorative motif.

wijān al-bāb Door frame made of stone or mud-bricks mortared with either stucco or mud-mix.

wijār Fire-place in the al-majlis where coffee and tea are made.

wradah, pl. *wradatt* Rose; pl. in pure Arabic are wurud.

wsādah, pl. *wasāyd* Pillow.

zakhrafa Decoration.

zakhrafat al-kharbasha Random decoration. It involved the worker moving his fingers, or a piece of rough wood across fresh mud, thereby roughening it.

zakhrafat al-mishṭ al-khashabī Wooden comb decoration. It was applied using a large, wooden comb which was moved across freshly coated, plain mud surfaces leaving shallow and raised lines, with varied forms such as horizontal, perpendicular, semi-circular or zigzag-waves.

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