ISLAMIC ORDER IN ARCHITECTURAL SPACE: ONE RELIGION'S CULTURAL INFLUENCE ON SPACE MORPHOLOGY

PART 2

ISLAMIC SPACE MORPHOLOGY

BY

SALIM SOBHI ALI AL-FAQIH
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ISLAMIC ORDER IN ARCHITECTURAL SPACE: ONE RELIGION'S CULTURAL INFLUENCE ON SPACE MORPHOLOGY

Part 2

Islamic Space Morphology.

CH. 4

ISLAMIC ARCHITECTURE: AN EXAMPLE OF ONE CULTURAL INFLUENCE ON SPACE MORPHOLOGY

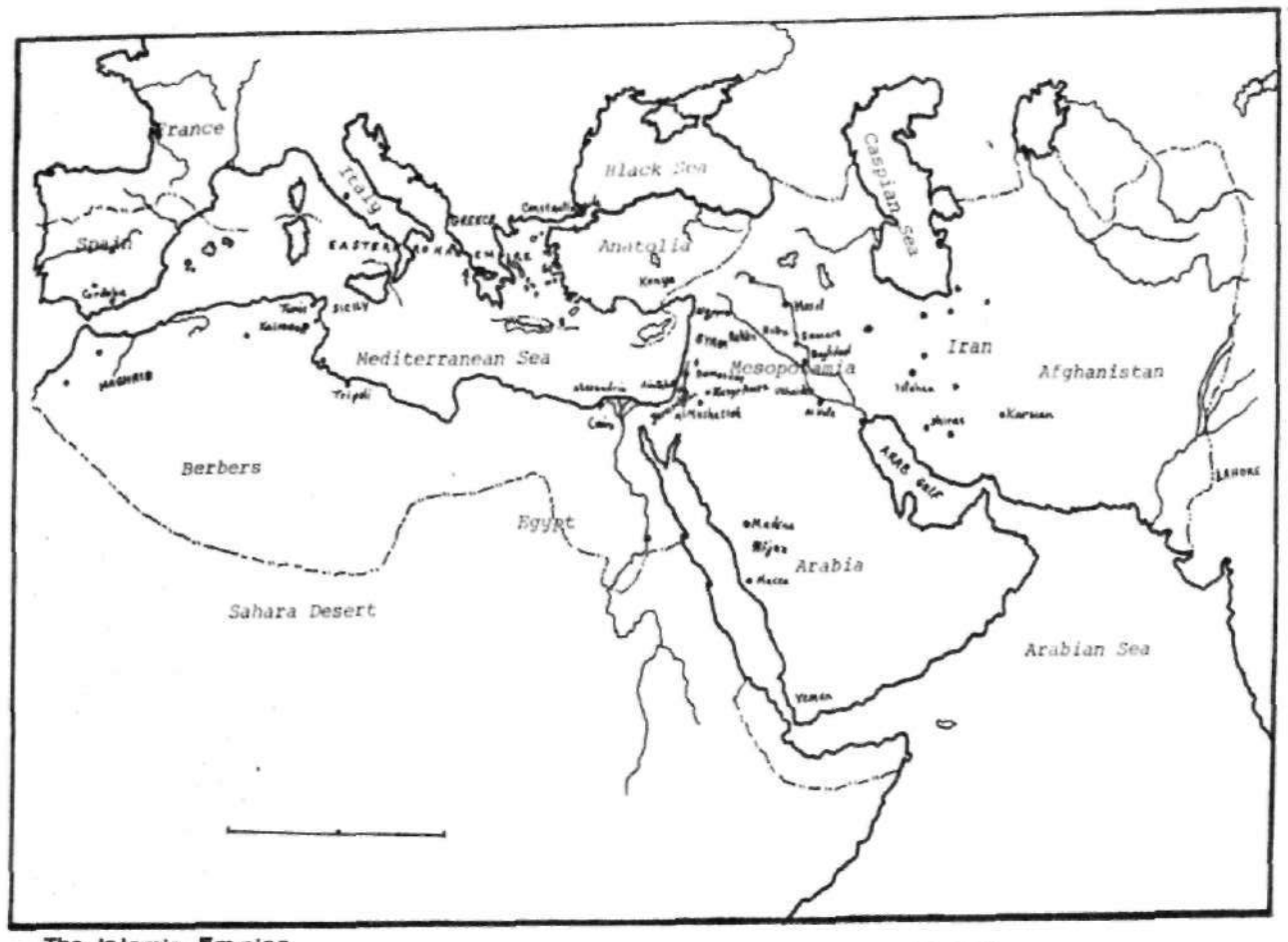
CH.4: Islamic Architecture : an example of one cultural influence on space morphology.

4.1 The Islamic World:

The true origins of Islamic Architecture are to be found in the distinct millenia between the 7th and the 18th century, an era of 1100 years, in which Beduin Arab Tribes periodically broke through the boundaries of the ancient civilizations. These tribes, whose efforts before Islam were scattered and disorganized, were often fighting each other. After the introduction of Islam, the Arab Tribes in the Arabian peninsula became united and pressed forward into the lands of the civilization that were bordered on the east by Tigris and Euphrates rivers of Mesopotamia, on the west by the Mediterranean sea. They pressed with an impressive military strength, united by their new faith. These lands were controlled by the Byzantine and the Sassanids empires.

Arab tribes found in the new religion, Islam, the cohesion that enabled them to set aside their age-old antagonisms. Islam affected the life of individuals as well as the society as a whole, not only on the spiritual level but also on the social, political and cultural levels. They were paving the way for the last great historical religion; then they created a new social and cultural order. This/

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The Islamic Empire

Arabia at the time of Muhammad 622-632 AD

Conquests under the first Caliphs 632-661 AD

Conquests under the Umayyads 661-750 AD

(279)

This creation of a new order was the result of a fruitful interaction between the ancient beliefs and was built on and integrated with the new faith and its social interactions. This newly-established order comprised an embracing framework of human life.

From the beginning the religion of Islam governed every aspect of its civilization; Mohammad the prophet was not only a prophet, but also a leader, a judge and a legislator. Mohammad was; 'the Messenger of God', the seal of the prophets over a period of twenty years from 612 A.D. until his death in 632. To him, God revealed His law, His world, as set down in the Koran, the uncreated attribute of 'God' co-existent with Him; . In Sura II, verse 171:

> That because God has sent the book,
> with the truth, and those that are
> at variance regarding the book
> are in wide schism. (1)

Islam is well summed-up in the formula: "There is no God but Allah, and Mohammad his prophet", which is the profession of faith, the "submission to God", that regulates the entire life of the 'Muslim'. In Sura II, verse 285:

> It is not piety that you turn your face
> to the East and to the West
> True piety is this
> To believe in God, and the Last Day,

> The angels, the Books and the Prophets;
> to give of one's substance, however cherished,
> to kinsmen and orphans,
> the needy, the traveller, beggars;
> and to ransom the slave,
> To perform the prayer to pay the alms.(1)

and in Verse 172;

> The Messenger believes in what was sent down to
> Him from his Lord,
> and the believers each one believes in God,
> and his angels,
> and in His Books, and His Messengers. They say
> 'We hear, and obey'.
> Our Lord, grant us Thy forgiveness; unto Thee,
> is the home coming. (1)
>
> Koran translated by Arberry.

'Submission to God', brought into being a unifying and stabilizing force, that gave the Islamic leaders the power of the truth, and the voice of authority with which they established the political order in a vast area of different countries and different civilizations.

Mohammad was born in 571 A.D. Mecca, in which was the centre of worship, trade and culture. Mecca also had a respectable position in the Penensula, so that the community in Mecca began to fear Mohammad's new faith. Then they forced him to leave his native town Mecca and to migrate to Medina - "Tathrib" in 622. This date marked the/

the beginning of the Islamic era, the "Hegra", which means "migration". Mohammad as an administrator set up a new social order within the new community in which various components of the population found themselves united. In 630 Mohammad and his followers made a victorious return to Mecca to 'Kaaba', the sanctuary of his forefathers. Then Kaaba became, after the 'Aqsa Mosque' in Jerusalem, the direction of prayer (the 'Qibla') for all Islamic Nations. It has been ever since the ritual place for pilgrimage. Mohammad won over the majority of the Arab Tribes in the Peninsula after his victorious return to Mecca. In Sura V verse 95 God says:

> God has appointed Kaaba the Holy House,
> as an establishment for men, and the holy month,
> the offering and the necklaces - that you
> may know that God knows all that is in the heavens,
> and in the earth, and that God has knowledge,
> of everything. (1)

In Sura II verse 135 God says:

> Turn thy face towards the Holy Mosque, and
> where ever you are turn your faces towards it.

and in Sura II verse 90:

> The first House established for the people,
> was that at Bekka, a place holy, and guidance
> to all beings. (1)

Koran translated by Arberry.

Upon the death of Mohammad in 632 four elected Caliphs succeeded him. They were: Abu Bakre (632 - 34), Umar (634 - 44), Othman (644 - 50) and Ali Ibn Abi Talib (650 - 61). The four caliphs began the first conquest in Islam. They conquered Syria, Palestine, Jordan, Iraq, Egypt and overwhelmed Persia. They defeated the Byzantine Empire in 635 and took over Damascus and Jerusalem in 638. In Egypt Muslims established al-Fustat as a new capital where modern Cairo would later rise, and Alexandria fell in 642. The Arab-Islamic army defeated the Sassanid army and dashed into Mesopotamia which is now Iraq, opened up Persia and the Iranian highlands.

The population of the new territories accepted their new governors. Even in Syrian-Mesopotamian regions, the people felt more akin to the Arabs than to their Greek, Byzantine or Persian governors. The Arab-Islamic governors accepted the necessary submission and the payment of "Jizya", which was political realism on their part.

During the reign of the fourth and last caliph Ali, (Mohammad's cousin and his daughter's husband), a crucial conflict occurred between him and Muawiya, the strong governor of Syria, in 658. This important conflict resulted in the division of the Islamic World into Shiitism, (those who supported Ali), and Sunnism (those who/

who supported Muawiya). Ali was assassinated in Kufa in 661, but Muawiya founded the Umayyad Dynasty with Damascus as its capital. The followers of Sunnism believed that the prophet was a defender of the law and leader of the community and that the religious authority rested wholly on the Koran. Shiitism recognized the leader or the Imam and they held that Mohammed had named Ali as his own successor, who would in turn name his own successor. But Islam remains what Muslim Sunnists themselves consider it: an indivisible unit. (2)

The Umayyad thus became the first dynasty of caliphs who held sway for a century. Under them Arabism was successfully applied to all government institutions. They succeeded in organizing the Arab Tribes and committed themselves to laying the bases of the Islamic-Arab state. Meanwhile they made a drive into Asia and North Africa, so that by the middle of the 8th century the Islamic World was extended from the Atlantic Ocean to the Indian-Ocean, where the Umayyad spread the new militant and emotional religion.

The Abbasid assumed power in 750 and the Umayyad broke down after the revolt of Khurasan in the north east of Iran. The Abbasid stood firm for five centuries. They abandoned Damascus and built Baghdad as the capital of the Abassid caliph/

caliph al-Mansur. Harun al-Rashid 786-809 built Al-Raqqa and al-Mutasim 833-842 built Samerra, a city to the north of Baghdad, for his palace, administration and barracks. Their initial momentum and effective power became progressively weaker; in fact their nominal power ended in 1258 with the sacking of Baghdad by the Monghol.

In Egypt in 868, Ahmad Ibn Tulun of the Abbasid founded a dynasty and declared himself independent; the Tulunid survived until 905. In North Africa, too , the first stable Islamic base was al-Quirawan, founded in 663 by the Umayyad of Syria and their military leader Okba Ibn Nafi. In 800 the Aghlabid's under the leadership of Ibrahim Ibn al-Aghlab inherited governorship fron Harun al-Rashid, and they ruled independently. The Aghlabids conquered Sicily during the reign of their leader Zyadat Allah I (817 - 838). But the Fatimids in 909 defeated the Aghlabids, and their leader Ubayed Allah proclaimed himself caliph. The Fatimid was in control until 1061, and took over Egypt from the Abbasid remaining in power until 1171. The Berber effectively replaced the Fatimid in Tunis. Also as a result of these political, religious and social conflicts, al-Maghrib (Morocco and Algeria) had already broken away.

Islamic-Arab and Berber conquered Andalusia of Spain in 711 and Umayyad Emirate was established in 750 by Abd al-Rahman/

man I (Ibn Muswiyah), who ruled Seville and Cordova and was appointed as Amir (756 - 788). Spain enjoyed peace and security under the rule of Abd al-Rahman II (821 - 852). Abd al-Rahman III (912 - 961) took the title of caliph in 929 and established Medinet al Zahra as an administrative capital from 945.

The tribe Zenata of the Berber founded the Marivid Dynasty. They first invaded Morocco in 1216, Fez in 1225, Marakish in 1269. They invaded Spain but did not succeed in extending their rule, although they maintained close relations with the court at Granada. The Marivid took Tlemcen in Algeria but never defeated the Hafsids in Tunisia. They declined late in the 14th century, and were succeeded by the Wattasid, then the Sadi Sharifs in 1549.

In Spain Mohammad Ibn al- Ahmar (1230 - 1272) and the Arab descendants of al-Mustansir, established the Kingdom of Granada in Zaragoza and built the Citadel of al-Hambra, as their capital. This lasted until the fall of al-Hambra in 1492 when it was sacked by Ferdinand I and Alfonso X of Castille.

The Fatimids in Egypt were defeated by Salah al-Din who restored the title of the caliph and converted Egypt from Shiite to Sunii. Salah al-Din - al-Malik al-Saleh, was a Kurdish, associated with the Zingrids in Musul and Aleppo, who restored the Islamic existence by defeating the crusadera'/

crusaders' invasion of the Middle East.

The crises of the Baghdad caliphate in the 9th century allowed the formation of numerous independent principalities, such as the Tahirids in Khurasam (820 - 872), who pushed on as far as al-Rayy and Kirman, and the Safarids of Sistan (867 - 999), who extended their dominion over central Iran and Afghanistan. In central and western Iran, the Zigarids and then the Buids who were Shiite, took over and conquered Baghdad in 935. (3)

The 11th century brought the large-scale penetration of the Turkish race into the Islamic World. The Seljuk Turks took over the Islamic territory from the Mediterranean Sea to Central Asia. They defeated the Ghaznavids in 1046, entered Baghdad in 1055 under the leadership of Tugrol Beg, and in 1071 defeated the Byzantine and fought the Crusaders in Syria and Palestine. Their leader Alp Arslan and Malik Shah, with the help of Nizam al-Mulk, - 'the visir' (Prime Minister), set up a strongly-centralized state.

The Turkish slaves took power in Egypt in 1250 after the death of the last of the Ayyubid Sultans; they were called the Mamluks. They produced two dynasties: the Bahrit Turks, and from 1382 the Burkets who were Circassian slaves of Soltan Qalaun (1279 - 1290). They stayed in power until the Ottomans' invasion in 1517.

The/

The Ghaznavids, who were descended from Turkish slave commanders, took over power in 977 and made Ghazna their capital. Their leader, Mohammad al-Ghaznavvi, (998 - 1030) extended their empire from Khurasan to Ganges. The Ghurids in 1186 took Lahove and they established the first dynasty of India, which was called Sultanat Delhis under their leader Shahab ud-Din Mohammad. Ghiyas ud-Din Tughlaq founded the Tughlaq Dynasty (1320 - 1414), and helped to spread Islam widely among the local population. Zaher ud-Din Babur seized Delhi between 1526 - 30, giving rise to the most celebrated Moslim dynasty of India, the Monghols, who had outstanding personalities and very strong politicians, like Jalal al-Din Akbar (1556 - 1605) and Shah Jihan (1627 - 1658). It was the British government that eliminated and put an end to the Monghols' historical existance in India in 1857.

The Samanids had Afghanistan in 850, and in 875 they took over Transoxiana. But their leader Ismail (892 - 907) made his capital Bukhara, and was made the governor of Khurasan.

The eastern territories of the Islamic World were stricken by another invasion that was accompanied by savage ruin. The Mongholof Genghis Khan moved out in the early 13th century and established an immense empire from China to Asia/

Asia-Minor, before the death of Genghis Khan in 1227. The Iranian territories, including Azerbaijan, Georgia, Armenia and parts of Asia-Minor, were under the governor Holague, who sacked Baghdad in 1258. But Holague was stopped by the Mamluks in 1260. The Mamluks succeeded in halting his drive towards the west, but Tamerlane the builder captured Shiraz, Baghdad, Damascus and Delhi in 1370 and captured Bayazid I at Ankara in 1402. But the last of the Monghols was Tamerlane's son Shah al-Rokh (1405 - 1447) who ruled only Khurasan.

The Safavid was the first real Persian Dynasty and introduced a real Safavid's character in the Islamic context. Isfahan was their capital when Shah Abbas I was their leader (1588 - 1629); Isfahan had been one of the most beautiful Islamic cities, and still has monuments of very great importance to Islamic Architecture. This era was of great importance for international trade which was conducted by land routes and reached far and wide. But the war in Afghanistan of 1722-1738 brought destruction. (4)

Mohammad al-Fateh sealed the end of the Byzantine Empire in 1453 after seizing Constantinople, the last of the Medieval empires. After Bursa Constantinople became the capital of the Ottoman State and was called al-Aasitanah - "Istanbole". The golden age of the Ottoman Empire lasted from the fall of Constantinople till the death of

Suleiman/

Suleiman the magnificent in 1566. He conquered the Middle East and North Africa, except Morocco. It was the most complex creation of the Turkish World. The Turks reached the Aust rian land,taking over the Balkan, and enjoyed supremecy in the Mediterranean Sea and the Indian Ocean. But the Ottoman Empire suffered gradually from socio-political conflicts, and after The First World War Turkey reverted to the Turks, leaving other territories to be claimed and divided by imperial powers and colonisation, ending in the occupation of Palestine and the creation of several new states in the Islamic-Arab World. (5)

4.2 Cultural and Social relations in the development of Islamic art and science:

The new militant emotional religion, Islam, produced the cohesion that enabled the Arab tribes to transcend the narrow confines of their tribal existence. Islam thrust them almost forcibly upon the culture of the ancient civilizations, and set before them the rich treasures of these civilizations. They possessed the chief monuments of ancient learning : Greek philosophy and science, Persian literary and political wisdom, and Indian medicine and mathematics.

The Islamic World represented a religious, social and cultural unity, despite the political and theological tensions between the different dynasties in the various regions. The Islamic Arabs were able to assimilate almost the whole of ancient learning throughout the period extending from the fall of the Persian and Byzantine Empires in the 7th century to the early Renaissance of the 14th century. They integrated this knowledge into their new cultural life and raised the level of knowledge in the fields of science, mathematics, medicine, astronomy, geography, philosophy, art and architecture to new heights.

The Islamic-Arab conquerors were not mere desert raiders acting in the traditional pattern of the tribal foray. They had an impressive military strength as well as the/

the culture of their desert home, which was simple and unsophisticated. This conquest was "in the path of God", 'fi sabil Allah', and created a new social and cultural order as an expressive identity of the new realm. This fruitful interaction between the diverse cultures and societies of the ancient world created a new Islamic social and logical trend; Islam introduced new bases of brotherhood without fragmentation or discrimination. In Sura XLIX verse 13:

> O mankind, We have created you
> male and female and appointed you
> races and tribes, that you may know
> one another. Surely the noblest
> among you in the sight of God is
> the most godfearing of you. God is
> All-Knowing, All-aware.
>
> Koran translated by Arberry.

This affected society as well as the individual on the cultural, social and political levels as well as on the religious and spiritual levels; it was an all-embracing framework of human life.

The source of Islamic law - "Sharia" is first and foremost the 'Koran', and the tradition 'Hadith' in turn became the source of doctrine according to the principle of the invitation of Mohammad affirmed in 'Koran'. The core of Islam is based on "five pillars".

The/

The profession of faith : 'al-Shahadatin'.
The ritual prayer : 'al-Salat'.
The obligatory payment of alms : 'al-Zakat'.
The fasting of Ramadan : 'al-Sawm '.
The pilgrimage to Mecca : 'al Hajj'.

and to these pillars is added 'al-Jihad fi Sabil Allah', through which the Arabs brought Islam with them; that was the decisive factor of cultural creation. Under Islamic rule, Moslims could practice their faith without hindrance, but this did not mean that all people became Moslims. It was the Islamic way to accept institutions of state and society without fragmenting the new realm into separate cultural components. The Islamic-Arabs encountered problems, conditions and materials that were unknown in their past tribal life. They used appropriate Greek, Byzantine, Hellenistic, Syrian and Persian materials to construct their own, including and excluding materials compatible with the nature of Islamic socio-cultural life. (6)

The fundamental concepts of Islam were expressed in 'Koran' and written in Arabic language. The initial vision of Islam was given to the world by an Arabic Prophet. Thus Islam in substance, in character and in origin was Arab. The Arabic language played a decisive role as a unifying super structure, and in the Islamic-Arab faith it made an enduring contribution to Islamic culture. Arabic language gave/

gave an identity to Muslims; through a sense of common intellectual order it provided the inclusive medium of communication and demarked the Islamic World. In Sura CXII:

'In the name of God, the merciful the compassionate'
Say; 'He is God, One
God, the Everlasting Refuge,
who was not begotten and has not begotten
and equal to Him is not any one. (1)

In Sura III verse 1:

Alif, Lam, Mim
God
there is no God but He, the
Living, the everlasting. (1)

In Sura III verse 63:

Oh believer, obey God and obey the Messenger,
and those in authority among you. If you
should quarrel on any thing refer it to God,
and the Messenger; if you believe in God,
and the Last Day, that is better and fairer. (1)

In Sura II verse 149 and verse 179:

And say not of those slain in God's way,
'They are dead'; rather they are living,
but you are not aware.

O/

O believers, prescribed for you is
The fast, even as it was prescribed for
Those that were before you, - hoply you,
will be god-fearing. (1)

Koran translated by Arberry.

4.2.1 The Unity of the Language:

The Arabic Language, the 'Koran' language, made a further contribution to the rise of Islamic culture. The main contributions of all muslims, Arabs or non-Arabs, even non-muslim, were made in Arabic, whatever their ethnic community was, and despite the existence of rich traditional languages in the ancient civilizations such as the Greek language, the language of art, literature and science. Arabic language had not been explored; simple vocabularies that reflected the simple and limited experience of the desert people proved capable of expressing foreign ideas, abstract concepts and the literary interests of sophisticated societies.

The Arabic language became the unifying thread and the dominant language of culture and scholarship. Since God had chosen Arabic Language to be the language of revelation, that made the study of its grammar and usage a religious necessity. It displayed a remarkable potential as a medium of sophisticated and complex communication. It had the strong/

strong structure of the Semetic Languages and its alphabets were direct descendants from the Aramic, "the north Semetic", which had developed a highly individual appearance. Also the Arabic letter-forms were extremely cursive, easy to form and graceful. (7) They had few clearly distinct shapes and they relied on numerous diacritical marks. These factors, and its analogical dereviation, made the Arabic Language a superb tool for thought. In "The Arab Role in Islamic Culture", J. Badeau illustrates:

"Arabic provided the common medium of communication that translated the political inter-mixture of diverse people into a commonly-shared culture, as Latin did in medieval Europe and as English did in India. A new universal intellectual realm was created where Persian philosophers, Arab theologists, Jewish and Christian physicians and Indian mathematicians could speak only one common language and hence had a sense of sharing in a common intellectual order." (8)

4.2.2. Literature and Poetry:

The Arabic Language was shaped by a special expression; it was a perfect and potentially divine medium, supported by classical literary and logical traditions, and inspirations of the great masterpieces of Islamic Literature (As evident in/

in Koran viewed as the World of God.)

The Arab poet was the chief spokesman, the propagandist, the preacher, journalist, politician, historian and entertainer who represented his people. The poet enjoyed extollingthe glorious deeds of his tribe and defaming the enemies. Because writing materials were scarce and literacy was rare, Arabic poetry suffered a decline in the early Islamic period, but it flourished in Umayyad, when the new urban social life originated, and where a new leisured, aristocratic and rich life-stylewas created that was in harmony with poetry, which was allied with music and dance.(9)

In the Islamic World, Arabic poetry survived in the memories of "al-rawis", but it was collected and reproduced afterwards. Arabic poetry had been composed within the conformity of rhythmical patterns comprised of eight rhythmical units, and eight mono-rhythmic, (known as 'Bohore al-Shiir'). Each was formed by repeating a definite number of identical units of (AAA, BBB, CCC), and the three stokes, (da, dada, dadada).(10) In the pre-Islamic period of poets of the Muallaqat, the best poems were hung over the Kaaba in Mecca at times of Okath where poets had to meet and compete in reading poetry; the poems were strict in form and often very lengthy. The importance of Muallaqat was that they were a comprehensive presentation of the Arabs' tribal life and their/

their socio-cultural knowledge. The Arabic poet, (vaunting his prowess on the battlefield,) said in his Mualaga: (11)

"These who were present at the engagement will
acquaint you,
How I plunge into battle, but abstain at the booty-
sharing;
Many the bristling knights the warriors have shunned
to take on
Those not in a hurry to flee or capitulate,
To them my hands have been right generous with the
hasty thrust
Of a well-tempered strong-jointed, straightened
spear."

(Based on a translation by Arberry)

and Jamil Buthaynah, the Umayyad poet, was driven by his extreme love and said:

"I loved you, before you were born,
And when we die, I shall bear your echoes."

(Based on a translation by Arberry)

Islamic society now possessed a new character and rich economic resources besides the new artistic and intellectual process of challenge and response. It interacted and co-operated with other cultures and other civilizations in the east and the west. The courts of the Islamic capitals included centres of translation that served as bridges of knowledge and new cultural development. This new Islamic culture/

culture came into being as a blend of all cultures and from Greek, Chinese, Indian, Turkish, Persian and Arab sources. Under the Abbasids, literature, prose and poetry were developed over several centuries by diverse philosophical and cultural interaction and the new universal character. Abu Nawas, a famous poet who lived in the court of Harun al-Rashid, (as did later his son al-Amin), humorously described his drinking and his love of wine, influenced by the new cultural character. He said: (12)

"Ho a cup, and fill it up and tell me it is wine,
For even I will drink in shade if I can drink in shine.
Curst and poor is every hour that sober I must go,
But rich am I whenever well drunk I stagger to and fro.
Speak for shame, the loved one's name, let vain disguises fall,
Good for naught are pleasures hid behind a curtain wall.

(translated by Nicholson)

Many other poets like al-Motanabi, Abu al-Ala al-Maarri, Omar al-Khaiam and many others of different philosophy and thinking produced poetry that was rich in meaning and quality. The luzumiyyat of al-Maarri is an example; despite the blindness of al-Maarri and his dark view of existence/

existence, he expressed a desire and philosophy to transcend man's moral existence on earth. He said:

"How be it, my inner vision shall be,
To the increasing flames of mystery,
Which may illumine yet my prisons all,
All crown the ever-living hope of me."

(Translated by Reihani)

In 'Genius of Arab Civilization', M. Khouri writes: "There is a considerable likelihood that the Andalusian 'zajal' and 'mowashahat' were the precursors of the songs of love and chivalry of medieval Europe."(13) The mowashahat was a special type of poetical song that had been developed by the Islamic-Arab-Andalusanian poets.

The "sirah", which means 'life-story", was one of the most popular forms of the folkloric traditional literature that flourished in the Islamic-Arab world during the 17th and 18th century and endured until the beginning of the 20th century. It had to be told by professional story tellers. Stories like Sirat Bani Hilal, Sirat Baybars and Sirat Antara, were some of the best examples of this type of literature.

Today Islamic-Arabs accept the influence of the West in fiction, poetry, criticism and other arts. Today the writers have adopted the novel and the short stories that were/

were translated from American and European literature using a concrete style displaying an intense social realism. They were trying to follow those past Islamic thinkers like : Ibn Hazm, Ibn al-Moqafa, al-Jahiz and Ibn al-Arabi.(14)

4.2.3 Philosophy and History:

The Islamic-Arab conquerors captured Alexandria, the cultural centre of Greek philosophy and science. The Umayyad made the first medical, astronomical and chemical translations in addition to the philosophical translation of the culture of the Greeks. (22) They intensified the activity of Basra and Damascus in the different parts of the Islamic World. Baghdad carried on what Damascus started and 'Dar al Hikma' - (the house of wisdom)- was established to be the centre of research and scholarship that produced the highest standard of philosophical criticism and analysis. They reproduced the complete works of the outstanding figures of the past in their Arabic language. The new Islamic conception of man and his relation to God, which was the distinctive product of the Islamic and non-Islamic cultures, put the Islamic perception into line with the universal ethical and social conduct of the Greek philosophers. Many Islamic philosophers like al-Kindy, al-Farabi, Ibn Sina and Ibn Khaldon showed a moderation almost without/

without parallel in the history of Islamic thought.

Ibn Khaldun developed the "Science of Civilizations", and to him the world was indebted for the systematic elaboration of a fully-fledged theory of "sociological determination". His writings showed a vast knowledge of affairs of state, and he was an astonishing philosopher about human events who also recorded the events of his time with restraint and objectivity. He made his conclusion that: "The manner in which people cling together and interact and the shaping of cultural character depends on such factors as climate, geography, economy, religion and ecology - along with the revelation of God". These led Ibn Khaldun to formulate a more concrete attitude to architecture, to city planning, air pollution, physical layout, zoning, education and the city support for arts and sciences. In "Genius of Arab Civilization", M. Fakhry writes: "His ideas in regard to commerce, economics and inflation seemed as inevitably linked as now." (15)

4.2.4 Exact Science and Mathematics:

The Islamic scientists translated the scientific texts into the Arabic language, with the help of other non-Islamic ethnic groups. This scientific accumulation of learning surpassed/

surpassed everything known before and created the distinction between "mathematical" and "physical" sciences. The Islamic research in the field of exact science made moslim scientists masters of its methods and techniques. They used "al-Hisab" which means, arithmetic, to cover the art of determining the unknown from the known quantities, and distinguished it from algebra which in arabic means "al-gabre". They absorbed the geometry of the ancient Greek philosophers, not only its context and methods, but they used higher techniques. The Islamic geometricians had introduced the text of "proof" as an attempt to prove Euclid's postulate and were led to formulate new theorems.

The Islamic scientists were deeply interested in mathematics and astronomy. They applied this knowledge of geometric principles and an innate sense of rhythm to poetry, music and to the formation of the complete complex, repeating these patterns of rhythm in their decorations. (16)

4.2.5. Astronomy:

The Islamic astronomers developed ingenious and increasingly efficient computational techniques and devised new planetary models. They designed different models to develop planetary theory along several distinct lines. They noted a strong similarity between the models produced in Damascus/

Damascus "al-Margha" and in those models produced by Copernicos. Omar al-Khiam and many other astronomers were mathematicians, poets and physicians as well as working on planetary models. (17)

4.2.6. Medicine and Life Science:

The Islamic contribution to science and medicine was developed to the highest level in the 11th and the 12th centuries. They included substantial new amounts of original information in the fields of research in medicine, pharmacy and agricultural sciences. Their books written in Arabic were translated from the Greek language, not only preserving classical information and knowledge, but also adding new original data to human knowledge. These books were later translated into Latin in the age of the Renaissance in Europe. They built the hospital - "Pemarestan" and developed it, where treatments covered specialized fields of survey, general medicine, ophthalmology and eye diseases. Hospitals had been considered important in providing practical training for the health professionals. Al-Rasi and Ibn Sina were considered to be the best health professionals. Students were coming from all over the east and the west to study in the new established hospitals in Cairo, Baghdad and in many other Islamic cities. (18)

They developed the study of veterinary science and

Abu/

Abu Bakr al Bitar in Cairo illustrated his book "Kamel as-Sinaataya" which covered life science in terms of zoology and veterinary science. (19)

4.2.7. Mechanical Technology and Engineering:

Mechanical arts flourished in the Islamic World between the 9th and the 13th century. This was related to the continuous traditional mechanical technology which had been developed through the centuries by other civilizations: the Egyptians, the Greeks, the Romans and the Byzantines who had made advances in various ways. They derived significant new mechanical ideas from Iran and India, and produced machines for everyday use, such as mills for water raising devices. War machines and machines for wonder and pleasure within the courtly circles were also introduced and developed.

The engineers' achievements were considered mainly a work of "hiyal" : tricky vessels, fountains, self-trimming lamps, musical automata and water-clocks. They provided superior information on the technology of a variety of devices incorporating all the techniques and components used by the Islamic engineers. Also, the Islamic engineers directed their talents and used their understanding of mathematics, plane geometry and measurements in the construction/

construction and assembly of their devices. These technical ideas were frequently carried from one part to another through travellers' reports, and through direct contact of engineers and technical craftsmen. (20)

4.2.8. Trade and Commerce:

The organization of trade and commerce between the Islamic World and the rest of the world, and within its different countries, was based on the experience and background of the Arabs. Trade and commerce were allocated a unique role because of the economic activities which had been prominent at the time and place of the birth of Islam. No prohibition was laid down against trading with any other nationalities or ethnic group other than Islamic people. They rendered Europe the greatest services, introduced new goods from lands beyond the mediterranean and provided a continued flow of those commodities.

In the Islamic World the movement of goods to markets and the movement of merchants between the different countries of the world led to advances in the fields of geography and navigation. Traders and merchants carried with them the culture, (books, manuscripts and experience of science, philosophy, medicine and geography), all over the known parts of the world. They carried Islamic culture/

culture and Islam as a religion to the far east and to Europe.

Ibn Batuta was an example of an Islamic traveller who made his travels from Morocco; when he turned back he dictated his memories. He dictated the work ceremoniously, illustrated: "In the name of God, the Merciful the Compassionate: praise be to God, who hath subdued the earth to his servants, that they may tread there on spacious ways. Who hath made there from and there unto the three moments of growth, return and recall, and hath perfected His Bounty towards His creatures in subjecting to them the beasts of the fields and vessels towering like mountains, that they may be stride the ridge of the wilderness and the deeps of the oceans." (21)

4.2.9. Music:

Poems in Arabic literature were sung as well as recited in the desert. In the poems the poets illustrated the colourful socio-cultural life of their people. The creation in the princes' courts of the Umayyad music and dance led to poets being encouraged to portray the lyrical new life of the rich social class.

Music was part of a macrocosmic system which was accepted as such in the Islamic world by many philosophers, astronomers/

astronomers and other scientists. Music was subjected to mathematical formulae related to and conditioned by cosmic patterns and relationships.

New divisions of tunes were devised by many Islamic scientists like al-Farabi. New instruments or new additions to old instruments and new scales of quarter tunes were persisted in the Islamic Harp. They taught the science of music and borrowed a few technical musical luords from the Persians, creating their own new terms. Then the Persians and the Indians adopted the entire Islamic-Arab musical monoculture.

In Spain and North Africa, the art of muashahat and al-maqamat al-Audulusia, introduced and added a new scale of development to Islamic-Arab music. (23)

4.3. Islamic Space Morphology in Two Dimensional Art Forms:

On leaving their peninsula, the Moslim-Arabs encountered problems, contradictions and materials which were unknown to them in their previous tribal life. They met a diverse complex of civilizations in the Persian Empire, in Egypt, in the Byzantine Empire and in the Early Christian and Coptic Church that had inherited the strongly entrenched Hellenistic art of Alexandria. They reacted by rejecting the complexes of representation in the arts of the conquered lands. However, the newly-dominant art formation included much of these rejected representations while giving them a moral quality. The new art formation was a very vital non-materialistic expression and was much more consistent with their own traditions. Considerable modifications were introduced into artistic and creative works where the new aesthetic sensibilities were in accordance with the context of Islamic culture. It is a combination of Arab, Persian, Turkish and others all brought together into one new individual art and developed on a traditional basis. (24)

The Arab element was always the dominant one in the merger of the other elements. The Arabic writing with its differing types provided an element of ornamentation. The "Arabic" form of writing led to the development of a variety of abstract ornamental and linear systems of abstraction. Koranic/

Koranic calligraphy in Arabic added an innate sense of rhythm to the art formulation of the complex repeated patterns which led to the development of all decorations.

The Persian element is difficult to define, although it is distinguished in Islamic art. It represented a combination of Chinese and Mesopotamian art, a peculiarly lyrical, poetical attitude and a metaphysical tendency that led to an extraordinary flowering of mysticism. The Persians introduced the major developments in Islamic painting, adding to Islamic art an abstract potential and specific imagery in its realisation. The Persians introduced painting into Islamic art with an art form of the greatest beauty, but of a complete fantasy introduced into architecture, and created forms of decorations that negate the very nature of architecture. They presented a floating world of imagination in which the principles of weight and stress of relief were expressed and supported, fusing all elements into a unity of fantastic unreality.

The Turkish element in Islamic art consisted of the indigenous concept of abstraction that Turkish people applied to any art forms in all the cultures that they met. They introduced an important tradition of both figurative and non-figurative designs from the east to the west of Asia, creating an unmistakably Turkish element in Islamic art.(25)

4/

4.3.1. Calligraphy:

Islamic calligraphy had a dominant role in Islamic art and was integrated in every sort of decorative scheme. These decorations reflected a unique meaning and an abstract theme or expression peculiar to the building on which they were used. Although Arabic script was developed at a much later date, the beautiful Arabic writing was of decisive importance in shaping the aesthetic taste of Islamic artistic thought.(1) The art of calligraphy was vital in giving a special importance to the various architectural elements in a building. Calligraphy and the variety of script/

(1) In the "Islamic Calligraphy, T. H. Safadi writes: "According to Arab literary tradition, only the seven odes called al-Muallaqat, which were considered absolute masterpieces, were committed to writing and especially honoured by being inscribed in golden letters and hung on the walls of the Kaaba at Mecca. Even after the advent of Islam in the early 7th century, the Koran was at first mainly submitted among the Muslims, not through the written word but by oral tradition. Nevertheless, once they recognized the necessity to commit their language to writing, they surpassed the world in the art of beautifying their script. They produced in a relatively short time an astonishing calligraphic development, transforming the Arabic script into an artistic medium that best reflected their genius and attracted their best artistic talents."

script types became the most important impulses in the formation of the art of the book. It was best presented in manuscripts of the Koran dating from the 8th and the 9th century.(2) Every manuscript of Arabic writing exhibits aesthetic values. These scripts had a potential for abstraction, and artistically fully satisfied the legal and emotional need of religion. (26)

Several calligraphic variants were developed from the "Jazm" script.

The rounded cursive form, "Naskhi", known as the classical tradition of Islamic calligraphy, was later developed into, more elegant, decorative forms of this; the Thuluth which evolved special ornamental forms, began to compete successfully with Kofic in the field of epigraphy; Muhaqqaq (meticulously produced) with its shallow sublinear curves and horizontally extended mid-line curvatures, combined with its compact word-structure, giving it a leftward-sweeping impetus); Naskhi (one of the earliest cursive scripts/

(2) "Umar urged the first caliph Abu Bakr to commit the Koran to writing. The Prophets' secretary, Zayd ibn Thabit, was ordered to compile and collate the revelation into a book which was later codified by the third Caliph "Uthman" in 651.

scripts, gained popularity after it had been developed and redesigned and ever since more Koranic have been written in Naskhi than in all other scripts together. It appealed to the ordinary man because it was relatively easy to read and write). Rayhani (like Naskhi but having a deep sublinear area). Riqa (often written linked, and usually well spaced with only a few diacritical marks) and Tawqi (developed gradually, resembled thuluth and was favoured by the Ottoman calligraphers).

The Kufic took a new direction in North Africa and Spain, and a new style with a noticeable rounding of the angles and with a dramatic increase in the depth of the sub-linear curves developed; it was called the Maghribi.

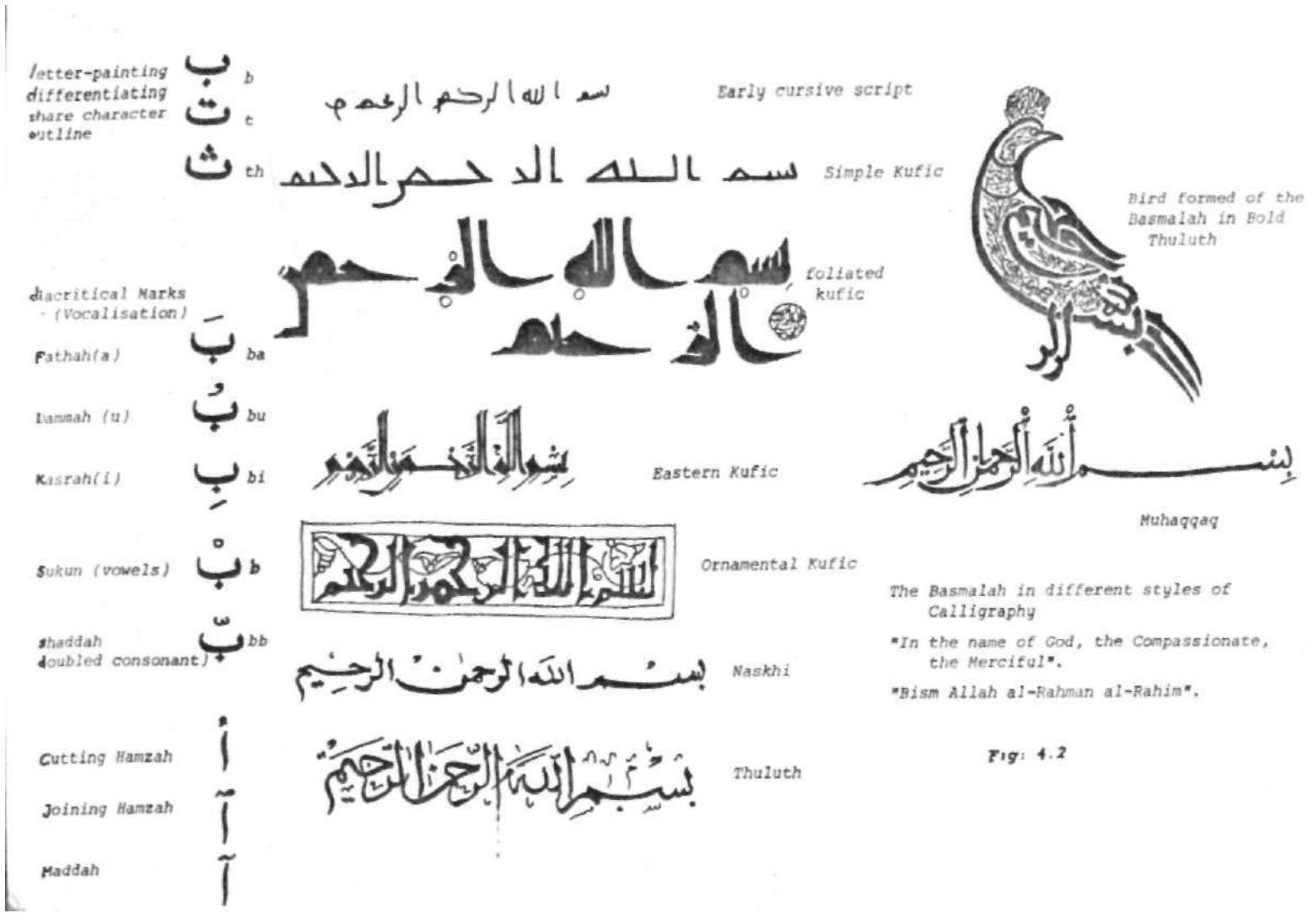
In calligraphy, Arabic Alphabets had developed a highly individual appearance. In calligraphy, too, the aesthetic quality of the script, especially when applied on objects in art, craft and architecture. The choice of text served an iconographic functional meaning as well, when specific passages of arabic prose or Koranic verses were selected in order to communicate the kind of information that images and representations provide in other artistic traditions.

In art crafts many ceramic and bronze objects were decorated with proverbs or expressions of good wishes to indicate the social purpose of the object involved. In architecture the choice of the Koranic verses or the passage/

passage of prose or poetry had a precise purpose. Other examples indicated the signature and name of the artist, and some represented dates which led to any number of social and economic observations. Each being called by a name relating it to its locality, such as Hiri of Hirah, the Makki of Mecca and Madini to Medina. Only two main styles were maintained, each with distinct features; one was cursive and easy to write, called "Moqawwar"; and the other, called "Mabsut", was angular and consisted of thick straight strokes forming rectlinear characters. Mashq (extended) and Naskh (inscriptional) two styles were developed in Hijaz and Kufic style was developed in Kufah. (27)

The Kufic script reached perfection in the second half of the 8th century; it had a relatively low vertical profile. The more geometrical type came to be written on surfaces of which the height was considerably less than the width. Kufic was developed into more complex ornamental forms, after which time the script lost its main function of expressing thought and became primarily decorative. Ornamental Kufic was applied to every kind of surface, including brick, stone, stucco, tile, wood, metal, glass ivory and textiles. Simple standard, Eastern and Ornamental are the main forms of Kufic style. (28)

The art of calligraphy thus had an iconographic and literal significance and so served more than an aesthetic purpose/



The Basmalah in different styles of Calligraphy

"In the name of God, the Compassionate, the Merciful".

"Bism Allah al-Rahman al-Rahim".

Fig: 4.2

purpose in Islamic art. Artists and decorators covered the walls of mosques and other buildings with patterns of endless repetitive forms that emphasized the unity existing in the building. The object was to evoke Islamic culture, the key idea that all creations and all arts occur only by the will of God and His word, whose presence must be the constant accompaniment of man's life. (29) (Fig: 4.2)

4.3.2. Painting:

The concept that; "God only can create perfection", created a new general attitude towards painters, although in Islam there is no indication that a doctrine exists on the representation of living forms in either the Koran or the Hadith. Yet the new culture searched for a new theoretical justification. The Arabs were tempted and fascinated by the world with which they had an immediate contact, the world of different cultures which had a rich history of paintings. The Arabs rejected - before Islam - the worship of images.

The Umayyad revealed the extent of temptation in painting in their private retreats by a wealth of images of all sorts, which illustrate among other themes the power of a new prince's art. The paintings contained a wealth of images/

images of all sorts, and represented a world of pleasure and fun, where a dominant international taste and foreign influences were more constant. In Samerra many beautiful paintings of princely life were also used as an expression of power and an explanation of social life. Hunting, listening to music and watching dancers or acrobats were also common themes of princely traditions. Such representations of this world of pleasure illustrated the difference between the ruler and the ruled. However the representation of living forms had a very limited role in Islamic-Arab painting, more so than in either Islamic-Persian or Islamic-Turkish art, but it established a deep sentiment in the mentality of the Arabs.

Paintings of the Umayyad period suggested that a style had already been born, in which figures were derived from Hellenistic prototypes, but reflected the beauty of the female as expressed in Arabic verses. This newly-produced style was associated with the Sassanian painting style as well as with the Abbasid period. Fatimid paintings rivalled the paintings of the court in the palaces of Baghdad, and their importance grew inside and outside Egypt. Paintings on the ceiling of the Chappella Palantine in Sicily were related to the Fatimids. (30)

"Islamic painting was an art of great beauty and of complete/

complete fantasy. When it was applied to architecture it created forms of decoration that do not negate the very nature of Islamic architecture but rather enhance it".(31)

4.3.3. Book Illustration:

The creation of the art of book illustration was the most remarkable example of Islamic art during the 12th, 13th and the 14th centuries. It was a painting technique animated with images that displayed practical observation of space, life and time. The illustrations were vivid and delightful despite the two-dimensional conventions they followed, according to which all figures are illustrated on the same plane against an open background. These works were magnificent and impressive in the attention paid to patterns of life and to details of textiles and costumes. This new complexity comprised a new outlook, marking a very important stage of development in landscape painting in Islamic art. (32)

The types of books that were illustrated were comparatively limited; they comprised medical treatise, books about animals, lyrical poetry and most importantly the books that record the adventures of heroes, which were more attractive. The earliest were Galen's work in medicine, Kitab al-Aghani, Maqamat al-Hariri and the ancient stories Kalila and/



"Bridled Giraffe" from the Book of Animals (Fig:4.3)

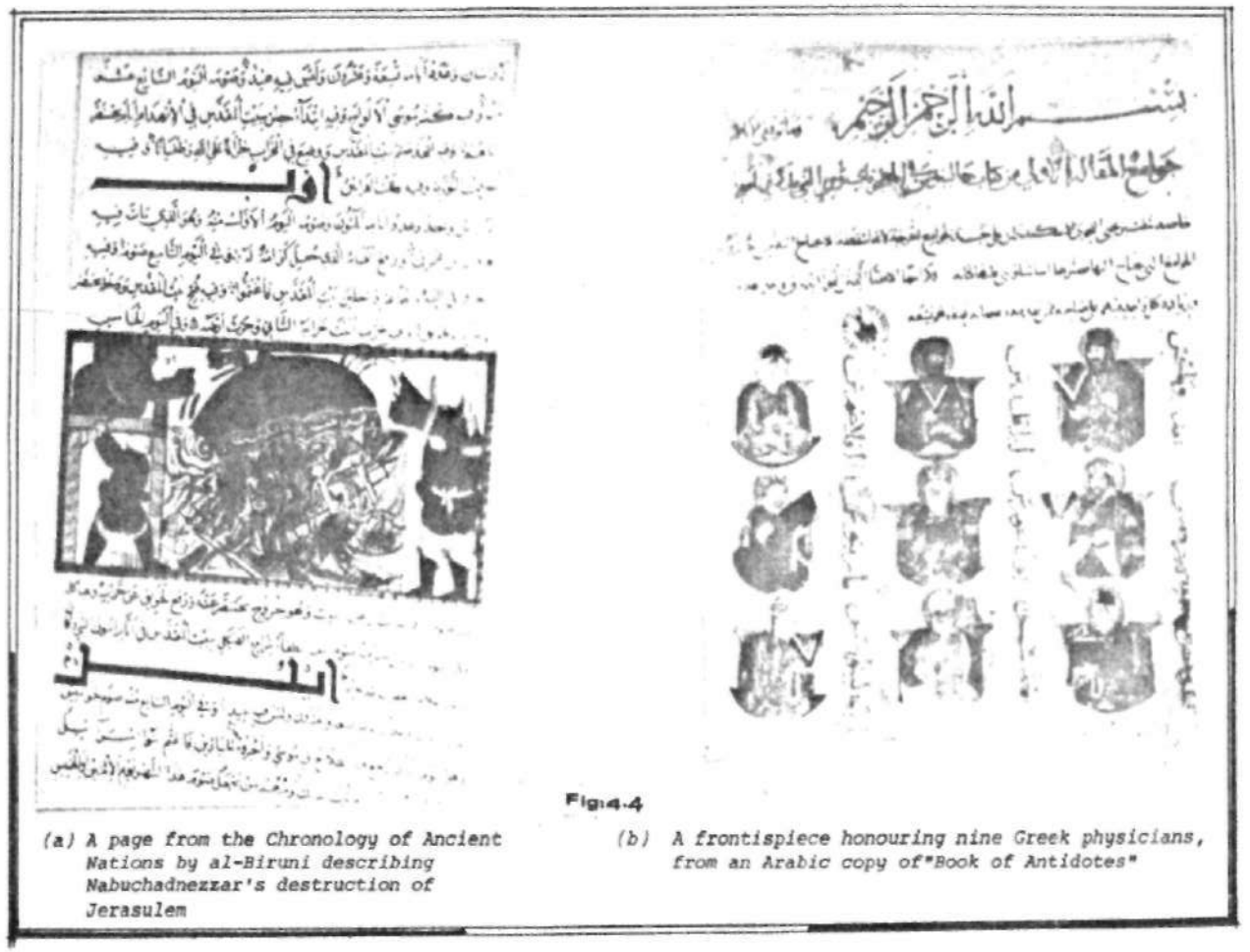


Fig.4.4

(a) A page from the Chronology of Ancient Nations by al-Biruni describing Nabuchadnezzar's destruction of Jerasulem

(b) A frontispiece honouring nine Greek physicians, from an Arabic copy of "Book of Antidotes"

and Dimna.

The different schools of the art of book illustration were spread all over the Islamic World; each had a special technique and characteristics, and introduced a special development. The school of al-Musul depicted realism but this was considerably derived from the Sassanian style. The School of Baghdad had its realistic rendering of details and extraordinary expressiveness of facial features. The School of Shiraz was distinguished by its brilliance of colouring and lovely landscapes, and by the frequency of freely-drawn birds and flower motifs in the margins of the books. The Mamluk school produced pictures of a beautiful quality but the colours were unnatural, as presented in "Kitab Manafi al-Hayawan". The Turkish school produced an outstanding quality and richness which was clearly illustrated in the "Nizami Khamsa". However, the system of vertical perspective, in which figures were shown above each others, was a technique developed by the school of Shiraz; the most outstanding book of this school was Shah-Nama, written at the end of the 14th century. (33) (Fig: 4.3) (Fig: 4.4).

4.3.4. Arabesque:

Arabesque represented the dematerialization of the natural form, and expressed basic ideas stylistically without resorting/

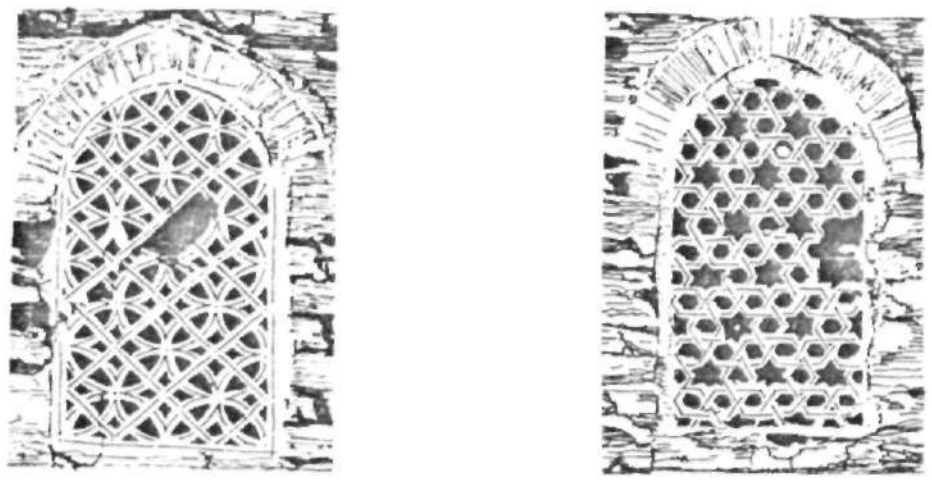


Fig: 4.6 Window Grills in geometrical patterns and calligraphy in different techniques and materials.

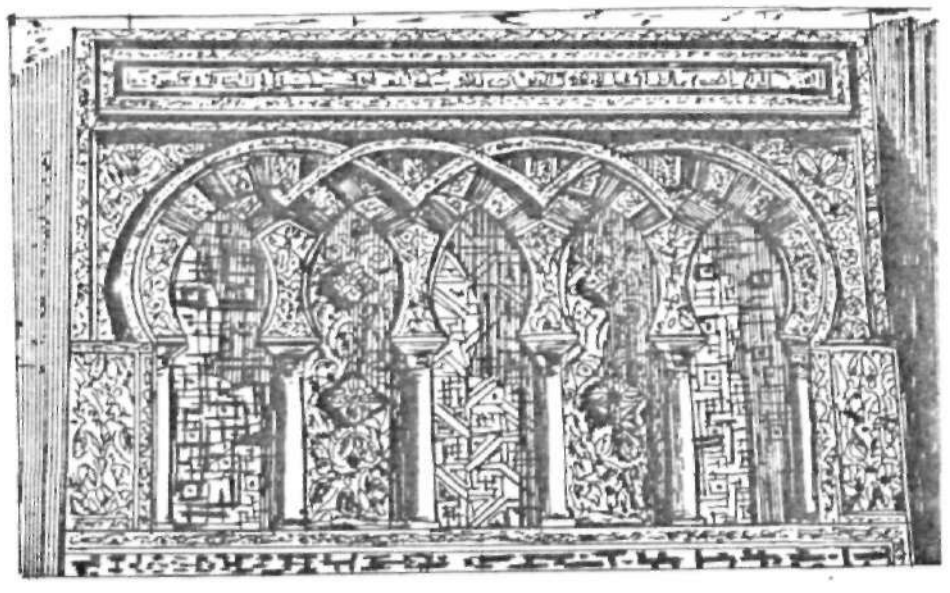


Fig: 4.5 Architectural device above a portal of the Great Mosque of Cordoba. The "Arabesque" used as a decorative feature in the Islamic buildings.

resorting to representations. Arabesque was the fundamental principle of Islamic art in which designs were analysed and described more easily in abstract terms than in their complete natural details. These natural figures were represented by a few characteristic details in two-dimensional space, and were coloured arbitrarily. (34)

Islamic art succeeded through the arabesque in achieving a system of abstraction, which developed beautiful motifs and a strong proclamation of "God" as the only creator. The Islamic artist produced arabesque as a special world rich in forms; it was designed and applied in different materials and had a successfully life-like quality. Such decorations of arabesque and calligraphy were applied to mark the directional axial flow of space and sometimes to increase the importance of some elements.

"The arabesque is considered as the most genuine and boldest ornament in architecture. In the arabesque delicacy of line and intricacy of pattern are perceivable. The fineness of the pattern lies precisely in the perceived relationships of certain natural forms." (35) (Fig: 4.5).

4.3.5. Icons:

Iconclastic became a part of Islamic art and was distinguished in its mystical aesthetics. This dematerialistic art/

art continued in the Byzantine period and craftsmen carried on such works in the Umayyad period and in Spain, e.g.: the Dome of the Rock, the Aqsa Mosque of Jerusalem, the Great Mosque of Damascus and al-Hambra in Granada of Spain. The prohibition of making any likeness to God or any living things resulted in remarkable achievements, as new techniques and new themes in mosaics and ceramic tiles, with beautiful colour schemes, were developed for the urban dwellers. This development in Islamic art reflected the taste of the Islamic people and the rising wealthy middle class in the prospering cities. (36)

4.3.6. Wood and Ivory Carving:

Wood carving and cutting techniques were introduced and employed by the Islamic artist and craftsman, as architectural decorations and furniture pieces. Partitions, built-in cupboards and open niches were framed or covered with beautiful geometric patterns or ornamentations. Beautiful screens for windows were made with decorative latticework features. Small low tables and storage chests were made of wood with beautiful decorations in perfected techniques. Such techniques were developed in Syria and then later in Egypt. New methods of ornamentation, like inlaying ivory, bone and mother of pearl were also perfected. Geometric designs/

designs in rhythmic patterns, floral forms or arabesque and scrolls of animals or birds were also used in wood-carving.(37)

Bevelling techniques were utilized in wood, to cut the two sides of the sculpture at different angles to the plane and producing magnificent reliefs. More complex light and shade effects were perfected according to their formal and aesthetic characteristics, which were always in the spirit of the time. Even modern artists have been inspired by such designs. (Fig: 4.7) (Fig: 4.8) (Fig: 4.9).

The Fatimids excelled in the design of floral patterns and arabesque compositions, but often they were seen as a continuation of the earlier Samerra traditions in the Abbasid period.

Ivory carving was a distinctive and important art used mainly for artifacts. The usual objects made by ivory carving were shaped in rectangular or circular caskets with beautiful decorations, using forms of scrolls of animals or bird figures. These objects were produced in large numbers and were of high-quality design and craftsmanship. Forms of abstract ornamentation based on a simple system of linear patterns were superimposed on each other, creating geometric complexes of stars, polygons or triangles. These designs were developed into the most fundamental Islamic art conception; infinite patterns. (38)

These/

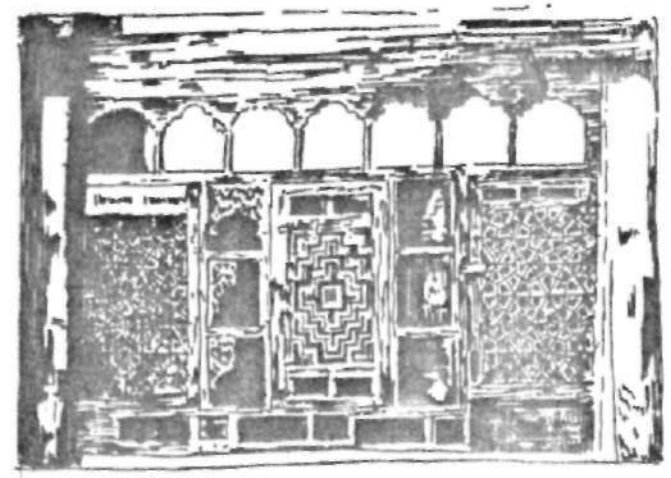


Fig: 4.8 *The window used as a sitting area looking over the street, furnished with pillows and cushions.*

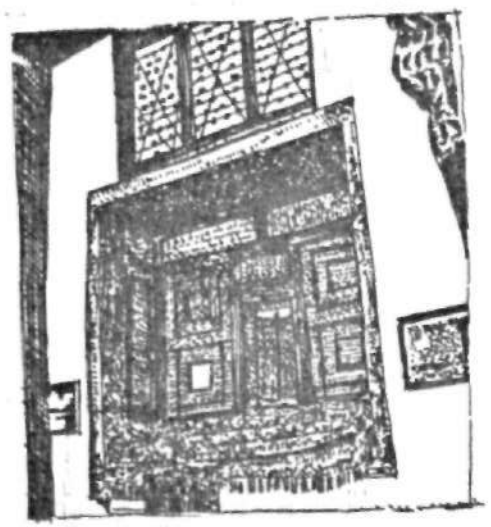


Fig: 4.9

Cupboards were made of wood, framed and covered with decorative patterns of geometrical shapes and calligraphy.

Fig: 4.7 *Carved wooden panel. Wood carving of this type characterised by elegant flowing designs was very popular in Syria and Egypt from the 13th century.*



These objects displayed a great technical variety and inventiveness, which confirmed that artists were not constricted by technical limitations. These artists responded to demand and produced a variety of artifacts for use in all aspects of life. Thus Islamic culture founded egalitarian ideals and urban values that led to the development of beautiful inexpensive objects.

4.3.7. Carpets and Textiles:

The carpets and rugs produced in Islamic art were of a superb artistic quality. They embodied the most typical Islamic art forms which combined geometric patterns and poetic abstract floral forms in representational styles. The carpets and rugs varied in size and shape, from the small prayer rug to carpets of immense sizes. Wool was the most usual material for making the carpets, but silk was used in specially fine, rich carpets. Cotton was also used in warps. Carpets were developed from primitive floor coverings.

Carpets added a marvellous sensation to Islamic architecture, and continued through the ages to be the main feature of the interior. Their magnificent colours and classifications were most often on the bases of designs such as, 'Garden', 'Floral', 'Animal', 'Vase', and, 'Medallion'. These designs were known as 'Tabriz','Sine', 'Ashak', 'Kashan', and, 'Cairene', and each had various distinguishing characteristics./

characteristics.

Textiles were used in social and personal relations. They were given as gifts and indicated honour, ranks and achievements. Robes and clothes reflected one of the major Islamic tastes and also the striking modern attitude towards function. (39)

A mass of materials was inherited from Coptic in Egypt, which became an important centre during the Fatimids period, and which produced textiles of great technical excellence, in which designs were purely decorative features. Some were figured and some consisted of calligraphy inscriptions. These were the most beautiful because of their delicacy and refinement of design. Silk and linen were the materials in favour for high-class work. Silver threads were added to distinguish the "Tiras", stuffs. The use of dyes in colouring techniques was developed and wax was used as a dye-resistant material for multi coloured patterns.

Sicily was an important centre for the manufacture of purely Islamic textiles. They introduced the Islamic design motifs which were the main scripts of these textiles. Designs of Kufic calligraphy, scrolls of confronted animals and arabesque were used. In Spain, golden threads were used in weaving more delicate textiles. Silk and velvet textiles were in great demand for rich court costumes. These were in blue/

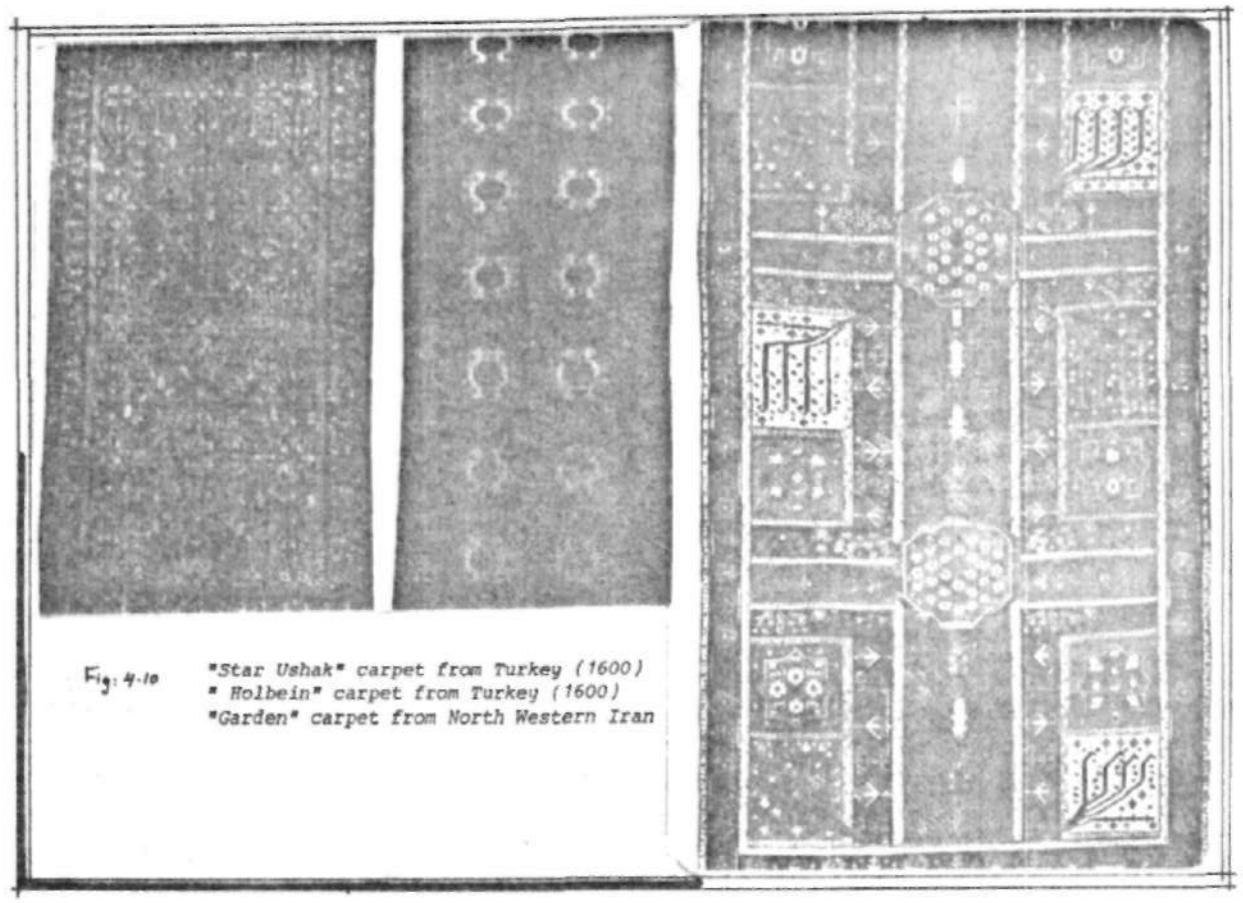


Fig. 4.10 "Star Ushak" carpet from Turkey (1600)
" Holbein" carpet from Turkey (1600)
"Garden" carpet from North Western Iran

blue, red and yellow (grand colours) besides motifs of coloured patterns.

Textiles were also used in covering the seats, sofas and curtains which formed typical Islamic furniture. Carpets and rugs were also used for wall covering and interior wall decorations. (40) (Fig: 4.10).

4.3.8. Art Crafts; Pottery, Ceramic, Glassware and Metal work:

Islamic art introduced remarkable new techniques and new themes on pottery, ceramics, glassware and metal work. In pottery they produced something similar to the Chinese three-coloured-glazed "Tiang Pottery", adorned with green, yellow and purple glazes. The shapes, images and figures showed a Chinese influence, ranging from astronomy to princely style. The Abbasid potters used lustre painting which was a great creation of the Islamic artists. They used silver and copper oxides that produced shimmering metallic reflections. They applied lustre as a pigment on the tin-glazed white surface, depicting stylized animal and human figures. These potters and ceramics were produced in response to urban-dwellers' demands. (41)

The Fatimid in Egypt were characterized by a buff-coloured/

coloured paste covered by an opaque white glaze. They produced plates with flattened rims and bowls with floral sides which were the most prevalent shapes. These designs showed either radical or cross patterns, utilizing inscriptions and floral motifs or central compositions with animal and human figures.

The Persian patterns were inspired by the Mesopotamian and Egyptian techniques, but the work of pottery became more fluent and reached an apex in a design which was delicately and beautifully painted in ruby, carmine or gold. Human figures or horse men seemed to inspire the paintings or pottery particularly. A new technique was applied in Kashan for pottery and came into fashion; it used coloured or floral figures, blue and black, moulded or engraved with a relief background. Large plates were engraved, also trays and mirrors with decorations in relief. (42)

The Turkish Kabachi family was known by its large plates and dishes which were rather thick with a white body, and decorations of scolls of flowers and similar motifs. Figures in the style of dancing people, were sometimes used as decorations. The Kabachi used in these designs were the blue-black, green-yellow or brown-red colours against a cream background. Kabachi pottery was developed along the distinctive lines of Islamic art.

However, these techniques were carried out all over the Islamic/

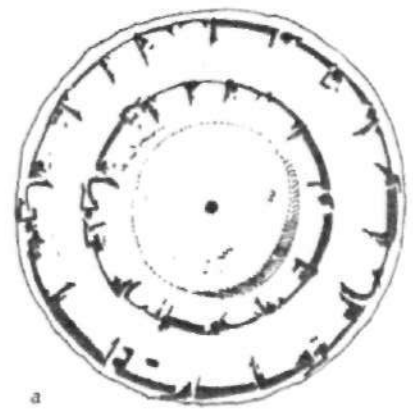
Islamic World, and schools were established for teaching such techniques as lustre and the so called 'Minai' or polychrome, which were difficult and complicated. There was great variety in the techniques of vitrefiable colours; colours were used, then the pottery was sent back for a second firing.

Metalwork was a brilliant example of the art crafts of the Islamic artist. The most creative workshops which produced metal work were in Syria, and particularly in al-Musul and Aleppo. The artists produced metal work objects decorated with pure Islamic themes, but scenes were also taken from Christian iconography. They used human figures which were adorned with astronomical subjects, signs of the Zodiac, scenes of princely entertainment and real and fantastic animals. They produced bronze vessels decorated with silver or copper inlay; this technique was developed in Persia but remained as an Islamic art of metalwork. A difficult and distinguished technique of inlaying silver and copper on to a bronze core was developed to be applied to tall jugs, ewers and large candlesticks. This technique was developed in both Syria and Egypt. (43)

The designs of silhouette wares, and the techniques of painting in black on a fine white body under a transparent ivory or turquise glaze, were applied and developed into art crafts. Also developed were the techniques of sgraffiti wares/



Fig: 4.11 Glass Mosque lamp with enamelled decoration made for Sultan Hassan in Cairo.



a

Fig: 4.12 Islamic coin with Kufic scripts in the 7th century



b

Ceramic bowl with decorations from Nishapur, Khurasan, Iran, 10th Centu

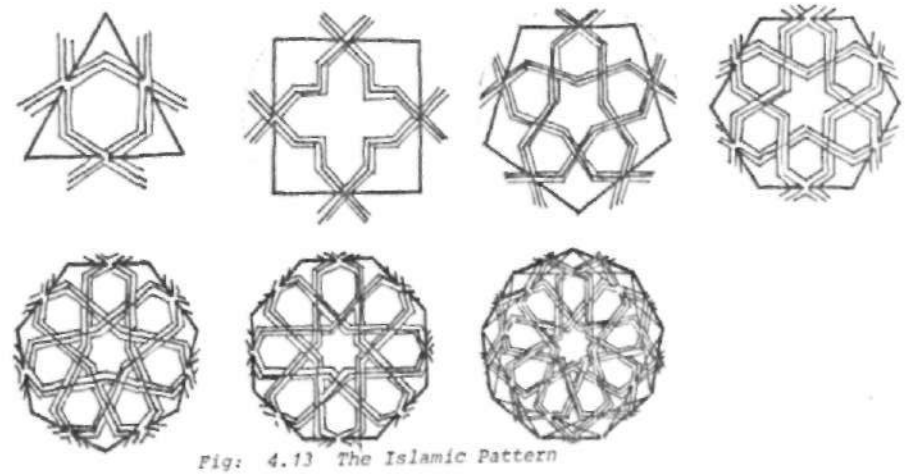


Fig: 4.13 The Islamic Pattern

wares decorated with polychrome glazes and wares of various types, and also the techniques of producing bunners in the form of birds or animals; all were apparently luxurious techniques for luxury products. (44) (Fig: 4.11) (Fig: 4.12) (Fig: 4.14).

4.3.9. Islamic Patterns:

The Islamic pattern was generated as an expression of culture and cosmology which asserted the total unity of existence. It had its foundation in an ultimate metaphysical thought. The hierarchy of the Arabic alphabets has the same hierarchy of geometric forms. In the "Islamic Patterns", K. Critchlow writes: "The Islamic pattern is an art of geometric forms and is considered as the crystallization stage of the Islamic intelligence inherent in manifest form and as suspended animation of the effusion of content through form." (45)

Islam, as it concentrated on geometry and geometric patterns, drew attention from the representational world to one of pure forms, poised tensions and dynamic form of equilibrium, giving structural insight into the writing of the inner-self and its reflection on the Universe.

The masters of the art of geometric patterns were motivated by the spiritual disciplines. They gave the pattern/

pattern both content and meaning, to help the viewer to raise his spiritual understanding and to understand nature through the essence rather than through the outer details. These patterns were an achievement of purification for oneself until one becomes illuminated by intellect.

Ibn Arabi stated in, "Fusus al-Hikam", ("Bezels of Wisdom"): "Genius Islamic pattern is the expression of this intellect, as seen through the spectrum of the individual craftsmen - who were and are themselves seekers of gnosis through the Safic, craft guilds. Islamic art,as in the contradistinction to art within Islam, is the imaginal expression of a sacred tradition and therefore in harmony with the other great revealed traditions and their accompanying art form."

This frame of work of essential geometry symbolizes the Islamic Perspective. They concluded that the first principle of unity is the circle, and the creation of the second unity is the triangle, and from there they progressed to the hexagon, the third unity which is the most natural shape with straight line edges. The Islamic patterns were pure geometric forms in which the recognition of the individual subject becomes secondary to the purely sensual appreciation of a work of art. On this simple "law of threeness", the first three basic shapes - the triangle, the square and the hexagon, is rooted the main foundation of Islamic geometric patterning, practically, symbolically, philosophically and aesthetically. This was explained by/

by "Ikhwan al-Safa", - the brotherhood of purity - who illustrated in their "Compendium of Knowledge" - The Rasil -; "Know oh Brother..., that the study of sensible geometry leads to skill in all the practical arts while the study of intelligible geometry leads to skill in the intellectual arts because this science is one of the gates through which we move to the knowledge of the essence of the soul and that is the root of the knowledge." (46)

Numbers are more than mere intellectual play; they are the fundamental expression, and the one key to the understanding of both Islamic Cosmology and its expression in the patterns on tiles, grills, mosaics and inlaid timber. Numbers, according to the spiritual tradition, had primarily a qualitative value, and also a quantitative value which was considered very secondary. The qualitative value can be expressed in shapes; three being the triangle, four the square and so on. The fundamental polygons were the foundations of the geometrical arts, thereby integrating them with the cosmology.

The understanding of creation expresses itself in the simple numbers by addition and multiplication, and through the understanding of the qualitative values of the primary simple numbers, leading ultimately to one and unity. As

in/

in Sura CXII:

In the name of "God", the Merciful the Compassionate

Say: "He is God, One,
God, the Everlasting Refuge
Who has not begotten, and has not been begotten,
and equal to Him is not any one." (1)

Koran translated by Arberry.

In the "Hadith" - the tradition -, the Prophet Mohammad said: "Praise God, the creator, who has bestowed upon Man the power to discover the significance of numbers." And again to Ikhwan al-Safa who placed the science of numbers at the "root" of all sciences,... "the foundation of widsom, the source of all knowledge, and pillar of meaning."

The Islamic pattern has a cosmological significance of great value, and through understanding, one can unite it as an aesthetic intellectual and spiritual response to Islamic art.

Traditional Islamic cosmology has its origin in the Koran, as in Sura XVI; verse 15:

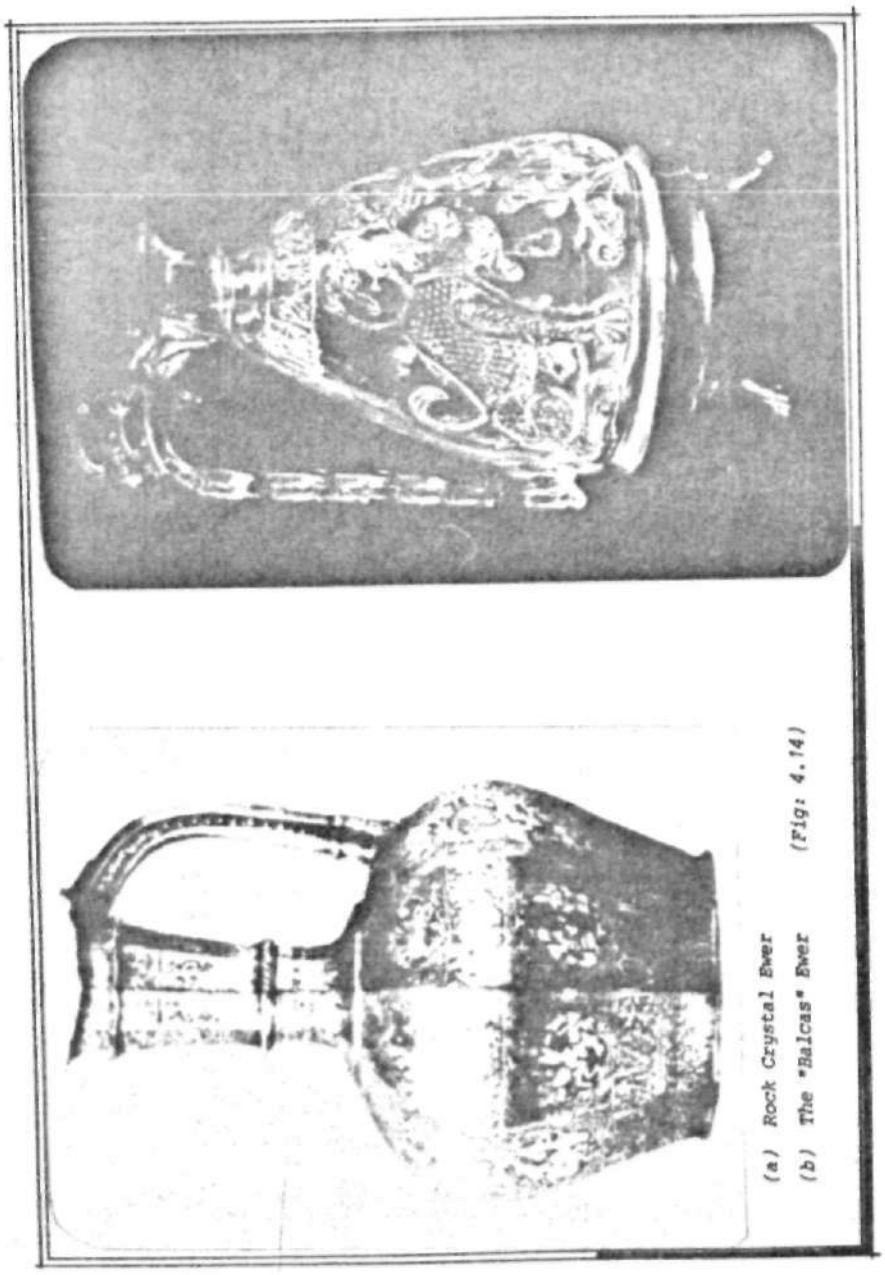
And He cast on the earth firm mountains, lest it
shake with you,
and rivers, and ways, so happly you will be guided,
and way marks, and by stars they are guided. (1)

Koran translated by Arberry.

In/

In the "Hadith", too, the Prophet Mohammad said: "My companions are stars; when so-ever any one of you follow, you will be rightly guided." Ibn Khaldun (1332 - 1406) is among the Islamic authors who refers to the use of geometry in art and architectural drawings: "It requires either a general or a specialized knowledge of proportion and measurement, in order to bring the types of form potentially into actuality in the proper manner, and for the knowledge of proportions one must have recourse to the geometricians".(47)

The scientist-artist in the Islamic culture introduced these extraordinarily simple geometric designs, representing space in two-dimensional forms. These patterns introduced beautiful identical shapes in space and were not separated from their colours and light effects. "It was from these two-dimensional forms easy to identify the basic geometric pattern and it provided a source of intellectual satisfaction. These geometrical forms were transformed into a new geometrical morphology of space in architecture in the art of the "Mokarnas"." (48)
(Fig: 4.13) (Fig: 4.14).



(a) Rock Crystal Ewer (Fig: 4.14)
(b) The "Balcas" Ewer

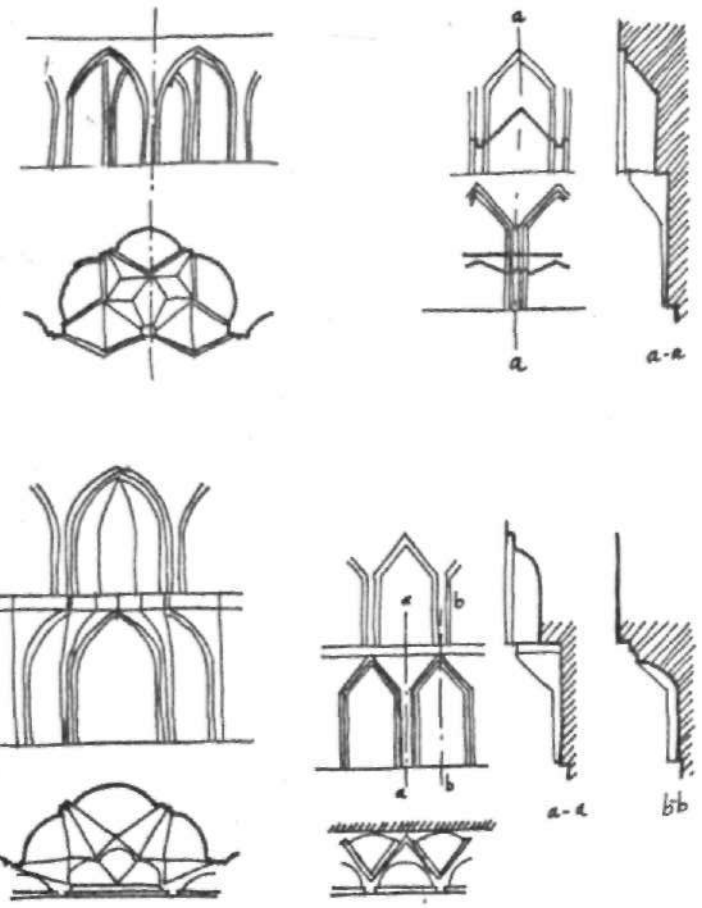
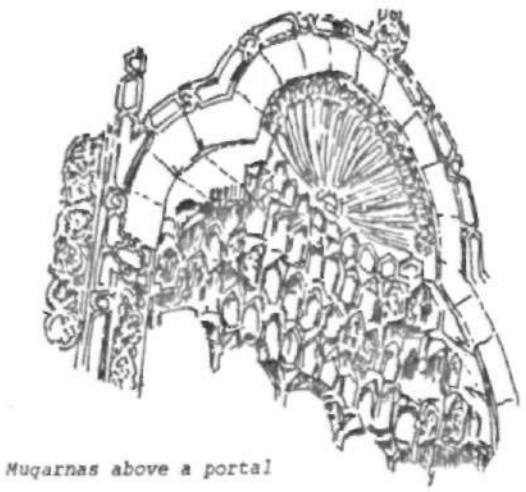


Fig: 4.15 Art of the Muqarnasat in different shapes and forms in different materials



Muqarnas above a portal



Islamic styles of column capitals.

4.4. Islamic Architectural Form and Space Morphology:

The Arabs, the first Prophet-followers, were able to express their spiritual values in visual ways that had symbolic and aesthetic qualities. Islamic architecture had its roots in the inherited Byzantine, Roman, Greek, Mesopotamian and Egyptian civilizations. But these inheritted forms were to be modified and transformed into new forms to accommodate the new intellects and the new faith. Islamic architecture changed the meaning of architectural form and its context. It introduced a new understanding of forms as well as the new motivations and attitudes of the new faith. Islamic architecture represented the survival of expressive meaning in design and form. The new forms required for the new Islamic functions were of great importance in the development of Islamic architecture, e.g. : the School, Madrasa; the Citadel; the Ribat; the Mosque - al-Masjid-; the Bazaar, Souk; and the Mausoleum complexes. These were urban structures having strong ties with the cities. The Palace also had its administrative extensions affecting the city structures. These architectural monuments were great achievements, successfully created for the new culture (49)

Architectural space was designed and formed to house and express the personality of the Islamic intellect. The aesthetic/

aesthetic perception, the new composition of space and its geometric excitement in Islamic Architecture, explained the meaning of the new forms through culture and time. Light was introduced into space and was carefully controlled to bring out the best in a spatial form. The articulation between the inner and the outer space was fully developed by using the same element of ornamentation in different materials and different treatments. The interior was developed in Islamic architecture as the architecture of privacy, expressing taste and utility, flexibility and function. New architectural elements were introduced into buildings as transitional spaces between the inside and the outside: court-yards, open to the sky, with pools, fountains, plants and trees; surfaces of coloured tiles; painted roofs and domes of different forms. High portals and different shapes of vaults and arches were the features of the exterior space. Ceilings, floors and walls with coloured patterns and of different textures were the features of the inner space. All helped to inspire a contemplative mood and provided a sense of serenity. (50)

Art was a vital element in Islamic architecture and the nature of Islamic art added many more meanings. In "Islam Monuments of Civilizations", U. Scerrato writes: "Under Islam then, art plays a basically ancillary role to religion but/

but in the fact of all its local conditionings,it is anything but uniform, giving rise to a surprising variety of styles reflecting the ethnic, cultural, tecnnological and other traditions of the countries in which it developed. One of the most eloquent testimonials of this is the architecture, which among other things is one of Islam's most vital manifestations as well as practical servants. Islam was a city religion and as a result it found in the city its basic elements which were to take shape even more clearly in the first decades of the conquest, when emerging from Arabia. The new religion found it necessary to render its triumph in tangible forms." G. Mascais defined these elements as; "The Mosque, the public baths and the Bazaar." (51)

4.4.1. Architectural elements and analysis of Space and Form:

4.4.1.1. The Mosque - "al-Masjid" -:

The Mosque symbolizes the faith of Islam and is the dominant architectural feature of all cities and towns in the Islamic World. Its function is not only to provide for the daily private prayers, but it is also an active organization in the body of the intellectual faith and an institutional revival of the Islamic culture.

Al-Haram in Mecca is the only sacred place associated with/

with the prophetic tradition and the 'Qiblah' indication, which is the direction in which the person praying faces for prayers. The private house of the Prophet in Medina was the first place in which the Islamic community gathered for most occasions. But Moslims felt the need for a place to fulfil a legal function and to participate in all decisions regarding society and religion. The conquerors in the new lands built camps which included the mosque. Big mosques were established in all the Islamic settlements and cities, which were the congregational mosque "al-Masjid al-Jamia, "the collective prayer space". Later small mosques were built by individuals for everyday prayers.

The interior space of a mosque is large, flexible and strong. It is a directional space in which people face the "Qibla", the 'Kaaba' in Mecca. Leaving their busy lives aside, worshippers offer prayers five times a day. Narrow gates in the surrounding walls lead to the interior court - ('Sahn') - where there are open spaces and shaded arcaded zones. This spatial arrangement gives protection, ensures privacy against the busy, noisy streets of the city and modifies the climatic conditions, especially in the hot season. In the mosque's layout the only fixed place is the "Mihrab", the place marking the 'Qibla' and where the 'Imam' stands to lead the prayers. The only fixed piece of/

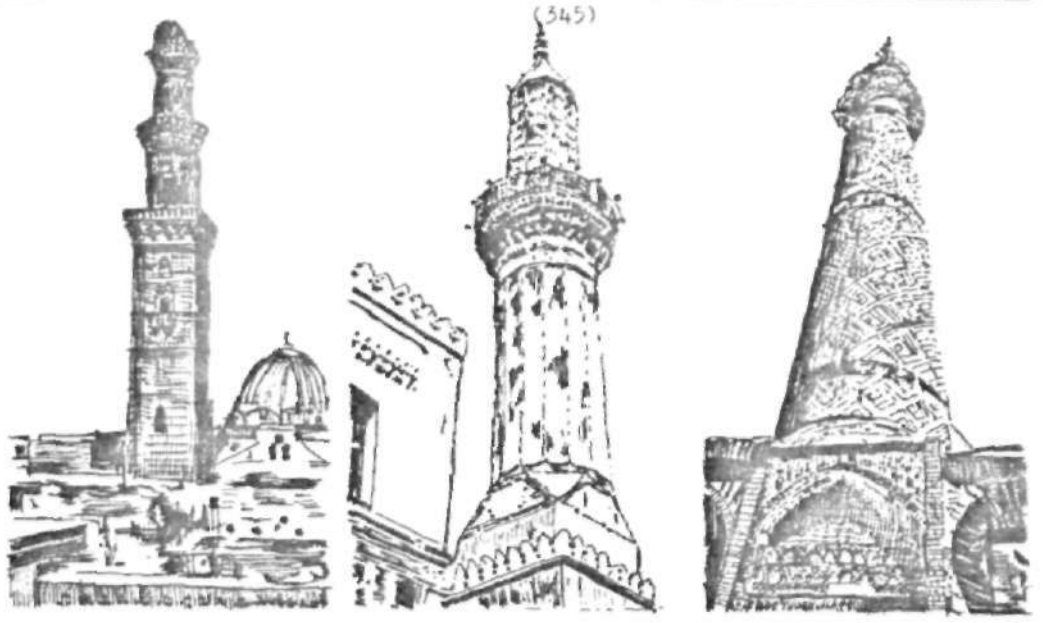


Fig: 4.16 The Minaret from which the muezzin give the call to prayer

(1) The classical minaret began square, changed to an octagon then into a cylinder and is capped with a miniature dome. The Southern cemetery in Cairo.
(2) Minaret of al-Azhar in Cairo (variations on the main theme)
(3) Natanz, in Iran (continuous cylinder)



Fig: 4.17 Mecca, the Kaaba the first Qibla in Islam. Every Mihrab of every Mosque is aligned with it and to it every moslim turns to pray.

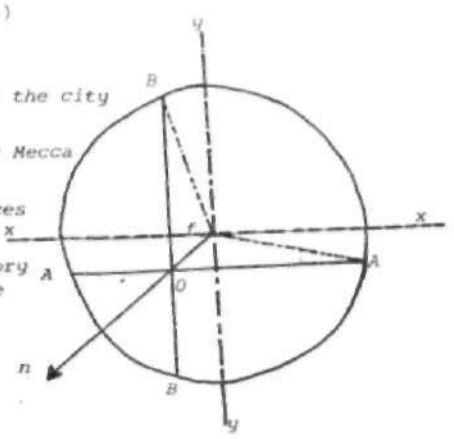
Fig: 7

AA The latitude } for the city
BB Equatorial }

XX The latitude } for Mecca
YY Equatorial }

a } are the differences
b }

fON is the obligatory direction of the qibla



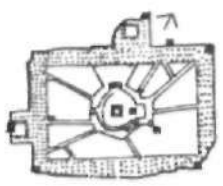
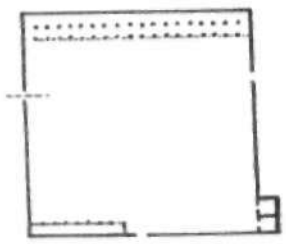


Fig: 4.18 Al-Haram al-Sharif at Mecca and Kaaba in the middle



Plan

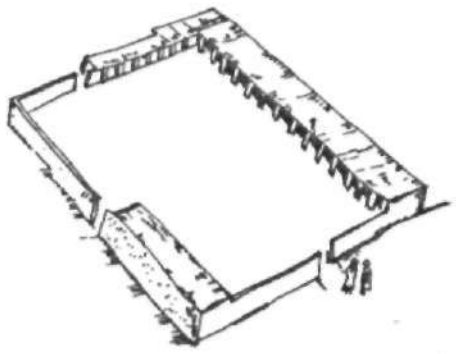
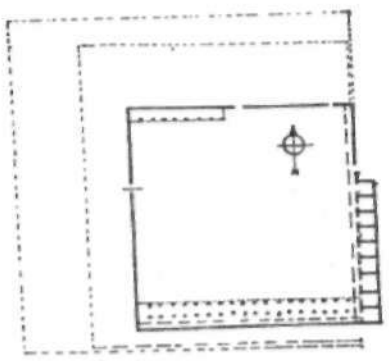


Fig: 4.19 The prophet mosque at Medina in the Arabia



Plan

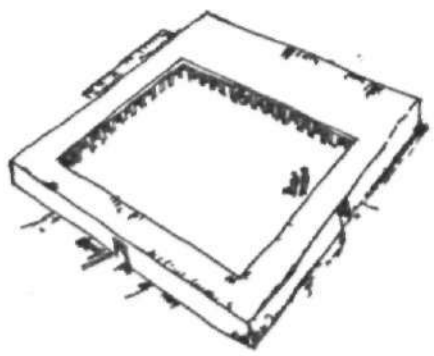


Fig: 4.20 The Medina Mosque in the reign of Othman

of furniture is the 'Minbar', an elevated pulpit from which congregational speeches ('Khutba') are delivered on Fridays. Rugs and mats cover the floor, emphasising an impressive simplicity. Decorations of abstract arabesque and inscriptions from the Koran are applied to the walls, the Mihrab and the Minbar. Coloured mosaics or marble tiles are used to cover the inside walls. (52)

(Fig: 4.17) (Fig: 4.18) (Fig: 4.19) (Fig: 4.20) (Fig: 4.21) - (Fig: 4.22) -

The plan of the mosque took mainly the hypostyle form, in which rows of columns or arches were parallel to the qibla wall on the long side. New elements were later added, producing new forms. The mosque assumed a complex of functions and included the 'Madrasa', the hospital, and the tomb of the Sultan. The new functions developed the four iwan mosques, e.g. Sultan Hassan in Cairo. Sometimes a ground floor was used for shops or stores for goods, open to the market place; e.g.: Sultan Kalawoon in Cairo. The dome was first introduced to the mosque over the 'Mihrab' and the 'Minbar', and later on over the interior court between the four iwans. The dome was also added over the tomb of the Sultans in later periods. Domes of a variety of structural forms and types were developed to allow for natural lighting and ventilation. (53)

Mosques were built to commemorate the rulers of the time. They were small in size, built according to the Sultan's/



Fig: 4.21 The Mihrab and the Minbar side by side the focus of space and the decorative devices all around in a very impressive way (Al-Moayad Nosque, Cairo 1420)

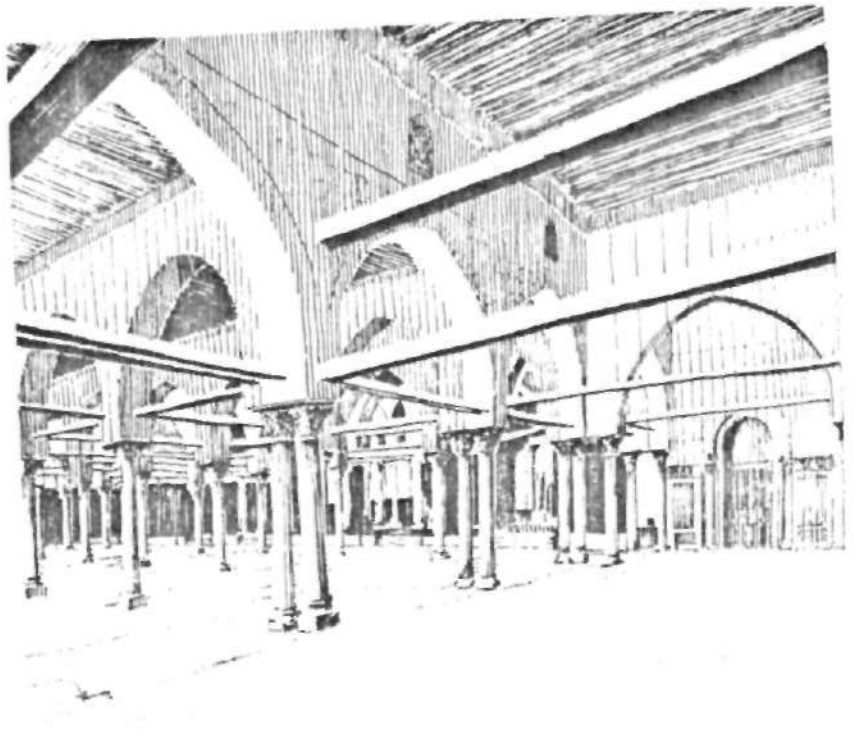


Fig: 4.22 Wooden tie beams act as two-way reinforcements to the arches in the mosque and it is clear the simple and easy movement of vision into space.



Fig: 4.23 Pointed arches had the same function as in Gothic architecture - to introduce unity to space and articulate the inside and outside. From the Vakil Mosque at Shiraz



Fig: 4.24

The horse-shoe arch introducing continuity and simplicity of space in Fez Al-Quaruiyin Mosque.

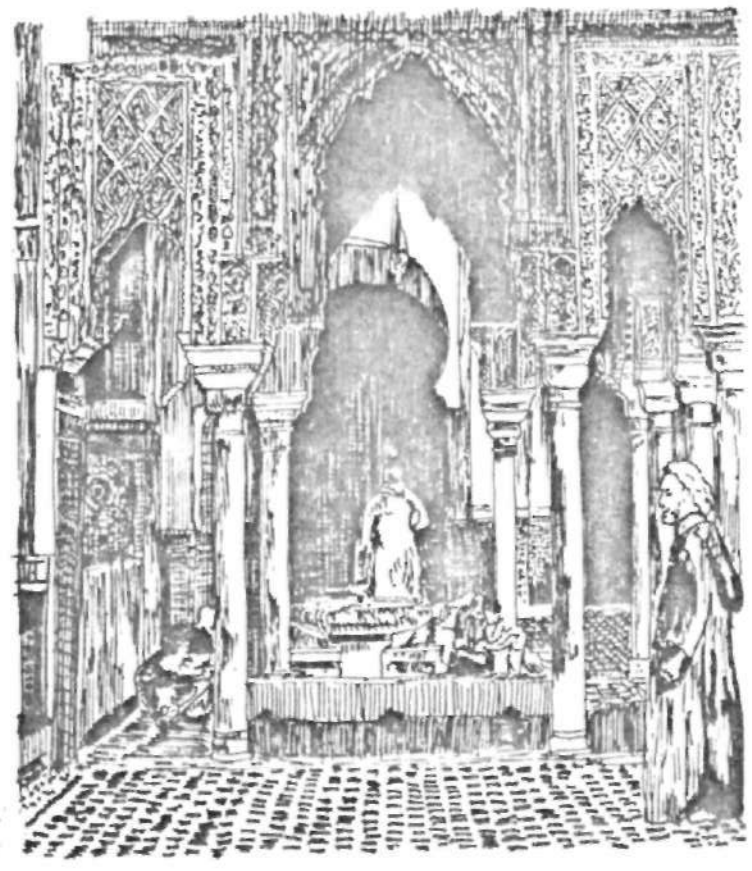


Fig: 4.25 The fountain for ablutions, prayers prepare themselves for prayer. The Mosque of Fez.

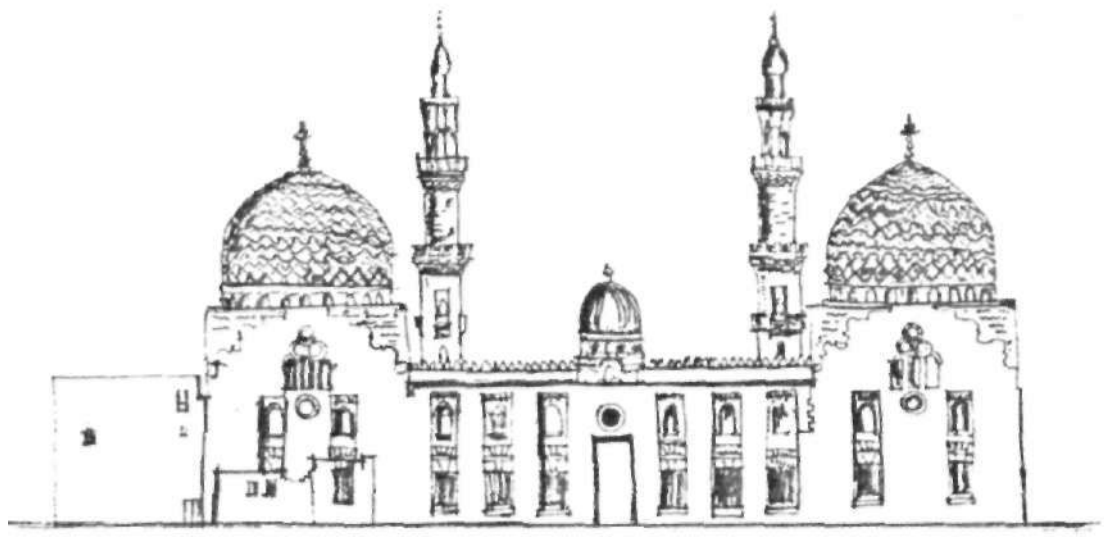


Fig: 4.26 Qaniqah Peiparse; an example of concentration of space on the middle dome.

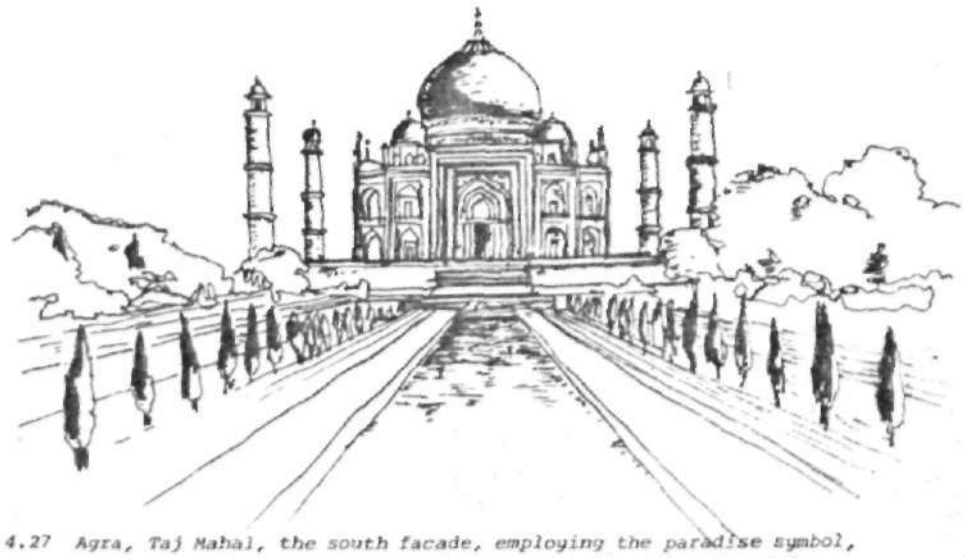


Fig: 4.27 Agra, Taj Mahal, the south facade, employing the paradise symbol, fantastic colours of the materials used in the structure and a continuous dado and flowering plants carved in low relief. The four minarets are creating a field of space around the dome.

Sultan's taste and decorated with ornaments of his chosen theme. (54)

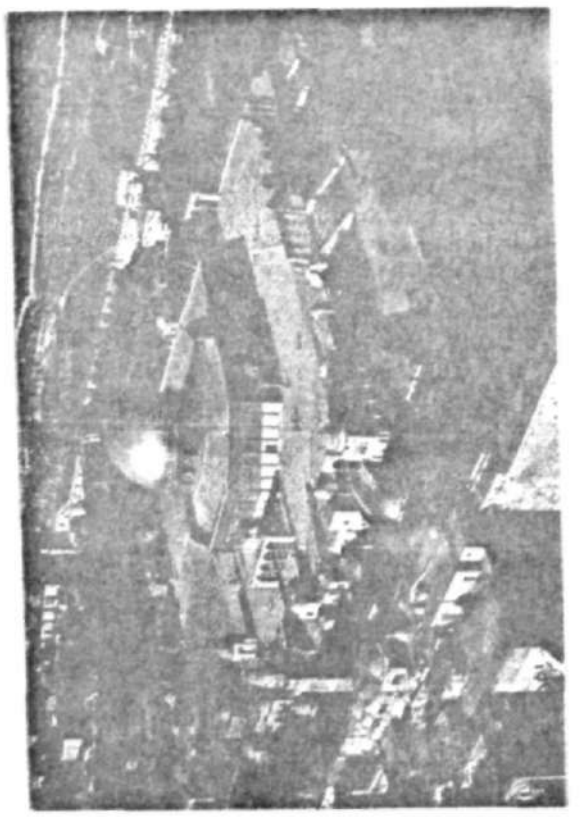
Every mosque has at least one 'Mineret' from which the 'Moathen' calls, announcing the time for prayer. The function of a mineret is similar to that of a bell tower in Christian churches, with the same style as the mosque. The mineret represents an impressive architectural element, which was developed and treated with the same decorations and ornaments. Besides their functional requirements, they served as landmarks of the faith and its message. (55) (Fig: 4.16).

Islamic architecture developed forms and plans to suit the functions of urban areas and cities. They showed the power of adjustment of space, where the main space was shaped first and any resulting irregular spaces were left for secondary functions.

In the 'Aqsa Mosque' in Jerusalem its arcades are at right-angles rather than parallel to the qibla-wall, as in other types of hypostyle plans.
(Fig:4.23)(Fig:4.24)(Fig:4.25)(Fig:4.26)(Fig:4.27).

4.4.1.1.1. The Dome of the Rock, Jerusalem:

It is the Noble Sanctuary of Islam today, as it was the most influential building in its time. The Dome of the Rock embodies many important and interesting features. The octagonal/



Dome of The Rock - Jerusalem - Palestine (Fig: 4.28)

octagonal design shelters the rock from which the Prophet started his night journey, "al-Israa", to heaven. It is called "al-Haram al-Sharif". In Sura XVII, verse 1:

> Glory be to him, who carried his servant by night,
> From the Holy Mosque to the Further Mosque,
> the precincts of which We have blessed,
> that We might show him some of Our signs.
> He is the All-hearing, the All-seeing. (1)
>
> Koran translated by Arberry.

The Dome of the Rock rivals the Kaaba in Mecca; it is the first qibla. Its design shows harmonious proportions, an ambulatory inside and outside. The form is richly detailed externally in construction and is sheeted with quartered marble up to the window line, and above in ceramic tiles dated 1554. In "Islamic Architecture", J. D. Hoag remarks: "There were once glass mosaics, known to have trees, flowering plants and buildings. They were probably intended as symbols of Paradise as those remaining in the riwaqs of The Great Mosque of Damascus."(56) These decorations were icons of representations of natural forms in beautiful rich colours.

The plan is based on the 45° turning of one square over the other. The eight points of the rather blunt star created, locate four piers and the four centre columns of the sets of three, which support the drum of the dome. Extensions of the sides of the two original squares into another/

another eight-pointed star, locate the piers of the other ambulatory as well as another larger pair of interlaced squares around whose points a circle can be drawn and within which the outer dimensions of the octagon are constructed. (Fig: 4.28).

The Dome of the Rock in Jerusalem generated the countless numbers of endlessly intricate nets of ornament which Islamic art displays. It contains the essence of development in architectural decorations. It has wonderful mosaics below the inscriptions on both sides of the inner octagon and in the spandrels of the outside of the drum, as well as on the inside of the drum all the way up to the spring of the dome. It is a powerful example of the peculiar original aspect of cultural crystallization, and it contains the first nomumental inscriptions created in Islamic architecture.

The Dome of the Rock in its form and spatial organization of space inside and outside the platform, is a dominant complex that the city of Jerusalem is as powerful as its representatives. It is a: "Unique example of commemorative buildng, the earliest major work of Islamic architecture, created as a monument to the Moslim presence in the holy city of Jerusalem; it acquired a succession of holy and mystical associations connected with the Night Journey of the Prophet/



Al-Sahin

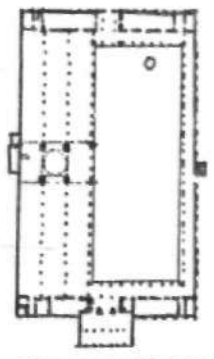
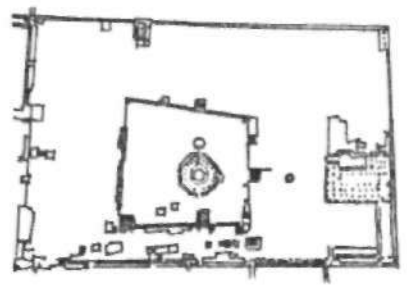
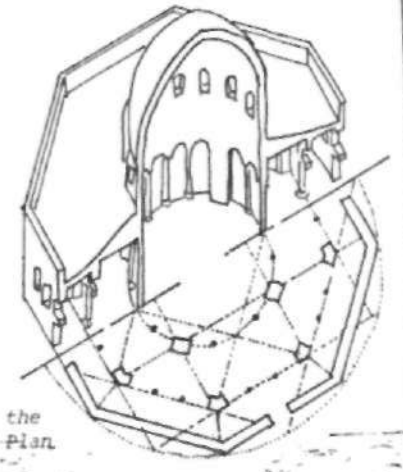


Fig: 4.30 The great Mosque of Damascus, the arches rows are parallel to the qibla wall. It is the first example of the borrowed types with decorations of Icons. The first mosque was connected to the Dar al-Imara.



The Holy Santuary platform in Jerusalem - Palestine



The Dome of the Rock Plan

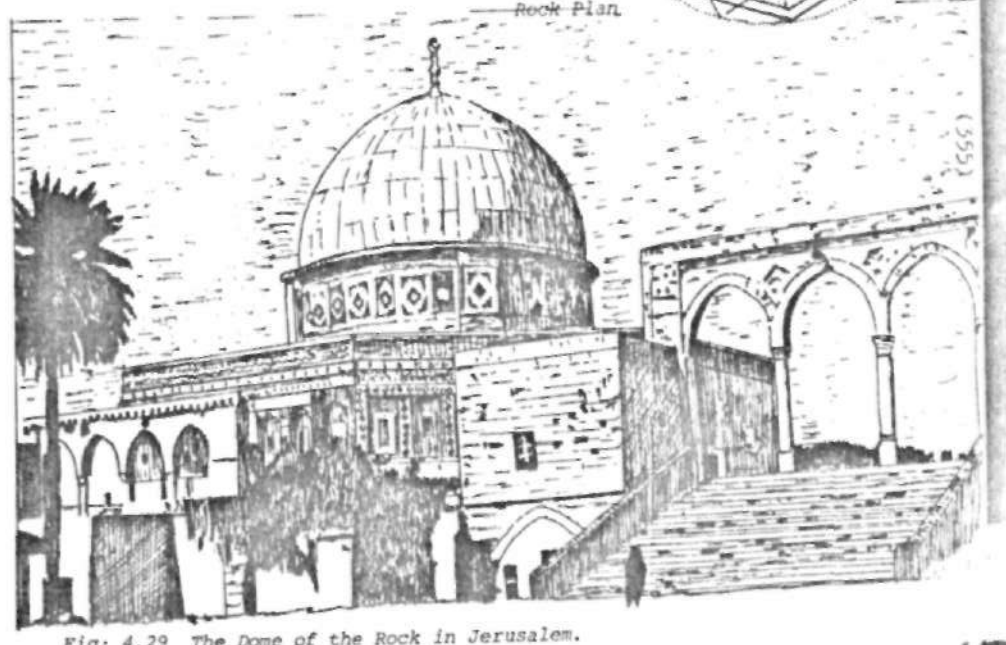


Fig: 4.29 The Dome of the Rock in Jerusalem.

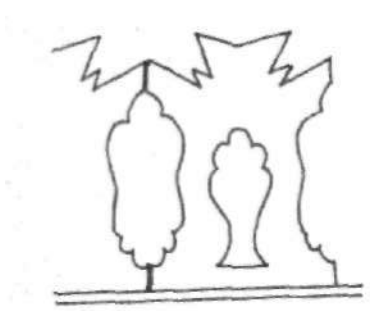
Prophet to Heaven. The Haram al-Sharif, the area surrounding the Dome of the Rock, is devoted to recollections of ancient prophets." (57) (Fig: 4.29)

4.4.1.1.2 The Mosque of Ibn Tulun,Cairo:

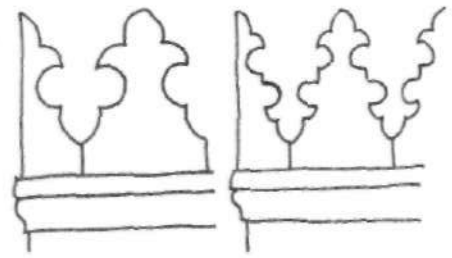
It is one of the best preserved examples of the Islamic hypostyle-type mosque. It is almost square in plan, with five portals which are regularly spaced. The square 'Sahn' has two aisles of arcades around and the Rwaqaf five aisles.

The mosque is built of well-fired red brick and is faced in stucco. The structure recalls the earliest Iraqi traditionalsystem of Samerra, which is clearly represented in its arcades on piers; at the corners of each pier are attached columns built in brick. The principle outer wall of the north west has a bishtaq about three feet high. The present stone mineret has no organic relation to the earlier structure but as Creswell has shown; "the original mineret was of spiral form and built of stone."

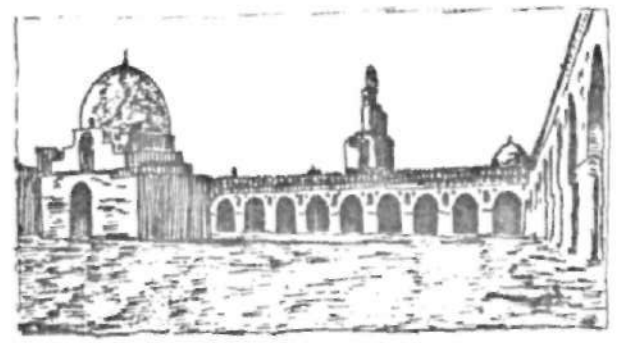
The interior of the mosque of Ibn Tulun where the solemn peace and dignified procession of the heavy piers and the broad channeled arches move down the spacious aisles and muffle all sounds is difficult to compare. It contains the most early construction of pointed arches (878 A.D.). The type of ornaments composed on the soffits of the arches are/



Bishtaq in the IbnTulun Mosque

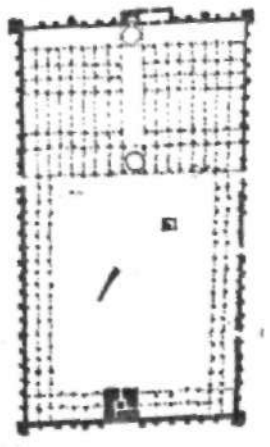


Two types of Bishtaq used in the Islamic building

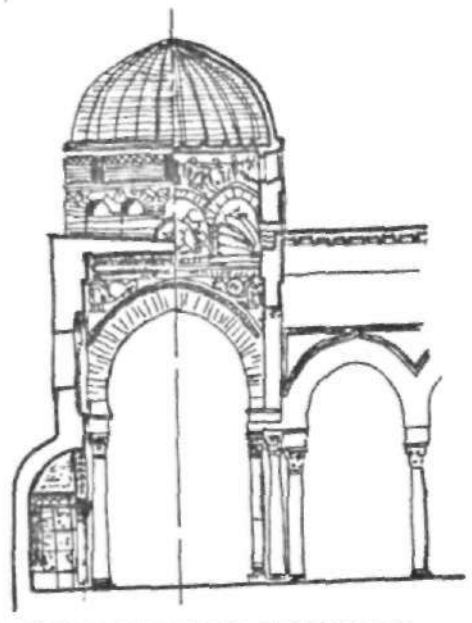


Perspective in the Sahn

Fig: 4.32 The Great Mosque of Qairawan



The plan



Section through the dome over the Mihrab

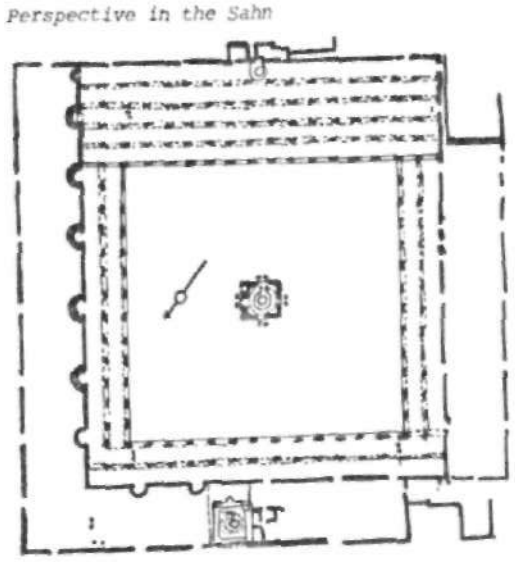


Fig: 4.31 The Mosque of Ibn Tulun in Cairo 1296

are sophisticated geometrical designs. They are bands of stucco that run as dados and continue around the arches, uniting the archades of the place.

The exterior presents a simple and very striking view, with its simple bishtaq that superimposes simple ornament over the solid walls. (58) (Fig: 4.31)

4.4.1.1.3. The Great Mosque of Kairawan,Tunis:

It was built in 695 and enlarged in 743. It is typical of the early Islamic mosques, and it is very well preserved. The mosque is rectangular in plan with informal portals, leading into the 'sahn', which is surrounded by aisles of arc ades. The great hypostyle hall of prayer consists of sixteen aisles of seven bays, each flanking a wider mihrab aisle, with a dome over the mihrab.

Most of the outer walls are constructed of brick; they are well preserved, and parts of them are of well-shaped stones. The arches were of brick or of stone, round in shape or very slightly horse-shoed, but those supporting the dome are slightly pointed.

The exterior is simple and clear, with its massive square mineret. Behind its striking blank walls there are formal doors open to the sahn, then to the prayer hall.

The/

The clarity of the composition is an expressive illustration of the ideals and life in early Islam. The mineret was a prototype that became the pattern for Islam in North Africa and in Spain.

The exterior lacks any decorations contradictions but the domical area over the mihrab is very well decorated, the ornamentations of which were of lustre that had been brought from Iraq. The wooden pulpit-minbar of the mosque is the oldest one preserved in the whole Islamic world, apart from the maqsurah which was introduced by al-Walid, the Umayyad Caliph, in 706.

The mosque represents a unity of space that to Grabar represents the social unity of the faithful community and symbolizes purity in its architectural form. This large open space is located inside the city, a large common place in the midst of tiny houses and lanes. It is a civic centre in which all social activities can take place. It is an example of Islam's unique cultural contribution and its effective architectural planning that is responsive to social needs. (59) (Fig: 4.32).

4.4.1.1.4. The Great Mosque of Cordova,Spain:

This great mosque was founded by Abd al-Rahman I in 785/

785, and was constantly enlarged and enriched during the reigns of his successors. The most important modification of the building was performed by al-Hakim, who added seven aisles south of the original prayer-hall. The mosque was fortunately preserved because it was used as a cathedral. The mosque is the third largest in the world.

The mosque is rectangular in general plan. The prayer hall has eleven naves; all are at right angles to the qibla wall. The subsequent transformations of the mosque maintained the basic design even while broadening it by adding new elements alongside. The interior is simple in design and employs a special dynamism in the system adopted to increase the height of the nave with columns supporting horse-shoe arches; between the arches' upper curves, light pillars are linked by semi-circular arches. These all produced distinctive effects of perspective and spatial dilation using polychrome masonary of light stone alternating with red brick. The mosque embodied the desire to have a space large enough to contain the multitude of the faithful that was yet suitable for social meetings and teaching. (60)

The mihrab is the focus of the mosque; it is unique. It is a small room without windows and it looks marvellous and effective from afar; it is dark, mysterious and a source divine./

divine. It is a monument and an imitation of the Great Mosque of Damascus.

The system of construction is a preserved traditional passage from square to octagonal to dome, a set of eight intersecting arches that were added to the octagon. It is the earliest experiment to be found in Islamic architecture. It is an extraordinary creation breaking down the normal spherical space of the dome into many planes set at different angles from each other. This multiplication of planes gave a comparatively small dome but a monumental character, and created an illusion of a great height that modifies the traditional shapes.

O. Grabar illustrated that: "In the dome as in the polylobed arches below, the illusion was achieved by breaking forms down into smaller and smaller units, in a manner similar to the way in which contemporary poets at times reduced words to syllables or even letters."

"It is therefore the divine world that is suggested by the dome in front of Cordova's mihrab as evinced by the universal Islamic consciousness." (61)
(Fig: 4.33).

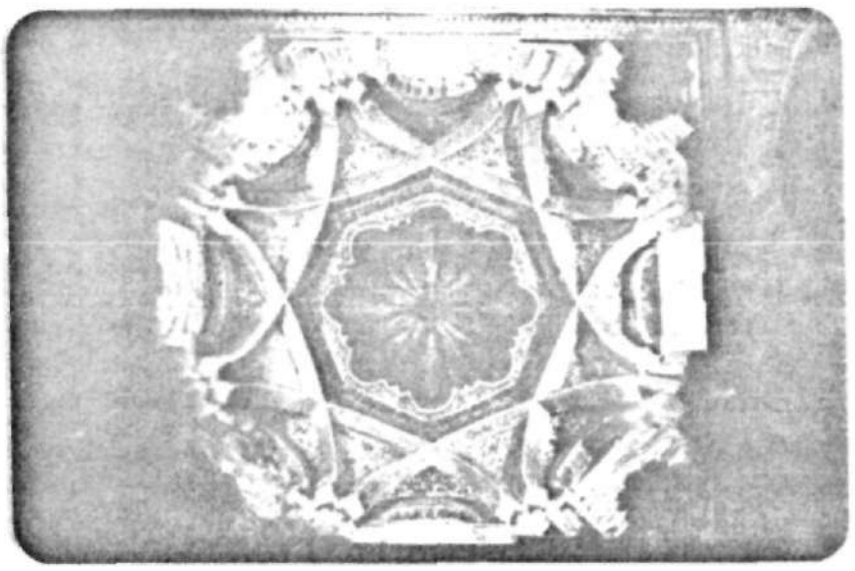
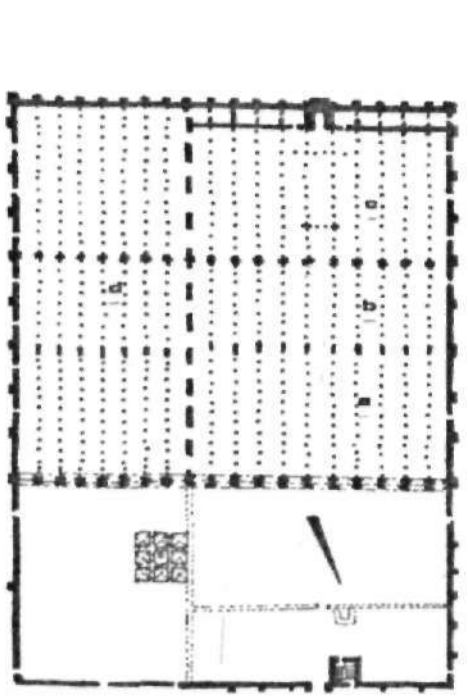
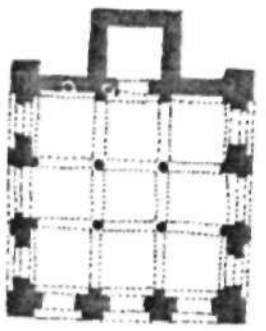


Fig: 4.33 *The Great Mosque of Cordoba in Andalusia of Spain, the Central Dome. 987.*



The plan and its extension.



The plan of the central area



Section in the central area over the Mihrab

4.4.1.2. Architectural Complexes; the Masjid, the Madrasa, The Mausoleum, the Pemarestan (Hospital):

1. The Masjid:

These small mosques were built by individuals or by social groups such as quarter (Hay) or profession (Mihan), in response to what is said in the Koran in Sura IX verse 17:

> Only he shall inhabit God's places of worship,
> who believes in God and the Last Day, and
> performs the prayer, and pays the alms and fears
> none but God alone. It may be that those will
> be among the guided. (1)
>
> Koran translated by Arberry.

It was only from the 10th and 11th centuries onwards that small masjids began to proliferate in most Islamic cities, when the economic crises and Monghol conquest had passed and when finances were concentrated in the ruler's hands. These rulers at times simply miniaturized the hypostyle mosques, like al-Aqmar in Cairo. At other times they were types based on one domed space like the Bab-Mardum mosque. Hundreds of these mosques dotted the Islamic World, and Islam was at the height of its influence. U. Scerrato and Grabar confirm the fact that these masjids (mosques) reflected the growth of social differentiation, and they are interesting because of the innovative features they exhibit, such as elaborate facades, fancy minerets, fountains/

fountains and other peculiarities that lustrate varieties of taste which were more personal than those in large mosques. "It became a competition between the different individuals that characterize the masjids' architecture." (62)

The Ayyubids introduced stone structures on a large scale, essentially to control architectural taste with careful decorative details. The new components of the local traditions and the construction technique gave rise to an impressive architecture; coloured stones were used in the interior of the masjid, and polychrome mason ry especially in the mihrab and the arches. Decorations were translated into stone sculptures from other materials.

2. <u>The Madrasa:</u>

This was a new religious foundation that flourished and developed through the Islamic World; it was an Islamic institution introduced to fulfil useful social and cultural purposes. It was used to train the spiritual and legal leaders according to the four Islamic traditions of the Sunii Moslims, which are called al-Mathahib al-Arba - the Hanafii, the Shafii, the Maliki and the Hanbalii. The madrasa was a large establishment built in the capital cities, in Cairo, Damascus, Baghdad and Jerusalem, in the different parts of the Islamic World. The largest were in Egypt/

Egypt and Syria. The used iwan type almost everywhere but either single, double, triple or quadruple iwan designs.

3. The Mausoleum; "the tomb":

In Islam it is prohibited to commemorate any dead whatever, be it an ordinary man or a leader. But the Shiism introduced some modifications ("Bida") to such restrictions to emphasise the direct rule of the Prophet's descendants; Ali, Hassan, - through his daughter Fatimah. They strictly emphasised the appearance of the cults, and as in any other society some powerful mystical groups did the same and formed under the leadership of powerful individuals. To counteract the Shiism, the Sunii leadership, especially Salah al-Din, encouraged pilgrimages to sites related to the old testament prophets and "Sahaba", and built them up. This new human vanity played a part in the development of the mausoleum. However the Arabs never went to the extremes of the Iranians' and Indians' Islamic Architecture in the construction of the funery monument. They preserved their outstanding spiritual depth in the "al-awlia al Saleheen", the cult of the dead. (63)

4. The pemarestan; "Hospital":

These buildings were designed and built to serve an unusual/

unusual variety of purposes, and they were very useful in their socio-cultural function. Hospitals were designed and developed to fulfil the practical response to life science and medicine which developed entirely within the Islamic Sphere. It was the idea of adding professional practice in medicine for medical students, that affected the design of the hospital.

The Umayyad built the first hospital in 715 A.D., but the first complete hospital was built in 809 by Harun al-Rashid of the Abbasid in Baghdad, who introduced the doctors from the Sassanids. Ibn Tulun in Cairo built al-Nasiri pemarestan but these were all demolished completely.

The most interesting complexes in architecture included the masjid, the madrasa the mausoleum and the pemarestan. The best living examples are: Sultan Kalawn in Cairo, the Tomb and Madrasa of Sultan Hassan in Cairo, Madrasa al-Nuriya al-Kobra in Damascus and al-Mustansiriya in Baghdad. They are of monumental scale and have a great simplicity of form, having distinctly sombre quality; large, flat undecorated surfaces contrasted with deep carving in the form of epigraphic or linear abstract ornaments. There are also deep niches with floral patterns and arabesque decorations. These are in local traditions and express a local style. However, some of these designs in the Mamluk period were affected/

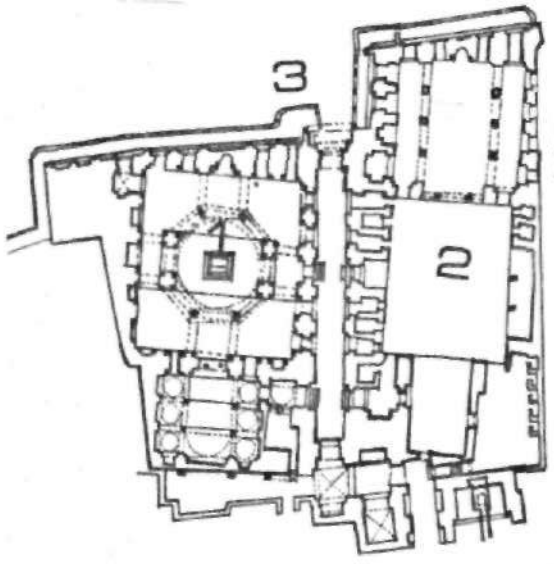
affected by the style of North Africa; "al-Maghrib", and Spain during the 14th and 15th centuries, producing a noticeable reduction in the scale of ornamentation in proportion to the whole structure. (64)

4.4.1.2.1. The Monumental Complex of Sultan Kalawun in Cairo: 1284

It consists of a magnificent masjid and tomb, and equally beautiful madrasa and pemarestan. All were built in one comprehensive structure, that made the complex most impressive. The complex represents a combination of all the characteristics of the Mamluk style in Islamic Architecture. It possesses simplicity of form, cubic monumentality, effectiveness and restraint of the exterior surface decorations, besides the richness and beauty of its interior decoration that employed a great variety of techniques.

The central court of the madrasa represents a spacious space, with the four iwan-halls around, which are frequently separated by using the arches of round-headed horse-shoe shapes in the two big iwans as well as in the two small shallow ones. The prayer hall which is the qibla iwan is unique in its triple aisles which are two stories high, and which repeat the triple arcades of the hall with a clerestorey over the higher nave.

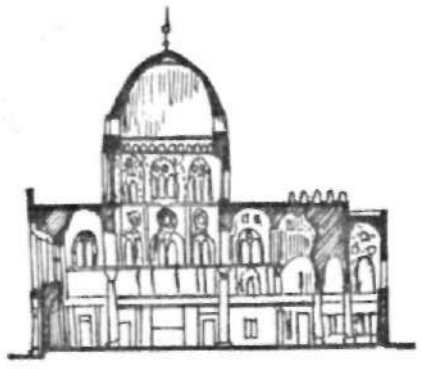
The tomb is preceded by a small court; almost an atrium, in/



The Plan

1. The Mausoleum
2. The Madrasa
3. The Hospital

Fig: 4.34 The Complex of Kalauun in Cairo



Section through the dome.



The striking facade showing the dome, the minaret and the building in its context

in which rises a superb carved stucco facade. Within the nearly square shaped chamber of the tomb there are four pink granite columns, and four square piers rise to support eight arches that transform the square into an octagonal windowed drum of the rise of the dome.

The hospital consists of a central court leading to the different sections of the building, which house three specializations for surgery, eye diseases and mental diseases. Within each section there are special cells for dangerous cases and carantina. Women had their special sections for privacy. The hospital used to have an out patients' clinic, and a school of medicine including a lecture room and specialized library.

The manner in which different spaces were organized in this complex, (the masjid, the tomb, the madrasa and the pemarestan), expressed the functional ideal and importance of architectural organization in Islamic Architecture. The plan is very representative and fulfils the interior responses; arrangements for qibla direction using adjusted shaped spaces, and irregular shaped space are used in secondary functions. The use of the corridor as a means of communiction between the tomb and the madrasa is a brilliant practical solution.

The north facade of the building combines both front facades of the madrasa and the tomb, despite the set-back where/

where the portal presents a tie element, leading into the court of each part of the complex. Decorations in the facade are particularly beautiful, pierced with linear grilled windows that archaize the Dome of the Rock in Jerusalem. The wooden moqarnas - (squinches) are original and suggest that the original dome was made of wood. The exterior facade looking over Souk al-Nahasin suggested the direct transformation of the busy noisy life of public space into the spiritual, calm life that emphasized privacy of space and the relation between them. (65)

The building is constructed mainly of well-shaped stone, coloured mason ry of red and white. Massive walls in the exterior are covered with linear vertical patterns of coloured marble on the lower parts. The mineret is three floors high over the top of the building; the lower two storeys are square-shaped in plan whilst the upper is circular. The mineret is an extension to the frontal facade that creates "a field of space to emphasize the dome over the tomb." (66) The frequent use of the horse-shoe arch in the complex, for both the interior and the exterior, gives the best appearance to the mihrab of the masjid, and mounting the windows, including those of two stories' high windows in the central court and the back entrance of the complex to the central corridor, emphasises the unity and the flow of space/

space formation inside and outside, stressing also a rhythmic order of the form. (Fig: 4.34).

4.4.1.2.2. The Tomb and Madrasa of Sultan Hassan:

It is a masterpiece of Islamic Architecture in Cairo built in 1356. It is composed of the madrasa where spiritual and legal leaders trained within the Islamic community. The mausoleum is attached to the madrasa that served to immortalize its inhabitants. The madrasa is represented in its functional design; the middle square court-yard is surrounded by four large-vaulted iwans. Each is restricted to one of the four Sunnis rites. Each iwan has the required dwellings for the students and the professor which are on several floors. Windows of these dwellings look over the street and are visible on the exterior.

The tomb is unique in its location on an unusual site; it is placed on the main axis of the masjid and in the direction of the qibla and the prayer.

The complex is magnificent, built deliberately to reassemble the unrawling strands of the Egyptian society. It emphasises the traditional learning of Moslims, although it gives a uniquely unorthodox importance to the cult of the dead. Its magnitude and form attest the growing strength of the folk traditions in relation to the rich in the society. The/

The complex is a rare example of an urban structure and monument which is clear and visible from all directions.(67)

The monument has a large high gateway with curious recessed windows and plane walls except for the superimposed cornice that runs all around the building. These structural features emphasise its striking contemporary design. According to Grabar, the monument may have inspired the American architect Louis Sulivan in his designs for urban commercial buildings at the end of the 19th century in the United States of America. The architects of the complex developed the architectural form and plan shape to be universally valid for the function in urban areas and cities.

"The Spiral fluted quarter columns frame the portal and emphasize its height. Paired minerets were on the original design surmounting the portal and symbolizing the monument." In the "Islamic Architecture", Haog writes: "Sultan Hassan was augmented by more recent Persian inspiration that goes back to al-Masjid al-Jami in Asphahan". (68)

The calligraphy inscriptions are the most interesting ornaments in Sultan Hassan's complex. These inscriptions are in the mihrab-nich, that symbolises the image of a lamp as it is illustrated in the Koran; Sura XXXIV verse 36, 37:

> God is the light of the heavens and the earth,
> the likeness of His light is a niche,
> wherein is a lamp;

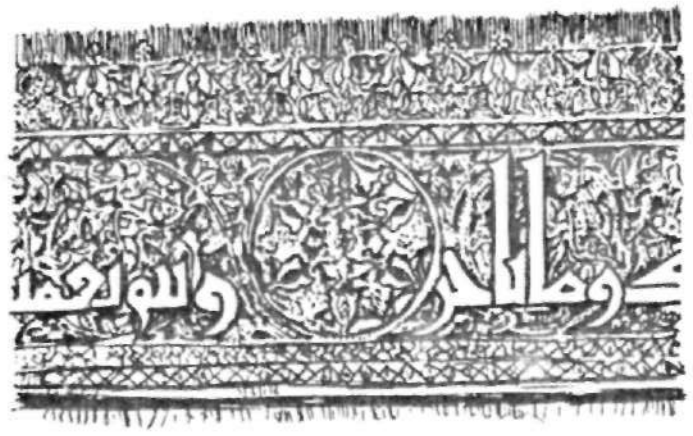
(The lamp in glass,
The glass as it were a glittering star).
from a blessed tree,
an alive that is neither of the east nor of the west,
whose oil well-nigh would shine, even if
no fire touched,
light upon light.
(God Guides to His light whom He will),
and God strikes similitudes for men;
and God has allowed to be raised up
and His Name to be commemorated there in,
there in glorifying Him in the mornings and the evenings,
are men whom neither commerce nor trafficking
diverts from the remembrance of God
and to perform the prayer and to pay the alms,
fearing a day when hearts and eyes shall be turned about
that God may recompense them for their fairest works
and give them increase of His Bounty,
and God provides whomsoever He will without reckoning.(1)

Koran translated by Arberry.

In the tomb and surmounting the walls around the tomb is the description of paradise in calligraphy inscriptions as it is illustrated in Sura XV verses 45, 46:

But the God-fearing shall be amidst gardens,
and fountains.
'Enter you them in peace and security!'
we shall strip away all rancour that is
in their breasts.
As brothers they shall be upon coaches
set face to face;
no fatigue there shall smite them, neither
shall they even be driven forth from there. (1)

Koran translated by Arberry.



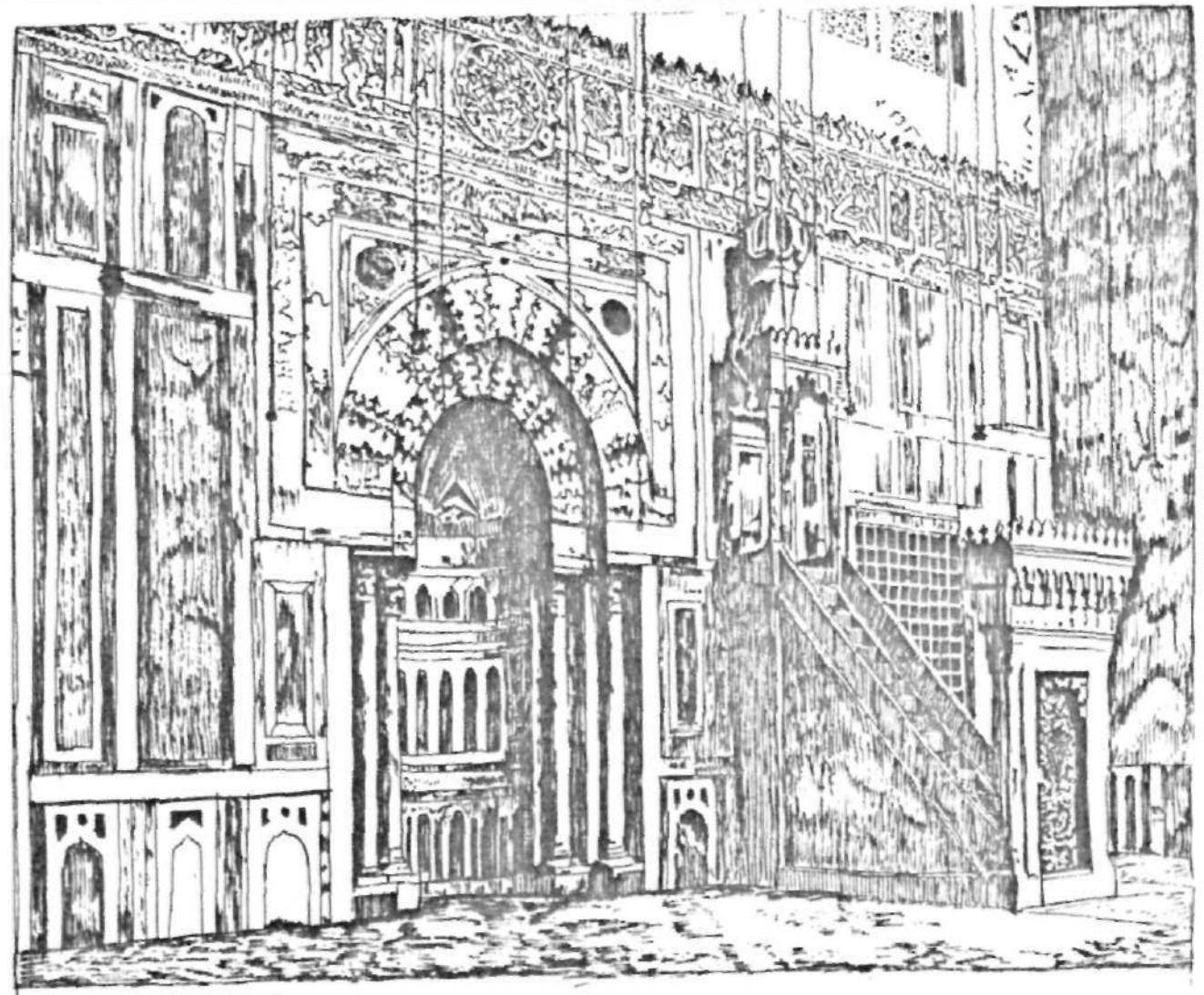
Interior decorations of calligraphy and arabesque



The plan of the Tomb and the Madrasa



Fig: 4.35 The Tomb and Madrasa of Sultan Hassan - in Cairo which shows the power of adjustment of space and the urban form.



Mosque of Sultan Hassan.

Here Islam in its maturity has achieved a system of synthesis between the sentiment expressed in the inscriptions and the architectural design.

The series of niches runs almost to the full height, giving a vertical directional rhythm to the heavy cubic block, with a portal that is dominated by a niche filled with elaborated moqarnas design above, and pierced by the entrance gate below. The portal is covered with surface-recessed panels and squares of geometric ornaments or small deep niches cut in the lower part of the sides of the entrance. It is a powerful piece of architecture. (69) (Fig: 4.35) (Fig: 4.36)

4.4.1.2.3. The Madrasa al-Nuriya al-Kubra in Damascus:

The building was dedicated in 1172 to the teaching of al-Hadith - (the tradition) - and only to the two rites of hanafits and shafit; nothing shows any division between the two iwans.

The structure is very plain, in monumental masonary, in which the entrance leads to a groin-vaulted vestibule, to the south of which lies the tomb chamber and to the west an iwan leading to the court. From the south side of the court through a treble port lies the entrance of the masjid, "The prayer hall", with its wooden roof. On the north side lies a large iwan which was once probably roofed in wood. The West iwan shelters a fountain. The upper floors are occupied by students in their cells and are reached by stairs north/

north of the vestibule.

The tomb chamber is roofed by a uniquely formed dome, covered by a stucco moqarnas of eleven tiers ascending from a cavitto cornice. The transitions are dexagons rather than octagons as a geometrical framework; gored domelets are supported by as many intersecting arches with open and closed frames, creating an interesting hierarchical structure. (70)

4.4.1.2.4 al-Mustansiriya in Baghdad:

In this monumental building of madrasa, the four rites were taught besides Dar al-Hadith and Dar al-Koran. It is an immense building with an interior court. The projecting portal on the long northern side of the building leads to an iwan looking on to the court and flanked by two spaces.

On the other side of the court lies the masjid, "The prayer hall", with a three portal facade; it is long and narrow. The lecture hall, the only iwan, penetrates the narrow ends of the court and was shared by the four rites. Elsewhere double tiers of students' cells open directly on to the court into a cloister in the floor above. All arches are covered with heavily-twisted mouldings.

4.4.1.3/

4.4.1.3. Defensive Architecture, the Citadel, the Ribat and the Palace:

The expression of power was always an important function of Islamic architecture. It was seen as a function that could not be isolated from the conquering Islamic forces and the glory of the new victorious faith. Various impressive citadels, fortified walls and towers, were built to represent the most direct forms of the spirit of Islam. They were complex structures with ornamental sculpture and Koranic inscriptions applied to the surfaces as reinforcements to their powerful forms.

Citadels were dominant features in Islamic urban centres. In a way the Palace of al-Hambra was a citadel expressing the powerful existence of Islam in Spain. The citadels of Cairo, Aleppo, Jerusalem, Skoura in Morocco and Yazd in Iran are all complexes of architectural monuments comprising a mosque, an audience-hall, baths and living quarters representing the integrated functions, duties and lives of the rulers.

The Ribat is perhaps an exception in the citadel type architecture of Islam as it has form of an institutional kind. The Ribat may be considered as portraying/

traying a new function and value in the formation of the new culture. The layout of this building was used to express the existence of the Islamic nation, "Ummah", as a large social, cultural body which is fully integrated and unified. The Ribat of Susa in Tunis is the best existing example of the architecture of the Ribat. (71)

Palaces were built on the desert edge, confirming the existence of powerful princes. They were considered as urban centres and functioned as complete developed systems of plantation, water-storage, and irrigation, as well as acting as defensive centres.

The Palace of Granada represents a special type of defensive architecture in Islam. Its outer walls established a citadel overlooking the city of Granada. It represents a living example of this type of architecture. The palace used to have its administrative and defensive extensions in the city.

The desert palaces varied in luxury and in the quality of architecture produced. The forms of these palaces were derived from the Roman, Sassanids and Ghassanids models. Hoag remarks of them that: "Their main interest lies in two features; many of them are lavishly decorated with paintings, sculptures and mosaics, thus illustrating the/

the amazing wealth of early Arab princes; and they are the only existing examples of private memorial architecture between villas of the Romans and the country palaces of *the Renaissance.* " (72)

These palaces functioned as castles and forming centres; minor structures were found around these palaces, which were more modest in their architecture and represented individual private houses.

The most important of these palaces are Khirbat al-Mafjar, Qusayr Amra and al-Mushatta.

4.4.1.3.1. The Ribat of Susa:

It has a square-shaped plan with two floors of barrel-vaulted warrior cells and halls surrounding a central court. The prayer hall, small masjid, occupied two bays of the southern part of the second floor with a mihrab that mounted the main monumental portal.

It is a fortified enclosure defended by circular or semi-circular towers with square or rectangular shaped bases. The small portal has a monumental projection and is surrounded by a small dome.

The/

The structure is built in ashlar masonry throughout. The outside is very striking and without any decorations. The bishtaq all around the top of the external walls used to give necessary protection to the defenders. The tower on the south-east corner represents the mineret of the masjid. The mineret functioned as a lighthouse beside its symbolic form, to give lighting signals at night. Advanced structural techniques were used to roof the rooms, where vaults and groin vaults were used. The Ribat of Susa is an example that influenced others built in Tunisia and Central Asia. (73) (Fig: 4.37).

4.4.1.3.2. Cairo Fortifications:

When Amre Ibn al-Aas conquered Egypt he built the camp of al-Fustat which was used as an army base and residence. The camp included the leader's house and the mosque that still bears his name, Masjid Amre, which was enlarged, many additional areas being built during the different dynasties. The Umayyads built al-Askar town to the north of al-Fustat and Ibn Tulun added the maidan, the square place, and built al-Kataii. The complex of these three towns is called as Misr which represents the ancient city of Cairo.

The Fatimids were the dynasty who built the first defensive wall around Cairo. The wall was built of brick. Two/

Two palaces were constructed in the central area of Cairo and left in between a large square, maidan, for military training and demonstrations. Badre al-Jamali, the army leader, built the walls around Cairo of stone. The defensive wall which had two towered gates in the north Babal-Nasr and Bab al-Futuh, in addition to one in the south Bab Zueilah, represented the power of the Fatimids. The towers in these gates took different shapes in plan; that in Bab al Nasr is square, and those in Bab al-Futuh and Bab Zueilah are circular. Tunnels were used under the wall to facilitate the movement of the army from one gate to the others. (74)

The Ayyubids continued what the Fatimids started, and Salah al-Din built the Citadel in Cairo, which represented a typical example of the Ayyubids' architecture. They used heavy structures, fortified monumental gates and towers; however they applied the Fatimids' system to the wall structure.

The Citadel in Cairo is a remarkable example of military architecture and it rivalled other types in many ways. The monumental complex structure of the Citadel gates is the most impressive part. In the 11th century the Ayyubid carried out many restorations in the Citadel and rebuilt all the fortifications around Cairo using only stone as a building material. They rebuilt Bab al-Futuh, which is the finest of their restorations. The Ayyubids built/

built with fine stone mason ry, using pointed arches and elaborated voussoirs. They applied their defensive conceptions to the structure, which represents an important development, followed by the Romanesque and Gothic architecture.(75) In "Islamic Art", D. Rice writes: "They used the first spherical domes carried on triangles from the corners in Bab al-Nasr, and the groin-vault system was applied to the others. Bab al-Nasr was originally decorated with images of military machines and security was firm in all portals." (76) (Fig: 4.39).

4.4.1.3.3. The Citadel of Aleppo:

It is an impressive monument to defensive Islamic Architecture, built at the top of a hill in the middle of the city. It is the strongest fortification of the Islamic World at that time. The entrance structure is original and most striking with its two gate-towers connected by a long bridge supported on high pointed arches of great beauty.

The gate is an enormous cubic block. It has strong towers and a complicated passage-way leading to a ramp and a stair case up to the second floor, which consists of a 15th century reception hall.

The unity of the form and structure, besides its stone decorations, demonstrates the strength of the city during the 15th/

15th and the 16th centuries under the rule of the Ghasnids' dynasty. (77) (Fig: 4.40).

4.4.1.3.4. The City of Baghdad:

It was called the city of peace, a circular double walled city, representing Baghdad at the centre of the universe. Baghdad was a conscious attempt to symbolise the universe. The idea was mainly derived from the form of Assyrian military camps which were round; however the same idea was used by the Sassanid Ardashir the first, who built Fairouz-abad.

The four gates were established at the four cardinal points of Baghdad. They were the Shami gate towards Syria, the Khurasan gate towards the north-east, the Kufa gate towards Mecca and the Basra gate towards India.

The internal defensive wall around the city was thicker and higher than the external; it was stepped into three heights; the first 6 ms, the middle 5.5 ms and the third 4.8 ms. It was mounted by an upper vaulted passage to facilitate the defenders' movement. The external wall of the city was surrounded by 6 ms trenches.

The gates used to have a bridge over the trench with an opening 4 ms wide leading to a semi-circular vaulted long-room, forming a cantilever tower from the wall. The entrance/

entrance bent at 90° to be under control and led to the open court with its two portals, then to the space between the internal and the external wall. The next high vaulted room had two stairs leading to the over-looking domed room.(78)

The Caliph's Palace, the Golden Palace, with its green dome, was in the centre of the city and dominated its surrounding space. It was a symbolic feature that demarked Baghdad. The architects made all efforts and used all the traditional ideas of former civilizations in building the city, the marvels of which have been extensively described in Alf Lila wa Lila, which is known as "Arabian Nights".

The fortification system was elaborate, with deep ditches round the city and fine walls encircling the central palace, and a succession of heavily-guarded gates with complicated safety devices. Indeed the Abbasid architecture in Baghdad reflected the concept of concentrated power in a vast and complex palace structure; the very idea of placing the royal palace in the centre of such a succession of heavily guarded and fortified rings of protection is that of an oriental despot. (79) (Fig: 4.38).

4.4.1.3.5. Khirbat al-Mafjar in Jericho, Palestine:

This is the most important of all desert palaces, and stands within a large agricultural estate. The palace is a square/

square in general plan, which is typical of desert palaces. However the exterior walls were sculptured while other palaces had plain walls. The palace had only one deep entrance, through two towers leading to the porticoed court, in the middle of which was a square basin surmounted by an octagonal pavilion. The porch forms the approach to the palace and serves as an outside link to the prayer-hall.

The prayer hall was lightened through a windowed drum and roofed with a dome on pendantives. The complex of the palace was described as a square enclosure, dominated by a central colonnaded court leading to smaller chambers called "beyt"; each was composed of four rooms for the inhabitants, facing in pairs to a central hall. It represents the unity in design and structure, form and space organization that reflects the main interest in Islamic architecture. Other palaces' interests were the structural form and scenes of the personification of history, poetry and the Zodiac. (80) (Fig: 4.42).

4.4.1.3.6. The Imperial Palace of Granada, al-Hambra, Andalusia:

This is the only imperial palace which is well preserved; it was built in the 14th century and consists of two main complexes of buildings located round courts and surrounded/

surrounded by gardens. It represents a remarkable period of Islamic architecture. Its architectural importance lies in its unity appearance and form. It consists of similar repetetive shapes and harmonious spaces. The outer walls established a citadel overlooking the old city of Granada. Splendid gardens were designed and planted lavishly to form a beautiful integrated combination of architecture and nature: "It is a citadel palace within the city of Granada." (81)

Court-yards and beautiful landscaped internal gardens were used as transition zones between the different spaces of the palace, with rich surrounding arcades, water-courses and fountains. These successive courts were of large oblong rectangular shapes, (e.g. the court of the Myrtles on which the Hall of Ambassadors opens), as the court of lions was reserved for the Harim - the women's section - with halls and rooms arranged around it. It had complete privacy with a beautiful interior garden and a bath-hall as transition elements to the court, accessible only to the caliph.

The inner spaces of the palace were and still are splendidly decorated with stucco ornaments and interwoven floral forms, with flowing inscriptions from the Koran and Arabic Poetry. These decorations display the precise workmanship of placing coloured tiles and forming geometric patterns. The Hall of Ambassadors, the Throne Hall, and the Square/

Square Chambers of the two sisters possess the most beautiful ornaments and inscriptions.

The poem inscribed on the "Fountain of Lions", refers to the warriors of the holy war. The Hall of Ambassadors has inscriptions over the windows and the walls. Sura LXVII, verse 1, "The Kingdom" is inscribed on the wooden cornice of the superb roof-vault:

'In the name of God, the Merciful, the compassionate'

Blessed be He in whose hand is the Kingdom;
He is powerful over everything,
who created death and life that He might try you,
which of you is fairest in works; and He is
the All-Mighty, the All-Forgiving,
who created seven heavens one upon another.
Thou sees't not in the creation
of the All-Merciful any imperfection.

Koran translated by Arberry.

From the Arabic Poetry over the walls' inscriptions:

'Long may you live! thus when you inter in,
morning and evenings in the months of boon,
bliss, felicity and charm greet you in
my name.
She is a high-domed hall and we are her daughters;
however mine is the pre-eminence and the
honor in rank.
My/

My master Yusaf has checked me, 'may God support him!'
in garments of pride and flowless of artistry.
He made me the seat of the Kingdom and thus she
(the Hall) has strengthened his rank.
with the true light, with the seat and the
throne; (1)

In al-Hambra the fundamental elements of Islamic architecture and the basic ideas of architectural design and decorations, which had developed over many centuries, found their highest form of realization. In al-Hambra every void forms by moqarnas is a complex line, demonstrating outstanding changing views during day and night. Colonnades around the courts were brilliantly lit, receding during the day to become dark frames around the sunlight from the windows.

Al-Hambra palace is like a splendid oasis remote from the reality of this world. This effect is specially emphasized by the contrast between an almost entirely undecorated exterior and the unparallel richness of the interior. In al-Hambra the expressive idea and true meaning of:

"There is no god but He, there is no Victor but God".

is reflected in the deepest sense of Islamic architecture. "It makes real sense in the mind, in the eye and in the soul of the faithful." (82) (Fig: 4.41) (Fig: 4.43)

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(1) 'Inscriptioners arabes de Granada' in al-Hambra the fundamental Madrid 1959.

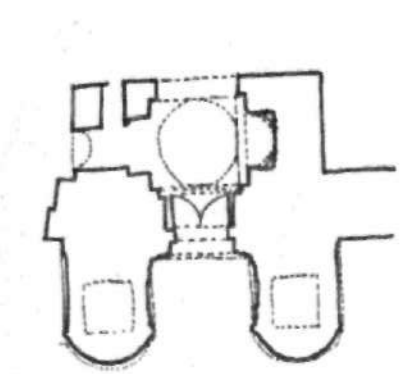
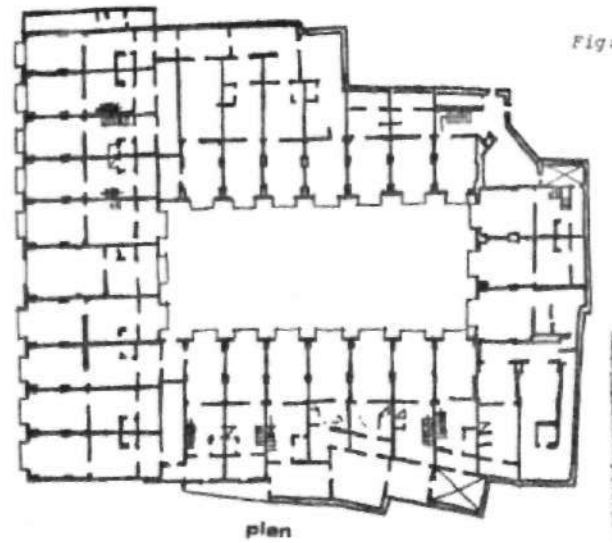


Fig: 4.39 Bab-al-Nasr in Cairo built in the 10th Century



plan

Fig: 4.44 Wakalat-al-Ghuri. Plan for the third floor for sleeping rooms and services.



Al-Ghuri Wakalah in Cairo marks a high tide of Mamluk prosperity.



perspective

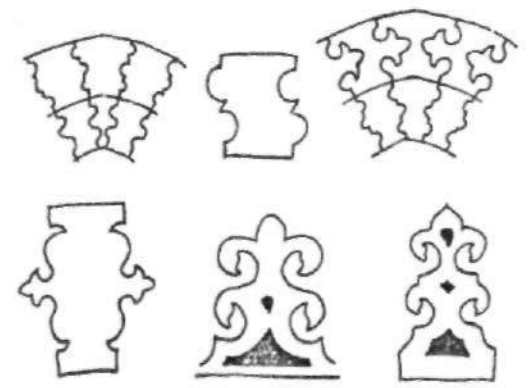
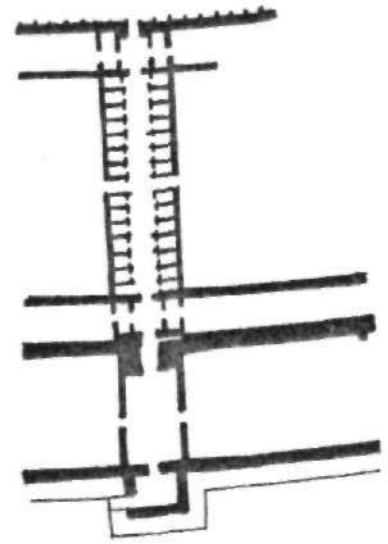


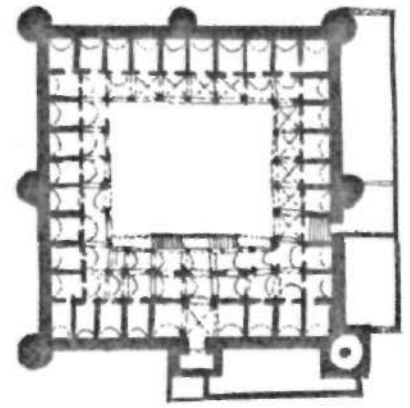
Fig: 4.36 Art of masonry used in colouring stones and shaping them in different interlocking patterns



Baghdad - the circular plan and the palace in the centre.



Plan of the gate



the first floor plan

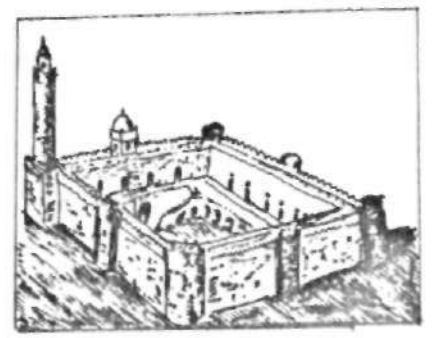
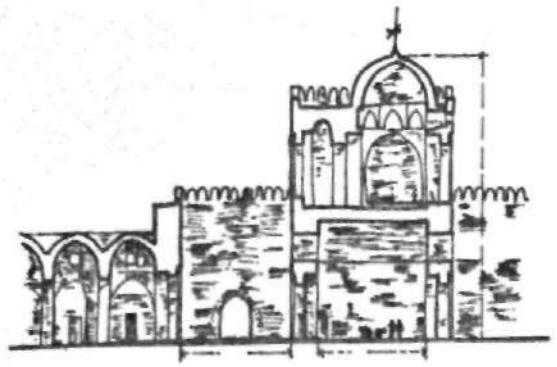


Fig: 4.37 The Ribat of Susa, Tunis



Section through the gate

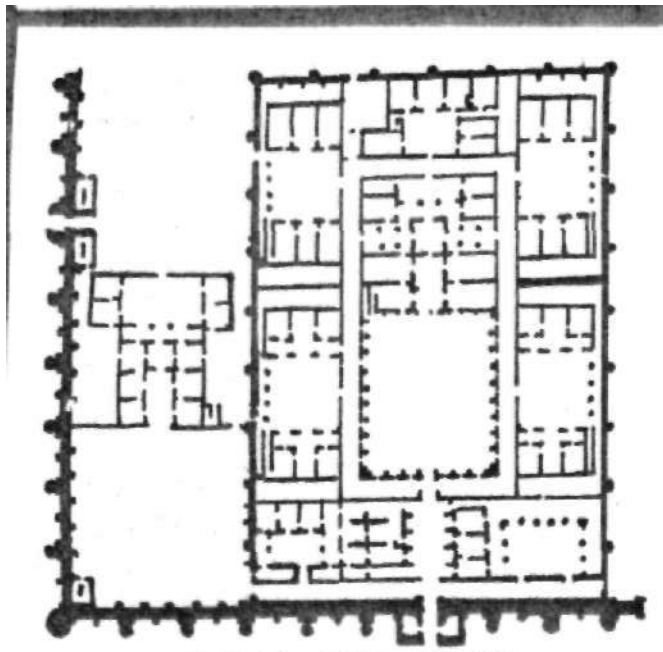
Fig: 4.38 The City of Baghdad

Fig: 4.40 Section through the Citadel of Aleppo, showing the fortified gate, the bridge, the massive barbican defending the entrance and the reception hall built over.

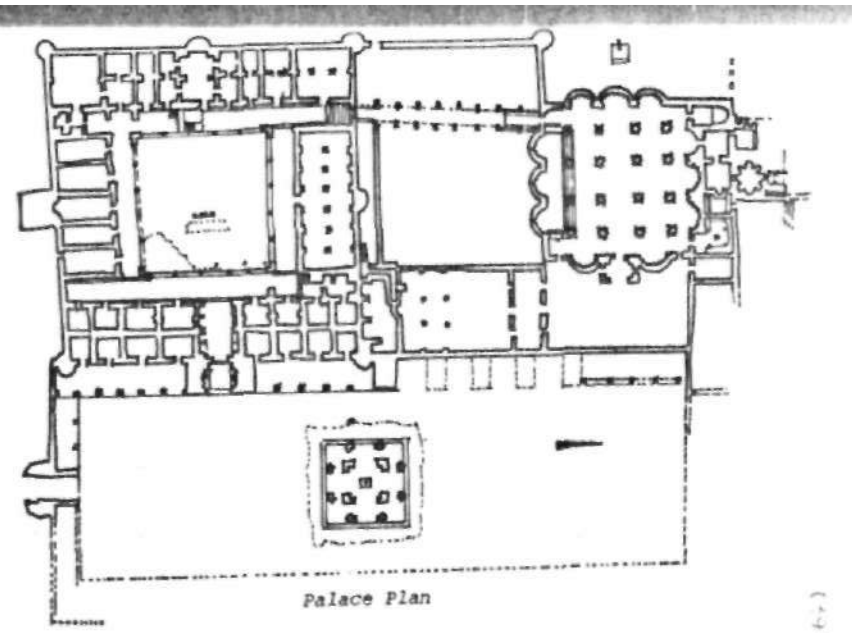




Fig: 4.41 The al-Hambra Palace in Granada. An expression of the Islamic existence in Spain and the most perfectly preserved.



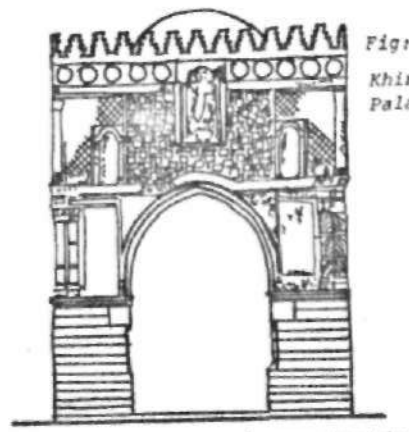
Al-Ukhaider Palace - the Plan



Palace Plan



The reconstruction of the court looking to the throne hall.



The entrance (reconstruction)

Fig: 4.42

Khirbit-al-Mafjar Palace, Jericho



The bath roofing (reconstruction of the palace)

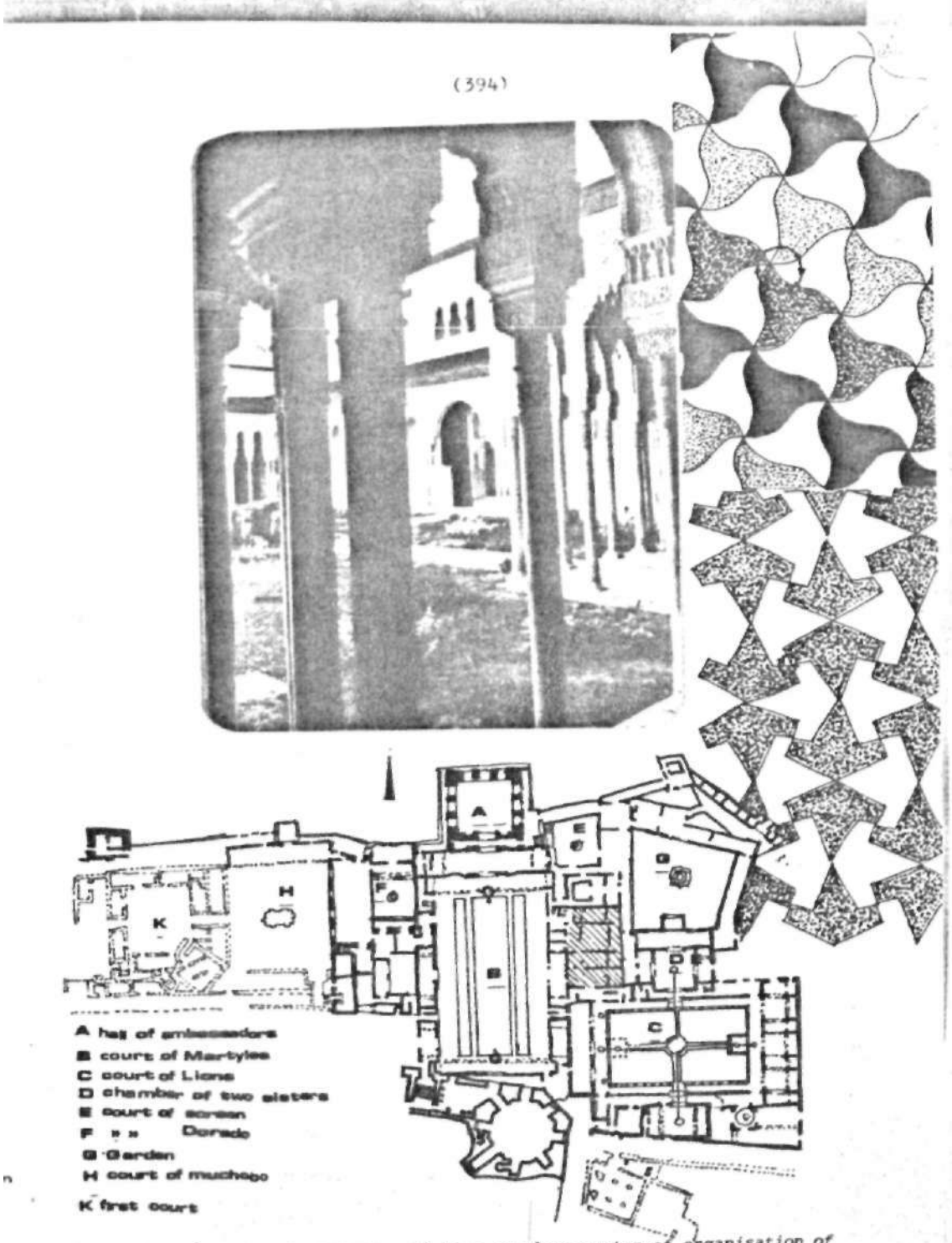


Fig: 4.43 Al-Hambra in Granada. It is a complete system of organisation of space inside, outside and in the flow of space with respect to the required privacy.

4.4.1.4. Commercial and Public Buildings:

Islamic Architecture served the needs of urban areas in cities. Commercial buildings were developed in the cities from the beginning, including the Bazaar, warehouses, al-Khan, al-Wakala and the public baths, which were connected to caravansaries. They were in almost every city. The commercial buildings today are complex combinations preserved in their entirety. For instance the bazaar (Souk), in Cairo, in Damascus, in Jerusalem, in Aleppo, in Asphaban and in cities all over the Islamic World. Islamic architecture gave the city its identity and its important character, reflecting its economic activity. This was long before such phenomena were to be found in other cities in other parts of the world.

4.4.1.4.1. The Bazaar; Souk:

The Bazaar represents a cavernous world, a majestic rhythm of vaulting structure that covers a whole area. This commercial thoroughfare where shops are placed on both sides, is the perfect use of space. There is no waste, for every part is used for buying and selling and people practising trade; it is a place of specific function and activity.

The structural system used produces a suitable environment/

environment, indicating activity; a creation of sculptural morphology, plasticity and unity. It represents special space conception, where the main space with its activities which take place all through the thoroughfare (the communication element) leads into small delicate spaces and some more larger important spaces, but all are threaded into the main structure of the complex.

It is a cool space where light is introduced through shafts of sunlight from the clerestorey on the roof or from the side windows, which are carefully located in the main vault system constructed in brick or stone. In some roofs, light materials are used; they are flat and perforated, so introducing beautiful tones of light and shade. The most interesting is the twisting and flow of space following the direction of the thoroughfare. Space, too, is softened by merchandise displayed in beautiful colours; scarves hung from hooks, piles of carpets and brilliantly dyed cloths, brightly coloured shoes and many other objects. It is a sense of place where the sound, the aroma of spices that is everywhere, and the smells of leather and cloths add a suggestion of space to the eye, to the ear and to the nose, creating interest and feeling in the place. (83)

The Bazaar is an organism unifying commercial and religious life. This enclosed space branches into separate spaces, each a private world adapted to its function/

function; the mosque, the madrasa, the hammam; "bath", the wakala, the Khan and the warehouse; they are all functional as people carry on their daily social activities there. (Fig: 4.45)

4.4.1.4.2. al-Wakala:

A building exists to house merchants coming from near and distant cities or countries. It consists of three or four floors organized around a central court-yard. Raw materials for handcrafts were stored on the ground floor. The upper floors were prepared for the arrivals. The court was used as a display and/or service space where goods and materials could be examined by shop-keepers, distributors and intermediaries. The part of the ground floor looking onto the street was composed of small vaulted openings, used as shops. Stair cases served the upper floors where residents slept in separate rooms, and each floor had its separate services.

The furniture used was simple and low, consisting mainly of cushions and pillows. All windows were provided with a mashrabia to give privacy and to control natural ventilation and light. Doors were solid and richly decorated.

The existence of the mosque in the commercial area of the city played an essential role in socio-economic and cultural/

cultural life, for members of the guilds from all over the Islamic areas frequently prayed together, reinforcing the sense of their communal identity and demonstrating the close relationships of religious and commercial life. (84) (Fig: 4.44).

4.4.1.4.3. The Hammam "bath":

The bath followed in plan the Roman ideal with certain adjustments, mainly in hot water distribution and in the massive walls built in brick and stone. It consisted of several spaces functioning in their organization as one unit; the vaulted room, hot water, cold water and steam rooms, with pools of cold or hot water.

The hammam was mainly comprised of three elements; firstly "al-Mashlah", the reception-room, where refreshments, drinks and "Narjila" were presented and displayed, besides the towel needed for bathing. Secondly, through a porch was the intermediate room - trapidium, where bathers sit on platforms to heat up or to cool down before and after bathing. Lastly the hot room - calidarium, where individual baths or a central one were to be found. The units were used for massage and washing, and lead pipes were used for water distribution to the cells.

The structure of the building was very interesting; it was a domed or vaulted space, and light was introduced through/

through openings like coffers in the ceiling, where coloured or non-transparent glass was used for privacy. The reception room contained benches with cushions and pillows, and was roofed with a dome or a vault with a top clerestorey which controlled and modified the light over the central fountain. Brightly coloured towels and walls all added a joyful air to the space. The hammam was also richly decorated with coloured tiles of beautiful geometric patterns and features.

The hammam had a vital role in religious instruction, and because of the hot climate. Through daily use it became a social place and a religious communal place.

4.4.1.4.4. Qaysarya:

It is a building of exceptional height, with a domed or groin-vaulted roof; it represents a special organization of space of many entrances opposite each other.

The qaysarya consisted of many warehouses and shops, and sometimes the upper floors were used as residences for people working there.

The qaysarya opens mainly to the square, (maidan), which symbolises the contrast between darkness of space and light, and which releases the work-people from their busy life to the mosque, which was usually connected to the qaysarya/

qaysarya. (The mosque was usually a congregational mosque). It is illustrated in the Koran Sura LXV verse 8 - 10:

> O believers, when proclamation is made for prayer,
> the day of congregation, hasten to God's remembrance,
> and leave trafficking aside; that is better for you,
> did you but know.
> That when the prayer is finished, scatter in the land,
> and seek God's bounty and remember God frequently;
> happy you will prosper. (1)

(Fig: 4.46) Koran translated by Arberry.

4.4.1.4.5. al-Khan:

This was a rest-house, built to provide caranansarai travellers with different services, including a place to stay. The Khan was built on the lines of a citadel for security and defence purposes. It had massive walls and protective towers. The Khan was built on the peripharies, then developed later into Kakala when it was to become a part of a city or town.

In the Khan, special spaces were reserved for animals that were used for transportation, like camels, horses and donkeys. It was usually on the ground floor and the upper floors were for residents. The prayer-hall was always reserved for prayer.

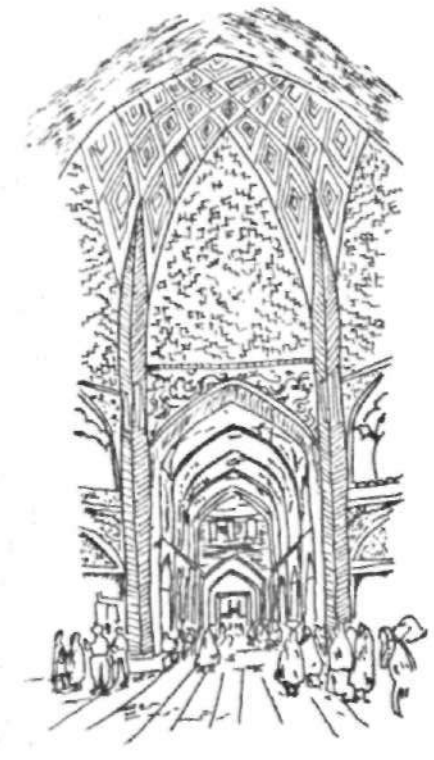


Fig: 4.46 The Qaysaryya and the Bazaar.



Fig: 4.45 The Bazaar - the Market, Al-Dira; a survival space full of movement and activities.

4.4.1.5. Domestic Architecture:

Islamic architecture achieved a successful variety of structural forms to meet man's needs and to satisfy his environmental requirements on the domestic level as well as on the spiritual and religious levels. It fulfilled the cultural - social needs of privacy and calmness, as is illustrated in the Koran in Sura XXIV, verse 27 - 31:-

> O believers, don't enter houses
> other than your houses, until you first
> ask leave and salute the people
> there; of that is better for you. Haply
> you will remember,
> and if you find not any one there in,
> enter it not until leave is given
> to you. And if you are told "Return",
> return; that is purer for you and God knows
> the things you do.
> There is no fault in you that you enter
> houses uninhabitted wherein enjoyment is
> for you - God knows what you reveal,
> and what you hide. (1)
>
> Koran translated by Arberry.

Care is given to the organization of domestic life and its role in the religious, social and economic aspects of/

of the community and the nation. The individual belongs to and is responsible to his family, the basic unit of social life. The family is given the right by Islam to live in privacy. This obligation establishes a clear distinction between public and private life and is the most significant social characteristic of Islamic culture.(85)

The home, ("al-beyt") in Islamic architecture adopted the court-yard house form. This became the main form used in urban areas, where the court-yard functioned as an intermediate transitional space between the noisy public streets and the private spaces of the house. Rooms overlooked the court-yard and were accessible from it. The inner court-yard also functioned as a modifier of the climate. It allowed outdoor activities to take place while providing protection from dust and direct sun. Sometimes court-yards contained fountains, landscaped gardens and water pools. In multi-storey buildings, court-yards were situated on the upper-most floor and opened directly to the sky. (86)

In Cairo, and later in other parts of the Islamic World, the Kaa (sitting room), was introduced into the house plan in the form of a large central area two floors high. This layout helped in reducing the house to an acceptable size within crowded urban areas. The Kaa was/

was surmounted by a dome under which a fountain was provided and floors of marble or coloured tiles were arranged in geometrical patterns. (87)

Another development in house design was the use of indirect or diffused natural daylight and the air-scoops, (Malkaf) which rose from the roof of the house to provide natural ventilation by the prevailing north breeze for the rooms beneath.

In the family home, the required flexibility of use in the interior central space and the living space affected the type of furniture used. Islamic house furniture became an expressive characteristic of its culture. Small low tables, cushions, rugs, mats and storage chests were commonly used. Built-in cupboards and open niches were often covered or formed by geometric patterns and decorations.

Windows and balconies were provided with screens (Mashrabiya), with decorative lattice-work features to provide the privacy needed, while allowing the penetration of natural light and air movement. This is an important feature of Islamic culture which lent special characteristics and a special appearance to domestic Islamic Architecture. (88)
(Fig: 4.47) (Fig: 4.48) (Fig: 4.49).

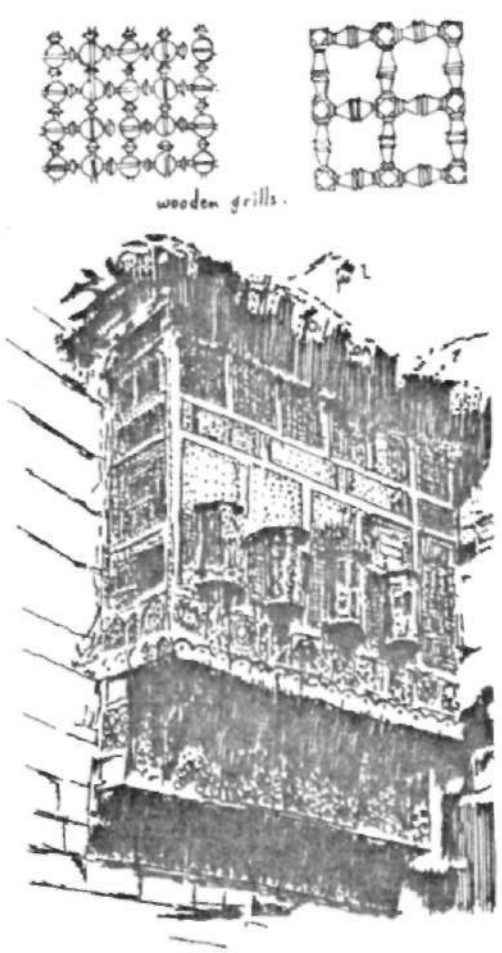


Fig: 4.47 Al-Machrabiya display a wide variety of ingenious patterns. They are used to provide privacy and as curtains to control sunshine thus serving as a cooling medium

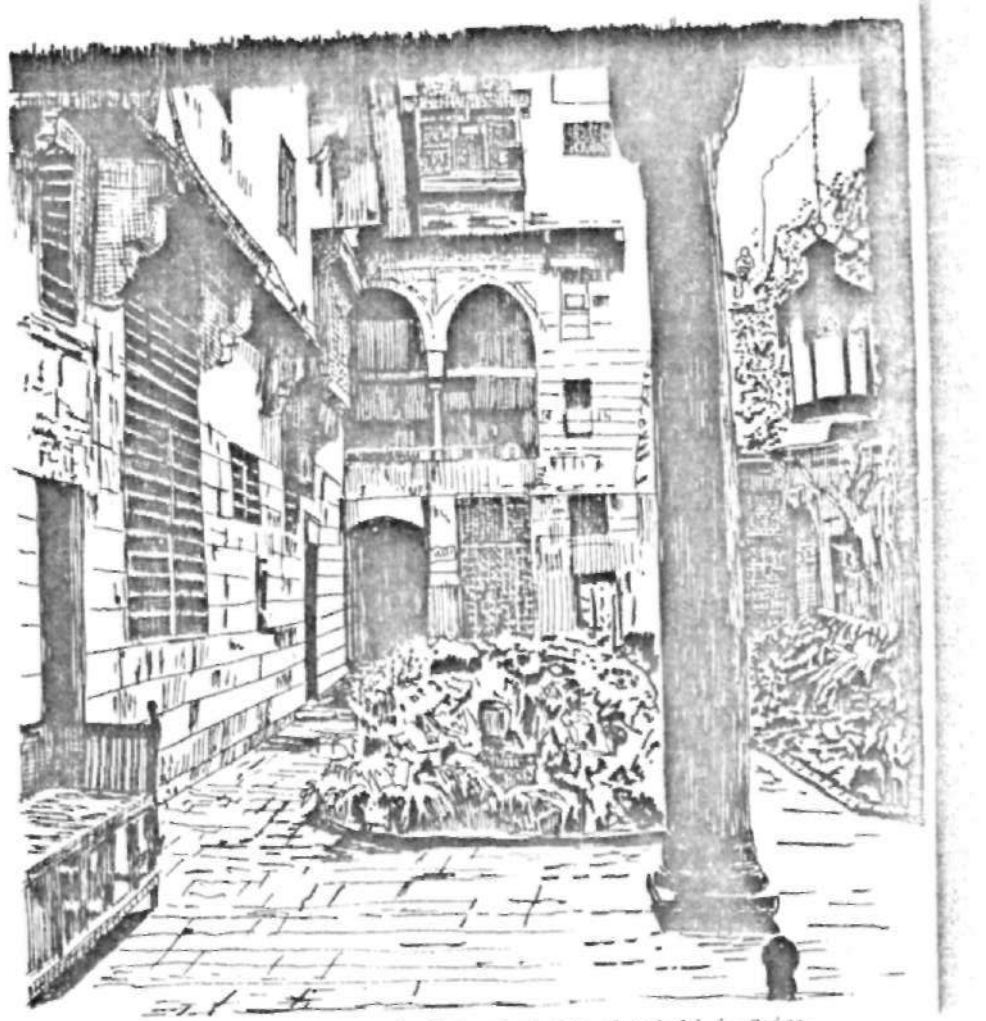


Fig: 4.48 The shady courtyard of Gamal al Din al Zahabi in Cairo.

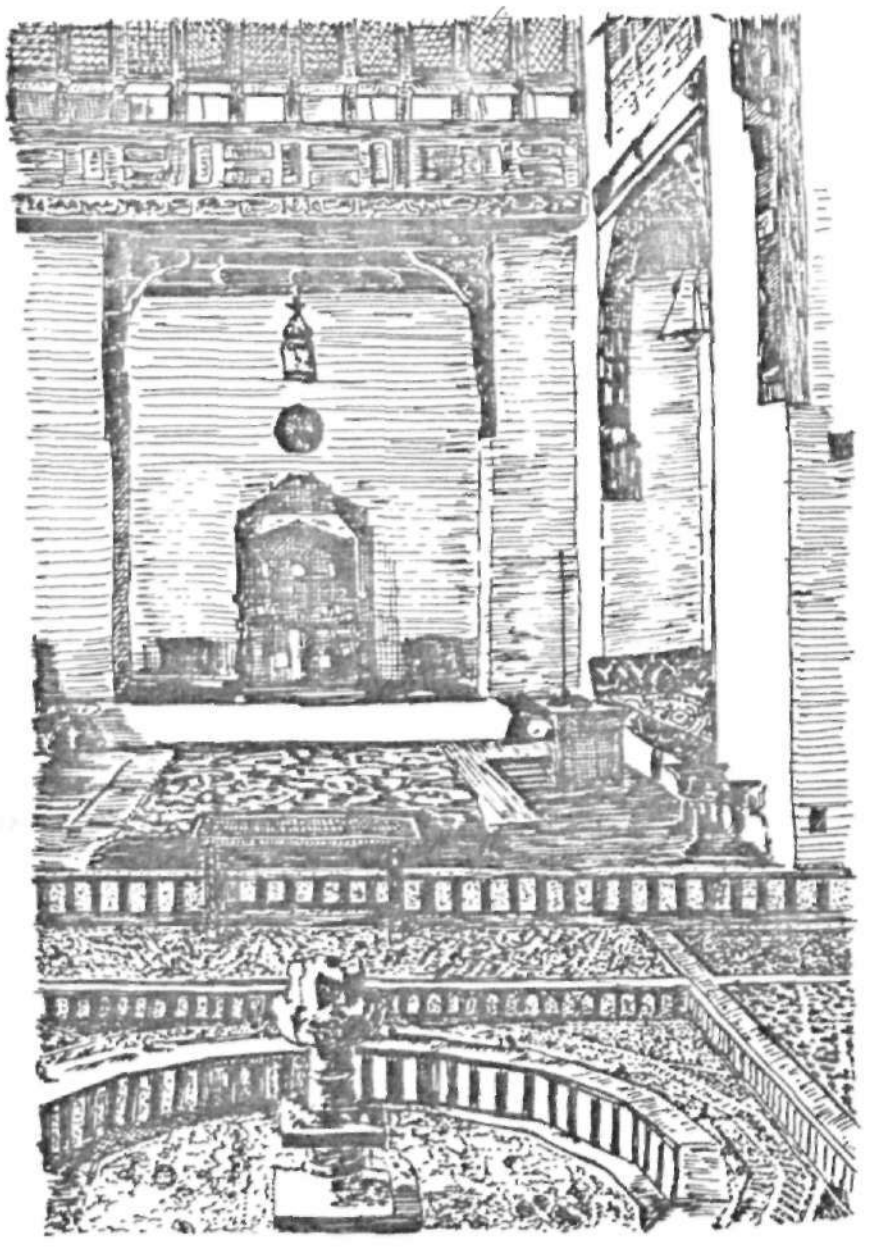


Fig: 4.49 The "Qaa" with its magnificent space housing simple furniture composed of cushions and pillows, floors of patterned ceramic or marble and a fountain as a modifier for all other parts of the house.

4.4.1.4.1. The house of Gamal al-Din al-Zahabi:

It provides a comprehensive model of all features of Mamlouk's luxurious house, unchanged since the 14th century. The house is adapted to an irregular site; the ground floor provided space for several shops opening onto the busy street. There were two entrances, each with its "dirka" or offset passage; the first led into the "hosh", the interior court, and the second into the "mandara" or public reception hall which was developed into kaa. The entrance from the court yard, (hosh), comprised a moqarnas-enriched portal leading to the principal residential floor. A grand open porch consisting of two arches (maqaa) led into the private reception hall, (Khazna), with a projecting mashrabiya balcony, from which women of the house could observe activities in the hosh and maqaa. Beyond this was the kaa (living room) for more intimate family gatherings with its iwans roofed with a painted wooden ceiling, and its lower walls richly encrusted in marble. Over the sunken dirka rose a windowed clerestory covered with a wooden domed lantern; the screened windows worked as modifiers and provided natural ventilation to the house.(89) (Fig: 4.50).

4.4.2. Conclusions and Observations:

From the previous surveys and studies, the following observations may be made about traditional Islamic architecture:-

1. The basic forms tended to be expressions of the new faith to accommodate the new intellects. Islamic architecture changed the meaning of architectural form and its context. The court-yard served as the centre of most compositions, and plans were adapted to the site. Massive walls, columns and piers surmounted by arches of different shapes were the main construction method in Islamic architecture. Wooden ceilings were common in large buildings as well as in small ones (in mosques and dwellings), but vaults and domes were predominant in commercial and defensive architecture.

2. Formal grand gates and portals increased in number and quality, and most of them were decorated elaborately and roofed with half-domes.

3. Islamic techniques and methods of decoration were traditional: sculpture in brick, stone and wood; painting and mosaics. The Islamic World adopted the stucco sculpture which was frequently applied, and created new techniques. The original techniques consisted of lustred and glazed/

glazed ceramic that gave particular brilliance to the wall decorations. Also, there was an extraordinary quality of colour in the architectural decorations. Tile decorations were used, becoming typical in North Africa and Spain.

4. The decorative architectural features which were used in all the Islamic World and applied to many types of buildings during many centuries are clearly distinctive.

5. There was a tendency towards interior refinement. Despite some striking exceptions, the architectural monuments are best appreciated from inside. The mild exterior reflects the subtle proportions and the constantly shifting effects of light and shade, solid and void, that also characterize the interior.

6. The invitation to privacy that characterizes the Islamic Architecture provides a sense of peace and calmness. This is symbolised by the portals that lead from the noisy world and activities in the souk in the bazaar, to quietness in the mosque, or from the street to the residence. This characterizes the Cairene buildings as well as those in Damascus, in Isphahan and in Cordova.

7. Traditional forms of construction were modified, and the most characteristic is the moqarnas or stalactite, representing the distinctive features of Islamic architecture, from/

from the entire cupola of al-Hamora to the zones of transition and portals in Cairo, Aleppo and Damascus, formed in different materials of wood, stone and brick.

"This art represents geometrical three-dimensional forms by a carved section, seen as segments of vaults. The shape they may form depends on the manner of assembly; it might take the form of an overhanging full or complex void penetrating the mason ry. It is an interesting feature that captures the attention of the viewer, compels the eye to look deeper into the details of the monument, and provokes deeper thinking into the meaning that they add to the abstract sense."

8. Another feature is the break up of arches, using the alternation of coloured stone and the moqarnas produced by such break up in the mosques of Syria and Egypt, and especially the mihrab of the Great Mosque of Cordoba. Also the use of coloured tiles in North-Africa and Spain, and the use of coloured marble in all interiors creates a sense of pleasure sufficiently different from the mystical world of the faithful.

9. The major characteristic features of Islamic Architecture are its fascination with ornamental calligraphy and arabesque decorative design. The small decorative inscriptions were woven into ornaments and sometimes there were/

were bold ones around the whole monument, creating linear patterns of different sizes and colours. These writings were frequently plant or floral motifs, dominated by strong, carefully-studied geometric patterns. These written decorations lead to God or to an appreciation of princely power. In geometry the basic but invisible skeleton of reality leads to thinking in the ritual world.

10. Another major feature was the power of translation of architectural monuments from one material to another and from one part of the Islamic World to another, despite all political and economic obstacles.

11. The provision of the so-called "paradise garden", an irrigated square or rectangular shape divided into four equal paths, associated with radially symmetrical water tanks raised over the planted area. Such gardens were used in Spain, Egypt, Iran and India, through several centuries. No other aspect of architecture had such continuity.

12. The original treatment of surfaces in architecture, and the supreme exploration of coloured linear decorations using natural and artificial materials. The best example of such treatment is the Taj Mahal.

13. Islamic architecture successfully controlled the design of internal space and shaped it well to control the exterior/

exterior space, rivalling Gothic in the relationship of outside and inside. It successfully controlled natural lighting and energy. It is a marvellous exemplar of environmental control and energy consumption, (90)

14. Islamic architecture is a display of culture where the refinements of details and decorations, in proportion and forms, are applicable to the level of spiritual devotion or domestic comfort. This generated beautifully decorated and plain surfaces, representing a meaningful treatment of functional elements in rhythmical patterns in the horizontal and vertical elements of the building. (91)

15. The achievements of Islamic architecture were extraordinary, whether at the level of spiritual devotion or domestic comfort. (92)

GLOSSARY

Amir	the most common title for an administrative officer in early Islamic times.
Beyt	Arabic term for dwelling, used to designate the self-contained apartments within Umayyad and Abbasid.
Caliph	leader of all muslims; at the beginning, the Caliph was both the religious and political leader of all the faithful.
Caravansary	Khan, a rest house for the caravans along the main trade route; some were built on monumental scale.
Dar	Arabic term for a dwelling arranged around a central court.
Diwan hall	A council chamber.
Fardaws	a walled garden.
Funduk	the term for hotel.
Fusayfisa	Arabic word for coloured glass on stone mosaic.
Hajj, Hajji	the pilgrimage to Mecca, one of the religious duties, required of all muslims.
Hadith	The traditions (traditional sayings of the Prophet Mohammad) not by any means as important as the Koran but of considerable influence/

	influence for the development of all forms of Islamic thought on almost any subject.
Hammam	a public or private bath.
Haram	an area set apart e.g. al-haram al-Sharif around the Dome of the Rock.
Hejra	the flight of Mohammad from Mecca to Medina in 622, the Moslim era is reckoned from that date.
Hosh	inner court of Muslim house (Egypt Syria).
Imam	religious leader of the community.
Iwan (Qaba) Kaaba	Sacred shrine of Islam containing the black stone in the middle of the Great Mosque (al Hara) at Mecca; literally a square edifice.
Kibla (qibla)	the direction towards Mecca; the wall in the mosque faces Mecca. It is called the Kibla wall.
Kasr	a fortified dwelling, synonym for palace.
Khanaqah	a monastery, usually of a sufi order of devishes.
Khutba	the Friday prayer spoken from the minbar; when it was not pronounced by the caliph himself, his name was always mentioned.

Kul Liyya/

Kul Liyya	a foundation complex consisting of a congregational mosque, one or more madras, a hospital, a khan and a soup-kitchen.
Madrasa	an endowed theological school providing student lodgings, a prayer-hall and sometimes classrooms; perhaps invented in the tenth century.
Mahal	a place.
Manar	tower, or light house, in a harbour.
Maqad	an open logia, usually on the second floor overlooking the hosh.
Maidan	Square or plaza.
Masjid	a mosque.
Masjid al jami	congregational mosque.
Minbar	a seat or pulpit, installed to the right of the mihrab.
Mihrab	a niche or an indication of a niche in the qibla wall facing Mecca.
Moqarnas	Arabic term applied to the stalactite or honeycomb vaults.
Manar or Minaret	refers to when the call to prayer was chanted.
Muristan/	

Muristan	hospital.
Musalla	an enclosure usually un-roofed, used as a place of prayer outside the walls of the city.
Mashrabiya	interlaced wooden screen used wherever privacy is desired without impeding the flow of air.
Nisba	part of an Arabic name indicating lineage or territorial connection.
Qaa or (Kaa)	the reception hall in the Islamic house.
Ribat	a fortified enclosure used as a dwelling-space and a place of prayer for a semi-religious brotherhood of Moslims dedicated to the Tihal or holy war.
Riwaq	one of the arcades surrounding the sahn of the mosque or a central shrine.
Sahn	the interior central court of a mosque.
Sabil	a public drinking fountain.
Shiites	the followers of Ali who believe in the succession of twelve or more imams after him; they rejected the Umayyad and Abbasid caliphs.
Sunni	the major or orthodox sect of Islam.

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CH.5

CONTEMPORARY ARCHITECTURE OF THE MIDDLE EAST.

CH.5 Contemporary architecture of the Middle East.

Since Islam, all countries in the Middle East have been sharing the same civilization, representing the religious, social and cultural unity of Islamic ideology. They all use the Arabic language which played a decisive role as a unifying superstructure, and gave a sense of identity, hence a sense of common intellectual order. The Arabic language has provided the inclusive medium of communication, and an enduring contribution to the culture of the Middle East.

Architecture in the Middle East faces a unique challenge and is in need of fundamental changes if it is to meet the future demands of urban growth. The area has been subjected in recent years to sudden socio-economic changes and rapid urban growth. This will probably continue, with more radical changes in the foreseeable future. The contradictions and backwardness of the social and cultural factors that will continue to affect architecture, are alarming. Most of the Middle-Eastern countries have recently emerged from a colonial era, and they are searching for their identities.

Today these extensive implications for architectural development, require serious commitment to their solutions. To solve these problems on the local level, as well as on the/

the regional and international level, these countries are looking for large-scale developments in housing, schools, hospitals and all other types of building, both in the rural and urban context. The responsibility for achieving such a mammoth undertaking can only be shared between the governments, the professionals and their peoples. The governmental bodies, as the decision makers, should look carefully into the current problems and their proposed contemporary solutions. It is of paramount importance that these solutions should consider the socio-cultural values of the people as well as their inevitable economic and political impacts. To ensure that the results will benefit the development of the man-made environment, the architect, designer, the planner and the client should share the responsibility of discussing and programming, as well as the realization of,urban growth. The interdependence between the architecture and socio-cultural values of a people is undoubtedly of great supporting value to the ordering system in the man-made environment.

To understand the process of change and transformation that is needed, it is necessary to assess the associated characteristics of cultural attitudes and sociological values of the mid-eastern professionals involved in contemporary architecture; the planner, the architect, the builder and the craftsman. It is also important to understand/

understand the patronage body - the client - be it the private patron or a governmental body.

5.1. Architects in the Middle East.

Architects involved in design, planning and construction are either Eastern-Western trained or Western architects. They produce mainly functional designs according to specific programmes, which are either incomprehensible or have non-social-cultural oriented designs. Some imported ideas produce highly specialized programmes which are in the main either economically based or politically-oriented. These architects are attracted by highly technical processes, and find difficulty in resisting the temptation to copy Western ideas, methods, forms and technology. H. Fathy describes this failing in his statement: "And we architects are wiping out all of what we have had, pretending that this is not modern. Never in the history of man-kind were drafting instruments a determining factor in design. We are earning our living as architects. We are not dressing stone, because we do not have the stone, we have concrete which we pour." (1)
Architects in the Middle East find themselves isolated from their culture, and with a new culture instead, that of East-West/

West developed countries. These new cultures cut off the native architect not only from his cultural world but also from his nature, isolating him from his environment. Today architects are not only leading us to a neutral bad architecture in the Middle East, but are also actively encouraging the eventual destruction of their own cultural identity. O. Grabar says: "The immense building activity today runs the risk of leading not only to a blind neutral architecture, a sort of zero architecture, but may especially lead to a further diminution, eventually almost to a destruction of cultural identity." (2)

The first Westernisation started in the late 19th century and early 20th century. The feature that characterized the new urban commercial streets in cities was the European Renaissance. Western architects started designing buildings for Middle Eastern countries at the beginning of this era. Drawings and plans were brought back by people who were trading or travelling abroad, to their builders in their region or country. Until the 1950s architects were rare in most of the Middle Eastern countries, and drawings were done mainly by local surveyors or prepared by special technicians who had their experience on site, or else the work was done completely by local builders without drawings.

The/

The commercial organizations, banks, insurance companies and trade agencies, who were dependent Western economies, built with an interesting "Palladian Style" form and in other classical styles. These buildings aimed to express the life-style and power of these organizations. The idea of the European 19th century villa style was introduced to houses in the Middle East.

Today there are some local architects, who are interested in building with the new spirit of their traditional architecture. The work of these architects is sometimes encouraged by the patron, the client, but often fiercely opposed by the authorities or the client himself. However, some architects succeeded in carrying on with their ideas and compromised, developing these concepts in terms of the clients' needs and his cultural and social objectives. Others attempted to reconcile the advantages of traditional building forms with those of modern technological constructional systems, with varying degrees of success. (3)

Western-Eastern architects, like Wright, Gropius, Jorn Utzon, Kenzo Tange and many others, were attracted by opportunities or recommended to the governments in the area by important personalities such as princes, ministers or rich people to design projects worth multi million pounds.

Such/

Such projects were designed in accordance with the most advanced technological methods of construction. These designs confirmed the anticipated problems of labour and materials, and emphasized the financial and administrative problems. This increased the socio-cultural gaps and economic impacts, turning a problem into a serious crisis. Thus the roles of the local architect, the Western architect and the client body may be defined as directly involved in the resulting architectural response.

5.1.1. The Local Architect, Builder and Craftsman:

Local architects involved in architecture and development may be considered in two main categories.

In the first category are those who have unconditionally surrendered their traditional and cultural values; those who are orientated to western culture. They are ready to accept whatever the west has to offer, and see it as an indication of progress. They wish to free themselves at any price from what they condemn as traditional poetic and mystic values. (4) S. Nasr sees this mood as: "the spread of secularization", while others relate it to internal and external factors which transformed the architect into that so-called "modern" architect who is divorced from culture and values. This implies a loss of the humanity and dignity/

dignity of the traditional architect and the rise of the "International architect" and "business man". Some see it as an integration in which western culture, like many other cultures, is integrated into the traditional culture of the people in the Middle East. D. Kopan says: "architecture, business management or the westernized education of our elite, cannot be understood without economical, social and political considerations." (5)

The second category of architects are those who refuse western culture in its totality and see it as a symbol of colonization, materialism and technology. They are aware of their traditional heritage as an active force in the architectural design process. They see that socio-cultural values have been an active driving force for a new transformation and development, yet because of prejudice or lack of knowledge they are just as limited in their approach as the architects of the first category.

Today there is a new rising spirit among the young generation of architects producing a new understanding and new architectural thinking. They see traditional architecture as an essence which represents a valu able step forward towards a new architectural formation and the development of the built environment.

Local architects tend to work as designers who have private/

private offices or as designers' employees in private consultants' firms, or in association with engineers and technicians of different specializations, or as employees in public offices and government agencies and planning organizations.

The economic oil boom in the 1970s provided larger commissions and brought enormous overheads and operating costs to the private consultants' firms. They changed into mass-production designers and profit-makers, and commercialism became a new aspect that seriously affected the quality of architecture. The questions of the aesthetic quality of architectural development for the built environment were left aside. Some of these firms got into the housing market and encouraged land speculation. Some of the consultants obtained the financial power to introduce new constructional methods of the prefabrication of industrialized buildings and prefabricated units into the market as commodity architecture.

Recently there has been an emerging need for young architects in the Middle East area; this may be considered as a new and encouraging phase of development. These architects have to compete with international firms, and establish their identity by producing new architectural achievements according to their traditions and aesthetic values./

values. Some of the work that has been done can be considered as a new contribution to architectural morphology in the Middle East. The new achievements had to be integrated into the new architectural transformation and development of the built environment. These architects are in the process of replacing western-oriented culture, architecture and technology. U. Kultermann explains the new situation: "Some architects from the Middle East have attempted to provide a balance in which attempts have been made to reconcile the advantages of traditional building with those of modern system construction." (6)

Throughout the history of the Middle East, great importance was always given to traditional builders. The traditional designs were built according to tested models developed and built by the designers/builders, who produced them within the rules of their traditions. The last three decades have seen a progression from this unselfconscious phase to the selfconscious, from the designer/builder to the architect. These changes in the Middle East have been dramatic following the International Style in Europe and the cross cultural flow through the different information media. The builder represents the practical base, and has built symbolic works in the context of the built environment. The builder's achievements in some regions of the Middle East are/

are of great realistic architecture that they may not be better presented. Architects/designers and the mass of the population admire these works and acknowledge their sensational artistic importance.

There is a close relationship between art crafts and traditional architecture but such a basic idea disappeared with the coming of industry and technology. New art crafts were introduced into architecture based on the art of the machine. The stone carvers, the wood carvers, stucco makers, even good masons and brick-layers became rare in proportion to the development of technology in the Middle East as well as in the whole of the Middle East. So the basic crafts became neglected and some practically vanished. Today there are very limited revivals of old crafts, including folklore crafts, for tourist purposes which have nothing to do with architecture. The traditional building crafts may survive as techniques, but not as actual building activities. The limited number of craftsmen still living, but scattered in the region as a whole, prefer to do simpler works or do less work for more pay. They want to survive and meet their material needs. Nobody is interested in using or asking for their old professional competence. D. Koban says: "The crafts, the bases of our traditional architecture are doomed for our purposes; one cannot keep preindustrial technology while others struggle to/

to reach the industrial revolutionary civilization. What we have remains the spirit, the spirit of the actual living culture, under the stress of rapid change and under the strong influence of modern life technology." (7)

5.1.2. Western Architects and Imported Expertise:

Since the age of colonization, the Middle East countries have become western-oriented culturally, politically and economically. The west became involved in all forms of activity, providing its expertise in all fields of development, economical stragegy, socio-political ideology and the educational systems. Western architects and their western concepts greatly have influenced the architecture of the Middle East. Such dependency between these countries and the West has increased over time. At best one may suppose that these Western architects have had experience and knowledge in how to solve similar problems in the West, for today they are taking on an extensive commitment to finding solutions for the problems facing the countries of the Middle East. Yet the Western architects' modern architecture is dominated by a style that can be called in some countries, "Petrol architecture", in which western forms are strongly recommended. R. Lewcock writes: "The most interested of all in the traditional art and architecture are/

are the American and European architects. These architects/ designers, planners and consultants are building multi-billion dollar cities, universities and airports in the Middle East countries." (8)

Many of the large architectural projects were designed and constructed by Western-Eastern firms. In the last decade these projects were commissioned to these international firms along with the formation of local consultants firms which have collaborated with the international firms. Even these Western firms know local consultants as business offices. U. Kultemann explains: "But even more important, there is hardly anything known in America or Europe about independent architectural firms, which are founded and headed by local architects."(9)

Western agencies, like the International Development Agency, act as advisory bodies to the Middle East countries and aid financially in the building of large architectural projects. Such international agencies insist on the Western consultant to design and supervise construction, in collaboration with a local consultant who would be responsible for a part of the job, usually less than 20% of the design-phase and less than 50% of the construction-supervision phase. Western architects prepare the designs according to the already-prepared programme, to meet special standards/

standards even lower than those which are applied in the Western developed countries. So even if we assume that the design fits local agencies, it would be difficult to discuss its qualities, its impact on the local architectural environment and the socio-cultural values of its inhabitants.

In some of the Middle East countries it so happens sometimes according to the individual wishes of someone like a prince, sheikh or a minister, that a Western consultant firm builds a modern hotel, a conference hall or cultural centre.

F. L. Wright is known by the richness of his vision which was expressed in immense projects, but sometimes he got lost in fantasy and eccentricity, such as his scheme of the "Opera House in Baghdad"; when F. L. Wright visited Baghdad to design the "Grand Opera" and the "Civic Auditorium", he was in a sense coming to familiar ground for he had known and loved from boyhood the tales of the "Arabian Nights:- one thousand and one nights (alf laila -we-laila). These classical tales celebrate the glorious days of Baghdad during the 8th and 9th centuries, the rule of Haroun al-Rashid.① The results from the famous Western architect reach far beyond a mere auditorium; 'for they would celebrate the glorious days of Baghdad.' The trip was described as a chance for F. L. Wright "to demonstrate what he had tried/

① Haroun al-Rashid is an Abbasid Khalif (785 - 813): In his times the Abbasid culture was established, and he started to build close relations with Charlemagne in France.

tried to reach in Japan and in the United States of America - that a great culture deserves not only an architecture of its time but of its own." (10)

'Architecture belongs to the city of civilization, built on the alluvial plain of the Tigris and Euphrates ① civilizations where architecture began, in the ancient cities of Sumeria, Isin and Baghdad, the places of hanging gardens and the Ziggurat towers of legendary Babylon". (11)

Baghdad is at the heart of Islamic civilization. The city celebrates cultural and social values. It was one of the many centres of art and science, besides its glorious architecture, for more than 600 years. But what F. L. Wright designed(54) for Baghdad was described by S. Geidion as: 'a disaster, and to the benefit of Wright it has been not constructed'. Whatever Western-Eastern architect produces is not in the spirit of the traditions and in accordance with the socio-cultural values, does not belong to the built environment values and norms. Development should be seen as the continuity of human experience, which cannot be gained by a trip. It is not a sensuous experience of entering a great mosque or moving through an intricately pathed market place.

The problem in or of architecture cannot be solved by giving/

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① Tigris and Euphrates the two rivers in Iraq and both pass through Baghdad.

giving an 'identity' difference, by using traditional elements like a pointed arch, a vault or a dome, using modern means. Portoghesi's "Islamic Cultural Centre in Rome", is an example. Portoghesi used obvious historical elements including the minaret, court yard and dome. He used curved domes ending in a point, and a four-centred arch with a slight ogee or reverse curve which he analysed in a masterful study. It is seen by Jencks as: "a metaphysical interpretation which aligns him with 'Past Modernist'. He used Guarini's structures with modern techniques so that they look lighter and thinner. These allow space to break through the corner supports of the column, and explore it into a ring (abacus) and four separate capitals and shafts: This new metaphorical structure is like a Nervi structure on a holiday. This gives an ambiguous reading and a feeling of giddiness and incomprehensibility to a mosque!(12)

While one can feel the difference, there is in The Mosque of Cordoba the same geometrical order and ambiguity which influenced Guarini as well as this design. Hence so much is missing and above all the essence of spirituality and values of the Islamic Culture; as Jencks says: "The mosque is still an object in space unrelated to urban fabric: it lacks the colour, richness, mosaic and small scale decorations of traditional works; it lacks a basic tension or/

or opposition between culture and traditions."

"It lacks any invention of use of traditional forms in a building type which demands it. It is a direct engagement of architectural content for post modernists which continue to develop space into ambiguous and sensual will start to conventionalize certain metaphors. These ideas cannot be supported by socially shared metaphysics and so they will signify a general spirituality." (13)

G. Broadbent confirms that the importance of the use of traditional elements lies in their meaning, which the western architects should understand so that there is a new cultural and institutional justification for the quality architecture produced by the Western architect. He says: "Whilst understanding the objections which have been expressed over the way in which Western architects have been commissioned to design Western-type buildings for Saudi Arabia and other parts, the author believes that the answer to these objections by no means lies in the re-use of Islamic forms. He sees it as lying rather in a much deeper study of their meanings and the way that these can be interpreted for present-day applications."(14)

David Pearce asks: "Ethics or work? Do we help Middle Eastern countries to destroy their architecture? It is an old dilemma and a new study."(15) The Western architect/

architect should do the job as professional designer and he has no excuses; "None of the Western architects who are involved in architectural projects can convince us pretending this is what they were asked to do, and it is the wish of the client." (16)

There are also other significant factors that affect the Western architect and his expertise beside the issue of knowledge of traditions and meaning in the built environment. These are psychological issues, which Grabar explains: "It is very clear that for a number of reasons, outside "experts" are brought in to play an extremely important part in the shaping of a new environment. This creates certain problems. It raises issues, not only practical issues of knowledge or no knowledge of local conditions, but I think also psychological issues, emotional issues such as Why do we need outside experts? Why should we follow what they say? and so forth. This is an area which is important to develop." (17)

5.1.3. The Contemporary architectural space concept and morphology:

Contemporary architecture in the Middle East suffers from an inferiority complex and hesitation before Western-Eastern ideas. Architects seek to copy forms from Western-Eastern/

Eastern architecture often as prestige projects in order to be more acceptable and reflect a feeling of progress in the spirit of the 20th century, even if these projects are culturally, socially and economically unacceptable. This development of borrowing from the works of known architects in different parts of the world and of different types of cultures and ideology, creates complications and lack of feasibility. It is an architecture of mannerists which is completely different from the architectural context of the traditional theology and architectural morphology. Such borrowing belongs to the world of architectural magazines - catalogues - in which ideas presented on maps soon spread everywhere. Hence it is a cheap reproduction and fragmentation in design that comes out of not only conscious fragments, but from complex sets of different sources. Contemporary architecture in the Middle East is produced without any originality and essence; "a kind of weak compromise, a mish-mash where second-rate thinker can take refuge in a welter of confusing antinomies. They combine contradictory material in the hope of avoiding any difficult choice or seeing through a problem to a creative conclusion." (18)

Looking to traditional buildings is assumed to be a backwardness race production; it is seen as a slow changing related to well known old ideas, and rooted in the family poetic/

poetic life-style. It is supposed to satisfy many spiritual and intellectual factors. Looking into modern international architecture is to respond to quick advancements and technological change, rationality and fashion, as well as new architectural morphology. To look modern is to have high-rise buildings with frame boxes of glass even in the middle of the desert. This is a chaotic situation in which architecture has been gradually disintegrated with modern morphology. There are contradictions with culture, climate and the built environment.

There have been consistent attempts to resolve these contradictions, but without any or with only superficial understanding of the traditional and socio-cultural foundations introduced the life-style and the built environment that of the inherited civilization. They employed a few arches, vaults or domes which were added by architects to show that their designs are acceptable as conforming with past forms of the built environment. Western consultants, architects, designers and planners in collaboration with their Local counterparts, managed to produce such projects which were costly and not in the traditional spirit of the region. It was thought that these projects might be capable of introducing change and development to architecture. If architects continue to build in such spirit without any considerations/

considerations of energy crises, culture, climate and social values, they are repeating past errors committed in Western urban development. G. Broadbent writes: "Designing for traditional architecture consists of repeating an established "type" solution from the West and putting on it a veneer of such decorations extending perhaps to the old decade." (19) These architects are incorporating these traditional forms, - domes, vaults, arches, arcades - with traditional motifs ornamenting them rather sparsely. They do not recognize that these elements of the past are 'symbols' of the spirit of traditional architecture and are still alive in the environment. These artistic formats constituted in the architectural formation of contemporary architecture are not used because of their cultural and symbolic values. They are used for economic and public acceptability value; subordinated to suit today's life patterns, and to the status of the new forms and materials; to fit in the speculative projects of staggering dimensions in the architectural context. (20)

The duality of the architectural space concept created in traditional architecture and the flexibility of the essence of space that carries the formal architectural quality as well as functionality, has been changed in contemporary architecture to functional spaces in accordance with/

with the modern style of buildings produced. When Western models were used, the house with the private internal space and court-yard garden, has been replaced by apartment buildings. The flexible space in the traditional house, was capable of satisfying larger family needs; this larger family was composed of parents living with their sons for two or even more generations; each built his own space and the whole family shared the living and reception areas; this became enough only for parents and their children. The free-standing form of the European villa brought basic changes to architecture in the Middle East. Articulated entrances with columns and baroque pediments replaced the hidden recessed traditional entrance. Other elements were relocated and some became more elaborated and on a grander scale. New elements introduced new possibilities and endless combinations of space morphology and new architectural thinking. Thus the new changes have been applied to house plans that added new meanings to space regardless of any traditional architectural responses.

Simply formed facades have been transformed into elaborated street facades. Wide streets have been introduced to replace the souk; (the bazaar), and have become the main urban link between neighbourhoods. These streets, as urban spaces with specific activities and new architectural/

ural morphology have been constructed as means of communictions with free-standing form houses. These houses became unique objects, *each complete in itself*, they act as segregationsl elements in the built environment.

Contemporary architecture lost its values, character and space duality of function and flexibility. The traditional forms expressing the internal forces components on the inside were replaced by high rise buildings in the international style which started with the exterior. H. Fathy says: "I feel very inhibit ed about traditions; once you lose standards of reference, chaos follows. You cannot have Western European style homes with Arab character. Arabesque is la Arabe. One can not do Arabesque today. You can not plant birches in the desert and you can not plant Palm in Stockholm. Each has its place. "(21) The contradiction in our natural environment and new formation is described as impressionist painting by H. Fathy who writes: "When I have nature which is very rich it is different. I could not have impressionist paintings in the desert. I could not have a palm tree and a camel besides a Swiss chalet; this is what we are doing now - *adays. We are having Swiss chalets with camels.* This is what we are doing with architecture." (22)

High-rise building is seen by contemporary architects as development and change; 'we do not know how to change, so/

so we took the easy way out, simply adopted Western culture.' It is modern architecture with rationalism and functionalism and adopted business method.[23] The most patent of its architectural character is a steel box with glass resulting in climatic conflict and excess energy consumption. These high rise boxes proved to be destructive psychologically, socially, spiritually and culturally. People were put on top of each other where architects succeeded in freezing something that was of value in the nature of man. It is an image, that can not be called architecture.

However one can also find useful examples, and well designed and well-built projects, that considered the needs of the region and provided proper and reasonable solutions in accordance with the climatic, social and cultural values, in harmony with man's nature and his built environmental needs.

5.2. Private and governmental Patronage:

It is said that: "architecture is a client-oriented profession." The client affects architectural development and has an important role in its rise and fall. His demands could be either destructive or constructive depending on his knowledge and culture. This is equally true whether the client is a private patron or a governmental/

governmental body. It is significant too, that the formation and space organization of the architecture produced is sometimes the outcome of different clients.

The most distinctive clients are the commercial developers, and the governmental bodies. Such clients are not easily convinced and change quickly, but architects by understanding can master the work as professionals. The architect should make them respond to the user's demand and the quality of architecture should suit the citizens. The number of the commercial organizations in building in the Middle East countries has been effective in producing the required houses. They produce an unbridgeable disparity between the new and the traditional architecture. The Architect in the Middle East has to adapt himself to master a lot; he has to be business-like, otherwise he will find himself in the wrong professional, social and economic standard. So, he might find himself along with the wrong ideas about architecture to have an architectural communication system with his clients,a language which can be understood by both the architect and his clients. But, finally they will find themselves pronouncing "values" which are not acceptable to the occupant, for whom these buildings have been built. However, it is necessary for the architect to know his clients' background and culture, but he might appreciate a certain style form and convince his client/

client with what he designs. So both the architect and the client are responsible for producing architecture with socio-cultural values in accordance with the client's background, the professional architectural dimension, and the user's needs. Louis Kahn writes: "Architecture is not simply solving the problem; there are elements that belong to the designer's choice. Any traditional element of socio-cultural value, can be articulated and explained in his architectural quality design." (24)

So both the client and the architect are conscious victims of a society in which creativity is only permissible if it can be commercially exploited. Where cultural and traditional values are not the common grounds in the society, where citizens, clients and architects have the same feeling. However it is important to distinguish between the purely commercial and those who look for better products and not commercial architecture.

Success or failure in contemporary architecture in the Middle East depends on two factors which have nothing to do with traditional concepts, culture or social values. These concepts are function and cost. Even cost overpower function and creative architecture. There is a need in these countries for shelter to satisfy social and economic unrest, which has led to the reduction of aesthetics in design/

design to a minimum. The cost factor seems to dominate all needs; for rural inhabitants it means everything. For well-to-do clients cost is negligible, so they demand extravagance for their buildings: new materials, new technology and buildings with full air conditioning. Banks, commercial buildings, supermarkets and hotels are the projects that architects are called to glorify. These commercial organizations are interested in building memorials and symbols of their trades. The impact of the governmental bodies on architecture is something that worries architects and influences their architectural products.

In contemporary architecture in the Middle East, the public, private patronage and its nature, the private powers in the society and the importance and impact of bureaucracies are clearly things which worry and affect architecture, its professionals and the built environment enormously.

It may be as seen by Oleg Grabar, due to lack of knowledge and communication between the different levels of the governmental body, the intellectual, the professional and the public; he writes: "Architects do not know history, historians do not know what goes on today, sociologists do not look at things, urban planners do not read and so forth. In other words there is an absence of education/

education in the problems with which "architecture" is concerned at other levels of the culture." (25)

5.3. The Socio-Cultural Impact:

Transplanted contemporary architecture in the Middle East countries created one of the destructive elements for the socio-cultural heritage. It revealed many aspects of conflict between needs and means in the built environment. It founded new variables in the social and cultural patterns and living behaviour. Rapid changes are affecting the social values in the family structure and in society as a whole, bringing new modifications in moral attitudes as well as in the social structure. However the traditional social and cultural variables are still providing basic living attitudes and social manners.

The contemporary architectural solutions with their rapid changes and restructuring of the social life, have profound effects on the individual modes of spiritual and religious as well as cultural existence and collective life. Where several generations used to live together in a house with adequate space, this is now replaced by the parents living in apartment buildings with enough space available only to live apart from their traditional family life and relatives.

Urban/

Urban population is increasing rapidly, creating a disequilibrium in population-distribution between the *rural inhabitants and people in the urban areas, especially* in the metropolitan areas in the capitals, where opportunities of work and services are likely to be available. This illustrates the complexity of socio-economic as well as cultural problems. This rapid development has allowed insufficient time for logical, adequate and achievable planning. Instead, imported Western models, which proved insufficient and inadequate are adopted. However there has been mis-achievement due to the lack of co-ordination between the different governmental organizations, the decision making people, that decisions and studies tend to remain on the theoretical level. Moreover imported Western-Eastern models have been applied without any considerations to any cultural or spiritual values of the traditional social life. Research in local environmental problems have met less considerations compared with interests in Western-Eastern culture.

The rapid expansion in the built environment in the city area, affected and changed the life-style of the new immigrants from other countries or rural inhabitants who migrate for opportunities in the city area. The middle class prepared particularly favourable ground for rational and functional anonymous architecture which could be regardless/

regardless to the nature and location of these buildings. Even more destructive factors were added, when some countries tended to establish separation between different social groups of the native population and foreigners. Such segregation creates major social and cultural disadvantages.

The village, 'the community', with its patterns structures and traditional life, its narrow streets, and houses orientated inwards where privacy and pleasant sensations are felt. These villages are replaced by new copied houses; forms of Western-Eastern ideas. They are even built in the desert. Inner spaces are organized according to the new imported socio-cultural models. The open court is cancelled; the beduin[1] is cut off from his sky, the God environment, his spiritual abstract environment, and is placed into a built environment not of his own and even not formed of his cultural values.

People used to find in their buildings, the Masjid, the souk, the hammam, places where they gather together as a community centre, or meeting hall to discuss their business and to practice their daily social activities. These activities were related strongly to their social and cultural/

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(1) Beduin the desert inhabitants, nomadic people moving from one place to another. Today new settlements are built for them to stay in one place provided with all needed amenities.

cultural values as well as their spiritual and religious values. These places tended to be centres of social life and cultural expression. New buildings demonstrate in varying degrees function, form, structure and space, but other concepts psychological, social and cultural responsibilities are almost forgotten. A. F. Moustapha illustrates: "Rational is a desire to demonstrate through housing and other urban structural development a concern about the social and cultural needs of low income people. Of special importance to the understanding of the family structure, life-style and patterns of religious observance and socialization and climatic protection, the souk, the school and the mosque." (26)

The architectural compromise solutions in design reached by architects as alternatives to the social, cultural and even economic concepts, represent a commercial sense and technique in which values are obscured and destroyed. But traditions are a continuous process through times. It may look attractive to some young architects who seem to deny any responsibility and tend to denigrate accepted values and ideas. These attitudes to the traditions may be denied by some architectural schools too. So they appear to deny the past by using arbitrary components which may be welcomed and exploited by their clients.

5.4./

5.4. Economic developments; 'imposed projects and imposed aid':

Countries of the Middle East are classified economically into rich countries with rich natural resources, (oil), and wealth, a high per capita income and less industrial development. These countries are looking eagerly to develop themselves fast, to improve standards of living and building new urban structures to meet the full needs of their natives. These countries suffer from a lack of labour, lack of workability of their indigenous materials and lack of professionals of all levels of technicians as well as engineers and architects. These countries are dependent on imported expertise for all specialities, who apply in their designs the most advanced technologies for equipment and implementation, which rise cost to imaginative standards. However these projects not only need the importation of all materials necessary for their construction, but equipment and different skilled building labours as well. The resulting impracticability of maintenance too, necessitates special technicians to keep these projects running. The impact of invisible results can be delay in construction which may last for years ahead, whilst the cost can also affect the adverse balance of payments of the international trade of the country that the project belongs to. These rich countries keep good relations with the West/

West and they are dependent on Western expertise, firms, planners and architects. Such expertise is involved completely in design and implementation. This situation seems likely to continue as long as 'Petrol' continues to flow from their lands. Hence these countries are suffering from economic crises as well as from social and cultural impact. They are trying to control their indigenous growth, to avoid complex building projects and to build development on a concrete base in accordance with their traditional socio-cultural values.

The other countries in the Middle East are poor and suffering not only from adverse balances and shortages of natural resources, but also from skilled labour in the building industry. These countries are dependent on international aid to provide the needed finance for their projects. This aid is economically and politically oriented with special conditions. Who insist on direct supervision and sometimes change their objectives which are totally subjected to political attitudes. It is vital for these countries to avoid wastage of their resources for building lavish structures with excessive standards of space and amenities is based merely on a desire for prestige. "Expert" assumptions are considered as bases in design and buildings. They consider that standard criteria prepared specially for the developing countries should be applied to buildings/

buildings and services. It is a direct imposed development for poor countries, which is causing alarm because of its negative results that can be seen clearly reflected in the built environment. Implementation of foreign models of planning and architectural design results in a kind of development which does not belong to the local environment. Today there is a gathering momentum to reject such development, to revive the values of their culture and to return to the concept of controlled indigenous growth designed and planned and even financed by indigenous expertise. R. Lewcock writes: "It is a growing awareness of how much has been lost in attempting to replace a (bamboo) or (grass) culture with a (cement) and (plastic) one, even more in (invisible) human values than in the obvious (physical) field." (27)

The idea of applying high advanced technology of the 'moon-shot rocket' - type is generally recommended by experts and adopted by governmental bodies and by architects and designers. These produced designs include new implications and cost. However the international agencies insist on Western architects and Western consultants, even Western construction firms. These agencies insist on specific materials and equipments being used for building and furnishing the buildings. Even these have to be of certain products from specific countries, which need specific/

specific technicality and maintenance.

Energy in buildings represents an economic impact in the new designs compared with traditional architecture. The running cost of air conditioning and mechanical equipment recommended by Western designers is dangerous for future energy and economic crises. The quality of architectural products in the built environment adds new crises beside its socio-cultural impacts.

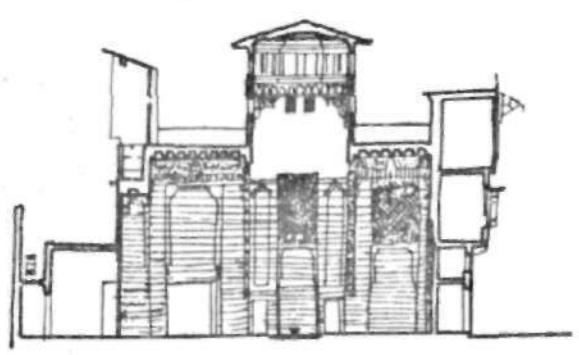
5.5. Summary and introduction to Chapter 6.

The recent situation in which contemporary architecture finds itself in the Middle East is facing crisis. The dependency on Western-Eastern highly advanced technology, designed by foreign expertise appreciated by the governmental institutions, approved and implemented by the architect and accepted by the users, has the economic and financial implications of imported modern industrialized materials and equipment, in addition to the labour force needed for modern construction, and the problem of the maintenance and running costs of these buildings. The isolation of architects, craftsmen and the user, as well as the client, from their cultural values, has led to a destruction of cultural identity. The impact of bureaucracies has affected architecture, professionals and the built/

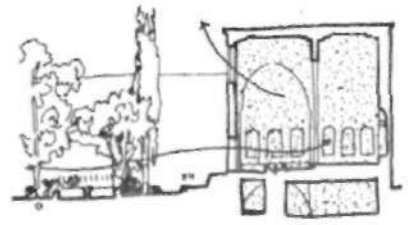
built environment. The system of transplanted contemporary architecture created a destructive element for the socio-cultural heritage.

This situation with its social, cultural, political, economic and financial implications needs a system which is modified and ordered in accordance with cultural value, and a revival in search of an understanding of the validity of traditional achievements, its built form and space conception, leading to a questioning of the cultural, theological backing for its success at a time when the technology of the day has its limitation.

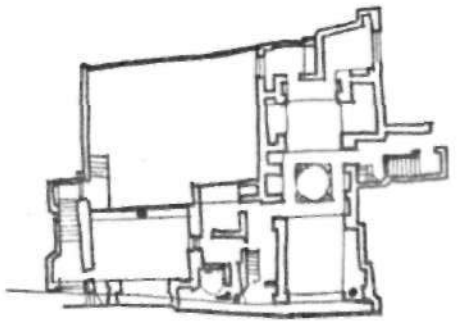
In the following chapter, the author will be looking into the architectural future in the Middle East; the spatial revival in terms of the traditional architectural attitudes and not of contemporary models. The author, too, will be looking into a new interpretation of the built environment including all variables; social, cultural, economic and psychological factors.



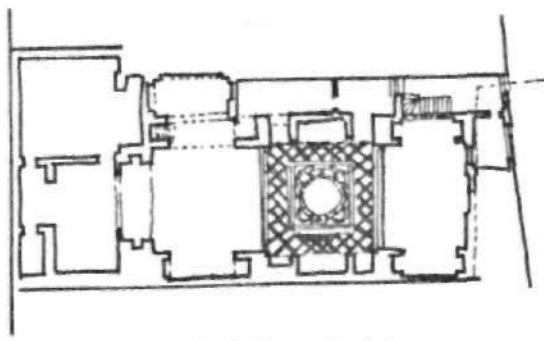
Section through the Qaa showing air-cooling movement and the structure used and elements for modifying the inside



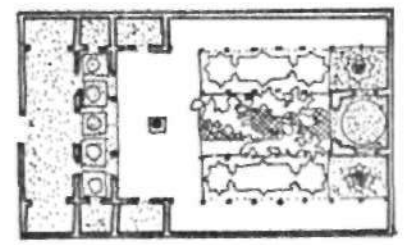
Section through the house and the garden acts as a modifier- or the house



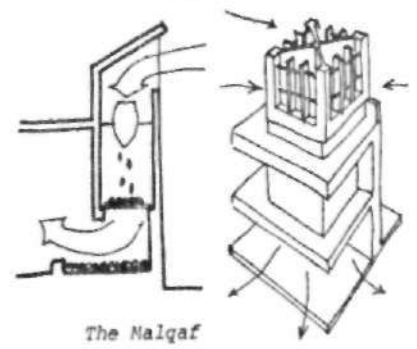
First Floor



The Qaa in Katkhoda house in Cairo (Fig: 5.1)



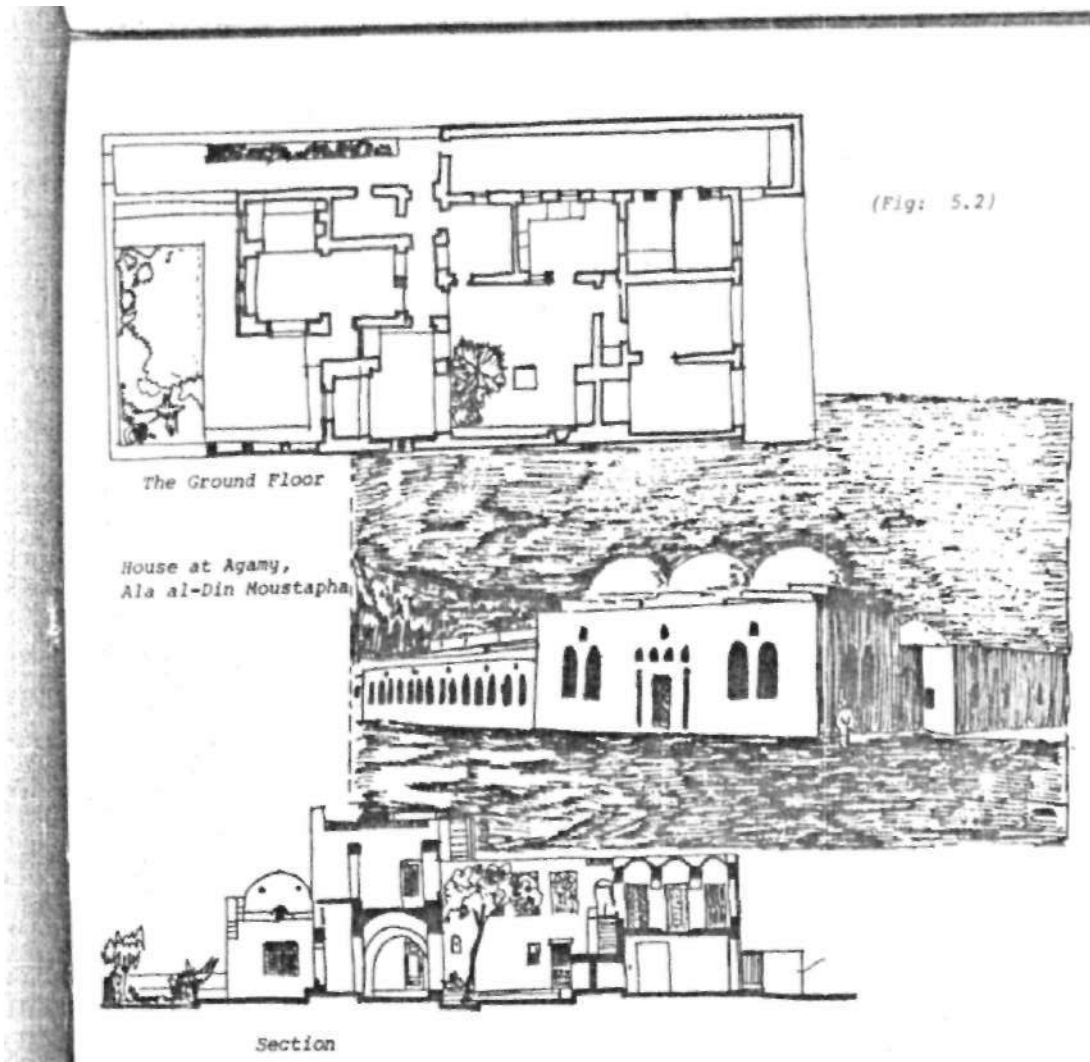
Plan



The Malqaf



Fig: 4.50 The House of Gamal al-Din al Zahibi - the ground floor plan

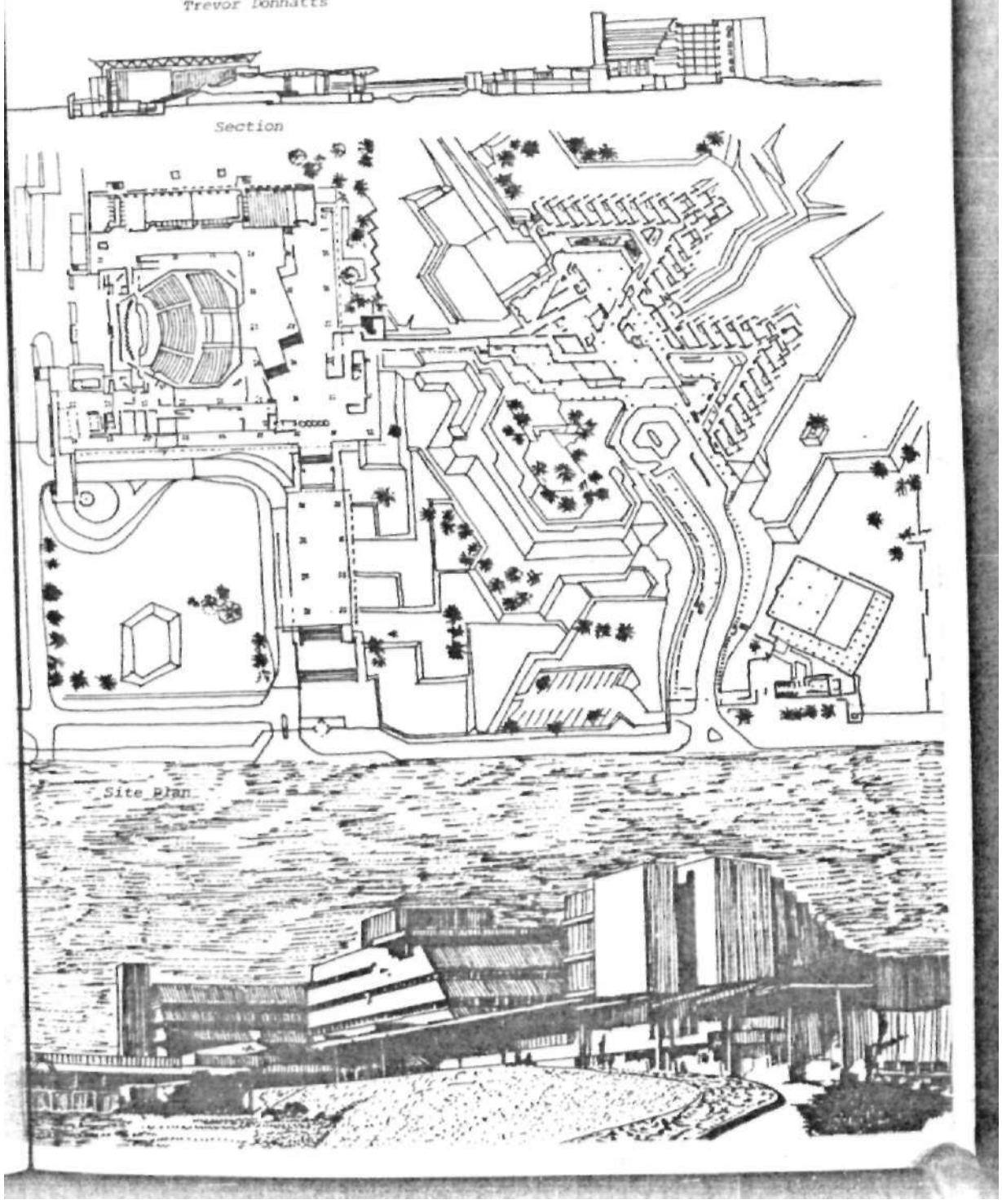


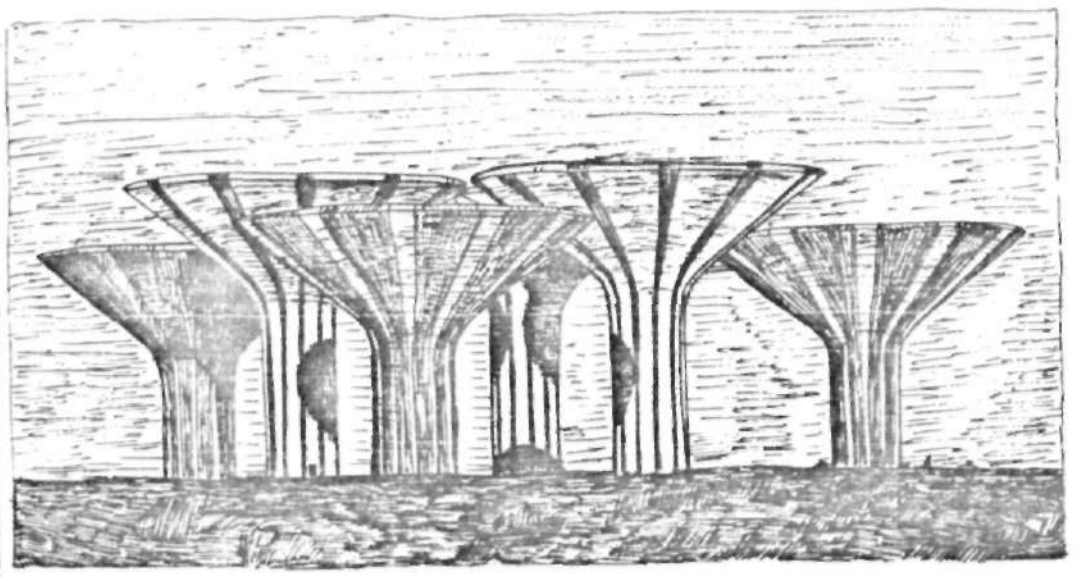
The Working of Traditional forms for housing people in Rural areas.

Arch. Hassan Fathi, his housing for the poor in Gourna-Egypt.

(Fig: 5.3) Conference Centre and Hotel, Riyadh, Saudi Arabia

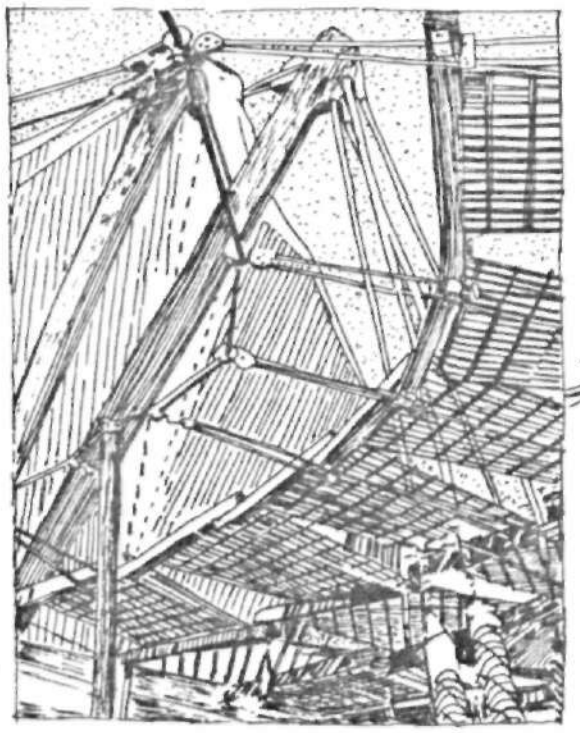
Trevor Donnatts





Kuwait water towers : detail of mushroom group intended to provide shade for a new park

Architects: U.B.B.

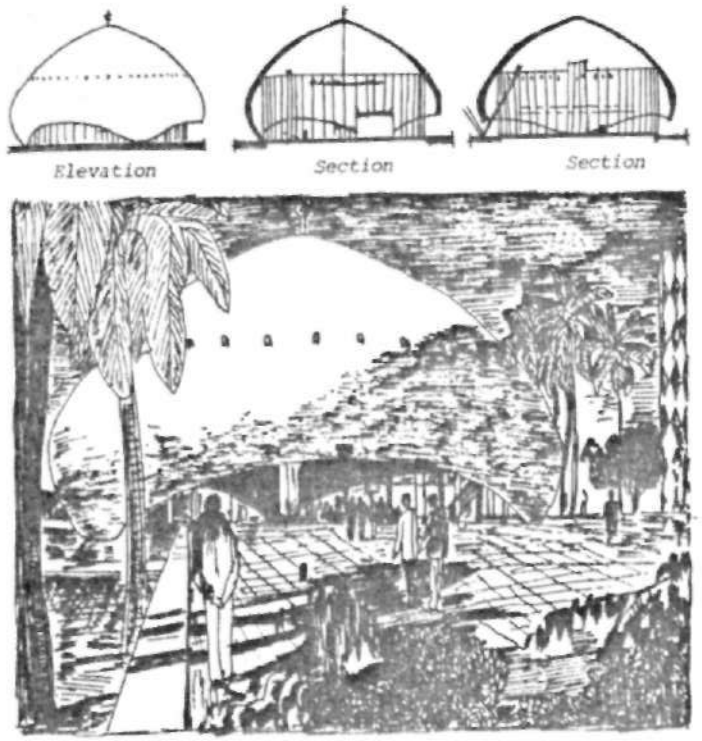


(Fig: 5.4)



International Hotel in Mecca
Architects: Rolf Grutbrod and Frie Otto

The suspended lattices against Conference Hall roof: New material, techniques and labour



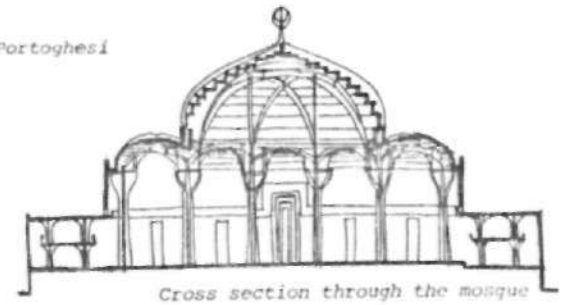
Elevation Section Section

Walter Gropius: University of Baghdad Mosque
The Pompe shape, the Crescent moon and the minaret are quite attenuated, but the image is so consistently absurd as to have a certain integrity.

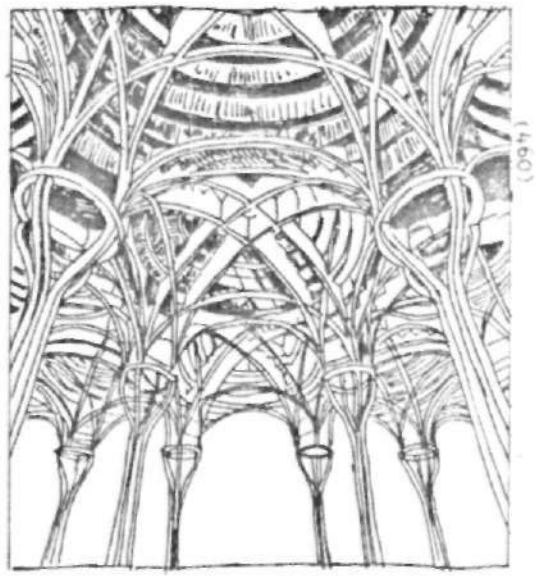
Mosque and Islamic Centre in Rome

S. Mousawi and Portoghesi

(Fig: 5.5)



Cross section through the mosque



perspective of interior of the Mosque

(460)

CH.6

THE ARCHITECTURAL FUTURE IN THE MIDDLE EAST

CH.6 The Architectural Future of the Middle East.

The need for a spatial revival in the architecture of the Middle East has become increasingly obvious. Revival of space represents an image of the cosmic main space. *Space as an abstract is the holy and gracious in God's* environment that we have to respect. We are living in this environment not only to observe and wonder, but to think and believe. Such a creative abstract space conception is expressed in the inherit ed architectural solutions and inhibited in the *produced monuments*. It is *expressed in the* new inventive symbols of the architectural elements. This architectural concept of space represents unity and faith, the unity in the social life-style, and the unity of the underlying cultural imperatives which has distinguishable meanings, yet its space formation is *different in meaning* and in its evaluation. It includes our attitudes as expressed in religious and spiritual philosophy, which are reflected in the social ideology context. It is described by Amos Rapoport who writes: "In this case the essential element is the creation of a sacred space separated from the profane, and hence dangerous world. It is this act of separation which makes space safe and hence habitable. It is essential to understand this and such understanding requires knowledge." (28)

Hence/

Hence it is essential to know the underlying philosophy of order in this concept of space, which leads to the required visible explanation of space; "One needs to know the ideal order which forms the visible order." (29)

6.1. The Spatial Revival:

Hassan Fathy writes about the environment of God: "Man is created by God to be surrounded by a certain environment, composed of the landscape, the rock, the tree, the animals, the sky, even cosmic rays. The teachings of all the religious are often the same thing; to find God by your sense, by analysing, by observing nature. The means might be different because my environment is different. In the Koran it says that Abraham had his people live in a barren desert to pray. This 'pray' is to observe, to think and meditate. That is why we have the abstraction in Islamic traditional architecture." (30)

This abstract concept of space points out the realization of the inadequacy and incomprehensibility of the urban architectural theories. These theories are based on contemporary models without any considerations of the traditional architectural attitudes.

The architectural concept of space should reflect cultural values and express the traditional attitudes and life-style. It is the outcome of interaction between man/

man and his built environment to satisfy his needs both spiritually and physically. It is reflected in urban space organization and in founding certain places as public elements of architecture which are functionally equivalent parts and related to the whole built environmental system.

The architectural concept of space has the ability to control interaction between the different spaces, which is privacy. When the bazaar-market was the main urban public space it had specific activities and houses next to each other, with their simply-formed facades which represented physical barriers between the private and public space, providing an environmental satisfaction for the individual as well as for the group which is the essence of the culture. There were sealed bent entrances as an element of transition between the noisy street and the private habitable space, through the garden with all its benefits and comfort. Hence these houses as spaces involve values and ideas of good life; "Good space is a good environment a function of a given context." (31) Space becomes by its quality a meaningful concept when related to the definition of its use. Space is organized to give a sense of place with its flexibility and functional identity and more: architectural quality.

"Each space within a specific form can have a different scale for different purposes. Its flexibility is the/

the essence of space and not only functionality. It is rather of a place carrying the formal architectural quality and not referring to the way this space is to be used. Such duality is created by traditional architecture." (32) H. Fathy explains: "Every room is respected and space proportions very well illustrated. There are higher ceilings for larger rooms. The harmony and beauty of the house comes into being as a logic of space." (33)

The spatial revival in the Middle East architecture is its response to the site and the idea of growth; each part of a building has an identity contributing to the whole. Although the whole is not finite, it is a part of the landscape and becomes part of the environment as a whole. New organs may be added later to make it larger.

The revival response should give close attention to climatic and other environmental features, as well as to materials of specific qualities used for construction. Due to climatic differences alternative solutions can be adopted which are inhibited in traditional architecture. Broadbent writes: "Effective use of climatic control by traditional architecture; forms were developed - pragmatically - for climatic reasons. The covered street, the souk, the court-yard with or without fountains, open screen walls of wood, marble or alabaster projecting open work bays/

bays of wood, brick or stone, sometimes with a jar of water to cool in and to cool the wind, balconies for sleeping; a wind tower and so on. All these devices were developed to increase the efficiency of the building as a climatic filter but also they became in themselves symbols of Islam, as symbolic in their way as the minaret of the mosque." (34)

These traditional elements provide us with good traditional examples as experimental and observational methods of proved effectiveness. P. Morcos Asaad writes: "In various regions people adapted their dwellings to their particular environmental requirements and an awareness of climate was successfully integrated with local technology, materials and craftsmanship to solve problems of comfort and protection. This resulted in buildings that were truly expressive of their regional character. Yet today's most pressing requirement in the tropics is housing and traditional forms, because of their origin in the life and economy of rural societies, are seldom suited to urban conditions.

The problem of urbanization in the tropics cannot be solved by the adoption of Western technology and patterns that have their origins in different climates, cultures and economic conditions." (35)

Orientation in buildings according to the movement of the sun/

sun , which may be restricted according to the time of the day and the season of the year, should be revived in architecture. The use of the internal garden as a central element that brings nature into the shaded interior of the house took different forms in different climatic conditions. Such particular elements locate particular buildings in particular regions with a particular climate.

The spatial revival use of traditional concern of family life through the cultural experiences of the inhabitants and privacy, explains the importance of the study of environments through the different historical stages of transition. A. Rapoport confirms the necessity of such a revival in order to base a hypothesis on a broader base and writes: "We can derive a more general hypothesis regarding the importance of transition. A re-examination of current environments in this light might then reveal a new set of relationships and many apparently unrelated spatial systems might be seen as different expressions of this one factor. Since the future of the environment to a great extent depends on an informed public, this is a most important consequence of a broader approach to the problem of all the aspects of environmental quality." (36)

6.2./

6.2. Reworking of vernacular architecture as a strategy:

The reworking of vernacular architecture, employing traditional designs using indigenous materials and traditional construction methods is an alternative response to architecture, to high-performance materials and traditional structure systems. It is a response to restore the aesthetic qualities of traditional architecture in the built environment of the rural areas - (peasantry areas). To make available dwellings which provide climatic control for comfort and meet the needs of native citizens with reasonable economic cost. However architectural aesthetic quality and a sense of space can be created by the rural population itself in accordance with their life-style and culture. It will preserve the continuity of attachment to the community in their environment. It is a continued practice and benefit from the traditional construction method in a co-operative system for satisfying their needs which depends on their collective effort.

The role of the people as clients, users and workers can offer a great contribution to design: "However ignorant or even suspicious he might be, we cannot do without him. The architect has not only (a duty) to do for these rural population, but he has to restore to them their position as patrons of a craft." (37) The architect has not to try/

try design without their indispensable help. They are intelligent and can offer an absolutely essential participation to produce harmonious buildings out of the constructional process. Otherwise the design will suffer and architecture will lose role in the cultural growth and development of the whole people concerned.

When H. Fathy undertook his experiment in 1945-47 to build for the rural people in Gourna, he illustrated practically the advantages of his architectural strategy. He employed the traditional mud brick as constructional materials, employing traditional method of building domes and vaults without centering on any new structural elements. J. M. Richards describes the finished Gourna: "An ordinary mud brick, dried in the sun, is perfectly adequate for building an ordinary house; one can in Egypt be made for next to nothing....the Engineer thinks that the stronger a component is the better it must be." (38)

Such indigenous materials proved to be satisfactory to meet the purposes they were used for. To try to improve on these materials, yielding to the temptation for modern technology or new processes may spoil their qualities. The traditional materials can be used not only for building, but it can be worked into artistic work by the peasant himself. "A peasant never talks about art, he makes it."(39)

These/

These materials, however proved their durability for hundreds and thousands of years. They should be studied by scientific research, their qualities as examples "constructed by pioneers." (40)

It is a strategy that can be applied where the problem of the rural inhabitant as an individual can be solved on socio-cultural bases and by a traditional revival in the villages with their traditional patterns, values and structures. H. Fathy illustrates, describing the villages: "Its narrow streets and houses oriented inwards where I felt the pleasant sensations." (41) The reworking of vernacular architecture can be adopted as an alternative strategy for architectural education, derived from the pioneering idea 'that new buildings might be based on a reworking of the local vernacular for climatic and economic reasons.' Where students meet natural, real problems, the 'building community' is a real workshop (42) in which architects are trained to see the results of what they do by research and literary approach; "instead of an approach in which buildings are ideologically contingent solutions to supposedly 'natural' problems." (55)

Such strategy proved to be capable of producing an identified environment based on all the necessary invariables: socio-cultural economic, spiritual and religious background. Which inhibit ed in the head of 'the/

'the builder' the peasants communities establish this environment, 'schemata', and his architectural concept of space. The architect, can simplify and incorporate these indigenous traditional forms, as did H. Fathy in the Gourna, and Paris who produced; 'filigreed windows (mushrabiya) and central courts to admit light without glare and coolness without draft.' (43).

It is also necessary to mention that the strategy can cover 'Housing by substraction', and digging in the ground which is a construction method popular in the Sahara of some countries in the Middle East. Inhabitants dig their rooms like tunnels in the ground and rooms are spaced arranged around an open court in the middle and ventilated and lit through openings which look onto the court-yard. The court-yard is simply drained in a well dug in the middle court which works as a climatic mediator to the house.

6.3. Proposed new interpretation of the built environment:

The built environment has its variable effects and culture is the most important, representing the interaction between man and his environment. Such interaction also depends on the environmental context, its interpretation and the degree of intellectual control. Intellectual control/

control as well as other practical activities becomes so complex that each needs a group of specialists; intellectuals and professionals. It is highly specialized knowledge which can feed, develop and accelerate the context of the built environment. People behave in places, exist in the context, which have special meanings for them. There are clear consequences of their behaviour, of cultures and sub-cultures variability and specifity. But there are major differences between the ones found in traditional and the ones in contemporary architecture, even in larger terms. "The congruence as presented in traditional culture and the built environment, where the rules of organization of the environment in terms of space, time, meaning and communication, were agreeing with each other, with the unwritten rules of culture with congruent ways in which situations were defined, and with places and the people included or excluded, they thus elicited the expected behaviour." (44)

An acceptable standard in the built environment, and an agreement among the professionals and intellectual involved, has to refer to; What is good or what is bad? What is the nature of the aesthetics involved for architectural morphology? What is the nature of the social patterns and attitudes needed? What is the relationship between people and the built environment? All are difficult/

ficult formal questions and represent a difficult complex on variable subjects. There is an absence of any viable related 'spatial theory', which can be adopted. As H. Fathy says: "I feel very inhibited about traditions. Once you lose standards of reference chaos follows." (45)

Values in traditional architecture can be interpreted through cross cultural and historical bases, where complexity increases. So it is essential to refer to an interpretation in which all variables including social, cultural and psychological factors are involved in the built environment.

The new interpretation of the built environment should include cultural artistic vocabularies, in which the architect, the designer, is not a missionary. The architect is to be equally responsible in all the facets of his profession and artistic thoughts; aesthetics represent an integral part of it, as Ruskin said: "no person who is not a great sculptor or painter can be an architect. If he is not a sculptor or painter he can only be a builder." (46) It might not be an absolute standard, but the architect in his artistic thought can help to achieve a built environment in which cultural values can survive, and the ordinary man can rediscover a wider sense of artistic values. However, the architect can fulfil another of his obligations and contribute positively to social life. New interpretation of art/

art, history and aesthetics, is useful, and helps the architect in the design process, which results in architectural quality of the built environment. Also: "A variety of educational institutions other than schools of architecture to do original work in the man/ environment field, since the future of the environment to a great extent depends on an informed public; this is a most important consequence of a broader approach to the problems of all aspects of environmental quality." (47) Also art will be brought back to its category and contribute effectively in other aspects of civilization. Ernest Fischer says; "There is a mysterious (magical) creativity in man which has been the source of industries, inventions and civilization. Art is from the same category." (48)

Vincent Scully confirms the importance of the interpretation of the architectural heritage and its influence on taste, thought and life-style; he writes: "Involving what the architect and the viewer have learnt, to distinguish and to image through their own relationships with life and things. It therefore follows that the strength and value of our contact with art will depend upon the quality of our historical knowledge." (49)

A new interpretation for architectural forms to be expressive is produced from our determination on rich meanings according to our learning and knowledge. To see buildings/

buildings as we understand them with all their involved values. By this only built environment embodies our decisions and choices and modifies the world around us in a purposeful way.

To be originalists in producing new architectural forms in which functions are only considered, is to have isolated free standing forms, as sculptures, with complete disregard of all the surrounding environment. It is one of the faults of the International Style; as H. Asplond writes: "Originalism is one of the lesser sins of functionalism." (50) Neither by using refined modern materials nor new technological construction methods, but motives should be the cultural context and values that produce architecture. It is said by I. Silone that; "On a group of theories one can found a school, but on a group of values one can found culture, where man interacts with his environment." (51)

The new architectural interpretation needed in the design process (52) is; "the organization of space for different purposes and different rules." to identify our built environment as the very indication of culture and social life. To design for a particular culture and life-style is to set an identity for people and to distinguish their built environment from other environments. In such a setting, order is expressed and cognitive schemata.

With/

With culture comes a set of values and beliefs which are the determinant characteristic shaping the built environment. If the ordering system is known it is possible to identify the built environment as well as the habits, manners and behaviour of its inhabitants.

Such an interpretation of the architectural concept of space has a fundamental importance and design manipulation, which expresses the environmental order. This concept of space has to express the values and the life-style of the population and their attitudes. It reflects the physical linkages and functional purposes of space. The need for a real understanding of space organization and use has a great effect on design. Only by understanding the human limits of crowding and privacy, and any other implications can architects be able to solve the problems and rules of barriers of space organization.

However, these should not be an over-simplification and quick violation of the traditional architectural experience, making it too complex. The need is a deep knowledge and understanding of the meaning of space, because the meaning is rich and not an easy experience. To give the full expression is to start viewing architectural meaning and needs through the eyes of the people one is designing for.

The new interpretation of space should be in relation to/

to environmental control, and climatic conditions; heat, sunlight, air movement, and any other special arrangements needed for communication and services. Other factors too are variable, like noise control, view and privacy.

Suppose that all possible revivals are made available to the architect by ancient or modern technology. All possible requirements for an architectural quality that satisfies all the possible needs of our culture, society and life-style. All requirements for an Islamic architecture, its values and beliefs, in terms of space organization and use, environmental comfort and climatic control with all requirements to satisfy economic implications. The need is not for a comparative study between ancient and modern. Architects should design for a new architectural quality that makes use of the technologies available for environmental control, for using any energy that reduces energy consumption like solar energy or any energy available in the environment. To develop form according to local circumstances, the availability of materials, various kinds of equipments and labour, and to climatic control and to energy benefit. The need for a real thinking that a building is an expression of our real life-style; it is efficient because it satisfies our needs and is built according to our rules.

Then our built environment will be identified, technologies/

technologies may still be appropriate and the cheapest more durable. Traditional forms may be helped to develop to become symbols of our built environment. (53) 'So our collection of technologies, old and new, structural and environmental, will help us develop forms which in their turn will acquire the power of symbols.'

6.4 Conclusions for Implementation:

Many aspects of developed environmental solutions were uncovered by the study of Islamic Architecture. The Islamic ethical and moral code introduced considerable modifications into art and architecture where new aesthetic possibilities were in accordance with the context of Islamic culture. Islamic art and architecture transformed and modified all the varied inherit.ed forms to accommodate the new intellectual ideals. The new architectural forms and their spatial concepts successfully represented the great achievement of Islamic Architecture, whose creative design embodied the expressive meaning of the new culture.

Islamic designers and builders successfully controlled their natural environment using day lighting and air-movement to modify their hot, dry or tropical climate. The consideration of privacy was an important feature of Islamic architecture; it provided a sense of peace and calmness for the occupants and endowed the buildings with a special characteristic appearance. Building forms were subtle in their proportions of solid and void and made use of the constantly changing effects of light and shade. New types of vaults, domes and arches were developed and used with decorative features that transcended the ornamental qualities of one material to that of another. Interior spaces/

spaces were decorated with coloured geometrical patterns and Karanic Calligraphy which led to the development of a new linear system of abstraction.

Islamic art and architecture developed from different cultural backgrounds (Egyptian, Mesopotamian, Sassanian, Byzantine, etc) yet as expressed in spatial order, a unity of thought and ideal was achieved through the unifying religious teachings of Islam.

Todsy the system of transplanted contemporary architecture in the Middle East has created destructive elements for the social life as well as for cultural values. This situation produces the need for a new architectural system to help to create an order through which architecture in the Middle East can regain its culture. The unity system recalls identification to the built environment. The author proposes the following proposals for implementation:

It would be hoping for the impossible for a system of change to be introduced in the Middle East without its implications affecting the different theological perspectives involved into the social and cultural structure. However it may be possible to encourage the cultural implementation within architecture and the architects themselves so that further destruction of the social and cultural identity could be stopped or at least slowed down. Such implementation could start at the local level then expand to the regional/

regional and national levels, through educational imputs from museums, magazines and the other media of communication like cinemas and television.

Indigenous architectural products have to be respected and developed through local techniques of construction and decoration, not only for folkloric and the tourist industry purposes. The presentation system of traditional monuments can be used as live models for the purpose of cultural research.

It is impossible to bring urban growth to a halt and to prevent rapid development, as the need for housing is urgent for the various population stratas. But it is possible to design and implement new projects which utilise better understanding and knowledge of the social, cultural, psychological and economic basis, to support the ordering system and values in the built environment instead of implementing ideals that proved wrong on the national as well as the international level.

Education underlies many of the problems which affect architectural identity. Through education we can channel at various levels knowledge concerning architecture, and through education it would be possible to educate not only professionals of different specialities, the intellectual and the public, but also the various governmental authorities and their decision-making bodies. It is at other levels/

levels of culture that a sense of history, a real knowledge of Islam as a faith and Islamic art and architecture as a product, that education can also be effective. This will influence the nature of architectural patronage, the architect's approach and the occupants' response. It will affect the nature of the public and the private powers in the social organization. The architect will be able to introduce an architectural sense, that what has to be built has to be accepted by both the patron and the occupant who will refuse what ever contradicts his values, feelings and life-style.

It is possible to develop interdependence, fitting the built environment with the individual's life-needs as well as the society's socio-cultural values. This is needed if we are to free society from imported cultural values, from imposed projects and dictated economy.

It is possible to develop the aesthetic and functional nature and quality of architectural form and space conception; forms that embody and express the meaning of our culture and the use of architectural elements,including symbolic features. These elements are to be threaded in an artistic formula which expresses and identifies the environment with its natural phenomena ; day lighting, air movement, daily sunlight, heat and colour, patterns of floral and geometrical and other details which have their origins/

origins in the inherited culture.

The art and crafts revival should be developed so that its artistic synthesis influences the architectural system. It is necessary to develop arts and crafts sources of industries, inventions and civilization to form with architecture a concrete combination of culture.

It is maybe possible to start scientific research into models of living traditional monuments, to develop traditional architectural solutions in accordance with the ideas of environmental control, high efficiency for climatic comfort and energy consumption. Using the technology of today, it should be possible to increase knowledge and effect a greater understanding of an architectural system that can be coded and recorded for the information and use of those concerned with design and building.

The system using traditional architectural forms built in traditional techniques proved to be effective, economic and a socio-culturally acceptable strategy that can be applied in rural areas. However, no experimental work or research has been undertaken to test a similar revival with an urban context.

Every effort should be made to introduce new systems based on past experiences and current advances, using natural resources [illegible] into architecture.

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