THE HISTORY AND DEVELOPMENT OF THE DOME IN FRONT OF THE MIHRAB

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CHAPTER 1

General Historical Background

The dome was not incorporated into Islamic architecture until the Umayyad period, but after that it became an essential feature in mosque and funerary architecture.

It is the purpose of this thesis to establish the reasons for which the dome was incorporated into mosque architecture and especially the dome in front of the mihrāb.

It will be seen from the descriptions of the ground plans of the various mosques that the early mosques either did not have a dome at all or if they did, they were not positioned directly in front of the mihrāb. But before giving a precise definition of what is understood by 'directly in front of the mihrāb' the history and symbolic

significance of the dome in pre-Islamic times is necessary in order to formulate a complete picture.

The dome was used extensively in the Parthian and later the Sasanian empire in palace and temple architecture.[1] The Sasanian domes were supported by a structure which is called the squinch. The role of the squinch was and is to convert a square base to an octagon in order to facilitate the setting of a dome or cupola. It seems that the use of the squinch dome was confined to the eastern part of the empire, however, this does not mean that domes were not erected in the western part of the Parthian empire. There is a reference to the existence of a dome in Parthian Babylon, as mentioned by Philostratus: "a room in the royal palace being roofed with a sapphire-coloured dome".[2]

It is possible that there was some Christian church architecture in the Parthian empire especially in Armenia where some of the edifices consist of a square room which is covered by a dome on squinches. It is possible that these developed from their Parthian predecessors.[3]

The dome was a feature which was also favoured by the Romans for covering their baths and temples. The development of concrete together with brick made the creation of the great Roman vaults and domes possible.

The earliest concrete dome was constructed in the second century B.C. in Pompeii, where it is found covering the Stabian baths. Roman architecture reached its peak with the construction of the Pantheon in Rome c. 100-125 A.D.,

with a dome of approximately 47m in diameter. The huge dome covers a circular base and the height of the walls is equal to the radius of the dome.[4]

There was a crucial difference between the construction of the Roman domes and those of the Parthian empire. The latter was already mentioned in connection with the squinch. Roman domes and as far as it is known other ancient domes also, were constructed, usually on a round base by reducing the radius of each layer of brick until a hemisphere was formed.

In order to understand the various factors which may have inspired the Muslims to include the dome in the mosque and especially in front of the mihrāb, the pre-existing domes that may have given birth to the concept, should be briefly examined, especially those in the Eastern part of the empire.

One of the most influential areas in this respect was the Byzantine empire. There were two types of church forms in the fifth century Byzantium, the Basilica and the Martyria. The latter one was built on the Greek cross plan and it was covered with a dome. Buildings with a square base and a dome existed also in the old Parthian and Sasanian empire, however, its introductions into Christian architecture was effected by the Byzantines. The most outstanding masterpiece of Byzantine church architecture is the Hagia Sophia in Constantinople, built in 532-7 A.D.[5] (See illustrations number 1a and 1b.) The individual merits of the Hagia Sophia and the influence it

exerted on Islamic mosque plan in general and in Ottoman architecture in particular will be evaluated under the appropriate chapter.

The Byzantines were well conversed in mathematics, inherited from the Greeks and applied this knowledge to their architecture. By the time the ninth century arrived, symbolism in Byzantine architectural form was quite accepted and widely practised. The church was regarded as the unity of earth and sky, the scene of Christ's life on earth and the image of the liturgical year. Symbolism was included in mosaic decoration and in painted decoration. They Byzantine Cross-in-Square church plan proved to be an ideal setting for the mosaics and paintings, inscribed in a square and covered by a dome.[6]

As expected, Byzantinian architecture exerted its influence in Italy as early as the fifth century A.D. Between the seventh and the ninth century it became more obscure, more eclectic, making identification of style much more difficult. In the East even before the seventh century we find that some churches of Armenia (St. Hrispime at Etchmiadzin) and Georgia (Dzhvari at Mtskhetta) are more closely related to the Near Eastern architecture of Syria, than that of Constantinople.[7] There is no definite explanation for this polarizing tendency, except that the traffic between Armenian and Georgian culture on the one hand and Persian and Syrian on the other was better than with the imperialist Byzantine capital.

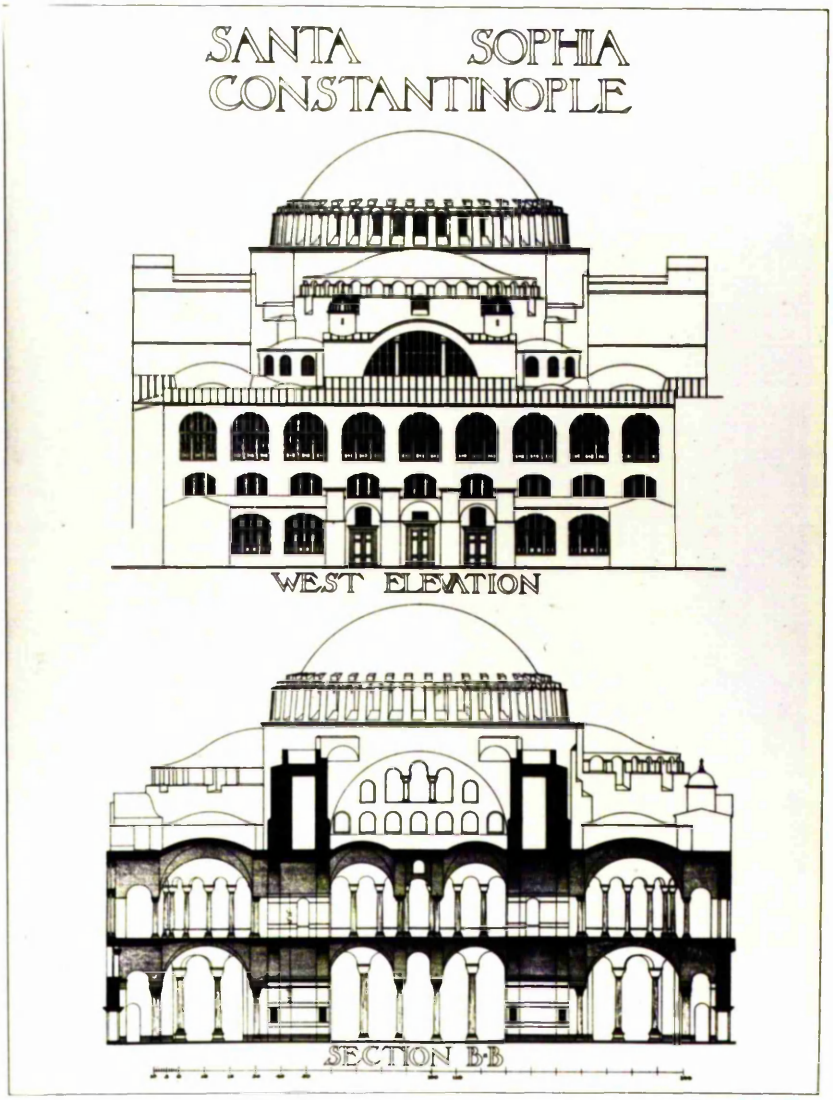


Illustration 1a Santa Sophia elevation.

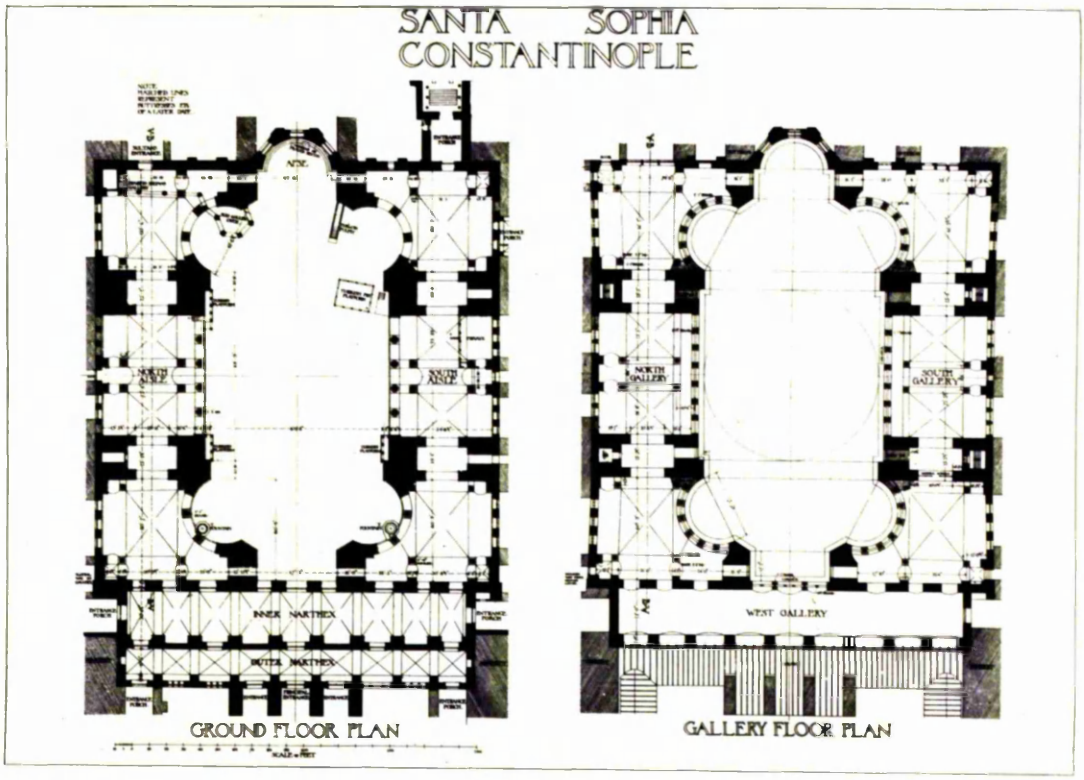


Illustration 1b Santa Sophia Ground Plan.

By the time Islam conquered virtually the whole of the Middle-East, North Africa and parts of Europe, the artists and architects of Islam had familiarized themselves with the building techniques, styles and decorative traits. It will transpire, however, from the historical evaluation, that this knowledge was not universally applied throughout the Islamic empire, in fact, in some areas very few religious edifices were constructed during the first centuries. This was due to a large extent to the nature of the conquerors, who were mostly nomadic Arabs, with different living habits from the sedentary peoples they overran. Their habitat was constantly changing, enjoying vast open spaces, giving them unlimited feeling of freedom and living in tents. It is difficult to imagine therefore, that they could have had a conception of what Islamic architecture should look like or, that they should have imagined praying anywhere else, but under the most perfect dome of them all, the open sky. The nature of the conquerors was in direct conflict with the demands of formalised and institutionalised religion, which requires centres of administration and centres for the implementation of the pragmatic aspect of the religion, which was to become the mosque.

By the time the Umayyads came to power, a distinctive Islamic architectural style had evolved, which was a homogenous blend of styles inspired by the interpretations of the Qur'anic texts and the Hādiths of the Prophet and the elements borrowed from the architecture already there.

It was a usual practice of the followers of Muḥammad to convert old buildings and churches into mosques; in Damascus, a pagan temple transformed into a Christian church was incorporated into the Great Mosque in 88-97/706-15. The significance of the Great Mosque will be expounded under the appropriate section.

The Umayyad rulers, however, preferred to reside in the desert, rather than in the towns and they built large palace complexes there,such as the Qaṣr al-Ḥair 110-11/728-9; Mshaṭṭā, and Qaṣr al-Ṭūba in Southern Jordan. The plan of these buildings were derived from Roman frontier stations.[8]

During the Umayyad period, the mosque was given an architectural form, which was dictated partly by the liturgical needs; the dome first appears in order to indicate the importance of the mihrāb both internally and externally.

Types of domes and methods of erection

A vault of even curvature usually erected on a circular base is called a dome, however, it can be also erected on a square base or a polygonal base. The section can be segmental, semi-circular, pointed or bulbous. If it is erected on a square base, then there has to be a phase of transition between the square and the circle. This transition can be achieved by means of pendentives or squinches. (See illustration 2.)

A pendentive is a spherical triangle; its curvature is that of the dome, whose diameter is the diagonal of the initial square. The triangle is carried to the height, which allows the erection on its top horizontal of the dome proper. A squinch is either an arch, or arches of increasing radii projecting one in front of the other, or horizontal arches projecting in the same manner. The dome will have the diameter of the length of one side of the square. It can be placed on the circular baseline, or a drum. If the dome has no drum and is segmental, it is called the saucer dome. Most of the Ottoman domes of Turkey belong to this category. (See the appropriate chapter.) If it has no drum and it is semi-circular, it is called a calotte, strictly speaking, the half domes of the Ottoman mosques should be classed as such. Where the diagonal of the square is the diameter of the dome, the dome starts as it does, when supported by pendentives, but their curvature is then continued without any break, such domes are called sail vaults. (See Illustration 2)

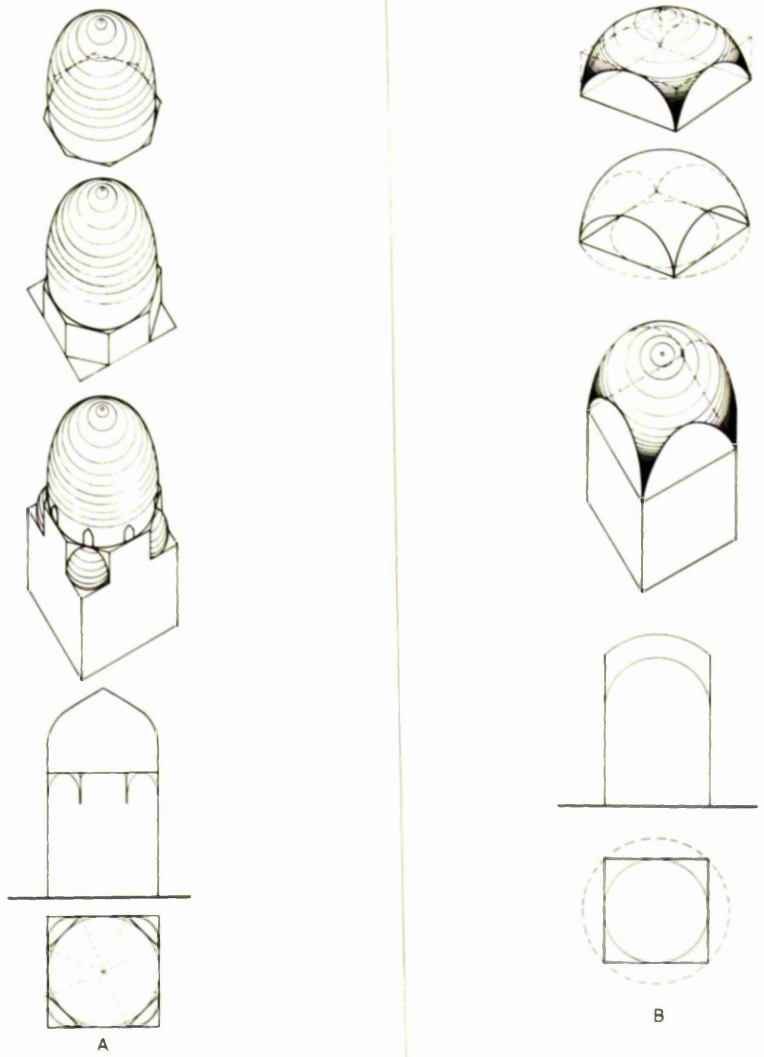


Illustration 2a Types of domes and methods of construction.

Domes constructed on a circular base, but also divided into individual webs are called: umbrella, parachute or melon dome.[9]

Domes in the Sasanian era were constructed using squinches to transform the circle to a square; in the third century at Firuzābād and in the fourth century at Sarvistān.[10]

Domes in the Roman period were constructed out of concrete on a circular base: in the Temple of Vesta in 80 B.C. and the Temple of Venus at Baalbek in 273 A.D.[11]

Domes in the Byzantine period were constructed on triangular or on a circular base, using squinches (triangular balls).[12]

The early Islamic domes built by the Umayyads and the 'Abbāsids in Syria and Palestine were of the double wood dome type, (See illustration 3) taken over from the Christians.[13] At Kazimain in Iraq, great teakwood domes crowned the shrines of the Holy Imāms Mūsā al-Muḥammad. These shrines were erected after 219/834.[14]

In later Islamic architecture, the method and style of dome construction becomes more individualistic, although incorporating all or some of the methods already in existence, but adding something extra, both in decorative and in design technique, to make it truly Islamic.

We have seen in the previous civilisations, that the methods of dome construction and the available material

determined the type of dome that was erected. By the time Islam had arrived, the various techniques were already well developed and the architects of Islam were able to combine their skills with the available material at their disposal to construct truly magnificent domes, which were to reflect the character of Islamic thought.

Domes in Islamic architecture

The mosques which were built during the Rāshidūn Caliphate were simple constructions. They were either covered with a flat roof in order to shelter the congregation from the intense heat of the sun or they were open to the sky.

There is no evidence which would point to the presence of the dome and there is no record of any palaces that may have been built during this period.

There were palaces built by the Umayyads, however, and one of the earliest of these is at Mshaṭṭā, dated 127/744 may have had a domed chamber which was the central throne room in the middle of a Basilica shaped building.[15] The significance of the dome covered throne room will be one of the central themes of the thesis, being the most vital part of the proposition, that the concept of the miḥrāb dome had originated from there. This will be expounded later, but for the time being a general description is offered concerning the early domes.

The first Mosque of the Prophet, the Mosques of Baṣra and Kūfa, built in 14/635 and 17/638 respectively and Fusṭāṭ, in 21/641 all had flat roofs.[16] The fact, that these mosques had no domes, is at least as significant to the interpretation of the important of the miḥrāb dome, as the existence of the dome itself.

The symbolic meaning of the dome is not something that is tangible, universal and never changing. It is in a state of flux, determined by social conditions, philosophy and patronage.

Burial culture, which was always a reliable pointer to the nature of a society could provide interesting data concerning early Muslim standards, by comparison with the practice of other cultures.

The funerary architecture of other civilizations included the domed Mausoleum and Martyria, which were grandiose constructions. Compared to these, the early Islamic burial places were quite insignificant. The explanation for this may be found in the imperatives of the Hadīths: "hold salāt in your own houses... sit not upon graves, perform not salāt upon them".[17] It is a direct attack upon the funerary culture of other peoples; "When a pious man dies, they build a masjid on his tomb".[18]

Later on, however, funerary architecture found its way into Islamic architecture in a grant style. Tomb-mosques, often referred to as qubba, which also means 'tent', but later took on the meaning of 'dome', were built. The name became a general term for the sanctuary and it also means a little chapel.[19]

The first shape of the tomb was a square room, which was covered with a dome. The phase of transition between the

square and the circle was octagonal. Later, squinches, pendentives and muqarnas were used for the purpose of converting a square into a circle. These structural developments will be discussed together with the appropriate case-study.

The most pertinent question at this stage is, however, why was there no dome in mosque architecture until well after the death of the Prophet, when there is absolutely no evidence in the Qur'ān, forbidding it. On the contrary, it should have been the ideal covering for the mosque, because it is the nearest thing to a roof without a column, thus resembling the open sky.[20]

Like other sanctuaries, mosques were often claimed to have been built as a result of revelation, which usually occurred to the patron. He would have his individual requirements implemented by the architects, however, these had to conform to the basic requirements of the mosque. For every community in Islam, the mosque played a role resembling that of the cathedral in the medieval commune. From the beginning of Islam, however, the mosque was not restricted to being only a religious centre, it was also a political institution. Religion, law and government was one, and the mosque was the obvious place for their practical implementation. It was used also as a court of justice and an educational institution and in small isolated communities it was the city, the centre of all activity. The mosque had to provide facilities, which had

conflicting characteristics, intimacy in the sanctuary, informality in the communal areas. Originally, at the time of the Prophet, this dichotomy did not exist as such. As Islam spread, the communities increased in size and the accommodation of the various aspects became architecturally more complicated. Each area had to be marked separately in order to distinguish their individual functions, the method of marking became stylised, then diversified, and eventually performed a symbolic function.

The earliest mosques were very simple, either square or rectangular in shape, with a substantial courtyard. The courtyard was the scene, where social activity was carried out, therefore, it was of considerable importance. In spite of its importance it commanded simplicity. It was separated from the external world by high walls, outwardly projecting austerity, at the same time inwardly providing security and privacy. During the history of the development of the mosque, the dome, courtyard and minaret assumed a special spatial relationship, not necessarily in symmetry, but in harmony. It will transpire from this thesis, that this relationship was diverse and not universal throughout the Islamic empire, it served the particular requirements of the individual country, which were dictated by different parameters.

The overall simplicity of the mosque, which was the norm during the Caliphate, was transformed into a more externally significant construction and a permanent

reminder to the conquered religions, that Islam was there to stay. During the reign of the Umayyads the splendour of Islamic architecture begins to assert itself on a large scale not only in mosque, but also in palace architecture.

According to al-Maqdīsī,[21] the Umayyad rulers were determined to surpass the excellence of any previous civilisation regardless of cost, commenced the transformation of the existing Christian churches into mosques, such as the Jāmi' al-Fāṭima in Syria or the Jāmi' il-Khidr at Buṣrā in the 7th century[22] or built them out of the ruins of the pagan temples. The expertise of Christian and other skilled craftsmen were utilised in the implementation of their endeavour. Buṣrā and Kūfa were important commercial and cultural centres already in pre-Islamic times and they became significant centres after the conquest also. There had been a magnificent cathedral at Buṣrā, built in the 6th c. A.D. with a large dome. The city fell to the Muslims in 11/632[23] and there is evidence, which substantiates the claim, that the cathedral provided some of the building material for the construction of the Mosque of 'Umar, for one of the columns bears an inscription with the date 488 A.D.[24] There is no verifiable evidence for the assumption, that the dome of the cathedral would have influenced the Islamic architects to include domes into mosques at a later stage, however, it is not unreasonable either to assume that it had. The dome was in evidence to such an extent, that it would have been virtually impossible, to disregard its significance as a symbol of the particular religion it represented.

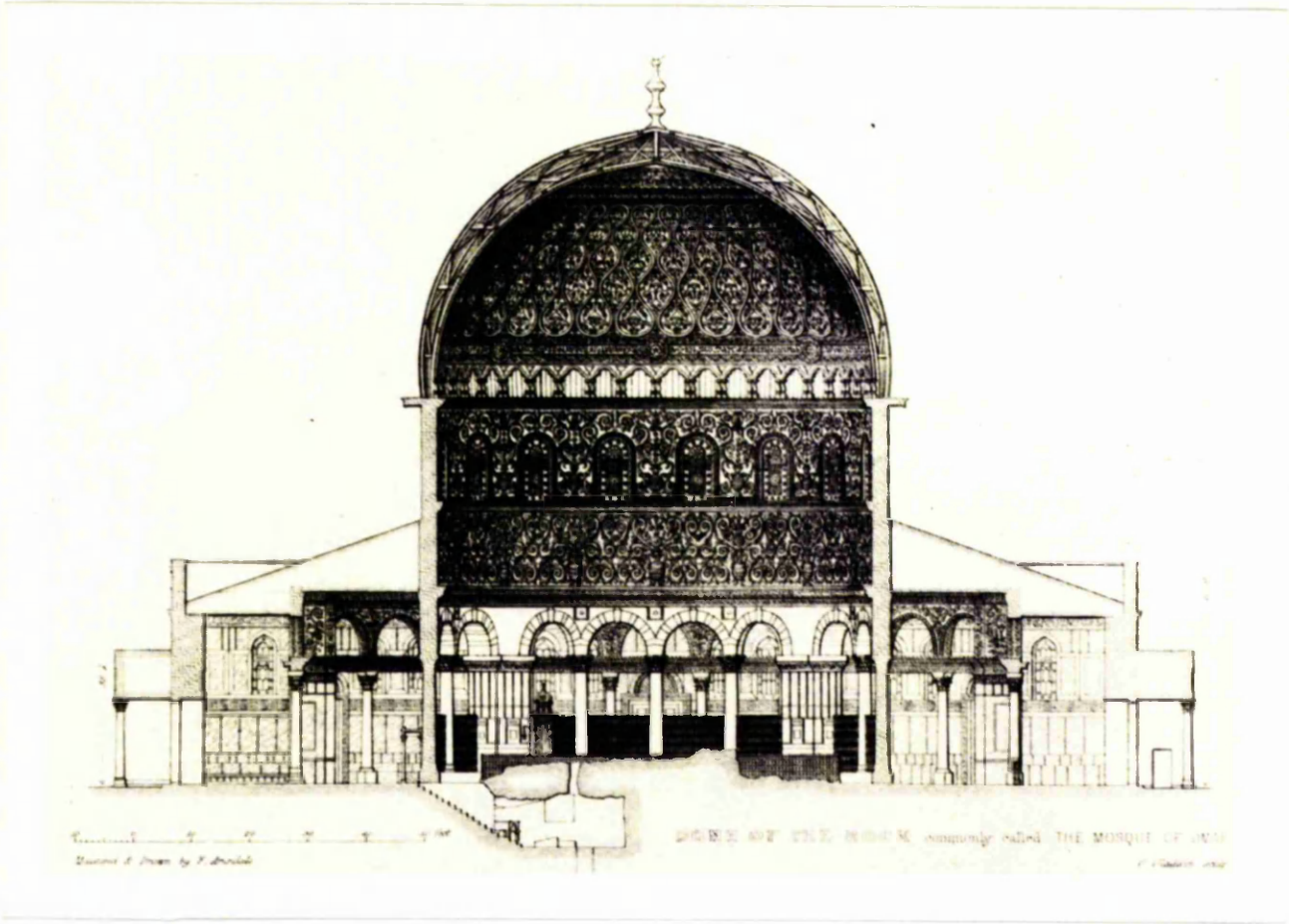


Illustration 3a Jerusalem, Dome of the Rock, Section.

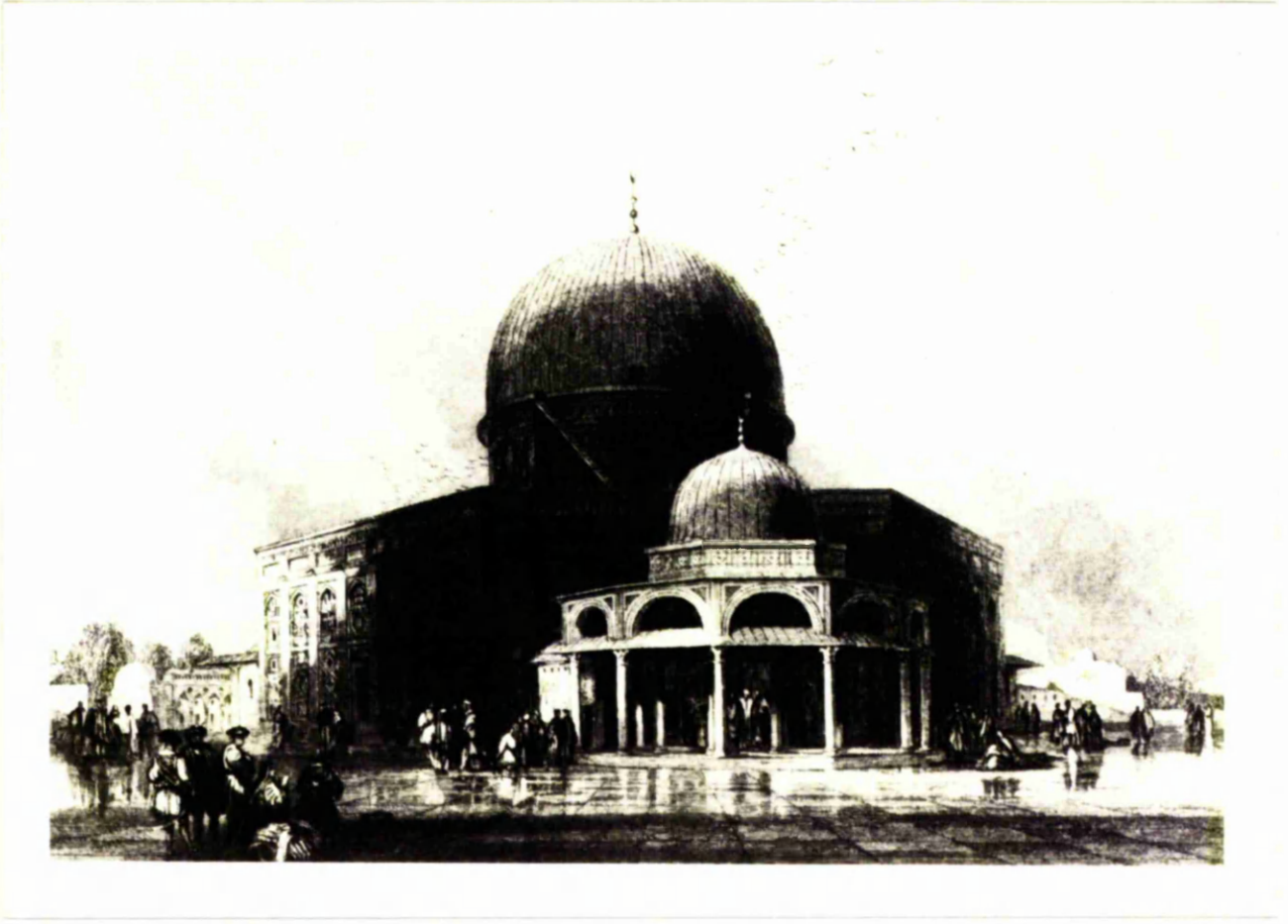


Illustration 3b Dome of the Rock.

The conversion of churches was not confined to Syria, in Egypt the Coptic churches such as the Rāshida Mosque, which was previously an unfinished Jacobite church became mosques.[25] In Palermo, Sicily, the Synagogue was turned into the Masjid al-Bannā' and in Iran, near Iṣṭakhr, the Masjid Salaimān used to be an old fire temple.[26]

The biggest and most splendid achievement of early Islamic architecture was the construction of the Dome of the Rock on the site of the ancient Temple and allegedly the stone of Abraham, thus putting on the stamp of supremacy over the Jewish religion and simultaneously to the Christian religion.

The Dome of the Rock was erected in 72-73/691-2 by 'Abd al-Malik, more than half a century after the fall of Palestine in 17/638.[27] It was alleged that it was the site of the Dome of the Rock from where the Prophet ascended to Heaven. if this were true, then it is logical that a memorial should be raised on the site, preferably in the style of a Martyrium, being the most suitable intermediary between the tomb and other religious edifices. It was mentioned supra, that the Prophet warned against raising tomb-like shrines in the memory of the dead and this probably is the reason why the Dome of the Rock is not recognised as a shrine to the memory of the Prophet.

After the erection of the Dome of the Rock, mosques were generally built with domes. The symbolic meaning of the dome in other religions was briefly expounded supra, its

meaning in Islam in general and the various countries in particular will be dealt with under the appropriate sections.

When we talk about domes in the mosque, for the sake of clarity and constancy, some definitions must be offered. The title of this thesis is: The history and development of the dome in front of the mihrāb. It is not completely clear from extant literature, however, what it means to say that a dome is in front of the mihrāb or that it is not. Books have been published on various descriptions of the dome, in most cases, invariably referred to as the dome in front of the mihrāb, however, for the purpose of this thesis, the dome in front of the mihrāb is defined as, the one and only one, which marks the area in the sanctuary directly in front of the mihrāb and is adjacent to the qibla. All other domes which are positioned in front of the mihrāb, but are not adjacent to the qibla are referred to as the mihrāb dome. It will transpire that the date of construction in some cases plays a crucial part for supporting the hypothesis concerning the development of the dome. Where there is conflicting evidence about the date of construction of the dome, such as in the case of the Medina Mosque[28] the relevance of that evidence is weighed up.

The various hypotheses concerning the meaning, the shift in meaning of the dome in front of the mihrāb shall be outlined briefly here and their possible influence on its development shall be discussed in detail, when appropriate.

It has been suggested, that the dome was erected in front of the mihrāb in order to stress its sanctity, to symbolise the invisible present of the Prophet, that it was adopted from Sasanian times, when it was considered to be a symbol of power. Coins prior to the reformation implemented by 'Abd al-Malik in 76/695, depict the Zoroastrian fire temple on one side and the head of the Sasanian monarch on the other, at the same time invoking Allāh's name.[29]

The latter information allows the assumption to be made, that at the beginning of Islam there was an amount of tolerance on behalf of the Caliphs and the religious institutions towards the various symbolisms of other religions, they were not considered to be a threat to Islam in any form, therefore, there was no need to dispense with them.

Another possibility has to be borne in mind when considering the origin of the dome in front of the mihrāb, the fact that the nomad tribes used their tents to perform their religious, civic and other duties in the desert, similarly to the city dwellers' use of the mosques. Landberg[30] quotes a verse from the Dīwān of Qa'is b. al-Khatīm, which describes: "un magasin a coupole tout près du ciel, dans son mihrāb il a kubbatin duwaina 'l-sama' i bi 'mihrābi-hā'", rendered: a 'tent with its mihrāb'. The Bedouin tents are in fact dome shaped. Other factors may have been contributory factors to the incorporation of the dome into mosques, such as lighting and ventilating. Aesthetic considerations may also have

played an important part, for the dome is an outstanding feature over and above the flat roofed town dwellings. Each of these possibilities will be weighed up and evaluated on its individual merits during the course of this thesis. It will be argued, that the architecture of the palace-complexes played a special part in the symbolic meaning of the dome, therefore some time will be spent on discussing this aspect.

The subject matter will be dealt with under different headings. The Islamic world is divided up into four areas: Saudi Arabia, Palestine, Syria and Iraq in Chapter two, North Africa and Egypt in Chapter three, Iran, Central Asia, India and Pakistan in Chapter four, Turkey and Anatolia in Chapter five and Summary and Conclusion in Chapter six.

The drawings and photographs will be incorporated in the text.

THE RELIGIOUS AND SYMBOLIC DIMENSIONS OF THE MOSQUE

THE SIGNIFICANCE OF THE DOME IN FRONT OF THE MIHRĀB

At the centre of Islam, both geographically and spiritually stands the Ka'ba. The mihrāb of every mosque is aligned with it and the worshippers of the Islamic world turn towards it during the salāt.

There are two axes in the mosque, a horizontal and a vertical, the latter one represents the spirit, which moves through time and space upwards to reach God.

It is at the Ka'ba that the two axes intersect, the horizontal axis defines the plane of horizontal existence.

The axes are mentioned in the Holy Qur'ān:

"We have seen the turning of your face towards the heavens (for guidance 'O Muḥammad)

And now we turn you indeed towards the qibla which shall please you.

So turn turn your face (in prayer) toward the Sanctified Mosque, and ye (O' Muslims) wheresoever ye find yourselves, turn your faces (likewise) towards it."[31]

Prayer takes place on the horizontal axis, by which one relates oneself to the vertical axis as represented by the Ka'ba.

The liturgy can be considered to be radial, since all Muslims turn towards the Ka'aba, thereby forming circles, which converge onto a central point.

This factor always played a very important part in mosque design, the pragmatic aspect of how to accommodate the maximum number of people at the closest proximity to the vertical axis.

It is believed that there is an invisible psychic fluid, which emanates from sacral objects, therefore the aim is to secure maximum exposure to it.

The Dome of the Rock is designed with this belief in mind, on an octagonal plan with ambulatories to facilitate the movement of pilgrims.

Where it is not necessary to enclose the mosque within the boundaries of walls, there is only a wall on the qibla axis and a mihrāb, where the population of the whole city can assemble, parallel to the qibla for prayer. This type of mosque provides the maximum exposure to the psychic fluid.

For the same reason, the first row of the enclosed mosque is the most important one, and which creates the greatest difficulty for the architect.

In order to cope with the problem, mosques were built on a rectangular plan with the emphasis on the sanctuary area.

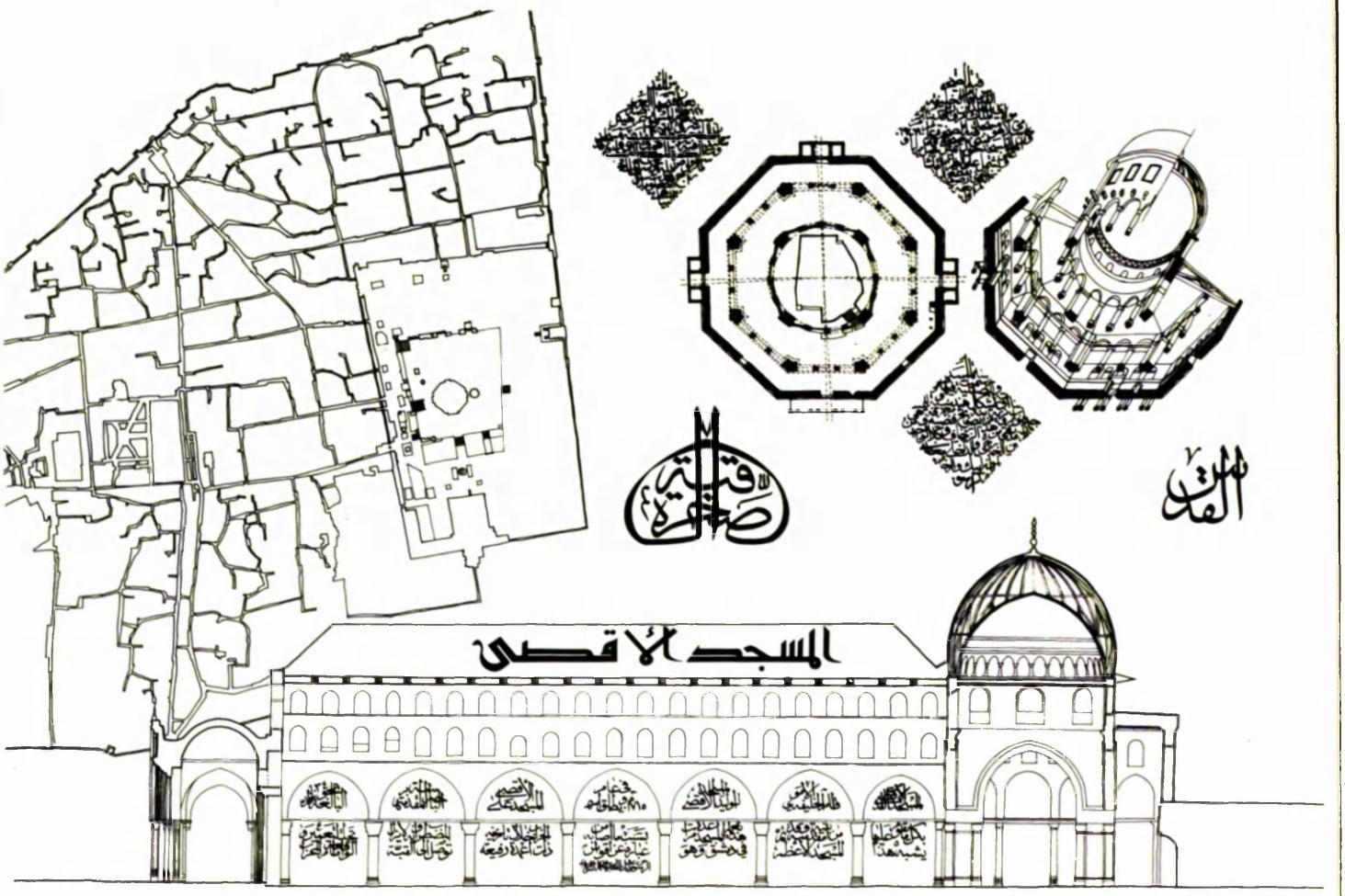


Illustration 4 Dome of the Rock, Ground Plan and Section.

On entering the mosque, especially the courtyard, one is drawn alongside the payer hall, along the width of the courtyard. This is often at right angles to the true metaphysical direction which is indicate by the qibla and accentuated by the mihrāb.

Normally, Islamic buildings, with the exception of domed buildings do not have an inherent axial aspect. Frequently, if it has a physical direction, it is different from its functional direction. This fluidity gives the architect a certain amount of freedom for imagination and architectural variability.

The size and shape of the courtyard can be manipulated until maximum effect is reached, the courtyard being the first step into the mosque area, therefore its role is important and should be emphasised.

Islamic architects employed various means and media in order to convey Islamic thought in a symbolic manner. For example, the position of the fountain, or the pool in the courtyard of the mosque or the royal palace is not accidental. The pool reflects the dome and all other features and therefore it recreates the concept of Paradise, which is the mirror image of the world, therefore, everything which is beautiful, should appear upside down, in order to appear the right way up in Paradise.

The dome is the cosmic symbol in almost every religion. In Islam it represents the vault of the heaven and has the

same significance as the garden in Christianity. In the early uncovered mosque it would have been a superfluous exercise to introduce a dome, because it was the vault of heaven, the open sky itself to which the congregation turned and which represented the vertical axis.

The sky, when viewed from within, gives the impression of being curved as a vault or hemisphere. The dome is the closest and the most suitable shape which can recreate the illusion of the heavenly bolt, therefore, it is logical that it should be incorporated into covered mosques and to serve as a religious symbol.

Earlier it was proposed, that the dome was first incorporated into the mosque when there was not an adjacent palace with a domed throne room, which was the seat of power. This proposition is not in contradiction with the religious interpretation of the dome, because the two aspects are equal and inherent in the nature of Islam. It is noteworthy and significant, that in the early domed mosques, the dome was not covering the area directly in front of the mihrāb and adjacent to the qibla.

Once the two functions, the aspect of power and religion were reconciled, the dome became its manifestation and took up its place in front of the most important part of the sanctuary, the area in front of the mihrāb.

The dome, however, was not universally and homogenously adapted in the Islamic world. Considerable amount of

diversity existed in decorative style, size and shape throughout history.

At the beginning of the thesis two premises were set up on the basis of which the theory of the dome in front of the mihrāb is developed. The first premise, that the dome symbolised the power of the rulers was expounded in the first part of Chapter one.

The second premise, that it also symbolises the religious power and that in Islam it is the marriage of the two aspects which is being represented by it, is the matter for evaluation in the second half of Chapter one.

If the second premise is true, then the religious aspect of the dome should have equal weight with the power aspect and should be the interpreter of the religious imperatives of Islam.

It was mentioned supra, that the spiritual aspect of Islam is concentrated on the vertical dimension. The spiritual involves both introspection and the externalisation of the result of that introspection. Through introspection the way is found to God which is then externalised. The former is a static state, which leads to the transcendental state. These two, seemingly contradictory aspects of worship have to be resolved in an architectural form, which is the mosque, where both states are practised and are achieved.

The enclosed space, is defined by the means of walls, arcades and vaults which are vital aspects of mosque architecture and serve the static state, yet, equally important it is to transcend and negate the enclosure and to create limitlessness, in order to comply with the demands of the dynamic state.

On the horizontal level, the mihrāb niche symbolises the transcendental dimension towards the Ka'ba, while the dome does precisely the same, but towards God.

The limiting side walls ensure that tranquillity resides within, which enables the worshipper to achieve spiritual introspection which is the true path to God.

'Abd al-Malik's coin of 66-86/685-705 displays a niche within which there is an arrow standing upright, as if it were the liturgical indicator,[32] the pointer to the path of God.

The earliest domes were small, externally rather insignificant. Internally they were more elaborate and in most cases provided some illumination for the spot, where the imām stood.

It will transpire from the following chapters, that in different countries, at different times, the problem of lighting was solved differently, without destroying the inner solemnity.

As cities grew in size, the size of the dome was also increased in order to tower over the flat roofs of the secular buildings, to transcend over them towards heaven. The external shape was influenced by local traditions, for example the bulbous domes are more frequent in India, than in the West. An important external manifestation is the Hilāl, which appears at the pinnacle of the dome and in most cases the minaret. The Hilāl is the symbol of the Islamic calendar, which is based on the lunar month. The crescent expresses the emergence of Islam which put an end to the dark ages of religious ignorance and to polytheism:

> "A.L.R. a book
>
> Which we have revealed
> Unto thee, in order that
> Thou mightest lead mankind
> Out of the depths of darkness
> Into light - by the leave
> Of their Lord - to the way
> Of (Him) the Exalted in Power
> Worthy of all Praise." Holy Qur'ān, Sūra XVI.[33]

Internally, the dome provides light, partly in order to illuminate the imām, partly to display and play with the versatility of the nature of light and to create contrasting patterns.

The shape and decoration of the dome was often influenced by themes taken from nature, but the most effective inspiration came from the Qur'ān:

> "God is He who raised
> the heavens without any pillars

That ye can see: is firmly established on the Throne
(of eternity)
He has subjected the Sun
And the moon (to his Law);
Each one runs (its course)
For a term appointed
He doth regulate all affairs
Explaining the signs in detail
That ye meeting with your Lord" Sūra XIII[34]

"He created the heavens
Without pillars that ye can see" Sūra XXX

Both Sūras start with the emphasis on the fact that God created the heavens without pillars. It is possible that the architects held these Sūras in mind when the religious dimension of the mosque came under consideration.

If it is to be accepted, that the dome is the symbol of heaven, then the postulate, that it should be supported without pillars, as referred to in the Qur'ān, could also be accepted.

It is in fact true, that in the early mosques the dome is not supported by pillars. Various other means, far more complicated than pillars were introduced into the zone of transition for support, such as squinches, pendentives, drums and beams.

The last line of Sūra XXX may have provided inspiration for some architectural elements to be created in pairs, such as double domes, coupled arches and minarets:

"On the earth every kind
Of noble creature in pairs". Sūra XXX[35]

There are several theories concerning the dome. According to one of these, the dome serves only one purpose, that is, to mark the spot in the mosque, where the Prophet stood.[36]

During the Greek, Roman and Byzantine era, the dome or cupola was used in order to confirm sanctity upon the person standing under it.

Another theory for the four-square geometry of the mosque with a dome is that both the nomadic and sedentary members of the Islamic community are represented. The four-square geometry represents the foundation-constant amongst the sedentary peoples, while the radial and conical forms predominate amongst the nomadic tribes. The square provides the foundation, the hemisphere crowns it and the triangle makes it possible to unite the two.[37]

These interpretations contribute to the whole truth, however, singly not one of them is a real representative of it. It must be taken into account, when considering the origin of the dome in front of the mihrāb, that there is no direct mention of the dome as such in the Qur'ān or in the Hādīths, and while Christian literature contains numerous references to the symbolic value of the dome, Arab and Persian theologians did not attach any symbolic interpretation to it. It is possible therefore that the dome in Islam assumed its sacred character only, when it was used to denote the sacredness of the structure it was to cover.

From what has been said so far, the assumption that the dome had a pragmatic purpose in Islam before it assumed a symbolic purpose, is not unreasonable.

One of the practical reasons for the inclusion of the dome may have been to provide extra height for the maqsūra and possibly for the minbar. If this were the sole purpose, however, then an ordinary raised roof would have sufficed.

All considerations seem to point to the fact, that the dome must have had a combined symbolic meaning.

In order to understand this combined symbolism, or indeed the reason why there is no overt directive for the dome in the Qur'ān, certain events during the time of the Caliphate in the early years of Islam are proposed for closer examination. Following this, at a later stage in the history of Islam, the various philosophical schools that were occupied with deciphering the various allusions, the hidden meanings in the Qur'ān, should also be taken into consideration.

Islam is a complex establishment and in order to understand all aspects of it, each and every component should be examined, however, in this study there is no scope for this and therefore only those events and elements which are directly responsible for the inclusion of the dome in front of the miḥrāb are being considered.

After the assassination of 'Alī in 41/661, the centre of activity of the Islamic world shifted to Damascus.[38]

Islam was in the process of developing a dual aspect, which was to dominate its subsequent history. There is the religious aspect on the one hand which has its roots in the prophetic mission of Muḥammad in Mecca, and on the other hand the political factor, which has its roots in the reorganisation of the Medinan society by Muḥammad. By creating a political reality, the Islamic state, political power became attractive for such a heterogeneous society.

In any society, religious belief and practice will inevitably influence and be influenced by the economic and political structure of that society.

In Islam, the two are deliberately combined under the same institution, therefore, this duality, with its resultant dichotomy must be taken into consideration in its architectural representation.

During the rule of the Umayyad mosque/palace complexes were to become the product of this inherent duality of Islam. Greater emphasis was put on the political than the religious aspect, which manifested itself in the architectural approach also.

This was to change during the reign of the 'Abbāsids, when the religious and cultural aspects of Islam became as important as the political one. The difference was discernable in architecture also.

The historical details of the 'Abbāsid period is discussed in chapter four, here only the most essential elements deserve a brief mention.

Islamic civilisation under the 'Abbāsids was a combination of three elements: the ancient culture of Persia, the philosophy and science of the Greeks and the stimulus for the cultivation of both was provided by the spirit of Islam. Baghdad became the meeting place for philosophers, mathematicians, astronomers and other scholars. The mosques and madrasas of Baghdad, Cairo and Cordoba were great centres of scholarship in the 9th, 10th and 11th centuries.[39]

From the eighth century onwards, the Qur'ān was studied with the aim to discover possible ways to interpret and reinterpret those passages, which seemed to contain hidden messages.

A group of the new school called the Mu'tazilites, maintained that the descriptions in the Qur'ān should be interpreted allegorically, such descriptions as the beautiful names of God, one of which is the seventh attribute, Speech or Word.[40] The Word is equated with the Qur'ān itself. This interpretation may explain the extensive use of the Qur'ānic text in calligraphic decorative form in mosques and in holy shrines. Calligraphy, more often than not, appears at the base of the dome, around the entrance portal and in some cases on columns.

Another doctrine of the Mu'tazilites emphasises the justice of God; man's destiny depends upon his actions; God has shown man how to live in order to deserve Paradise. Therefore it is man's duty to heed God's word. Here is a direct relationship between the execution of the imperatives as laid down in the Word and its necessary consequence, which is Paradise. In visual terms, this relationship is represented by means of calligraphic quotations from the Qur'ān around the drum, which is then crowned by the dome.

The Mu'tazilites were in great favour for a considerable time with the 'Abbāsid rulers and probably their allegorical interpretation of the Qur'ān served as inspiration for the Islamic architects.

The theological literature was in Arabic and it was spread by travelling scholars all over the Islamic world together with the different interpretations of the texts. In this case, there are several directives in the Qur'ān concerning the design and decoration of the mosque:

> "God is the Light of the heavens and the earth
> the likeness of his Light is as a niche
> wherein is a lamp
> (a lamp in a glass,
> the glass as it were a glittering star)
> .....
>
> Light upon Light;
> (God guides to His Light whom He will).
> .....
>
> in temples God has allowed to be raised up,
> and His Name to be commemorated therein;

therein glorifying Him, in the mornings and the evenings"

Sūra XXIV[41]

There are a number of key words in this quotation: 'the niche', the 'light upon light', 'His Name to be commemorated in'.

It is reasonable to assume, that the niche referred to is the mihrāb niche or a dome like structure, which provides the light to where God leads His chosen.

The complete first line "God is the Light of heaven and earth" points to two interdependent dimensions: the horizontality of earth and the verticality of heaven.

The two dimensions can be reconciled architecturally by employing features which are symbolic, such as the mihrāb for horizontality, the pointer to the Ka'ba and the dome for verticality, the pointer to the heavenly plane.

Other lines from the Qur'ān give guidance as to the decorative elements, which were subsequently employed for the dome and the mihrāb niche: "the glass as it were a glittering star". Glass mosaics were frequently employed. Star shapes are abundant in decoration and so far the radiating lines, which represent the radiating stars or just simply the emitted rays from a heavenly body.

God's name is commemorated by the attestation: "There is no God, but God", which forms a part of the decorative elements.

Further on in the same Sūra: "that God recompense them for their fairest work" is an imperative, to produce something that is beautiful and everlasting, which will be rewarded by God. By following the directives as laid down in the Qur'ān and combining it with the technical expertise which was acquired from pre-existent cultures, the Islamic architects produced such magnificent and impressive domes in the 9th, 10th and 11th centuries as those of the Great Mosque of Qayrawān and the Great Mosque of Cordoba, to mention but two.

It was mentioned supra, that another vital component of Islamic palace and mosque architecture was the water tank in the courtyard. Its significance is outlined in the Qur'ān:

> "And as for the unbelievers,
> their works are as a mirage in a spacious plain
> which the man at first supposes to be water,
> till, when he comes to it, he finds it is nothing;
> there indeed he finds God".

Reflection can be a mirage, and the pool or tank is positioned in such a way, that it reflects not only the building, but the sky above also, thereby yielding a perfect upside down picture, which is ready for Paradise. At the same time it gives an extra dimension to the

available space, which is always a priority for the Islamic architect.

In conclusion of the religious and symbolic interpretation of the dome a quotation from the Pearl of Al-KabĪr will be discussed:

> "Seven heavens God made;.....
> And each and every one
> Sphere above sphere, the treasure over treasure,
> The great decree of God made for regard and pleasure.
>
> Saith the perspicious Book: 'Look up to heaven! Look!
> Dost thou see fault or flow, in that vast vault,
> Spangled with silvery lamps of night,
> Or gilded with glad light
> Of sunrise, or sunset, or warm noon?
> Rounded He well the moon?
> .....
>
> Eyesight is drowned in yon abyss of blue
> Ye see the glory but ye see not through".[42]

The last two lines may be important clues as to why there is such a lot of blue used in Islamic decoration. "Sphere above sphere" could be describing the dome, its shape, its decoration and its role, in other words, it should be spherical, high enough to look up to, richly decorated with lots of blue and it must not be transparent.

If it were to be accepted, that the inclusion of the dome into the mosque was God inspired, then it should also be accepted, that it is also an indication of the unity of the Muslim community, the Ummah, of faith and the unity of mankind.

Universal order can be achieved only on the basis of a universal faith and not on the basis of commitment to gods of race, colour or religion.

The ideal man's brotherhood seeks realisation in Islam, which incorporated the symbols of previous cultures in order to unite them. In order to mark the place of the holy, as alluded to allegorically in the Qur'an, the dome was chosen. The dome also acts as a marker and visual guide to the Right Path, to the house of the one God, in order to unite in prayer and submission to the one God.

Guiding to the 'Right Path' involves entering through the portal, which is in several cases covered by a dome. Along the path to the mihrāb which is the 'Right Path', on its axis, domes or vaults appear at ceiling level. The dome in front of the mihrāb is God's guidance in its final form and is preserved for all time and is enshrined in the Holy Qur'ān.

It is also a burning torch, which is aided by the towering minarets to draw man's attention to the will of God, to strengthen man's commitment to God, through the spiritual discipline he needs to live as God wishes and to enable him to reach Paradise.

REFERENCES TO CHAPTER ONE

1) V. Pope and P. Ackerman, SOPA I., p. 428.
2) Ibid., loc. cit.; Jairazbhoy R.A., An Outline of Islamic Architecture, p. 16.
3) Ibid., loc. cit.
4) The Penguin Dictionary of Architecture, ed. J. Fleming et al. 1982, p. 265.
5) Ibid., p. 59.
6) The Anatomy of Architecture, p. 47; Akurgal E, History of the Art and Architecture of Turkey, pp. 51-3.
7) The Penguin Dictionary, op. cit.
8) Jairazbhoy R.A., op. cit., p. 96.
9) Penguin Dictionary of Architecture, ed. J. Fleming et al., London, p.97.
10) Pope U, Persian Architecture, pp. 59-60.
11) SOPA I, op. cit., pp. 550-5.
12) The Penguin Dictionary, op. cit., p. 265; Wilber D. N., Iran, Past and Present, pp. 34-5.
13) Ibid., p. 240.
14) Wilber D.N., The Architecture of Islamic Iran, p. 61.
15) Op. cit., loc. cit.
16) Creswell K. A. C, EMA I, pp. 1-26.
17) The Encyclopaedia of Islam III., 1st ed. p. 379.
18) Ibid.
19) Ibid.
20) The Holy Qur'an, Sura XIII.2.
21) JRAS, 9. VII. p. 384.
22) Butler, H.C., Ancient Architecture in Syria, div. III., Sect. A.S. Syria, Part 4. p. 220.

23) Ibid., p. 217.
24) Ibid., p. 286.
25) Encyclopaedia of Islam, III., op. cit., loc. cit.
26) Ibid.
27) Rogers M., The Spread of Islam, P. 84.
28) Papadopoulo A, Islam and Muslim Art, transl. by Wolf R.E., pp. 227-8; Creswell, EMA I, op. cit. pp. 142.
29) Jairazbhoy, op. cit., p. 38.
30) Sarjeant R.B., 'Miḥrāb', Bull. of SOAS XXII, 1959, p. 450.
31) Holy Qur'ān, op. cit., Sūra II.
32) Michell G. Architecture of the Islamic World, p. 15.
33) Holy Qur'ān, op. cit., Sura XVI.
34) Ibid, Sūra XIII.
35) Ibid, Sūra XXX.
36) Papadopoulo, op. cit., p. 224-6.
37) Critchlow K, Islamic Patterns, p. 102.
38) Gibb E.J. W, Memorial Volume IV, Umayyads and 'Abbāsids, pp. 77-80.
39) Hill D and Grabar O, Islamic Architecture and its Decoration, pp. 32-3.
40) The Concise Encyclopaedia of Living Faiths, ed. R.C. Zaehner, pp. 184-5.
41) Holy Qur'ān, op. cit., Sura XXIV.
42) Man's Religious Quest, ed. W. Foy, p. 505.

CHAPTER TWO

SAUDI ARABIA, PALESTINE, SYRIA AND IRAQ

Introduction

It is a well established fact, that Islam originated in Saudi Arabia, perpetuated by Muḥammad in the name of Allāh.

The Prophet prayed and gave audience in his own domicile, of which the most important part was the courtyard, where practically all social and religious activity was carried out. With the spread of the religion, the frequency of audience increased, the area was extended, covered and a special throne like seat was installed which later was to become the maqsura. The covering of the 'audience chamber' was simply palm leaves, which provided shelter from the intense heat of the sun and from heavy rain.[1]

During the lifetime of the Prophet several mosques were built, however, there is not much information available concerning these. The study of mosque architecture should commence with that of the Medina Mosque which was built on the site of the original Prophet's Mosque and was reconstructed under the Umayyads. The significance of this mosque cannot be stressed enough, as it was the one to set the precedent for future mosques.

The Medina Mosque is discussed in conjunction with the Damascus Mosque and the Aqṣā Mosque in Jerusalem, because these are the earliest mosques possess domes. In conjunction with these, the mosque-palace complexes in this area will receive attention also, together with the ground plans and their relationship to the position of the dome.

The mosque-palace complex played a very important part in the development of the dome in front of the mihrāb as did the concept of symmetry and the awareness of space.

The relationship of the dome to the ground-plan of the mosque

When an analysis of the relationship between the dome and the ground plan is attempted, the type of mosque in question must be taken into consideration, otherwise one might fall victim to generalisations. It is important to differentiate between a Congregational or a Friday Mosque, Mosque Madrasa or igdhal; place of prayer, Mosque Khānaqāh, or Masjid.

The early Congregational Mosques had either no roofing, or very simple covering, purely for utilitarian reasons; to shelter from the intense heat of the sun or the heavy rain. In the time of the Prophet, as mentioned supra, the shape and size of the mosque did not present an architectural problem, it remained a simple construction. Under the Caliphates, the practice was adopted, that the place, where the ruler sat, was cordoned off by high

decorative fencing, mainly for security reasons. This is called the maqsūra. The height and position of the maqsūra must have played a part in determining where the dome was to be included.

The Prophet's mosque was the basic model, on which later mosques were designed and developed, namely the Congregational mosque. The courtyard was not covered all around, and this gave it a more informal character and this is where religious and civic life were united.

In addition to the Friday mosques there were several smaller mosques in towns, mainly for private prayer, rather than for public gathering and display. The difference in the various roles is one of the determining factors for choosing a particular ground plan, therefore no generalisation can be made concerning these. The climatic factors are also influential in mosque construction, uncovered courtyards are more suitable in warm climatic conditions.

If the courtyard is climate dependent, then, from this follows, that the internal components of the mosque will have to offer replacement or complementary features in turn. In practical terms this means that the shape and size of the area in the sanctuary in relation to the rest of the mosque will in proportion be different and interdependent. This in turn will determine the size and position of the dome.

Another factor also should be considered, that is, the entrance to the holy area. In the case of mosques with courtyards, the congregation enter from the unholy area, which should be marked in order to differentiate it from the holy sanctuary. In the case of mosques without courtyards the worshippers have direct access to the holy area. It is pertinent to assume, that the place of entry in both cases will be marked differently. The distance from the point of entry to the qibla in the sanctuary is also relevant to the positioning of the dome, or domes, whichever is applicable.

The first mosque to be discussed in detail, is the Medina Mosque and parallel with it the Damascus Mosque. During the period when these were constructed, there were numerous others erected, but without domes. It is pertinent and at the same time inevitable, that the reason for this should be examined. It is a known fact and well documented, that the original mosque of the Prophet was not only a mosque but also a dwelling place and a place of political power. If the fact, that the Medina Mosque encompassed under the same roof all the aspects of Islam is accepted, then, it is logical to assume, that because it was the prototype, it must have set the precedent for all future mosques. At this point, what this entails in terms of construction, symbolism and location, warrants closer examination. Firstly, the question, who would be in a position to occupy a mosque - cum dwelling place has to be asked. Secondly, where is such a complex located and thirdly, is it required of such a complex that it should project an external image.

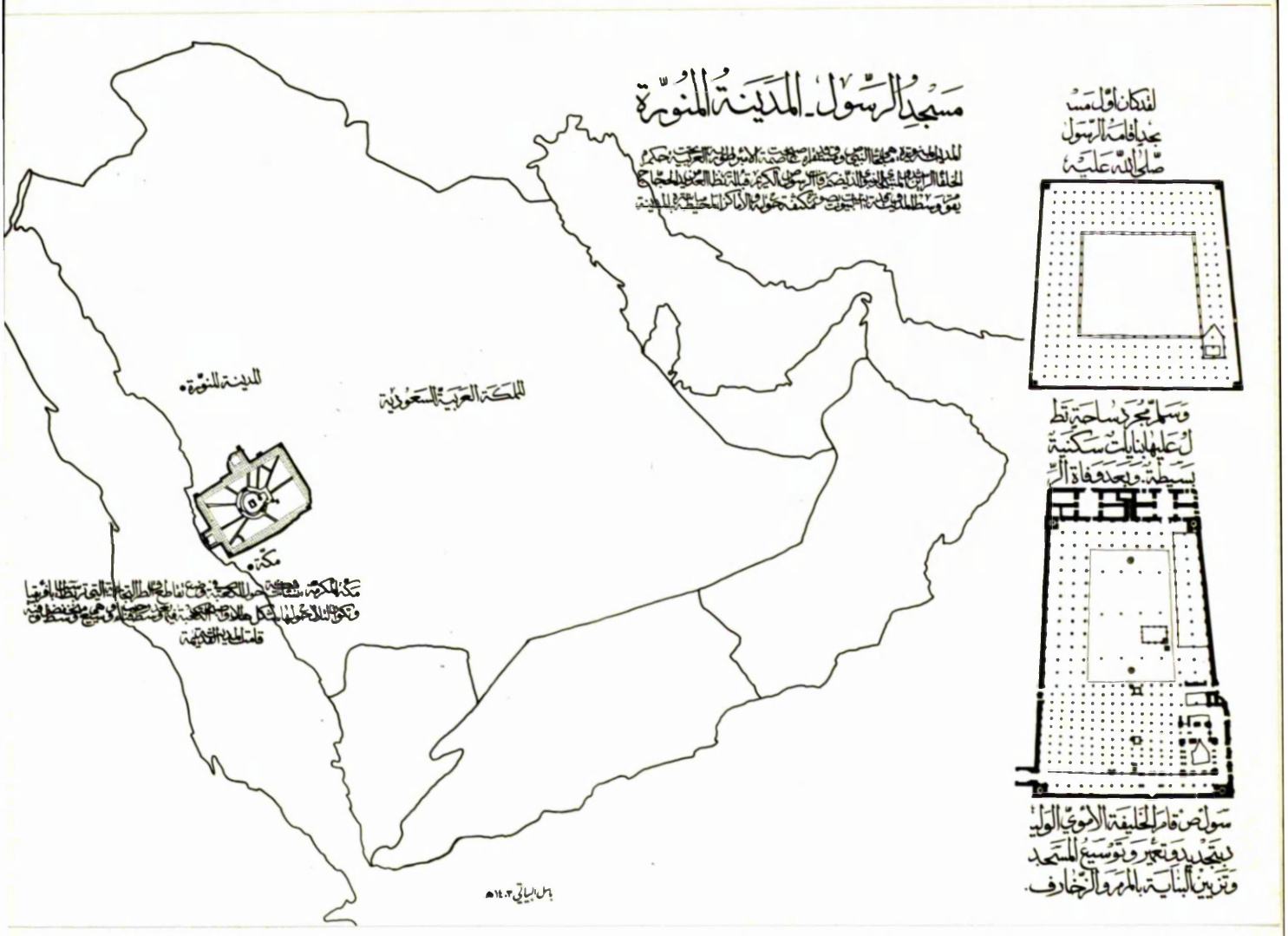


Illustration 5 Medina Mosque, Ground Plan.

It has been touched upon briefly, that during the early Caliphate the role of the religious leader and the ruler was combined. By nature, most of the rulers were desert dwellers. The skirmishes for the most part were directed from the then capital cities of Baṣra and Kūfa respectively, where, the rulers directed their military and other activities from the converted episcopal palaces, which were in most cases attached to the house of prayer, on the qibla side. The palace adjoining the Kūfa Mosque had a triple aisled hall, which led to a domed chamber. It was built by the Arab commander-in-chief, Saʿad ibn Abū Waqqāṣ in 17/638.[2] (See illustration 6 a, b, c) At the Palace of Khirbat at-Minya, there is a triple aisled mosque with a miḥrāb and also a domed entrance portal. This palace complex was built in 94/712.[3] These two examples from the early Islamic period are very important, because, they were not conversions of buildings of Christian or Roman origin, but were structures in their own right, with domes which are situated where the palaces are adjoining the mosques. Furthermore, they are conjoined on the qibla side, with the dome on the palace side, yet in close proximity of the qibla. In all cases, the palace is lavishly decorated and extra attention is given to the architectural composition, while the mosques are simple and inconspicuous.

Here we meet the duality of the puritanism of the salāt in the simplicity of the mosque and the symbol of power represented by the palace, divided only by a wall. In the case of the Khirbat al-Minya the mosque is actually part of the palace. The dome is situated at the entrance of

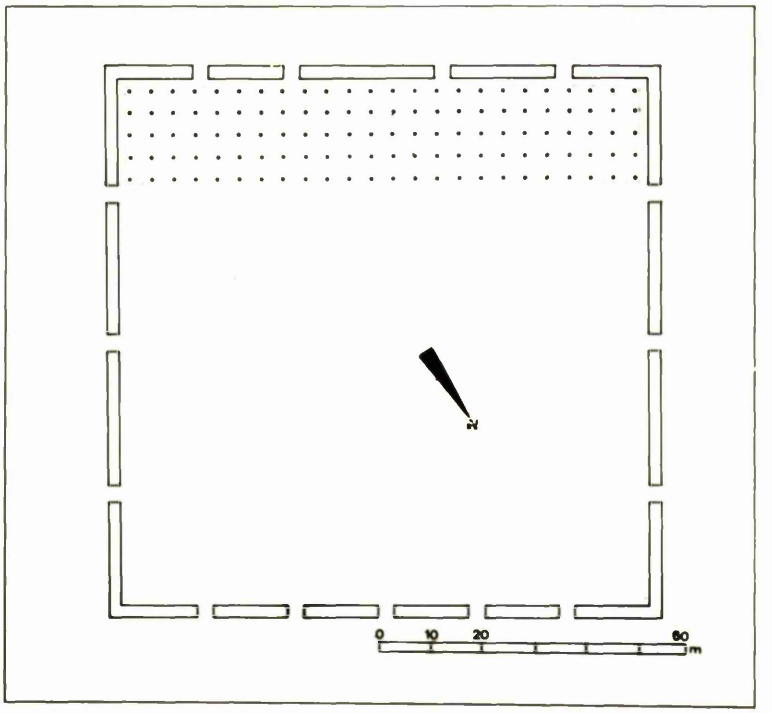


Illustration 6a Kūfa Great Mosque, Original Plan.

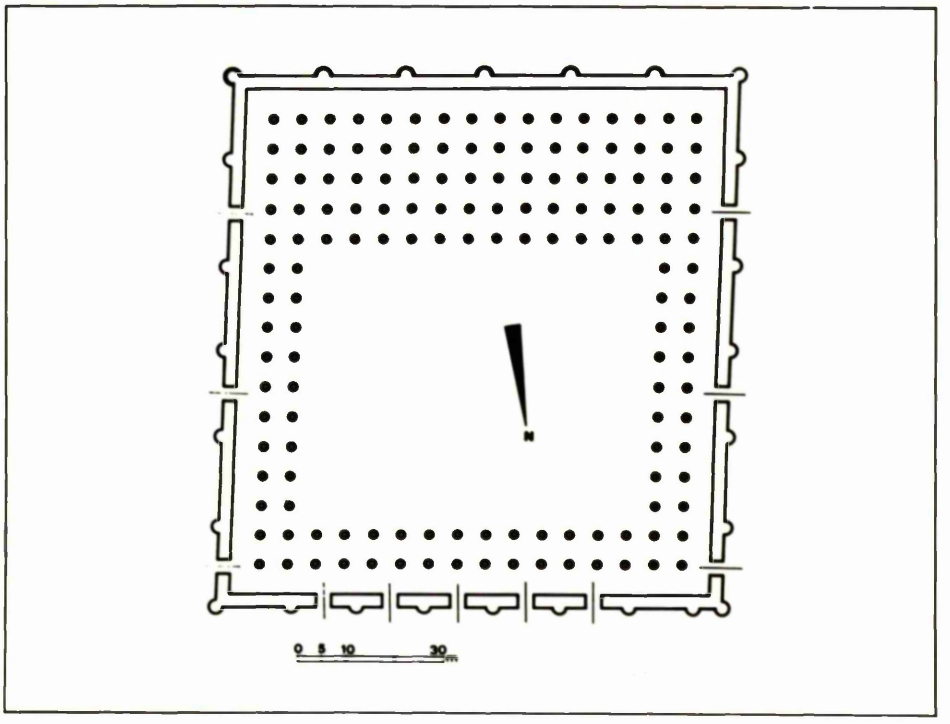


Illustration 6b Kūfa, as rebuilt by Ziyād ibn Abīhi.

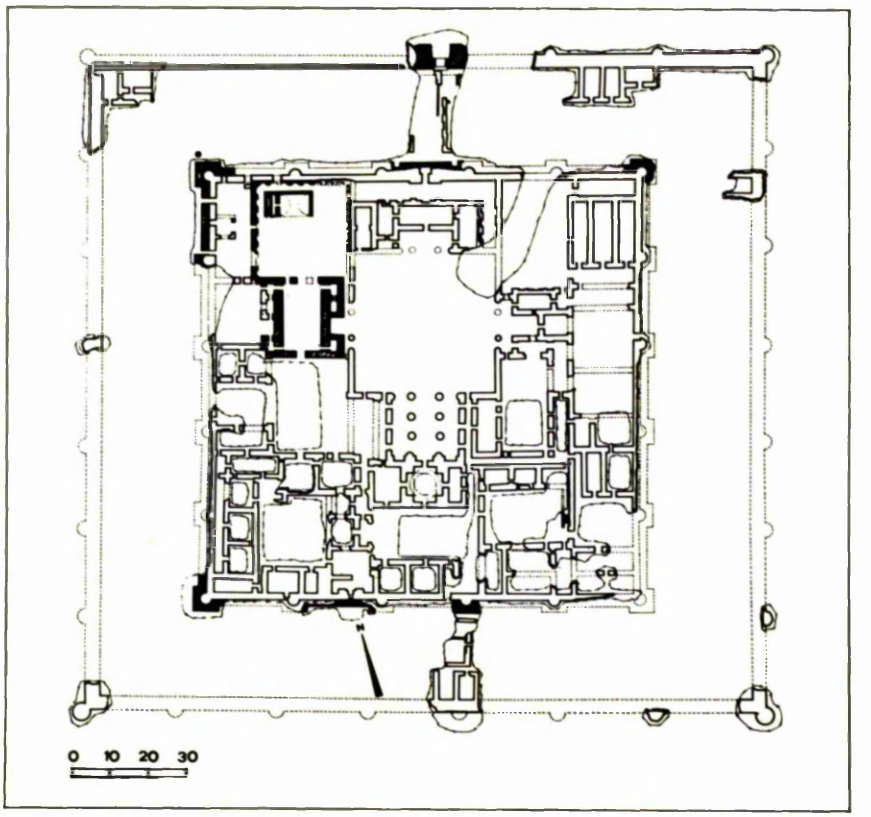


Illustration 6c Kūfa Dār al-Imāra, Plan.

the mosque, at the dividing line between the holy and the unholy. Before proceeding further, at this stage the ground-plan of the palace Mshaṭṭā has to be mentioned. (See illustration 7) The date of the palace is still being debated, but it is possible that it was used by al-Walīd II to give audience, therefore, it was an influential centre of power. The dome chamber is of the triple-apsed basilica type with a mihrāb in the rear wall. Mshaṭṭā may have served as an intermediate structure in the development of the mosque/palace complexes, occupying the temporal dimension between that of the Kūfa Mosque-palace and that of Khirbat al-Minya complex. It is feasible that attempts were made to find a satisfactory solution for a single unit where both mosque, the place of worship and palace, the place of power was equally represented. Due to the lack of evidence concerning the exact date of the said building, this hypothesis is offered purely as a speculation.

At this point, the generally accepted proposition, that the Medina Mosque set the precedent for the inclusion of the dome in front of the mihrāb is evaluated. The mosque was rebuilt by al-Walīd I on the site of the original one between the dates 87/705 and 92/710. According to a storyteller, quoted by Sauvaget, the ceiling of the maqsūra, situated at the back of the longitudinal nave, which corresponds to the bay in front of the mihrāb, was covered with a wooden cupola.[4] From the examination of the ground-plan, the fact that the longitudinal nave is

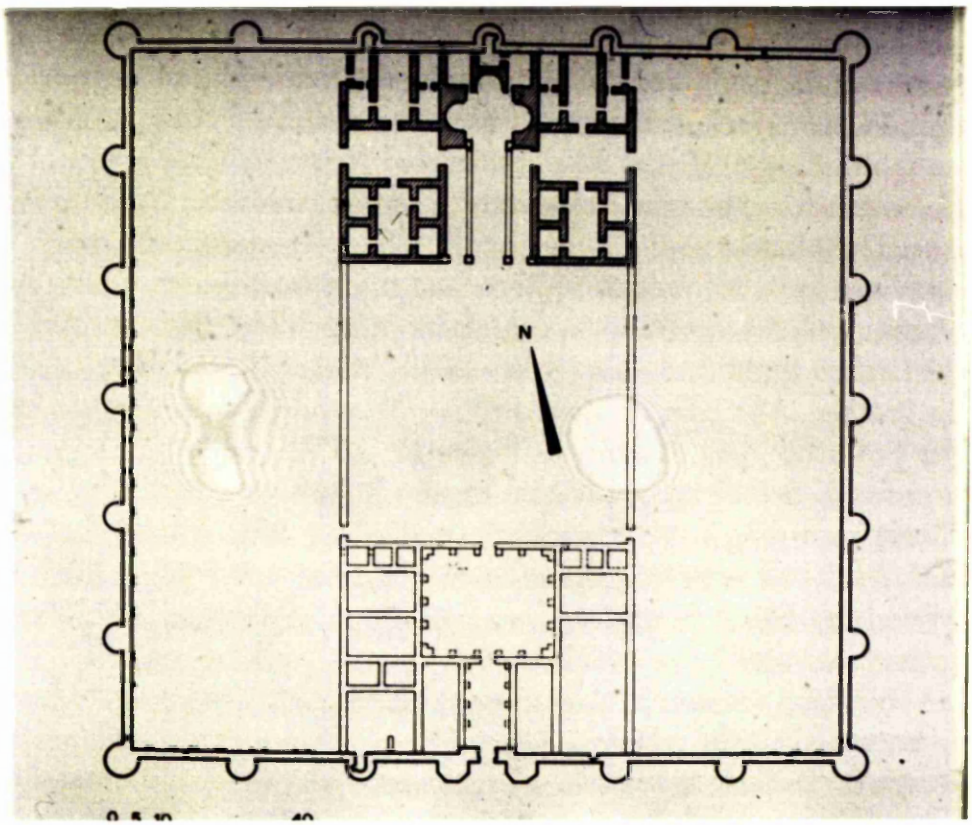


Illustration 7 Mshaṭṭā, Ground Plan.

not in the centre of the mosque, consequently, nor is the cupola in front of the mihrāb is revealed. Furthermore, in the original reconstructed mosque of the Prophet, as well as the Umayyad mosque, central aisle has a door where the Prophet and later the Imam or the ruler entered. This factor influenced the rest of the construction, in that, the mihrāb and therefore the cupola had to be displaced to the left of centre.

This peculiarity of the ground plan warrants a sequence of assumptions to be made: If it were true that the Medina Mosque set the precedent for future mosques in order to possess a dome, then it is logical to assume, that their plan would be similar also. This assumption is further justified by the claim, that the present mihrāb marks the spot where the Prophet cast his javelin in order to mark the qibla, the direction of prayer and the cupola marks the spot where he stood. This does not prove to be the case, however, as can be seen in the Aqṣā and the Damascus mosques. The al-Aqṣā Mosque is similar to the Great Mosque of Damascus in that, the central aisle is wider than the others and terminates in a dome in front of the mihrāb bay. Both mosques have three aisles parallel to the qibla, and the dome is situated over the second one which means that in order to remain consistent with the earlier description concerning the definition of the dome in front of the mihrāb, these shall be referred to as mihrāb domes. The Great Mosque of Damascus was built on the Christian church plan and this may explain the

position of the dome. (See illustration 8 a, b, c) The al-Aqṣā Mosque on the other hand was modelled on the Damascus Mosque, hence the position of its dome. (See illustration 9) The Prophet's Mosque on the other hand has five naves parallel to the qibla, but the perpendicular nave which is marked by the cupola at the ceiling level is equidistant to the others. The "T" plan is made evident only by the miḥrāb and cupola positions. Although the cupola is over the nave which is directly in front of the qibla, it is not an integral part of the overall structure, it is restricted to the ceiling level only and the path from the ṣaḥn to the miḥrāb niche is marked at the same level by gilding. The sanctuary and praying area surrounds the ṣaḥn without differentiation.[5] The date of the cupola is not certain, there are conflicting claims. According to some scholars, it was included only after the dome of the Damascus Mosque was constructed.[6] This idea, however, was contested by Creswell and A. Lezine who consider such a step to be retrograde.[7] On the basis of the available historical and architectural information the following hypothesis, which at the same time forms the central core of this thesis is offered: The dome was incorporated especially in front of the miḥrāb, because the latter was considered by the Umayyad rulers to be the symbolic manifestation of the Dār-al-Islām, the unification of the seat of power and the place of worship under one roof on the model of the palace/mosque precedent. It is for this reason, that the hypothesis, that the cupola in the Prophet's Mosque was

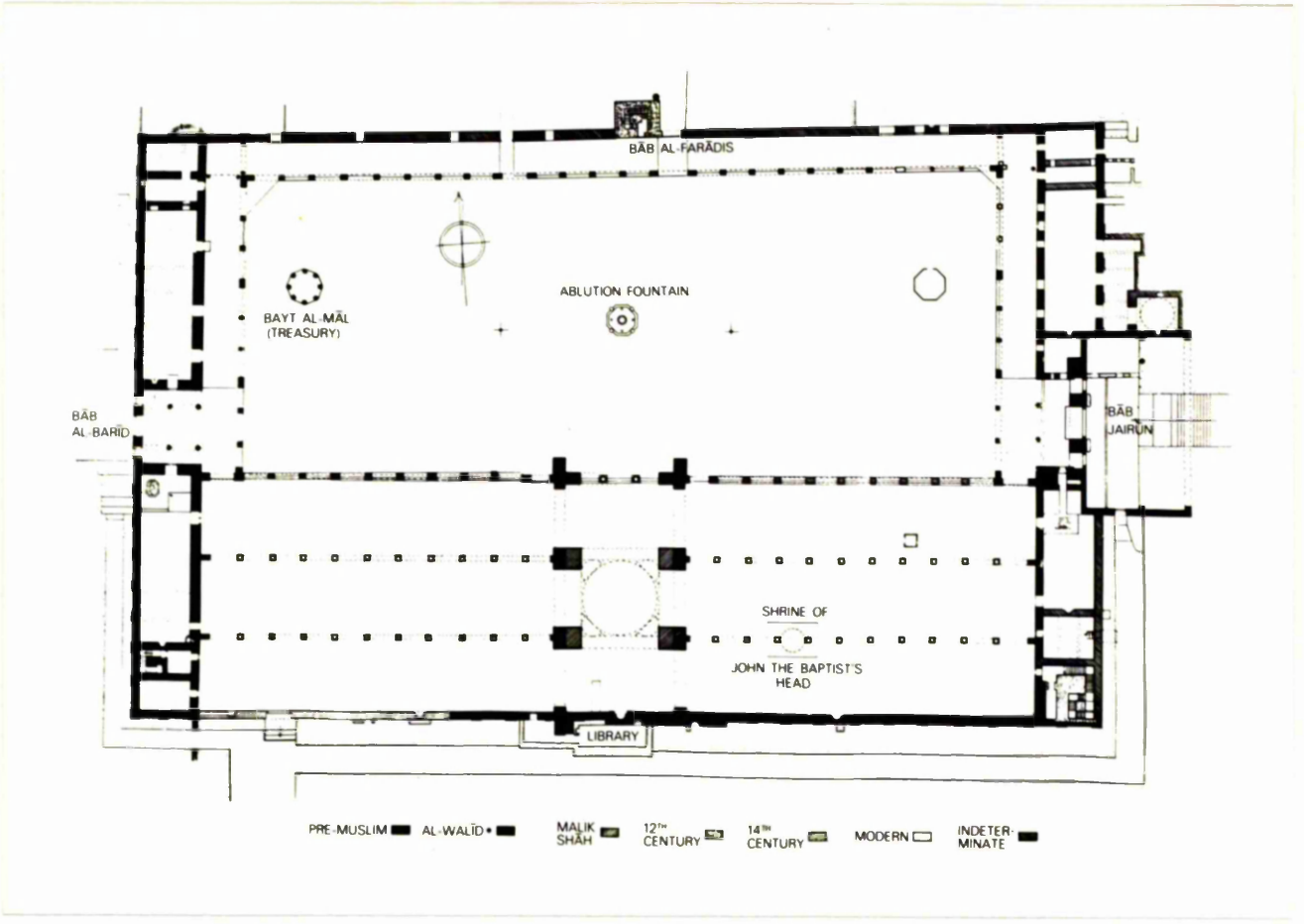


Illustration 8a Damascus Gt. Mosque, Ground Plan.

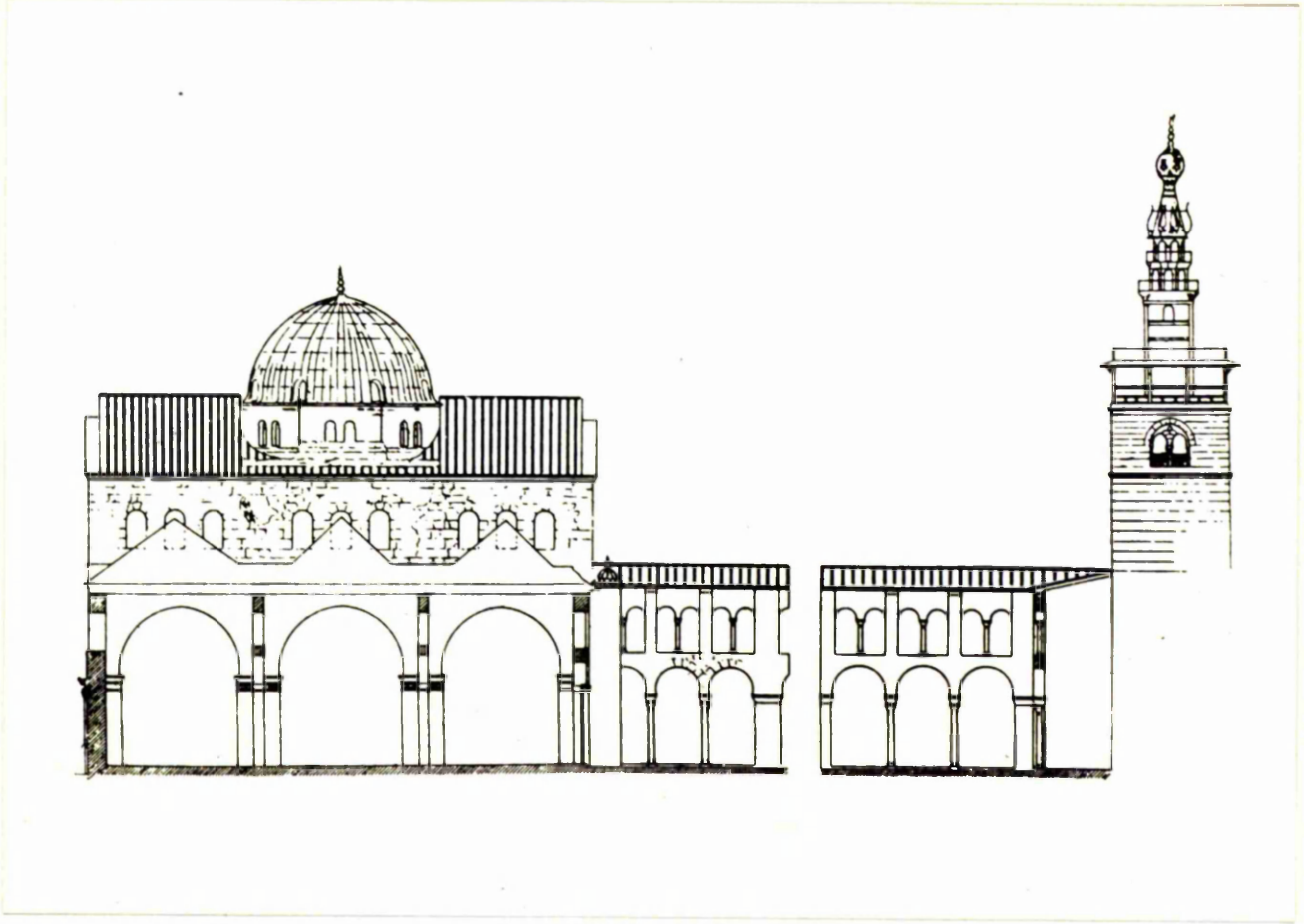


Illustration 8b Damascus Gt. Mosque, Section.

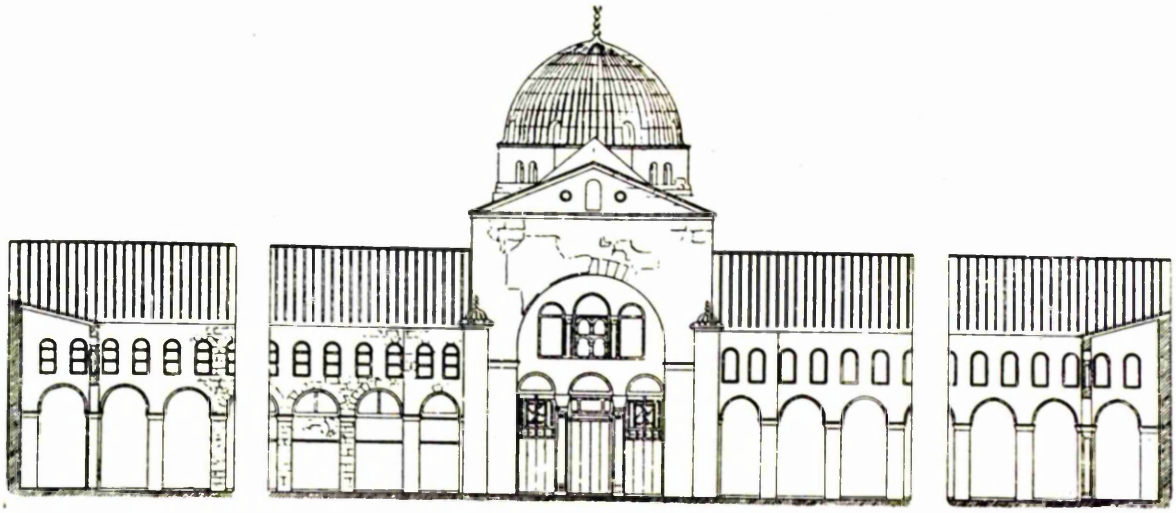


Illustration 8c Damascus Gt. Mosque, Section through Courtyard.

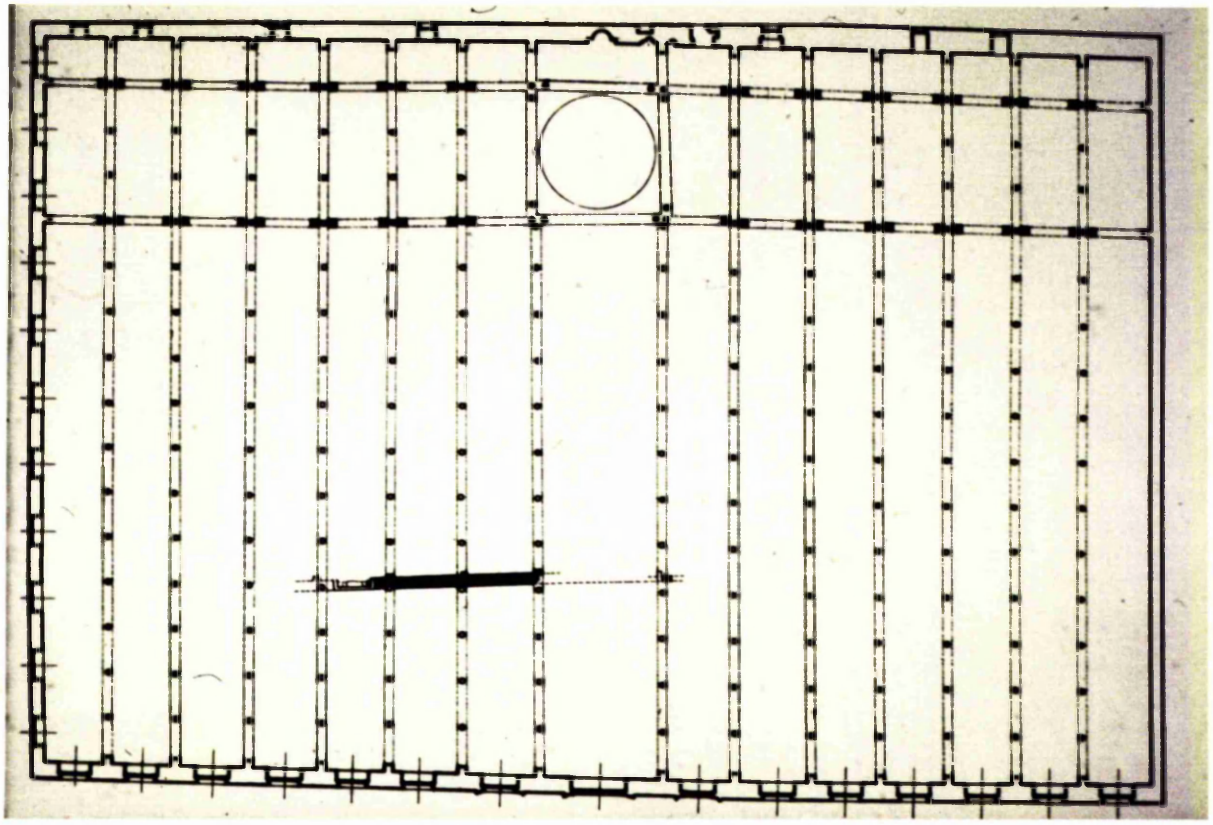


Illustration 9 Jerusalem, Al-Aqṣā Mosque,
Ground Plan.

possibly an afterthought, rather than as what Creswell suggested, is here offered support. The position of the cupola was determined solely by the position of the mihrāb and it served only as a decorative item. There is an overlap of approximately five years in the period of reconstruction of the Prophet's Mosque and the building of the Damascus Mosque, which was sufficient for contradictory evidence to emerge.

Further support for the hypothesis is derived from early precedents of the palace-complexes, such as the one at Kūfa, which was built in 17/638. The next chronology is at Merv, where the Dār-al-Imāra with a mosque was built in 132-8/750-55 by Abū Muslim, who used to sit in the domed chamber. The next mosque palace is in Baghdad, built for al-Manṣūr ten years after the edifice at Merv.[8] But even before Merv, at Mosul, Marwān II built a mosque in 126-30/744, which according to Muqaddasī[9] was covered with domes which rested on alabaster pieces.[10] The palace at Mshaṭṭā was mentioned earlier, during the excavations at Samarrâ, a similar type of throne room was found in two palaces, namely the Jausaq al-Khāqānī and Balkuwārā, dating from the mid-ninth century. The first one has a basilica type plan and the latter a four īwān plan, like that at Merv and both have a central throne room, or domed chamber.[11] The next important complex is the Ukhayḍir Palace in Iraq, which dates from the eighth century, 'Abbāsid period. (see illustration 10) The palace consists of a mosque, a court of honour and audience

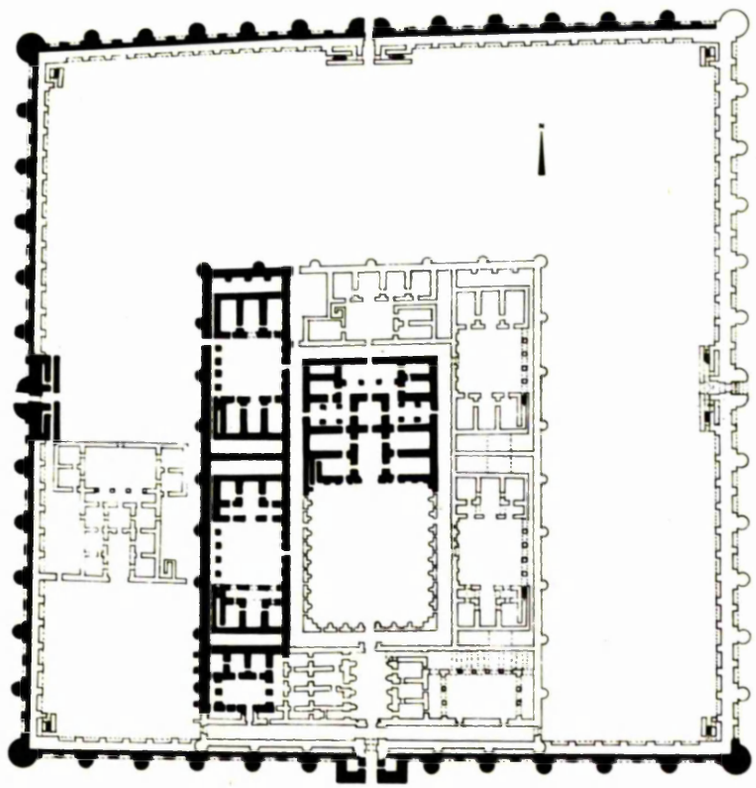


Illustration 10 Iraq, Ukhaydir Palace, Ground Plan.

halls. The entrance hall leads into a square room with fluted dome, which is the first of its type in Iraq. In Iran similar complexes appear, at a later date, one of which is the Ribāṭ-i-Sharaf, discussed under the appropriate heading. It has two mosques and two palatial suites separated by a domed chamber, which recall the throne rooms of earlier palaces.[12]

The most important building in the development of the dome in front of the mihrāb is the Ribāṭ at Sūsa, because it is in this construction, that for the first time the dome is actually in front of the mihrāb, as understood on the basis of the definition supra.

The Ribāṭ set the precedent and the North African Mosques that were to follow and it will be discussed in the next chapter.

REFERENCES TO CHAPTER TWO

1) Jairazbhoy, op cit., pp. 84-5.
2) Ibid., p. 27.
3) Creswell, EMA I., op. cit., pp. 381-9.
4) Sauvaget J., La Mosquée Omeyyade de Medine, p. 84, Fig. 5.
5) Ibid., P. 91.
6) Shafi M, "A Description of the Two Sanctuaries of Islam", A Volume of Oriental Studies, Presented to E. Browne, p. 429.
7) Lezine A, L'Architecture de l'Ifriqiya, pp 55-7.
8) Hoag J, Islamic Architecture, p. 34.
9) Ibid., pp. 248-53.
10) Ibid., p. 222.
11) Ibid., p. 48.
12) Mitchell G., op. cit., p. 256.

CHAPTER THREE

NORTH AFRICA AND EGYPT

Historical Introduction

North Africa was conquered during the period from the middle of the seventh to the end of the eighth century. The inhabitants of the area were heterogenous, comprising nomadic desert tribes and settled city dwellers. The invading Arab armies were stationed in coastal fortresses and similarly to the other countries under occupation, the military personnel were isolated from the rest of the population.[1]

The prevalent architectural style of the area was similar to the one encountered in Syria, but on a much simpler scale.

The newly acquired territories were governed from the seat of the Caliph, wherever it happened to be, through individual governors. Before concentrating on the characteristics of the type of architecture which resulted from this early political arrangement, the relevance of the Ribāṭ at Sūsa will be discussed in detail.

The Ribāṭ, a monastery fortress with a mosque was completed in 206/821.[2] (See illustration 11) A

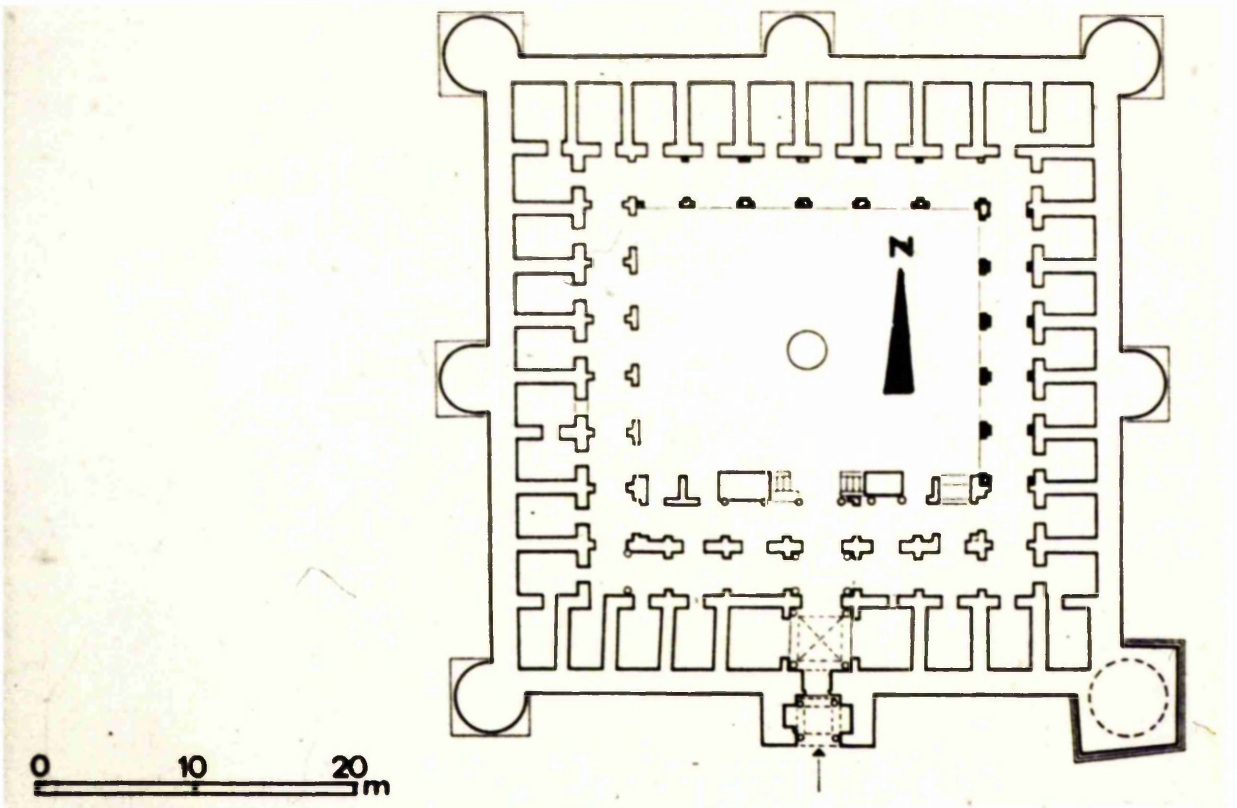


Illustration 11 Tunisia, Sūsa Ribāṭ, Ground Plan.

comparison may be drawn between it and the mosque/palace complexes discussed supra, because the house of worship and the place of power is under the same roof. Moreover, this is the first edifice, where the dome occupies the place directly in front of the mihrāb, and sets precedent for the North African mosques to follow. The Ribāṭ occupies a square area with a central courtyard which is surrounded with tunnel vaulted rooms. The sanctuary is not on the ground floor, it is situated directly above the entrance and the equivalent rooms on the ground floor, the mihrāb bay is marked by a dome. The dome is slightly raised and rests on a square drum with the squinches reminiscent of the Sasanian types, being joined between the arches and very simple. (see illustration 12)

The squinches are reminiscent of those found in Iran and they found their way to North Africa probably via Syria. The dome does not seem to be an organic part of the prayer hall, rather, it is sitting on top of it. Nevertheless, it is still one of the most important examples in the history of development of the North African domes and their positions.

The question must be posed whether the dome was intended for the sanctuary only was it intended to serve a dual purpose: to signal the position of the mihrāb and to mark the division between the hostile external world and the place of protection, the Dār-al-Imāra.

Another question arises at this point: were there attempts made to build fortresses similar to the Ribāṭ at Sūsa either earlier or later.

Several palace complexes were built earlier at Kūfa and Baṣra in Syria and at Merv in Iran. The complexes of Kūfa and Baṣra were modelled on Roman fortresses, but aside from that they had nothing in common with the Ribāṭ at Sūsa. There was no dome over the entrance portal or in the sanctuary of the mosques, but there was one covering the throne room.

There is no evidence concerning any intention to use the dome or cupola in order to mark the division between the internal and the external areas either by the rulers or their architects prior to the Ribāṭ at Sūsa. The absence of the dome or cupola over the entrance portal could be construed as support for one of the central issues of this thesis, that the dome over the entrance of mosques acquired symbolic significance since the Ribāṭ of Sūsa.

The following explanation is offered as a possible reason for the absence of a portal dome in desert palaces, that when viewed from a distance the dome over the throne room presented an unmistakable picture of the location of the palace of power. Had there been another dome, either in the mosque or over the portal, the observer would not have been able to identify the centre of focus in the palace/complex.

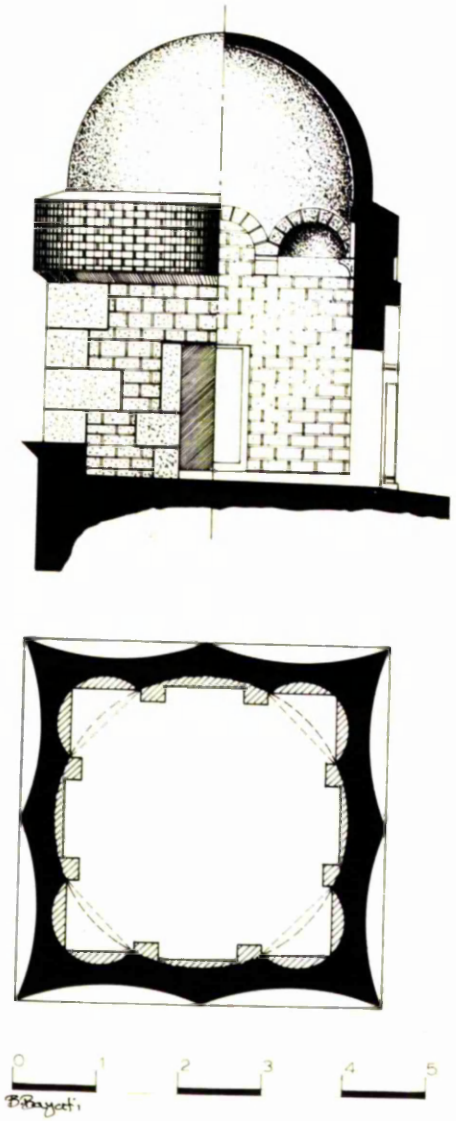


Illustration 12 Tunisia, Sūsa Ribāṭ, mihrāb dome.

There is a gap of around fifty years between the construction of the Ribāṭ at Sūsa and the first group of mosques to be discussed. These include the Great Mosque of Sūsa and the Great Mosque of Sfax, which were built in 228/850, followed by the great Mosque of Qayrawān. Although built prior to these two, its dome was included later in 240/862[3] therefore it must be considered as a later example in the chronology. The second group comprises the Mosques of Ibn Ṭūlūn and the Great Mosque of Tunis,built in 275/869 and 116/734 respectively, however, the latter mosque was totally reconstructed in 248-252/862-866, by Ziyādat Allāh. An inscription at the base of the mihrāb, however, gives the date of completion as 250-1/864-65, thus making it a contemporary of the Qayrawān dome.[4]

The dome to be discussed in the first group is that of the Great Mosque of Sūsa, followed by Sfax. The former one possesses two domes, one at each extremity of the central nave. One of the domes is situated directly in front of the mihrāb fulfilling the requirement for it to be classed as such. The dome rests on an octagonal drum, 1.46m high, with slightly incurved faces and rests on a shallow substructure of 1.02m in height. There are eight colonettes, carrying four squinch arches. The interior of the dome is hidden and it may be the oldest example of a dome supported this way in Islam.[5] (See illustration 13) The sanctuary itself is of an area comprising thirteen aisles which are perpendicular and six aisles, which are

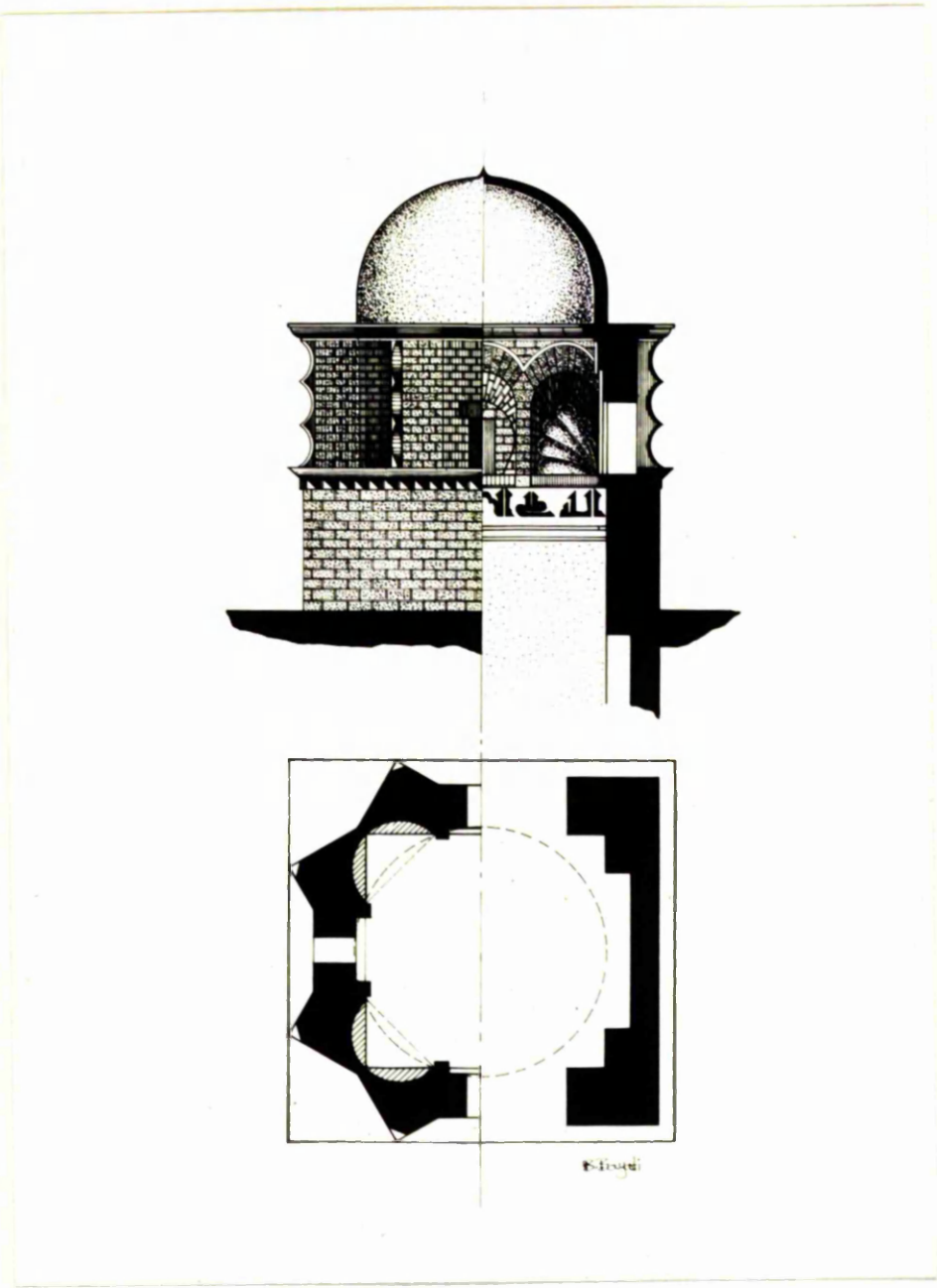


Illustration 13 Tunisia, Sūsa Gt. Mosque, mihrāb dome.

parallel to the qibla. The disposition of the dominant naves are reminiscent of the "T" plan, with the two domes at the extremities of the central nave. The sahn is rectangular, enclosed on all four sides and it is approximately the same size as the praying area, thereby providing a balanced appearance between the holy and the unholy areas. The dome in front of the mihrāb, probably modelled on the dome of the Ribāṭ, is much more elaborate and attractive. The corner squinches are not only functional, but serve as an integral part of the decorative pattern. Kufic inscription is also included in the decoration and above it there are two brackets. The second dome is situated on the central axis as mentioned supra, covering the third bay of the sanctuary, it rests directly on a square substructure.

The original sanctuary could only have been entered from the sahn as the doors are later additions.[6] The second dome, however, is not directly in front of the entrance area, but further in and it is followed by two more aisles towards the sahn side. Again this arrangement gives a balanced impression, because there are two aisles between the dome in front of the mihrāb and two aisles after the second dome. However, there is an impression of differentiation between the area in front of the second dome and the sahn in that the ceiling is covered with cross vaults in the first instance and barrel vaults in the second.

It is impossible to ascertain the motivation and reasons for the implementation of such an arrangement, architecturally there is no particular advantage in the inclusion of two domes, but, it is possible that the answer lies in the symbolic meaning of the dome:

If the mihrāb is the holiest component of the mosque, then it is logical to assume that the qibla, which houses the mihrāb, is the next holiest. The further the worshipper is from the holiest area in the sanctuary, the less the sensation is of the holy emanation.

It was established earlier, that the dome in front of the mihrāb marks the holiest area in the sanctuary. It is not illogical therefore to assume, that a second dome would mark the least holy, which is inevitably the dividing line between the external world and the internal one. The two main aspects of the mosque, which present a dichotomy are the liturgical axis, which has to provide adequate praying 'surface' in the closest proximity of the qibla and the architectural axis, which enables this to happen. Extending the sanctuary along the length of the qibla wall complies with the requirements of the liturgical axis, but this is not the only architectural solution. It is possible to extend the liturgical axis in the vertical direction also, the inclusion of the dome in front of the mihrāb seems to be a reasonable solution to this architectural dichotomy.

The second North African mosque to be evaluated is the Great Mosque of Sfax. The original mosque was erected in 236/850. The ninth century sanctuary contained nine naves, perpendicular to the qibla wall.[7] There is a cupola preceding the mihrāb. Similarly to the mosque discussed above, there is a second cupola at the entrance to the sahn. There are a number of architectural anomalies in this mosque, one of which is the presence of a mihrāb, which is hidden by a more recent one. At some stage, the mosque was reduced in size and the mihrāb was moved into a different position, where now it occupies a central position.[8] The present mosque is well balanced with five perpendicular aisles and six transverse ones to the qibla. The second dome is positioned outside the sanctuary area, on the same axis as the dome in front of the mihrāb, marking the entrance to the sanctuary. The position of this dome is different from that of the Sūsa Mosque, the latter being in the prayer area. One possible explanation for this anomaly may be due to the fact that the original mosque was considerably reduced in size and the architect paid more attention to the transverse or architectural rather than the liturgical axis, thereby attaining a symmetry between the sahn and the sanctuary, which is an area approximately the same in size. The dome in front of the mihrāb is also more striking than the Sūsa dome, which may be an indication, that a more conscious attention was paid to the creation of a lasting visual impression, than previously.

The next mosque in this group is the Great Mosque of Tunis (Zaytūna). The original mosque was built on the site of an old Christian church in 116/734, which was completely reconstructed by Ziyādat Allāh in 248-52/862-66.[9]

The plan reveals a dissymmetry in that the naves are not orientated exactly at right angles to the qibla wall. This may be due to the fact, that the dome had to be set on a square base, while the ground plan was not. The central aisle leads to the mihrāb, which is preceded by the dome which is supported on the square base formed by the main arches of the axial nave and the qibla wall. The mihrāb arch and the two coupled arches are perpendicular to the qibla wall, but are not an extension of the arches of the axial nave. The sanctuary consists of fifteen aisles which are perpendicular to the qibla. There are seven parallel bays in the sanctuary area, one of which is covered on the courtyard side of the mosque. The central aisle of this section is covered by one dome on the mihrāb dome axis, the same way, that is to say, not in the prayer area, but outside it, as in the case of the Great Mosque of Sfax.

The dome rests on shell-shaped squinches set on four corners. It is surmounted by an octagonal drum, which is pierced by arched windows. The dome, which rests on the drum is ribbed and is surmounted by a Hilāl.[10] (See illustration 14) The appearance of the Hilāl in North Africa is a very interesting indicator. It further

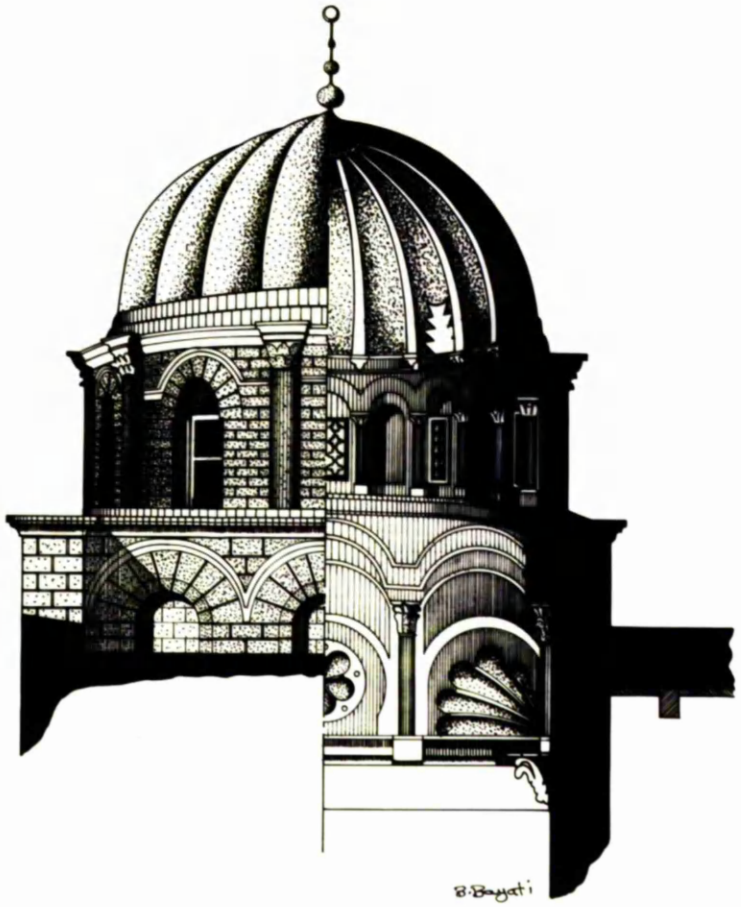


Illustration 14 Tunisia, Tunis, Zaytūna Mosque, mihrāb dome.

supports the hypothesis that the symbolic ideology behind the North African mosques is different from those of Iran and Syria. The dome is much more impressive than those discussed previously in this group, with a special emphasis on the external appearance. Externally the dome is gadrooned and it is supported by a cylindrical drum, which is strengthened by pillasters with capitals and is pierced with claustra.[11] Unlike the first two domes, this one is not only more impressive in its architectural elements, but also in the decorative elements. Similarly to the Great Mosque of Sfax, the visual aspect takes on an important role, however, in this mosque it is manifested both externally and internally.

The importance of the visual element in Islam is one of the imperatives laid down in the Qur'ān and the fact that this is the third instance in which Kufic calligraphy appears as an integral part of the decorative element, besides the twenty radiating lines, which radiate around the centre. The shell-like squinches are also indicative of the emphasis shift towards the development in the direction of aesthetic appeal.

Undoubtedly the most impressive of this group is the Great Mosque of Qayrawān. It was built in 224/838, but the dome in front of the mihrāb was added in 248/862 by Ziyadāt Allāh.[12] (see illustration 15) The original mosque was built in 55/674-5 and it had a Dār-al-Imāra attached on its qibla side. There is not enough information about the

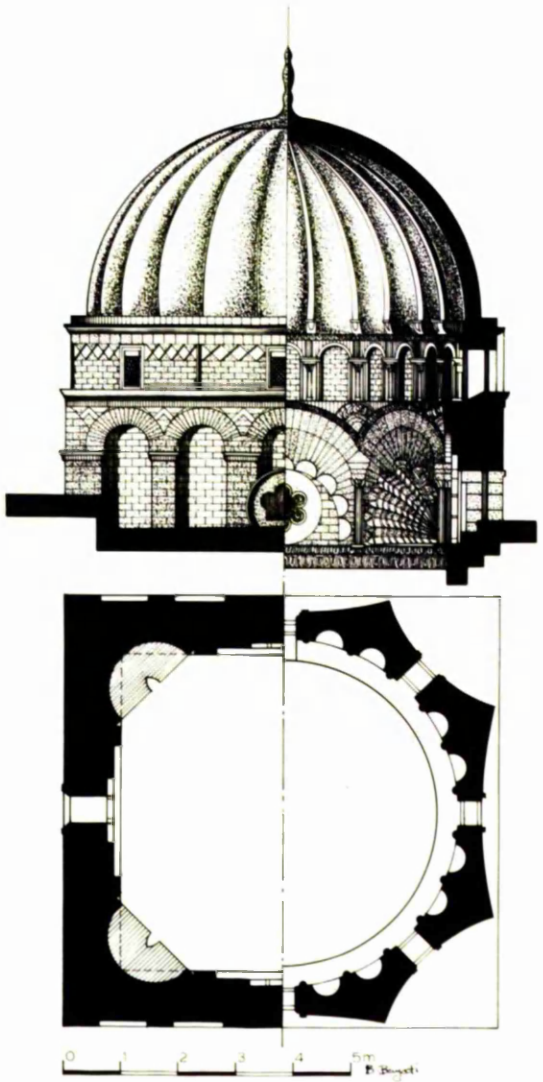


Illustration 15a Tunisia, Qayrawān Gt. Mosque, mihrāb dome. Plan & Section.

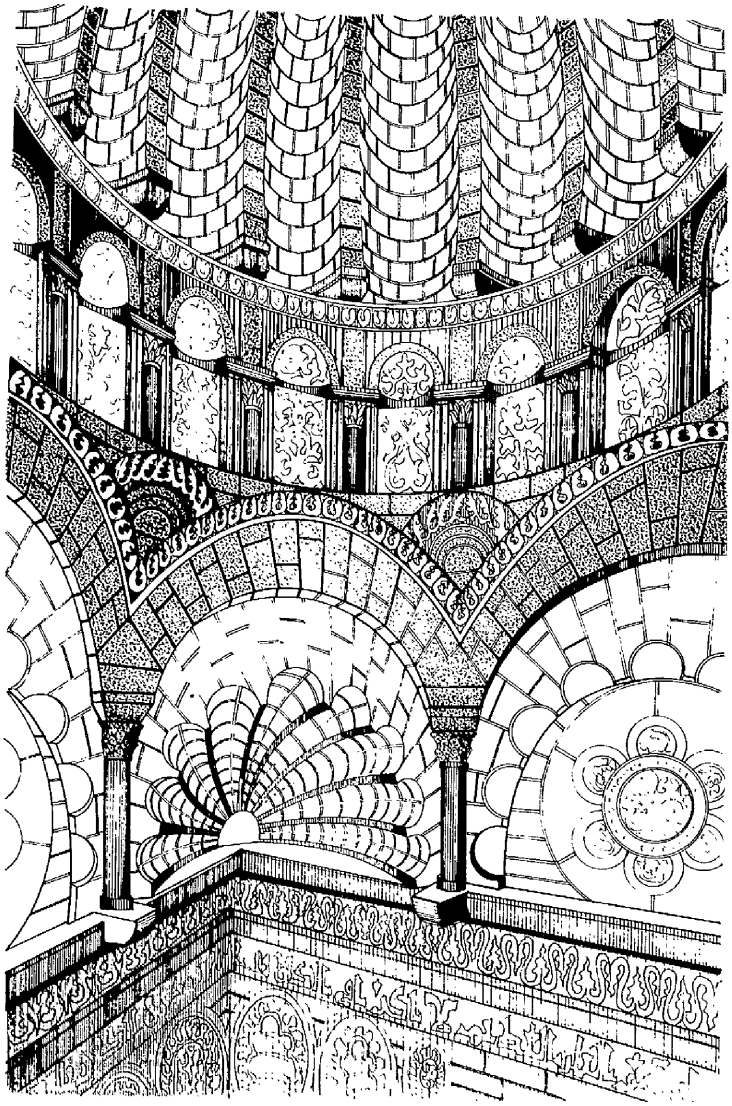


Illustration 15b Tunisia, Qayrawān Gt. Mosque, mihrāb dome interior.

original building, but on the basis of previous precedents it can be assumed, that the throne room was domed, as it was in the case of the Kūfa mosque/palace. The sanctuary is in the characteristic "T" formation. There are seventeen perpendicular aisles, the centre one in front of the mihrāb is wider than the others. There are eight naves which are parallel to the qibla followed by a dome which covers the portico, which, however, was built later than the original dome of the sanctuary.

There is a rectangular courtyard which is enclosed on all sides, with the shorter side parallel to the qibla. The dome in front of the mihrāb is the epitome of Aghlabid dome construction and decoration. In the square chamber there are squinch hoods which are scalloped into shells, they give the impression of radiating sunrays from a central nave.[13] (see illustration 16)

It has to be noted at this point that the shell motif was implemented before in the cupola of the Prophet's Mosque in Medina. It was in evidence also in the case of the Khāṣṣakī mihrāb in Baghdad. It may have acted as an inspiration for later domes.

The shell type squinch occurs for the first time in the two Tunisian mosques discussed earlier. The Qayrawān dome squinch differs from the other two in that the shell shape completely hides the functional aspect of the squinch and presents a purely decorative picture. The wall spaces of

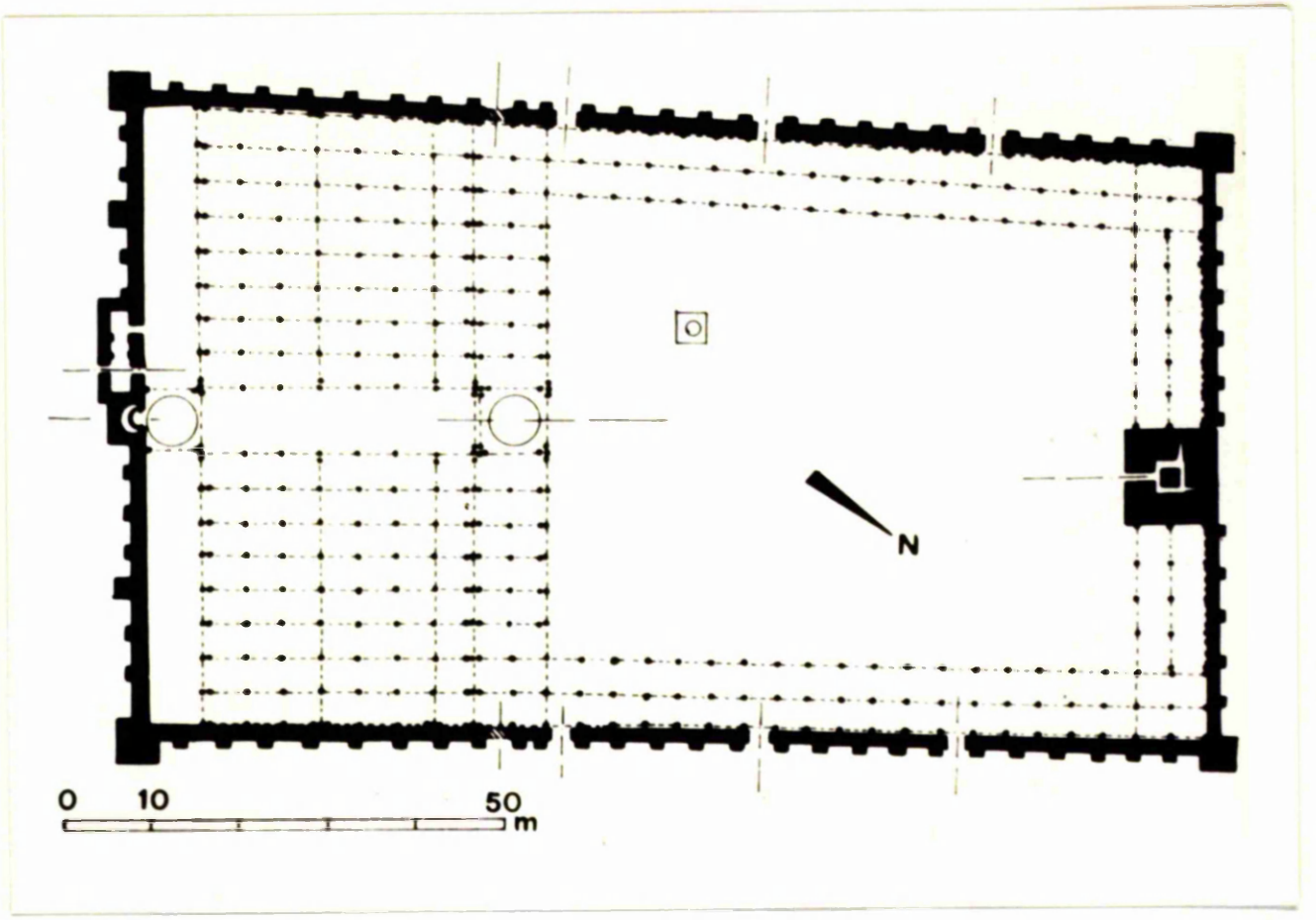


Illustration 16 Tunisia, Qayrawān Gt. Mosque,
Ground Plan.

the transition zone are panelled replicas of the shell outline, which assumes a multifoil pattern. The circular drum on which the dome rests is pierced by hexafoil windows, above which the 'scallops' of the dome converge at the zenith.[14] Externally, this dome is not particularly different from the dome of the Zaytūna Mosque, it is ribbed and its silhouette is extremely impressive over the rooftops of the city.

With the Qayrawan Mosque, the chronology of early Aghlabid mosques has been completed. Without doubt, these have had far reaching influences over the development of the Morroccan domes, however, these can only be mentioned very briefly. The emphasis must be on those mosques, which set the precedent for the later ones and which are the representatives of the diversity within the Islamic empire.

Strictly speaking, the next mosque for discussion does not belong to this group by definition, however, in historical and stylistic terms it must be discussed here, because it caused some controversy amongst some eminent scholars and important developmental role for the inclusion of the dome in front of the mihrāb has been attached to it. The mosque alluded to is the mosque of Ibn Ṭulūn in Egypt.

The Mosque of Ibn Ṭulūn was built in 263/876.[15] (see illustration 17) There is a certain amount of controversy attached to whether or not this mosque originally had a

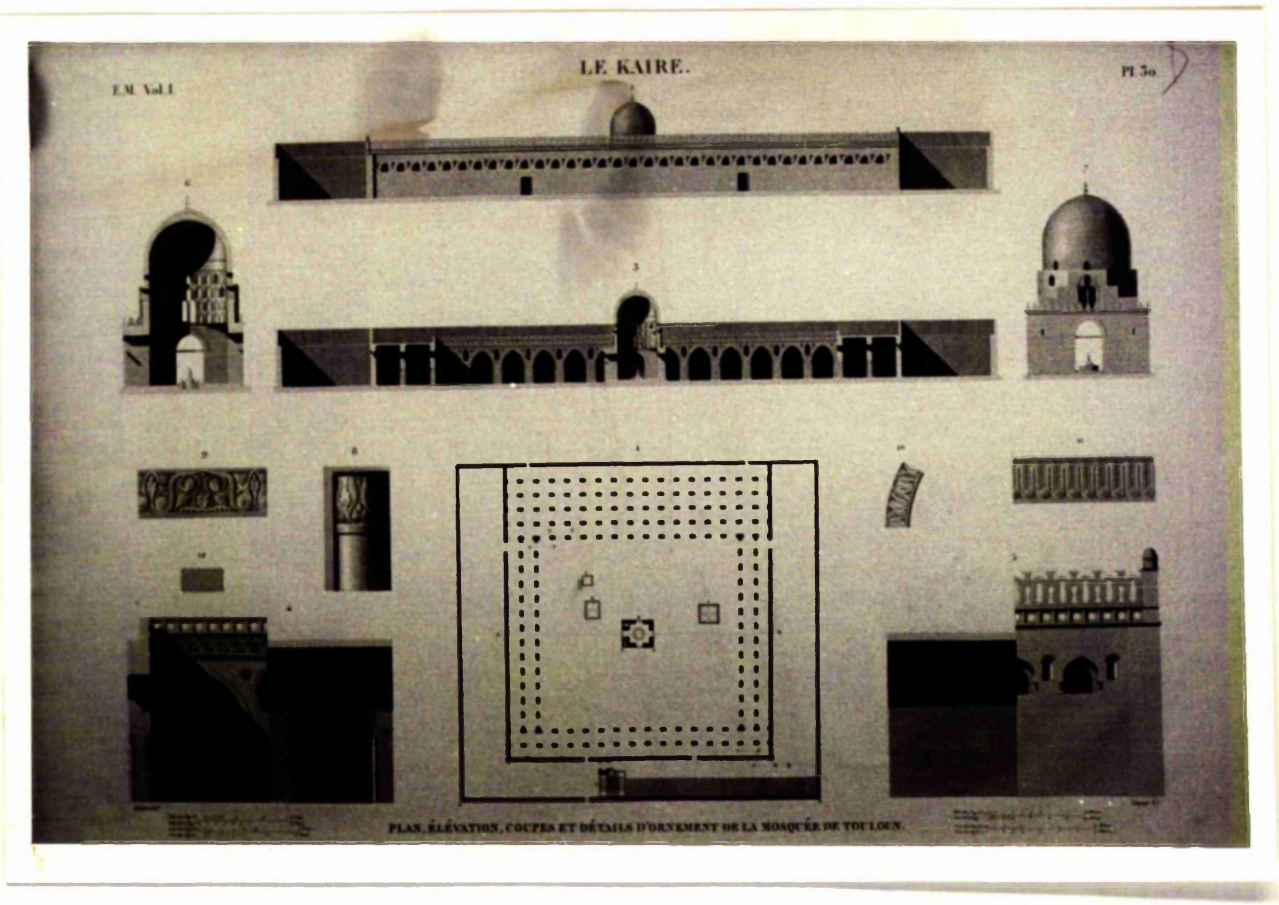


Illustration 17 Egypt, Cairo, Mosque of Ibn Ṭulūn, Ground Plan.

dome in front of the mihrāb. Owing to the lack of available evidence about the interim stage of this mosque it is impossible to state that either one or the other was the case. It is certain, however, that there was a palace adjoining the mosque; the Dār-al-Imāra and it is therefore quite feasible that the mosque/palace concept was implemented as in the case of the Kufa and possibly the Baṣra Mosque, where the seat of power was represented in the palace, consequently the dome was incorporated in that part of the complex, while the place of worship remained simple and unassuming.

On the basis of this assumption, it is highly likely that there was no dome in front of the mihrāb in the original mosque and the present dome was introduced later.

The original mosque had a sanctuary with five naves, which were parallel to the qibla. The enclosed square shaped courtyard is considerably larger than the sanctuary area, which is rectangular. The longer wall is parallel to the qibla. The area in front of the mihrāb is marked by the dome, which was erected in 696/1296 and is attributed to Lājin.[16]

The mosque is surrounded by ziyādas, probably in order to shield the sanctuary from the surrounding secular buildings of the town.[17]

The relationship of the secular buildings to the mosque is

very similar to the earlier examples in Islam, the royal palace was situated on the qibla side of the mosque and the secular buildings converged on the other three sides.[18]

The layout of the mosque itself is very similar to that of the Great Mosque of Samarrā (see illustration 18), which may partially be due to the fact that Aḥmad Ibn Ṭulūn was educated in Samarrā. It is worth noting, that while the Umayyads and the Aghlabids built elaborate and outstanding mosques in the same area, Ibn Ṭulūn chose the simplicity of the earlier mosques, such as those of Sāmarrā, Kūfa and Baṣra. The Iraqi influence can be detected, where more attention is paid to the liturgical axis, than to the transverse, or architectural axis, than in the mosques discussed earlier.

Creswell denies that the Great Mosque of Samarrā had any influence on architectural layout of the Mosque of Ibn Ṭulūn, but likens it to the plans of Kūfa, Baṣra, Wāsiṭ and Baghdad Mosques.[19] The plan may be somewhat different from the Sāmarrā Mosque, but it cannot be denied that the emphasis is on the liturgical dimension; the sanctuary is wide, along the qibla side instead of being deep on the transverse axis.

If Creswell's interpretation is accepted, that the Mosque of Ibn Ṭulūn should be included in the Baṣra and Kūfa type group, then this mosque further supports the hypothesis, that the dome in front of the miḥrāb was introduced into

Illustration 18 Great Mosque of Sāmarrā, Ground Plan.

the mosque as the direct consequence of the nature of the mosque/palace complex. According to Creswell, in 170/786, Hārūn al-Rashīd incorporated the Dār-al-Imāra into the Great Mosque of Baṣra. Furthermore, it can be argued that it was through the mediation of the capital cities of Baṣra and Kufa that eastern influence was to find its way into North African dome architecture, namely the muqarnas pendentive, whose origin was possibly in Central Asia, in Tim, in the tomb of Arab Ata. (See illustration 18a) For the types of muqarnas see illustration 19 a, b)

Egyptian mosques from the 'Abbāsid period did not possess domes and it was not until the Fāṭimids came to power that it became the accepted practice, but nothing new in style was offered until the Mamluk period.

During the Fāṭimid period pendentives were used in order to support the dome. The pendentive was already in evidence, however, prior to their inclusion as dome supports in the Cairean mosques. For this reason a closer examination of the early pendentives is warranted and for this purpose only those buildings will be cited, that seem not to conform to the trend. One of these is the Jāmi' Ikhwāt Sayedna Yūsuf, which was dated 480/1087 on the basis of its pendentives. The main dome rests on squinches, however, there is another one, which rests on continuous sphere pendentives. This type of dome setting appears to have been imported from Syria, for which there is a precedent in the Golden Gate to Jerusalem, constructed during the reign of Justinian.[20]

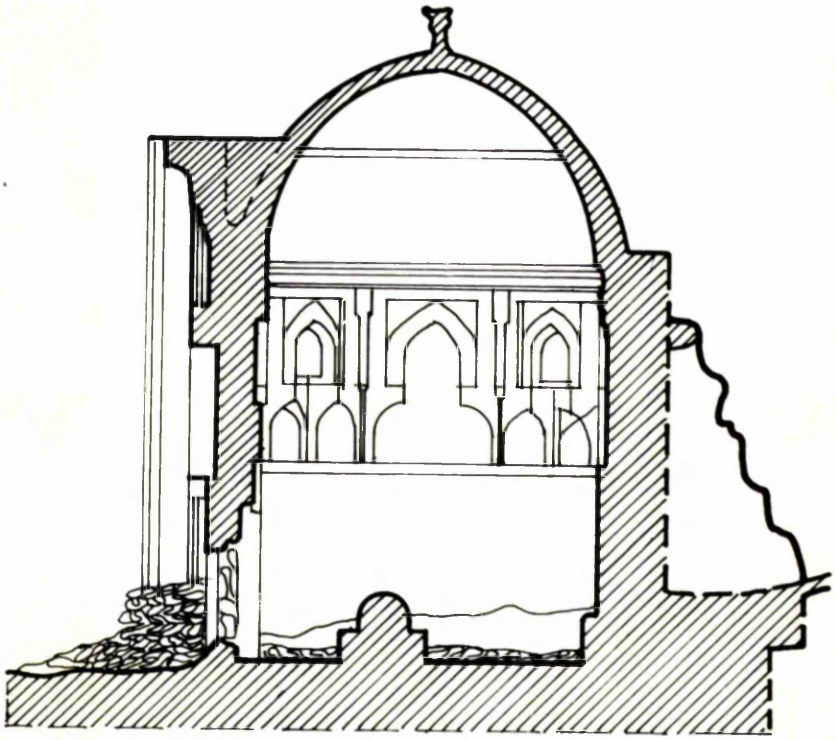


Illustration 18a Tim, Tomb of Arab Ata

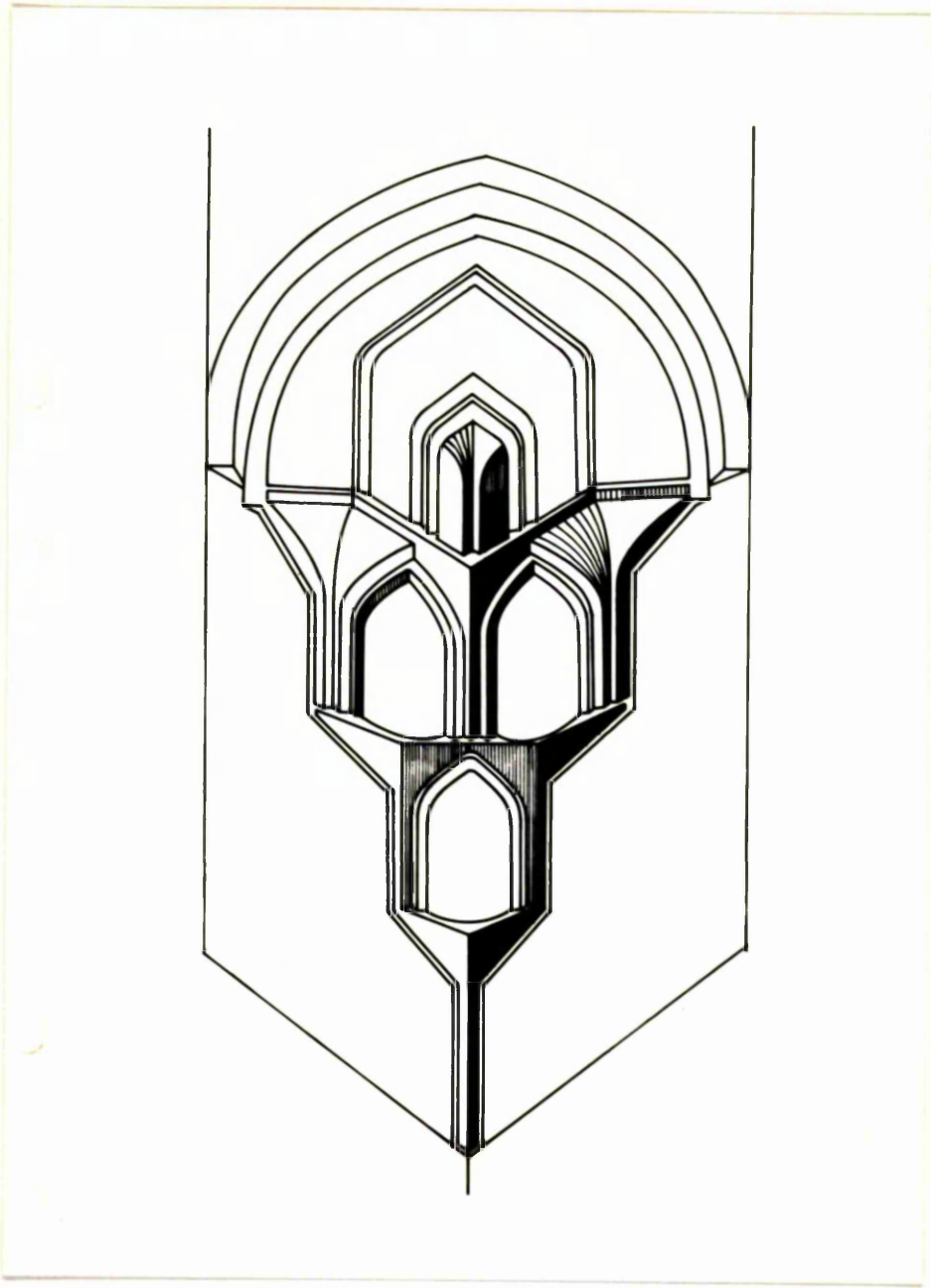


Illustration 19 Muqarnas as squinch of a cupola.

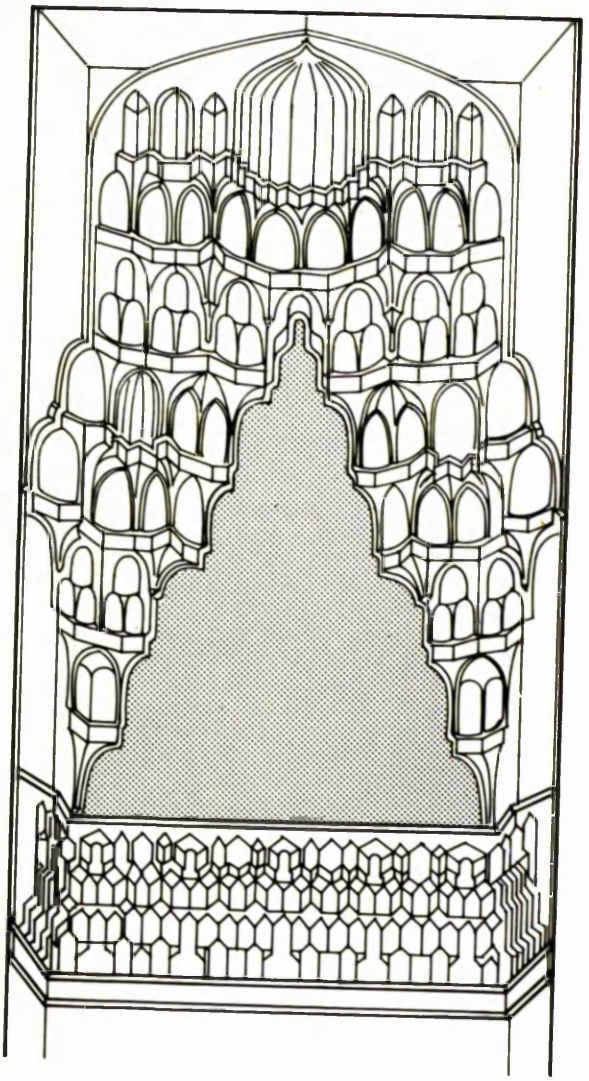


Illustration 19a Muqarnas - niche.

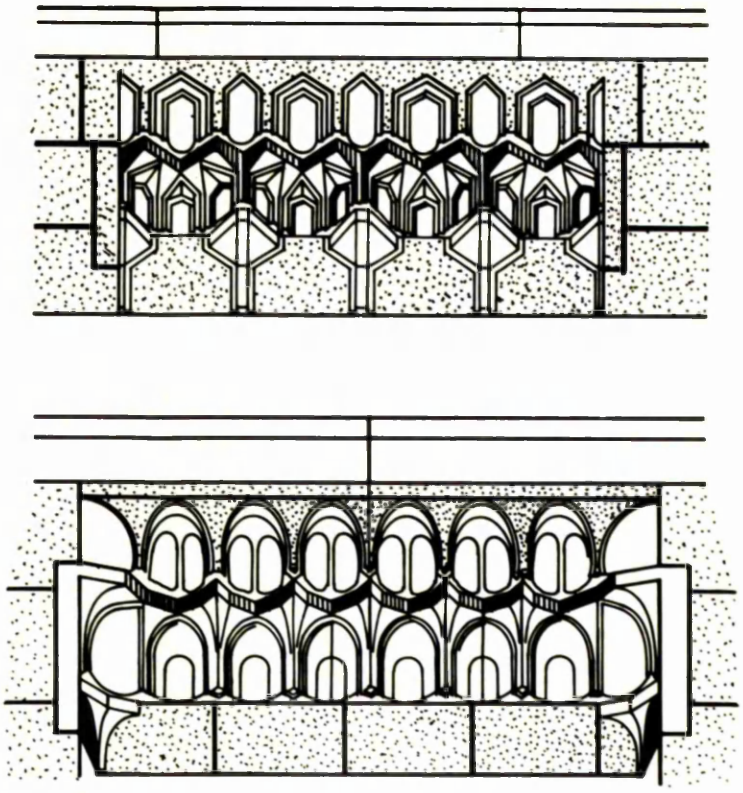


Illustration 19b Rectilinear and Curvilinear Muqarnas.

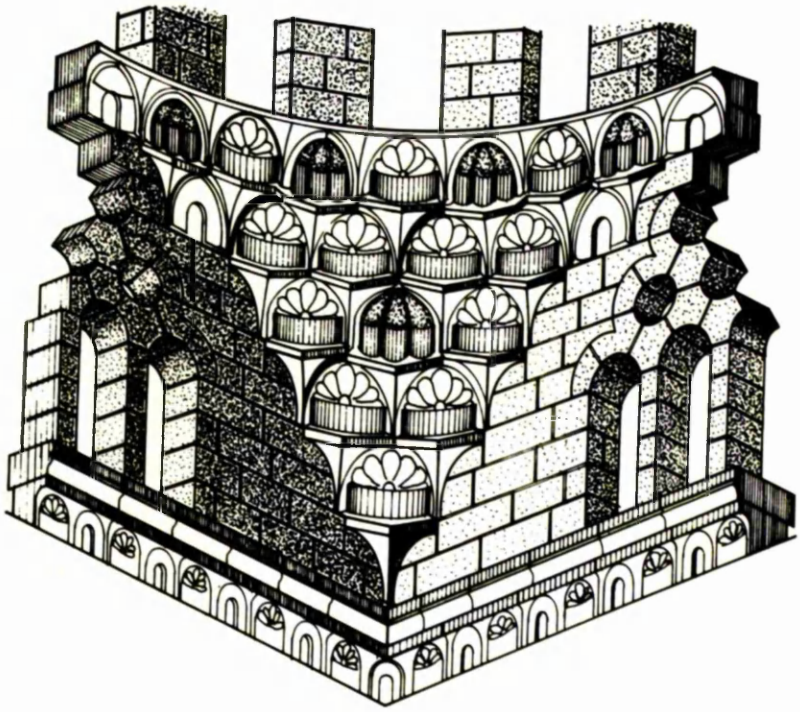


Illustration 19c Muqarnas forming a passage from square to circle.

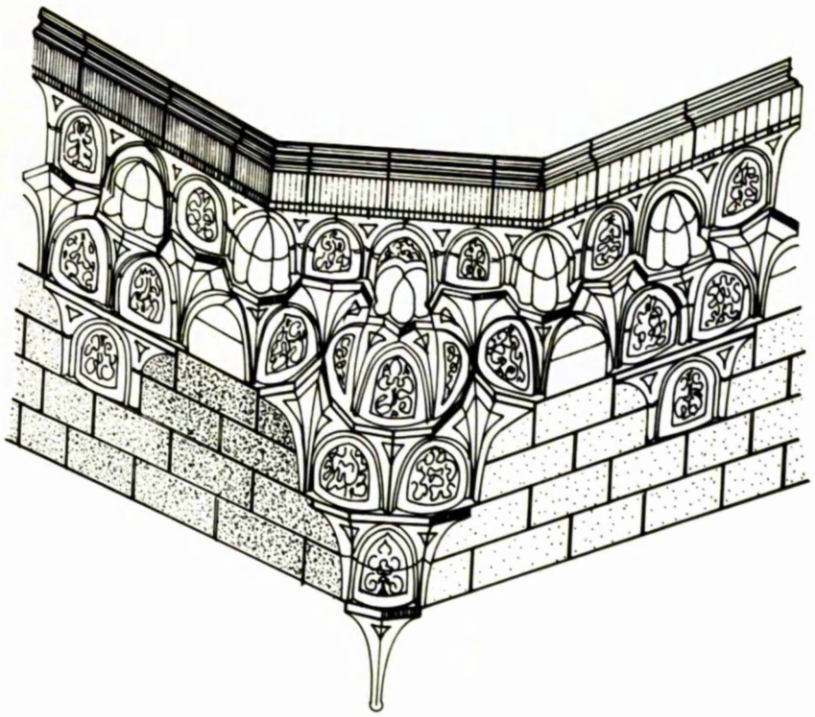
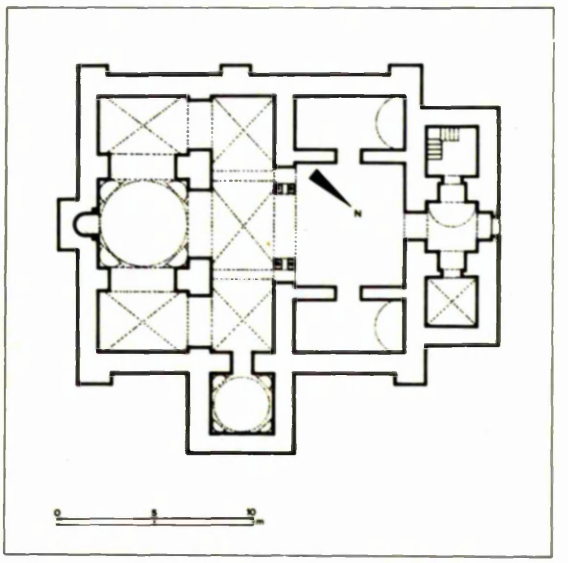


Illustration 19d Muqarnas forming a passage from square to octagon.

This type of setting is not found in the Mosque of al-Guyūshī, however, it must be an antecedent of the Mausoleum of Sayyida Ruqayya, whose dome rests on pendentives, which are one stage removed in its development from the simple squinch, it consists of three niches crowned by one. (See illustration 20) This arrangement should be viewed as a possible first step in the evolution of the stalactite pendentive, which replaced the ones employed in the mosques of al-Ḥākim and al-Guyūshī. The development of this element was a marked feature of the Mamlūk period.[21] The dome has 24 ribs, which meet in a small circle. The ribs are highlighted with vivid colours, which are repeated regularly. Externally it has 24 flutes and the apex is crowned by a bronze finial of three balls diminishing in size and surmounted by a ring.[22] The ribbed dome appeared in Egypt for the first time in the 6th/12th c. and it manifests eastern influences.

Before the other mosques of the Mamlūk period are introduced, a mention must be made of the Mosque of Sulṭān Baybārs, dated 665-67/1267-69. (See illustration 21) The dome is huge, it covers nine bays and is the replica of the dome of Malikshāh in the Masjid-i Jāmi' at Isfahān, which was built in 473/1080 with identical diameter of 15m.[22] The plan resembles those of Ibn Ṭūlūn, al-Ḥākim and al-Azhar, (see illustrations 22 and 23) however, there is a crucial difference in that, the area in front of the mihrāb, the central division resembles that of the Great



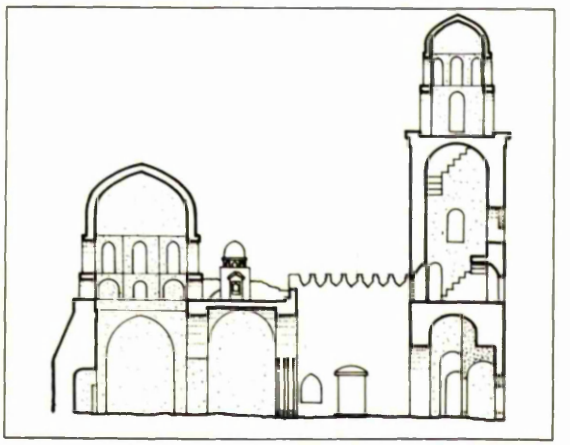


Illustration 20 Cairo, Mosque of al-Guyūshī, dome.

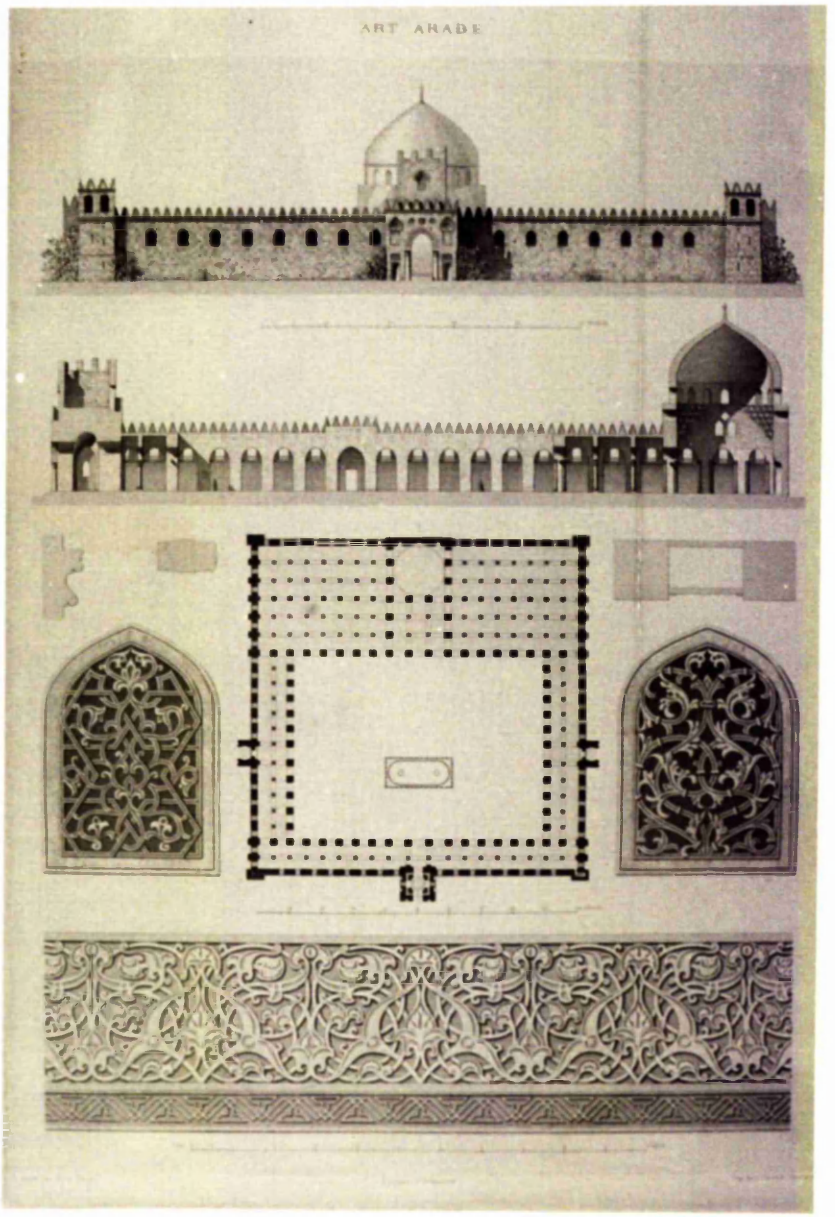


Illustration 21 Cairo, Mosque of Sultan Baybārs.

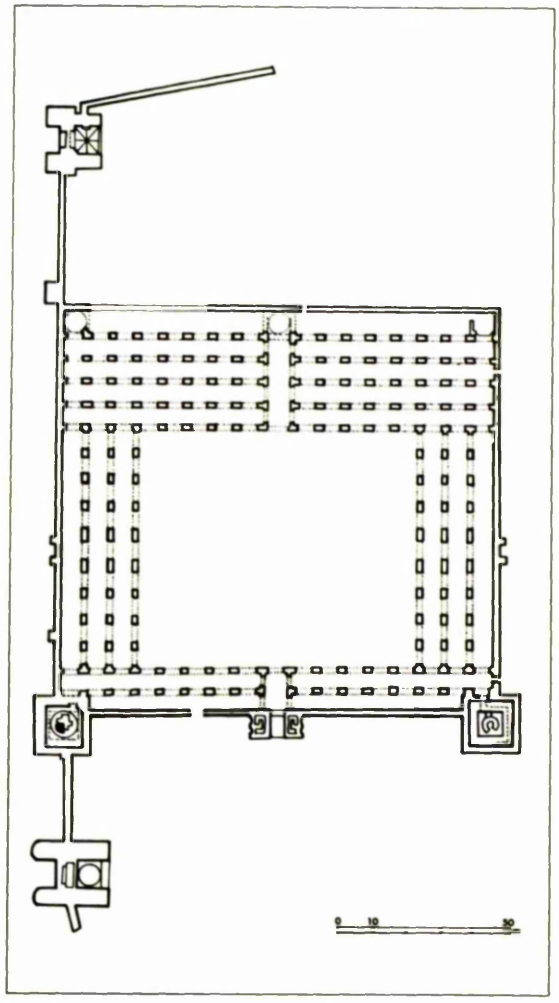
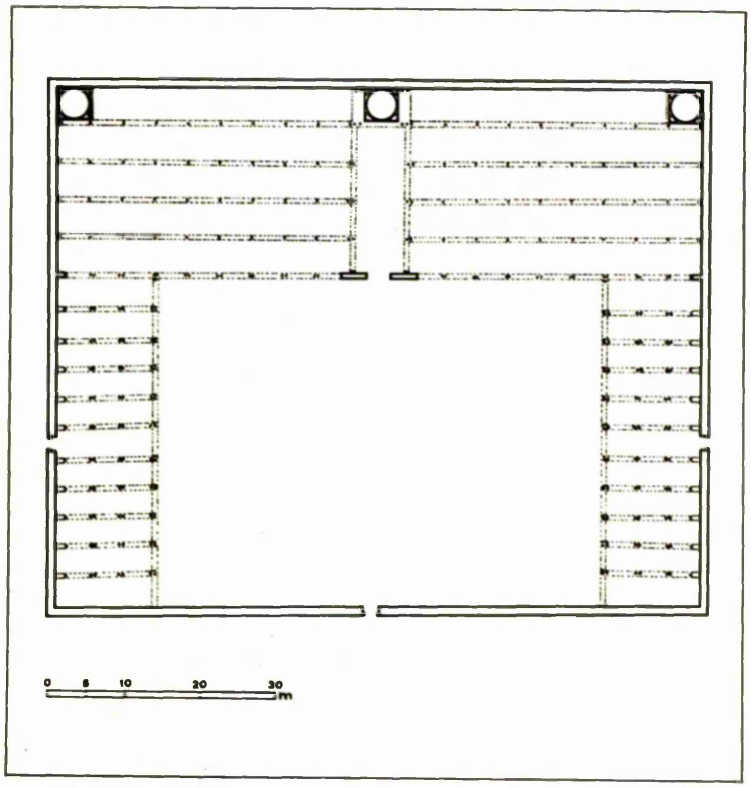


Illustration 22 Cairo, Mosque of al-Ḥākim, Ground Plan.



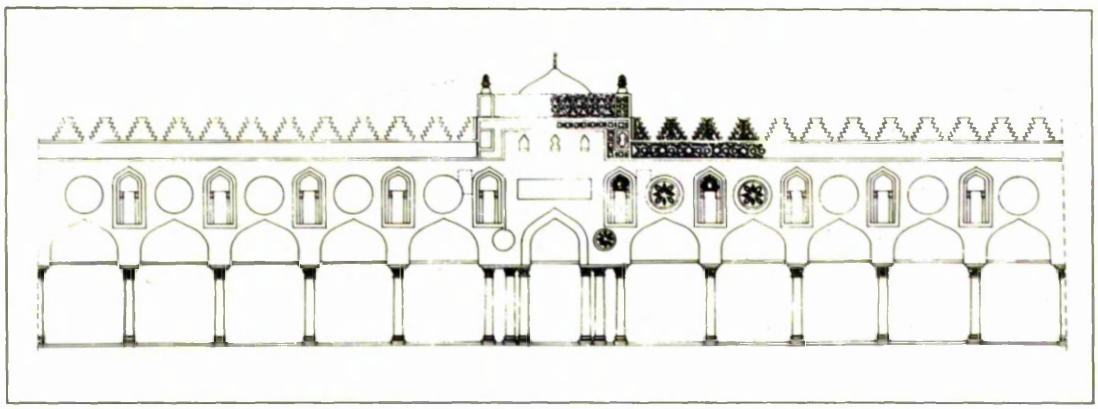


Illustration 23 Cairo, Mosque of Al-Azhar,
Ground Plan.

Mosque of Damascus. It is still a hypostyle mosque with a huge dome, which served as symbolic indicator of the might and power of the newly established ruling class. The idea was obviously imported from Iran and incorporated into the local traditional elements.

The domes which were constructed during the various stages of the Mamlūk period manifest the properties which are characteristic of the Timurid domes of the East. These generally rest on high drums and externally they are covered with decorative brickwork.

Another practice which was developed during the Mamlūk period in Egypt, but which originated from the East, was the combination of the mosque and mausoleum (khānaqāh) combination. (see illustration 24)

Cairo enjoyed an important cultural and power role during the reign of the Mamlūk ruler al-Nāsir, which is best described by the words of the Moroccan traveller Ibn Baṭṭūṭa.[23] "At Old Cairo is al-Qarafa, a place of vast repute for blessed power, whose special virtue is mentioned in a tradition related by al-Qurtubī... people build their beautiful domed chapels and surround them by walls, and they construct chambers in them... Some build a religious house or a madrasa by the side of the mausoleum."

The origin of the madrasa can be found in Iran and its adoption into Egyptian mosque architecture is a further indication of the fact, that the traditions, which were

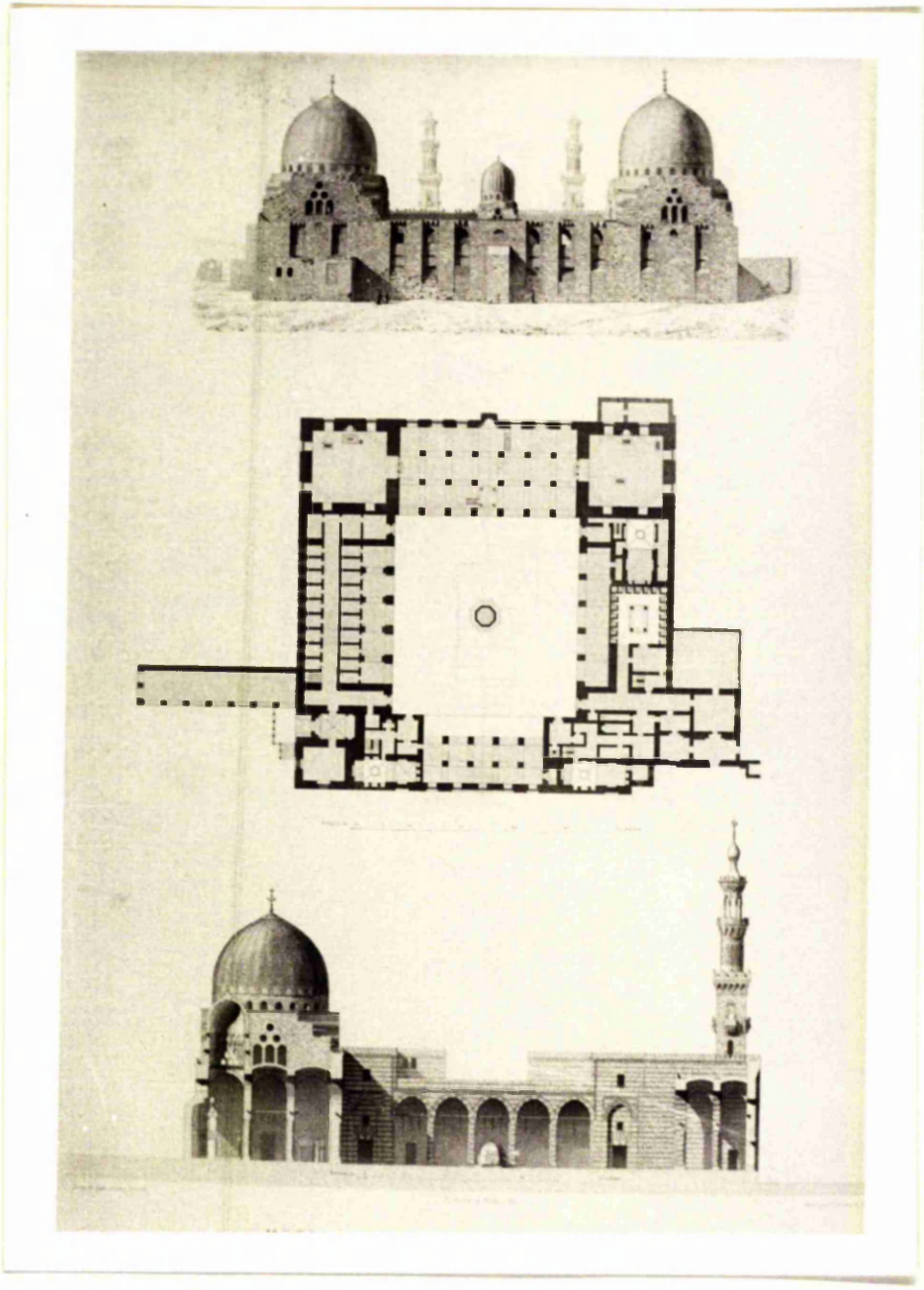


Illustration 24 Cairo, Khānaqāh and Mausoleum of Barqūq.

established during the 'Abbāsid period and which had strong Persian cultural flavour were utilised in Egypt side by side with the Arab or hypostyle mosque architecture.

There is another reason for the adoption of the four īwān style, the nature and layout of the city of Cairo. Its streets are narrow and already laid out during the preceding periods. Orientation presented a problem in that the street entrance axis did not always coincide with the prayer axis and the architects had to employ their ingenuity to harmonise the two aspects.

The religious buildings had to be conceived with three conflicting needs in mind: to be impressive, to face Mecca and to face the street. The first was solved by the monumental dimensions of the dome, the portal and the minaret. The second requirement, that of orientation, was solved by aligning the qibla wall with the direction of Mecca. As a result, the qibla and the entrance were no longer parallel to each other and as a consequence the portal was not on the mihrāb axis. A perfect example can be seen in the case of the al-Aqmar Mosque. The shape of the minaret, which previously had been square, was modified, the square being no more than a transition phase between the building and the receding octagonal storeys, which are surmounted by slender colonettes and a bulbous stone finial.[24] The monumental portals are reminiscent of those of Iran, sometimes surmounted by a portal dome. Internally the domes are lavishly decorated, some with stucco, others with polychrome tiling.

The dome in front of the mihrāb of the al-Azhar Mosque, attributed to Sultan al-Ghauri who reigned during 906-22/1501-16 does not rest on a drum, but directly on the zone of transition made up three rows of small pendentives and which is pierced by windows and resemble the more ancient pendentives in Cairo. The dome is decorated with stucco ornament.[25] Many of the Cairean domes were modelled on the al-Azhar one.

The pendentive in Egypt developed rapidly in the 12th century. In the khānakāh of Baybars II the zone of transition was solved by one large pendentive, which is superseded by two small ones. In other buildings, such as the Sayyīda 'Attika and Ruqayya, the angle of indentation of the niche is more visible than in the previous era. The niche is flanked by two other niches whose base is the flat wall.[26]

There are several experimental stages in the development of the stalactite pendentive in Egypt, (see illustration 25) the architects of Cairo solved the problem by combining two systems; the matching pendentives and the corbelled vaults. This method seemed to the most suitable when bricks were introduced and the diameter of the dome was increased. The domes had to be increased in size in order to dominate in the overcrowded city and that necessitated the increase of the size of the supports and the height of the pendentives, however, the technical skill was not always available for the latter, therefore,

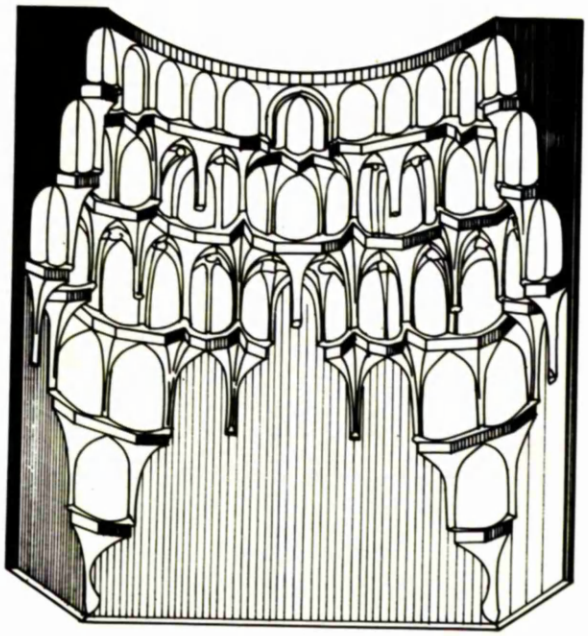


Illustration 25 Muqarnas forming Stalactites.

the pendentives were built up in stages. The central position was occupied by an arch or vault on cul-de-four, then a semi-vault, the coving these vaults and the wall were joined by niches and corbelling.[27]

The domes, as mentioned above, were of different styles, but the new type, which was most likely imported from Armenia, was the high cylinder type. From the beginning of the Mamluk period the ribbed domes became popular.[28] For the external patterns see illustrations 26 b, c and d.

In the other countries of North Africa, Morocco and Algeria the early mosques tended to be without dome, but later in the twelfth and thirteenth centuries, magnificent domes in front of the mihrāb were built one of which is in the Great Mosque of Tlemcen, built during the Almoravid period, with thirteenth century additions.[29]

There is a very interesting example for the mosque palace/complex in Algeria, that is the Qal'A Banū Ḥammād, which was built in the eleventh century.[30] The palace complex has a domed throne room which was decorated with amongst others, muqarnas pendentives, which further supports the earlier assumption, that many of the decorative features were imported from the east and that the idea of the power/religion concept also originated from there. This aspect is discussed under the appropriate heading.

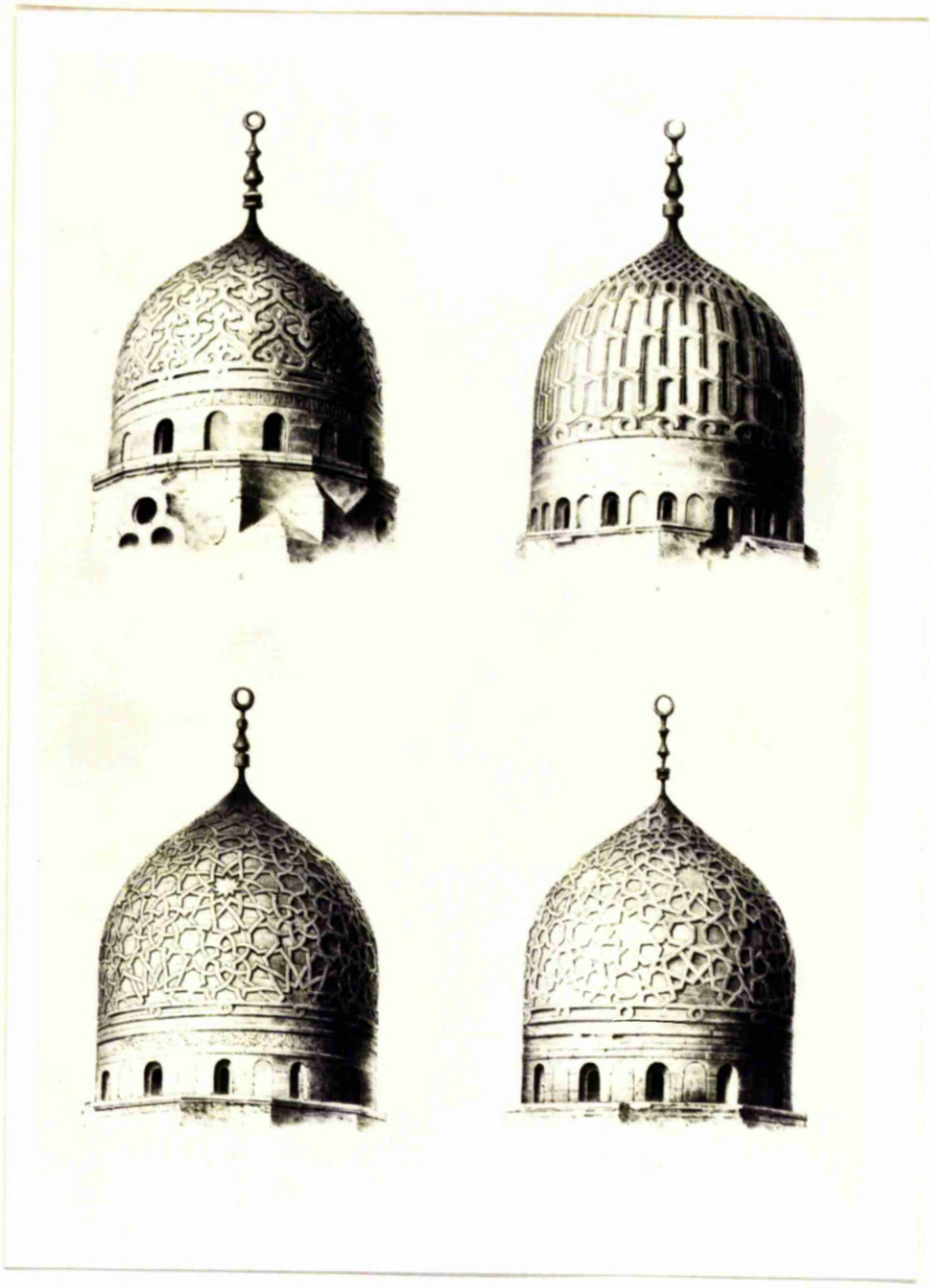


Illustration 26b Types of Dome decoration.

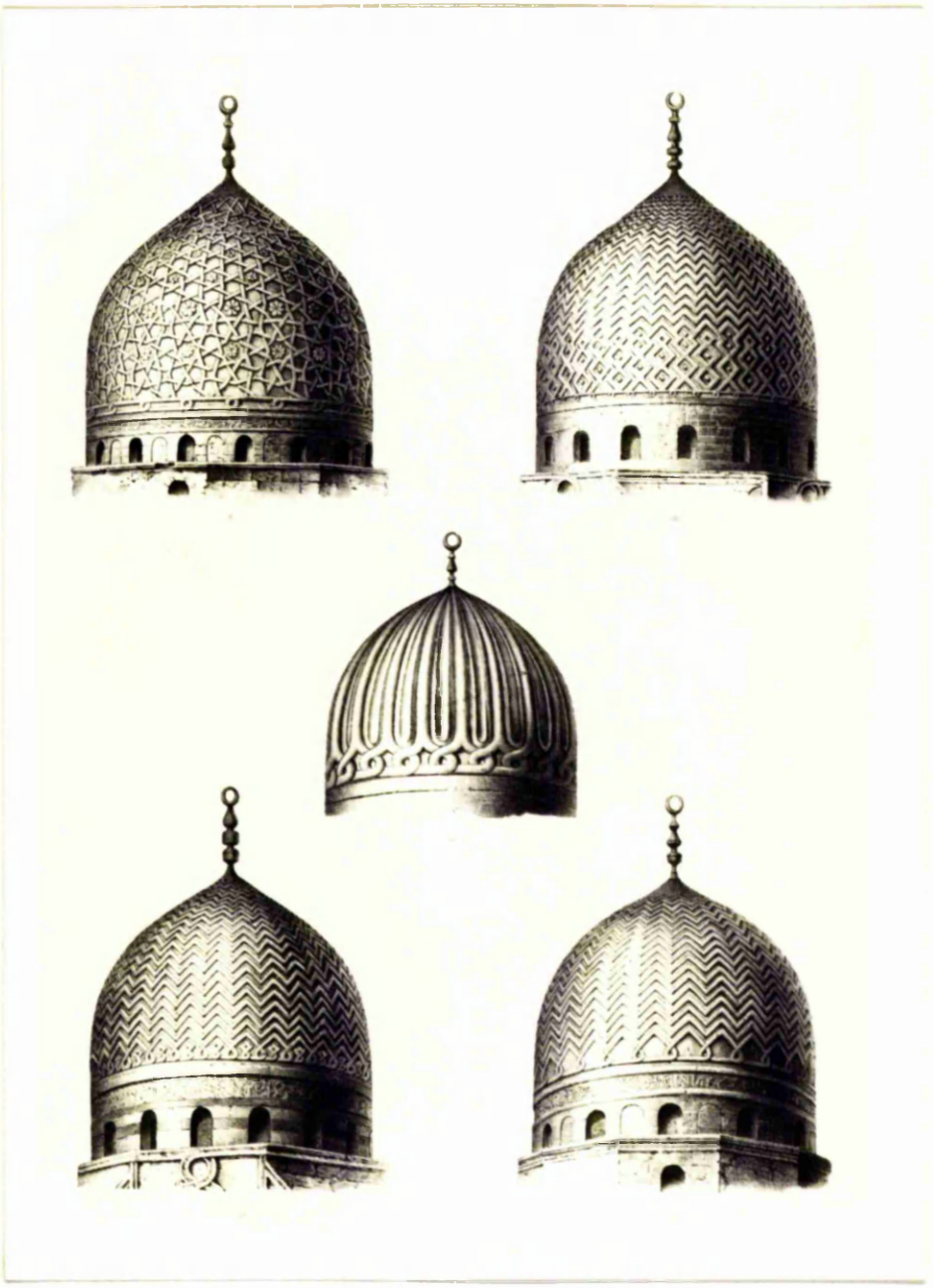


Illustration 26c Types of Dome decoration.

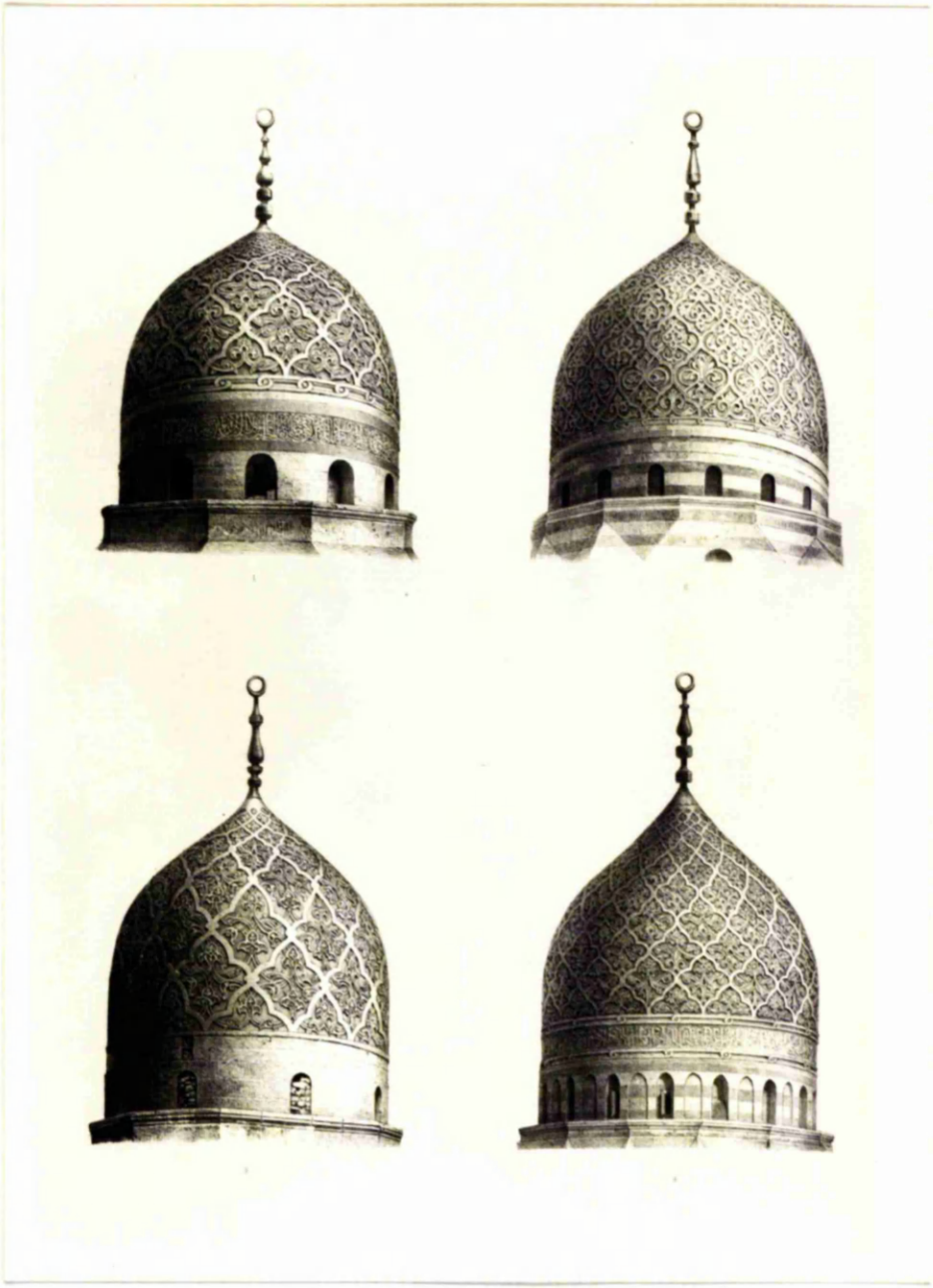


Illustration 26d Types of Dome decoration.

LIBYA

The significance of Libya lies in the fact that it provides a historical and architectural bridge between Tunisia and Egypt. This bridge was established when at the beginning of the tenth century the Fāṭimids came to power in the Eastern Maghrib and when they subsequently conquered Egypt in 359/969.[31]

Fortified palaces were built along the shores of Libya and these fortress complexes served the same purpose as the Ribāṭ at Sūsa. One such palace complex was constructed in Mahdiyyā, but with a difference: the mosque was not included in the complex itself, but built separately at a distance from the palace site.

One of the most important of the Tunisian mosques was not included in the discussion earlier, on purpose. Its relevance is more appropriate here, where the influence of the Fatimids is being considered.

It was stated before, that it was in the Tunisian mosques, where the dome in front of the mihrāb was incorporated into mosque architecture, in front of the mihrāb as defined at the beginning of the thesis. Those domes were built under the rule of the Aghlabids and they assumed their symbolic meaning during that period. It was not until the advent of the Fāṭimids, however, that

the full realisation of this was to happen in the rest of North Africa, but more specifically in Egypt, via Libya.

The mosque being referred to is the Great Mosque at Mahdiyyà, built at the beginning of the tenth century. It possess a dome in front of the mihrāb which was built in the tenth century originally, but had been rebuilt several times since. The early qibla wall collapsed and together with it the dome. The appearance of the original dome is not known, only its position could be established. The present dome supports belong to a later date, it is possible, however, that they were constructed on the model of the original structure.

The support of the dome is a Fāṭimid innovation, comprising a number of polyobed arches. This type of dome support is not entirely without precedent and the idea behind it, but with some difference, was implemented in the Great Mosque of Cordoba by the architects of the Umayyad caliph al-Rahmān II.

The Libyan town which is worth considering is Ajdābiya. During the Fāṭimid period and later, it was an important trading point between the Maghrib and Egypt and as expected of such a major centre, it has a Friday Mosque. The remains of the tenth century palace/fortress reveal a rectangular plan with corner towers. At the back, the throne-room of the palace possesses a niche covered by a semi-dome which is supported on shell-squinches. This

room is preceded by a vaulted īwān. The combination of īwān, throne room with niche is reminiscent of the pre-Islamic royal palaces of Persia.

In these two instances the mosque is separate from the palace complex. Whether or not the Ajdābiya Mosque had a dome in front of the mihrāb is a matter of conjecture. The Mahdiyya Mosque was built fractionally earlier than the Ajdābiya Mosque and it may have served as a model for the latter, in which case, it is highly likely that there was a dome in the sanctuary chamber.

The last but not least Fatimid stronghold in Libya which was excavated relatively recently was a Medinat Sultan. Its plan revealed a similar layout to that of Ajdabiya but thusfar not enough information is available for more detailed discussion. The ruins of the Friday Mosque revealed decorations around the mihrāb which were similar to those of the Friday Mosque of Ajdābiya.

The presence of the dome in the Libyan mosques can be considered as evidence for the theory that the Fāṭimids adapted it as architectural as well as symbolic concept into their mosque and palace architecture.

Fāṭimid architectural elements which were present in Libya, subsequently found their way into the mosque architecture of Fāṭimid Egypt. Some of these elements originated in Syria, others in Iran, many of which were

employed during the previous century in Tunisian mosques. The most notable of these elements is the shell-squinch, the origin of which was discussed in the previous chapter.

The last mosque to be considered in this chapter, although strictly speaking it is not in North Africa, is the Great Mosque of Cordoba.

The Great Mosque is of great interest for several reasons. First of all because it is on European soil, secondly, because several architectural styles seem to have found a synthesis in this mosque. The splendour of East and West meet in the same building, where Christianity and Islam were practised under the same roof.

The Great Mosque was built by the Umayyad prince ʿAbd al-Raḥmān who fled to Spain after the ʿAbbasid onslaught. During the first phase of building, there was no dome included in front of the mihrāb. The whole building is doubtless a continuation of the Umayyad tradition, combined with Iranian and Byzantine influence.

The decorative elements are much more elaborate than contemporary examples elsewhere, although the Umayyad palaces were renowned for their extravagant use of mosaic and marble. The contrast between the red and white striping of the horseshoe arches against the beautiful gold and coloured mosaics of the dome in front of the mihrāb evokes a feeling of awe. (see illustration 27)

The black and white was widely used in the Byzantine empire, while gold and mosaic was customary in the Christian tradition and prior to that, the Romans. The idea of the ribs in the dome decoration may have been derived from the eastern arches. The arches that contain the clerestory windows are pointed similarly to the Gothic arches. Spain was occupied by the Visigoths at that time, therefore it is a possibility, that the idea originated from them. On the other hand, pointed arches can be found in the Hagia Sophia in Constantinople. These arches also go in pairs to form a semi-circle, thereby forming an octagon, which supports the dome. There is another theory concerning the possible origins of these ribs, that is, that wooden roof construction has affinities with the building of timber hulls and it may be significant, that at the time when the ribbed vaults first appeared, there was a renewed spate of shipbuilding in Spain.[32] This possibility is worth putting forward for consideration, however, it is more reasonable to assume, that an already extant architectural feature would have served as the model and which was subsequently incorporated into the dome support design. It is noteworthy, that the architects were very versatile and that they came to Spain from different countries, such as Syria, Iran and Byzantinium no doubt bringing with them not only the technical skills, but also the artistic trends.

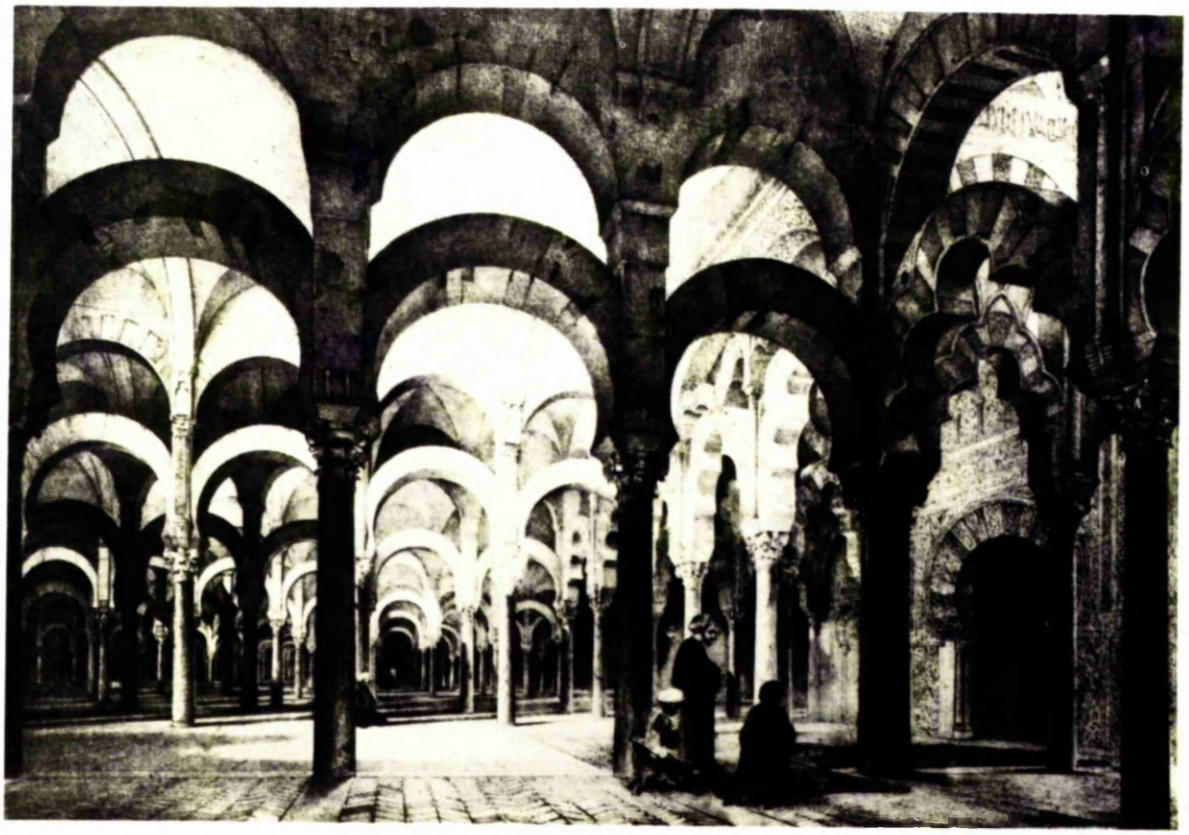


Illustration 27 Cordoba, Gt. Mosque, Arches in front of the mihrāb.

The dome in front of the mihrāb was completed in 354/965 during the reign of al-Ḥākim and it is flanked by two other equally magnificent cupolas (see illustrations 28 a, b). The domes have complex rib-systems, which may be likened to those of Armenia and Iran.[33] The dome in front of the mihrāb is shaped like a shell and it is possible, that it was inspired by the cupola in the Medina Mosque. This assumption is supported by the fact that the court poet of Caliph ʿAbd al-Raḥmān III, Ibn ʿAbd Rabbīhi referred to the Mosque of the Prophet in c. 287/900 as having a gilt gallery adjacent to the mihrāb "a roof in the shape of a huge concave shield, like a mother-of-pearl shell".[34] The gold and glass mosaics of the central dome recall earlier Umayyad mosaics in Syria, which were allegedly introduced to Spain from Constantinople.

The dome of the Great Mosque of Cordoba served as a model for some of the Moroccan mosques, especially the ribbing or palm or the utilisation of the muqarnas to the maximum effect.

The most beautiful of the Moroccan domes can be seen in the Qarawīyyīn Mosque at Fez. The dome was erected in the twelfth century. It rests on a drum, which is adorned with Kufic inscriptions. The pendentives are arranged into a honeycomb form or, to describe it differently, by superposition of the small pendentives or stalactites into what could be described as semi-herring-bone vaults.[35]

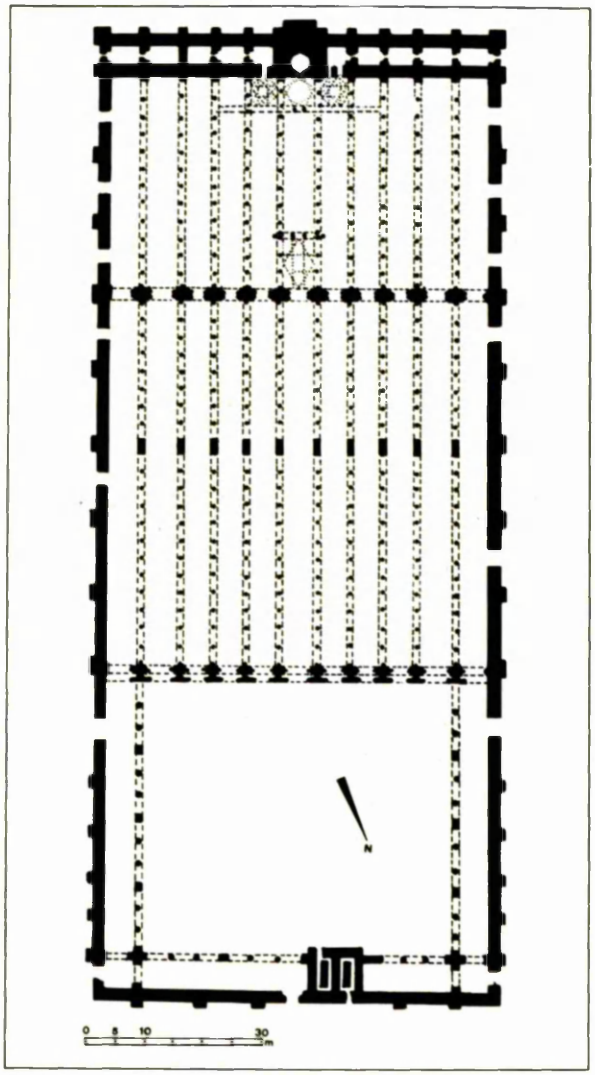


Illustration 28 Cordoba, Ground Plan.

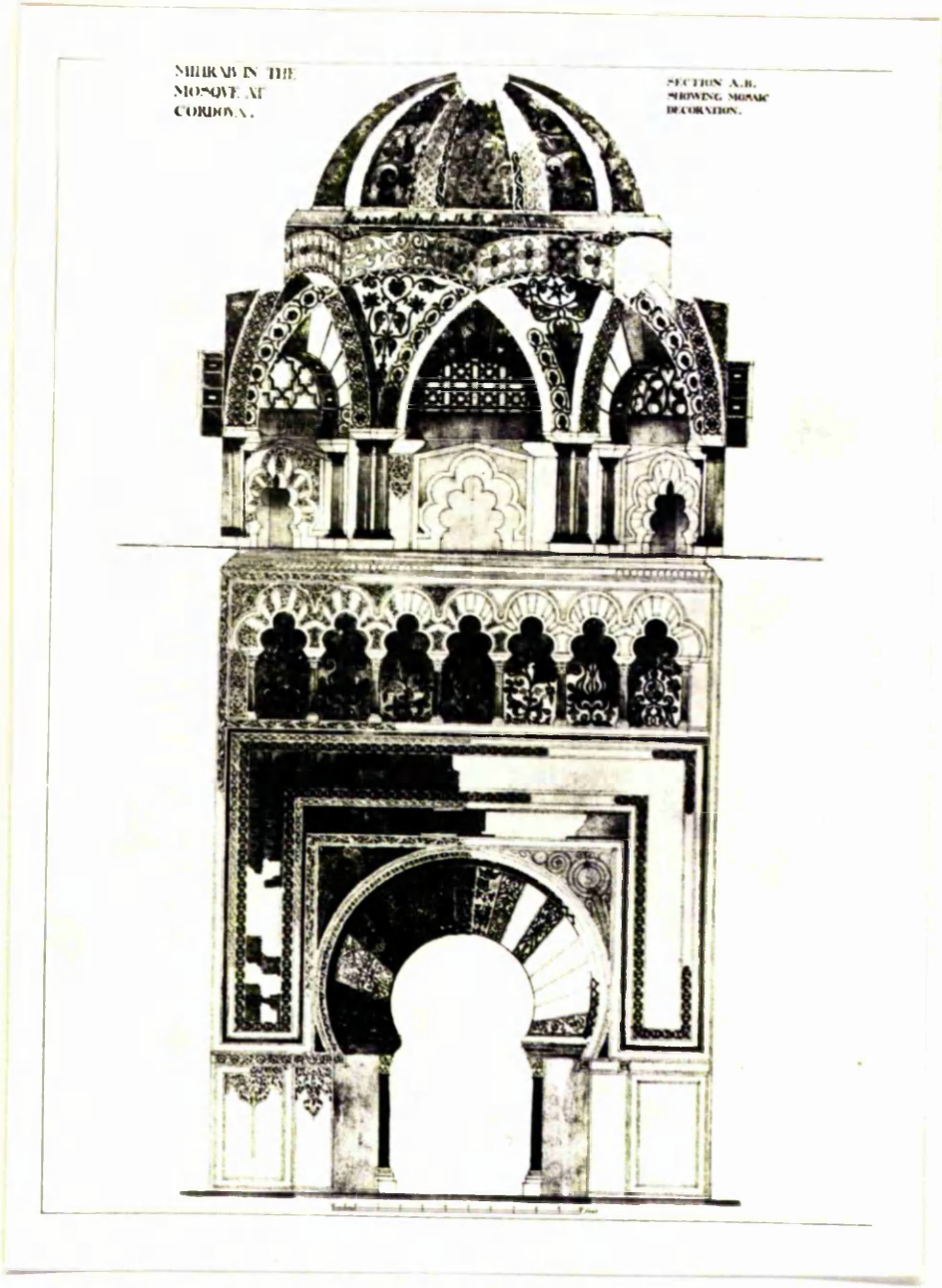


Illustration 28a Cordoba, Gt. Mosque, dome in front of the mihrāb, Section.

Illustration 28b Cordoba, Gt. Mosque, dome in front of the mihrāb, Plan.

The Great Mosque of Tāza[36] also possesses a dome in front of the miḥrāb which utilises the ribs to maximum effect, crossing over each other and culminating in a circle at the summit. The square base is transformed into an octagon by the means of muqarnas pendentives, which are surrounded by floral decoration, which may be considered to be a nostalgic return to the more ancient forms of the Almoravid period and in particular, to the Great Mosque of Tlemcen.

With the Great Mosque of Tāza, the discussion of the North African domes in front of the miḥrāb is concluded. This does not mean, however, that there are no others worth speaking of, but the selection must be terminated at a stage where no innovation is evident and where development means returning to previous forms and the utilisation of the refined version of elements which were discussed previously.

To conclude this chapter, a summary is offered, which should encompass all the important salient pivotal features of the dome in front of the miḥrāb in North Africa, on which the theory of this thesis rests.

Summary

In this chapter an attempt has been made to establish the fact, that the first instance of the inclusion of the dome in front of the mihrāb as defined at the outset of the thesis occurred in the Ribāṭ at Sūsa. Moreover, the dome fulfilled a dual purpose, that is to say, it marked the entrance from the external, or unholy area into the internal, or holy area, on a visual level and at the same time it signalled to the external world, the importance of the area in front of the mihrāb. Because of the nature of the building itself, the power/religion duality came under one roof, the role of which was signalled to the outside world by the dome.

The other mosques in Tunisia, the Zaytūna, Qayrawān and Sfax were the first ones to incorporate the dome in front of the mihrāb as understood by the earlier definition, with the Ribāṭ at Sūsa as its antecedent.

Apart from the mosque of Ibn Ṭūlūn, the Egyptian mosques were catering for different needs with different extant parameters, with which the Egyptian architects coped with great ingenuity. Eastern influence becomes evident with the rise of the Mamlūks and these eastern elements were refined until a unique Egyptian and Maghribian style emerged.

East and West found its culmination and its synthesis on the Spanish mainland in the Great Mosque of Cordoba. The dome in front of the mihrāb here unites the excellence of

the cultures that Islam gathered under its flag. The shell-shape, which may have been inspired by the cupola in the Prophet's Mosque at Medina, decorated with Byzantinian mosaics and interlaced arches, which may have originated in the East, or equally may have been adopted from the resident Visigoths. It may well be, that it was the amalgam of the two, which was refined into a coherent new, where the origins became blurred.

The Great Mosque of Cordoba acted as a model for some of the Moroccan mosques, where the existing Islamic architectural elements were further refined until the point was reached, where the past had to return in order to provide the novelty.

The importance of North Africa cannot be stressed enough when the question of the dome in front of the mihrāb arises, because that was where real meaning and symbolic meaning became unified and where the ground was set for further development. Once this was achieved, the shape, size and final positioning of the dome could be subjected to alteration and reinterpretation.

REFERENCES FOR CHAPTER THREE

1) Hutt A, Islamic Architecture: North Africa, pp. 13-5.
2) Golvin J, Essai sur l'Architecture Religieuse Musulmane I, p. 125.
3) Michell, op. cit., p. 220.
4) Ibid., p. 221.
5) Creswell K.A.C., EMA II, pp. 248-50.
6) Golvin J, op. cit. pp. 127-8.
7) Marcais G and Golvin J, The Great Mosque of Sfax, Book Review by H. Stern, Ars Orientalis 5, 1963. p. 289-90.
8) Hill D and Golvin, Islamic Architecture of North Africa, pp. 105-6.
9) Michell, op. cit., p. 220.
10) Creswell, EMA I, Pt. II, p. 223.
11) Hill D and Golvin J, Islamic Architecture of North Africa, p. 95.
12) Creswell, EMA I, p. 315-7, 323.
13) Marçais, 'Coupole et Plafonds de la Grande Mosquee de Kairouan', Notes et Documents VIII, pp. 9-27.
14) Marçais, Manuel d'Art Musulman: l'Architecture, p. 32.
15) Hoag J, Islamic Architecture, p. 60.
16) Creswell, EMA II, p. 350.
17) Hautecoeur et Wiet, Les Mosquées du Caire, pp. 230-1.
18) Creswell, op. cit., p. 339.
19) Creswell, EMA I, Pt. 11, pp. 462-5.
20) Hautecoeur et Wiet, op. cit., pp. 243-5.
21) Creswell, 'Brief Chronology', BIFAO XVI, p. 57.
22) Michell, op. cit., p. 223.

23) Alden Williams J, 'Urbanisation and Monument Construction in Mamlūk Cairo', Muqarnas, An Annual on Islamic Art and Architecture Vol 2, ed. Oleg Grabar, 1984, The Art of the Mamlūks, pp 37-8.
24) Ibid.
25) Creswell, MAE: Ikshids and Fāṭimids, pp 39-40.
26) Hautecoeur and Wiet, op. cit., pp. 219-20.
27) Alden Williams, op. cit., pp. 314-20.
28) Aslanapa O, Turkish Art and Architecture, pp. 89-90.
29) Hill and Golvin, op. cit., p. 115.
30) Mitchell, op. cit. p. 219.
31) Hill and Golvin, op. cit., pp. 133-4, Lezine A, "Mahdiyā", Reserces d'archaelogie Islamique (1965) pp. 69, 74 74-7; Architecture de l'Ifriqiya, pp. 55-7.
32) Jairazbhoy, op. cit., pp. 83-5.
33) Michell, op. cit., pp. 212-3.
34) Jairazbhoy, op. cit., loc. cit.
35) Terrasse H, La Mosquee al-Qarawiyyin a Fès, pp. 30-33.
36) Rumpler, La Coupole, p. 57.

CHAPTER FOUR

IRAN AND CENTRAL ASIA

In the previous chapter, the dome in front of the mihrâb in the mosques of North Africa and the Maghrib was discussed. The evidence pointed to the fact that the inclusion of the mihrâb dome was a gradual process, which was influenced by historical events and the changing attitudes of the different ruling dynasties.

Climatic factors were taken into consideration as possible factors which may have contributed to the development of certain architectural features, including the dome. In the case of North Africa we postulated, that climatic factors were not directly involved, and the significance of the dome was political, rather than utilitarian or functional. The availability of building material was also considered.

This is not the case, however in the eastern part of the Islamic empire, where the climatic conditions are much harsher, so that architects had to make allowances for them in the mosque design, bearing in mind the importance of the courtyard in its functional and social aspect.[1]

The primary reason for the dome, however, is the same as in the case of the North African mosques, but its design and size might be climate dependent. It was also stressed in the previous chapter that any development, architectural or religious, must be analysed in the right

context, within the historical and geographical setting of the particular country in question.

In North Africa, apart from Egypt, the cultural background at the time of the arrival of Islam, could be compared to the virgin soil about to be worked, receptive and adaptable.

This was not so in the case of Iran or India. Both these countries could boast a formidable history and a well established cultural heritage. Immediately prior to the reception of Islam to Persia, the Sasanian dynasty was in power and preceding it the Parthians who ruled the whole Persian empire.

During the reign of these two dynasties, architecture in Iran flourished, palaces were built on a grand scale, which, as we shall see, played a very important part of the development of Islamic architecture after the east was conquered. Another dominant feature, which was to determine the specific development of Islam in Persia, was its religion; Zoroastrianism. The consequence of the oppressive policies of the rulers and harshness of the religion were that conversions to the new faith was not widespread. This may explain why there is practically no architectural evidence that bears witness to the religious attitude of the population during the first years after the conquest of Iran.

The conquest of Iran was initiated mainly from the garrison cities of Baṣra and Kūfa. The final defeat was

achieved between the years 18-22/639-43. After the conquest there was an influx of Arab military, and the administration of law, order and taxation was carried out under Arab supervision.

A strong Arab garrison was established in Merv in approximately 54/674. [2] Merv will be discussed more fully later in the thesis when the mosque/palace complex and its architectural and political significance is considered. It is not surprising that there was such a complex at Merv, the idea was probably imported by the settling Arabs. Conversion to the new faith was higher in Khurasan than elsewhere, probably because of the more concentrated population of the Arab settlers. Besides Khurasan there were large Arab garrisons stationed in al-Jibal and Transoxania. The residual strength of the old religion was shown by the fact that even in the 5th/11th century, there was a sudden increase in the number of conversions, something which was catalysed by the spread of the charismatic Sūfi movement.

Christian bishoprics were also in evidence, especially in Fars and Merv, which may have contributed to the diversity of these two cities.

The newly converted Muslims did not hesitate to use the Zoroastrian Fire Temples for worship, as function had priority over everything else. The same occurred in Syria and other areas of the western empire, where extant non-Islamic religions buildings, notably Christian churches were used as mosques.

Secular and religious building occurred only in those areas, which offered nothing from the previous civilisation. In some areas such as Syria, Christian churches were converted into mosques and in Iran palaces were requisitioned for religious practices.

Under the Umayyad rulers flourishing architectural activity was confined to the western part of the empire. Building activity was at a virtual standstill in Iran, where there was widespread discontent concerning the behaviour of the Umayyad princes and their officers.

It was not until the 'Abbāsids came to power that Islam was more or less consolidated in the country. This was to be a new chapter in the history of Iran and the population converted to Islam with the exception of one or two localised regions, which were ruled by the aristocracy, and remained in the hands of the Zoroastrian clergy.

The Sasanian concept of the universal empire was greatly strengthened under the 'Abbāsids. The Caliph came to be regarded the Shadow of God upon earth. This aspect will be discussed in detail in relation to its manifestation in Persian religious architecture. In the course of the time, this attribute was conferred upon the temporal rulers, something which became detrimental to the freedom and dignity of their subjects.

Other Sasanian concepts, such as the identification of the state with the social order or the hierarchical nature of society also became increasingly accepted.

It is noteworthy that in early Islam matters of state and social justice were closely related to the function of the mosque, so that it is logical to assume that Sasanian social and political ideas and concepts exerted considerable influence on Iranian mosque architecture.

The Sasanian and Islamic palace plan, which is probably related to the historical development of the dome will be discussed in detail later.

Under Sasanian rule the Zoroastrian clergy was very powerful and oppressive. It is not surprising therefore, that the oppressed saw the arrival of Islam as a form of liberation. Conversion to the new faith was not, however, universal. Those who clung to the old faith were at the same time members of the ruling class and in order to defend their heritage put up considerable resistance to the proselytism efforts of the Arabs.

It was not until the rise of the 'Abbāsids that Iran could be claimed for Islam. Under the 'Abbāsids the families of the old ruling elite gained new autonomy and with it a new national self-awareness. This tendency was beginning to reflect in artistic and architectural development. Old Sasanian models were gradually integrated into contemporary mosque architecture. The Arab style mosque with a wide but shallow sanctuary and pen courtyard surrounded by covered cloisters on the other three sides was adopted in Iran and then adapted to suit local liturgical needs.

When the capital of the Islamic empire moved from Damascus to Baghdad, Iran gained direct access to other styles of mosque architecture which were flourishing in the western territories. Diffusion operated both ways. The ancient Persian practice in dome support, the squinch, was adopted by North African and Egyptian architects. (see illustration 29) The īwān and later the monumental portals were implemented also.

In Iran, the rapidly increasing size of the congregation found the old converted Fire Temples, palaces and compact small mosques inadequate in style and introduced western models in order to solve this particular problem.

The fact that the Iranians preferred to practise worship in the open, in the courtyard, facing the qibla, while the covered areas were rarely used, except in case of bad weather, is a significant point of reference and should be kept in mind during the analysis of the Iranian mosque plan and the subsequent role of the dome in the mosque.

There is strong emphasis on the monumentality and decoration of the portals, which is probably a direct consequence of the praying habits of the worshippers.

Mosque architecture architecture in general and the architecture of the Friday Mosque in particular is often referred to as an interior or court architecture. Its main characteristic is the enclosed space which surrounds the worshipper. This follows an ancient tradition of monumental architecture of the Ancient East and the

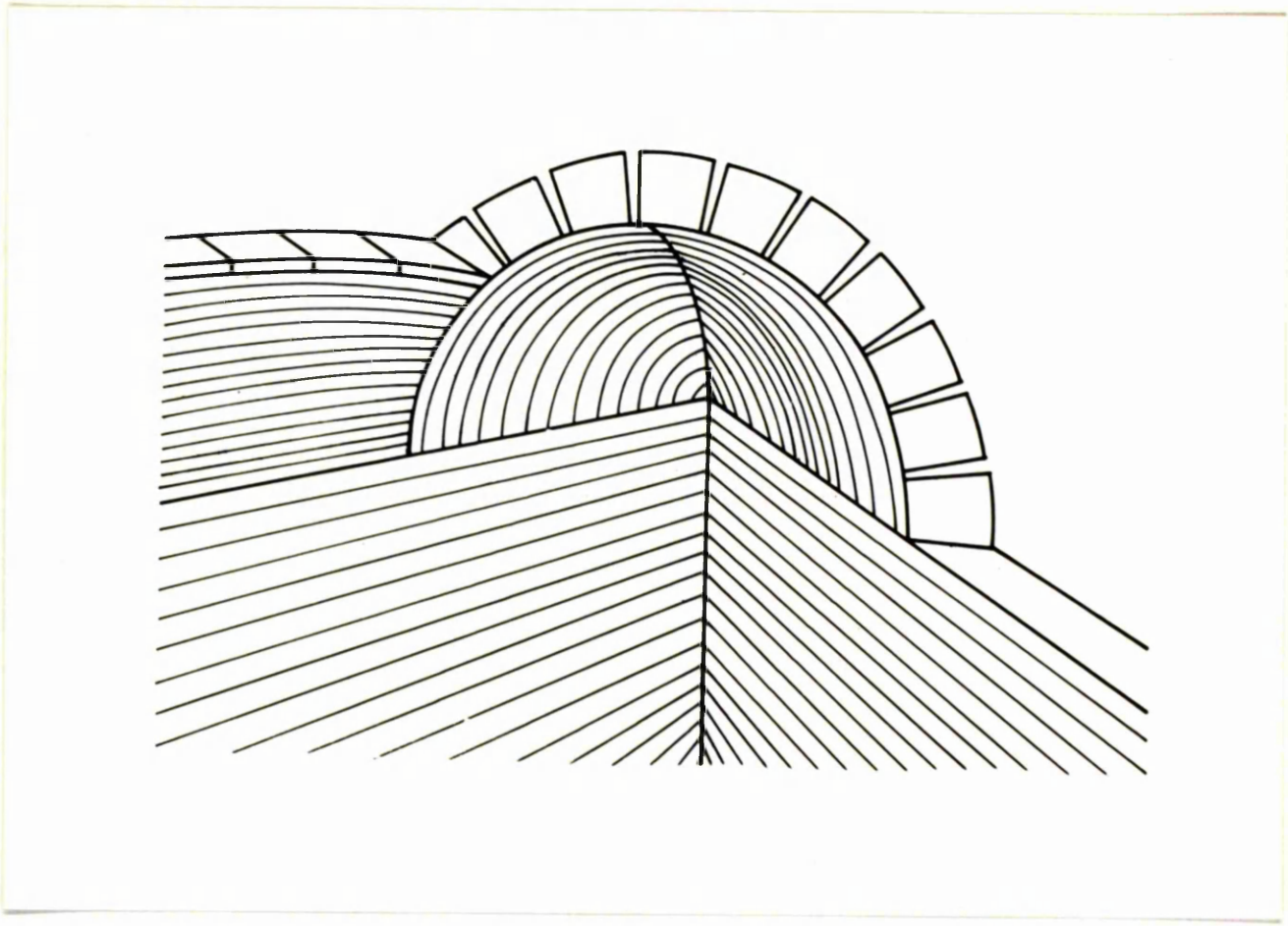


Illustration 29 Sasanian corner squinch.

domestic practice of Iran.[3] Closely related to this particular development of the Iranian mosque is the fact that at the time of the conquest, palaces were turned into mosques. It is not unreasonable to postulate, therefore, that the Iranian mosque is a true successor of the great palaces. But the palaces such as Ctesiphon and Persepolis in Sasanian times, which were the seats of divine as well as sovereign power, together with the colossal structures which were symbols of power, steadily declined under Islam.[4]

At the beginning, however the mosques served the same purpose as the palaces, though in a more democratic fashion and in this sense they were important political institutions. Here the monarchs proclaimed their authority, councils of war were held and military and political appointments were announced in the mosque. It is evident, therefore, that the religious aspect of the mosque must have come under threat from time to time. In Iran, the religious consciousness of the population developed and responded in an unusual manner; during the rule of two Iranian dynasties, the Samanids and the Buyids, pre-Islamic Persian traditions revived. The Samanids ruled in eastern Iran, which is now considered a part of Central Asia. Monuments originating in this era, that is, between 262/875 and the end of the tenth century have great significance for the study of the development in Persian Islamic architecture. During the rule of the Samanids, Bukhara and Samarqand became the centres for learning and for art.

In the tenth century, with the emergence of the Buyids, a new national awareness brought with it new ideas in architecture. The tenth, eleventh and twelfth century Iranian mosques had a domed chamber in front of the mihrāb with an īwān leading to the central courtyard. In the case of the Friday Mosque of Ardistān, there is a second dome chamber. It is worth mentioning, that there is a dome in front of the mihrāb, it is invariably a dome chamber and not just a dome that marks the central aisle in front of the mihrāb. The appearance of the dome chamber is significant for two reasons. It anticipates the construction of the single-chamber mosques which will be realised ultimately by the Ottoman architects. Secondly, it indicates a tendency on behalf of the architects to revive the memory of the Fire Temple in order to built a bridge between past and future.

Possibly, the size of the dome was directly related to the requirements of the worshippers due to climatic factors, as previously suggested. Probably the harsher weather conditions of Northern-Iran and Anatolia forced the congregation to retire to within the walls of the covered area, which thus substituted for the courtyard. It is not unexpected, therefore, that this area had to assume different dimensional characteristics, such as the increased size of the dome, in order to create space in the vertical dimension. Certainly, this was the driving force behind the creation of the huge domes of the Turkish mosques.

One of the most important buildings in Iran is the Davāzda Imām, built in 419/1028 and it antedates the Seljūq conquest by twelve years. The squinch of the dome is one of the oldest of its kind except for the one in the Mausoleum of Arab Ata at Tim. (See illustration 19) It comprises three lobed arches. The profiles of the side-lobes, revolving through a quarter circle into two parallel planes define the essential element, the quarter plane. This Mausoleum will be further discussed below.

The quarter dome is a purely Persian device and most influential. It was further refined during the reign of the Seljūqs, because more attention was paid to aesthetics in decoration and construction.

Specifically from the fourteenth century onwards the squinch gradually disappeared. From the squinch developed an especially pleasing form of it, the stalactite or muqarnas. In Egypt, the pendentive was introduced at the end of the eleventh or early twelfth century, but it is highly likely, that Iran exerted some influence on its development. The squinches of the Davāzda Imām at Yazd were mentioned supra.[5] It is known, that these squinches are earlier than those of Malik Shāh in the Great Mosque of Isfahan. The whole combination is set in an outer frame, which is never found in Egypt and can be attributed only to the Sasanian tradition of the squinch.

In the Great Mosque of Isfahān, with an arched recess forming panels, the whole of the lower register is set on

an outer arch. The octagon thus obtained is converted to a figure of sixteen sides by eight shallow squinches.

A major change occurred at Gulpaygān in the Great Mosque which was built in 498-512/1104-18. The arched panels disappeared, to be replaced by four-tiered niches.

There are no contemporary examples in Persia, that resemble the early Egyptian stalactite pendentives, and when they do occur in brick, their composition and setting is entirely different from those found in Egypt.

On the available evidence, as far as the squinch dome is concerned, the Islamic world can be architecturally divided into tow main areas. East and West. It must be remembered, however, that the squinch, which converts the square into an octagon, originated in Central Asia and subsequently it was adopted by the western part of the empire. Its implementation was achieved with the help of Christian and Byzantine architects.

In the introduction it was briefly mentioned that, early on in Islam, there was no symbolism of any kind in Iran. It follows therefore, that nothing was created, which required symbolic representation. There are a few examples in Iran, especially on coins, where the rule of the religion is symbolised; on the one side of the old Sasanian coins a fire temple was engraved, while on the other side there was the shahāda, or the attestation of the faith. [6]

There was, in architecture, the equivalent at Merv with a mosque/palace complex, which in itself was a symbol of power and religion. The converted palaces of Ctesiphon and Firuzābād are also visible evidence of the ruling religion. It is noteworthy, that there was a precedent for the temple/palace combination in the Parthian and later the Sasanian period, such as the palace at Hatra, which is now Iraq. [7] (See illustration 30)

The temple is built on a square plan, the antecedent of the square dome chamber, which was to become a vital aspect of Persian Islamic architecture. The Friday Mosque of Iṣtakhr was originally a Sasanian palace, then used as a Fire Temple, before it finally became a mosque. The palace at Firuzābād was constructed by the Sasanians on the four Īwān plan with three squared dome chambers. (See illustration 31) These are the oldest known domes in Iran.

The Sasanian architectural style was also accepted by the Christians and used in the so called cross in the square churches. While the Fire Temple plan exerted its influence over the Armenian churches and the Balkans.

This method of dome construction was adopted by the Christians and subsequently by Islam. Sasanian structure, however, relied heavily on inert masses for stability, and it was Islamic Persia that refined these forms. Persian mosque design had its own individualistic development, which was based on the Persian cultural heritage, as

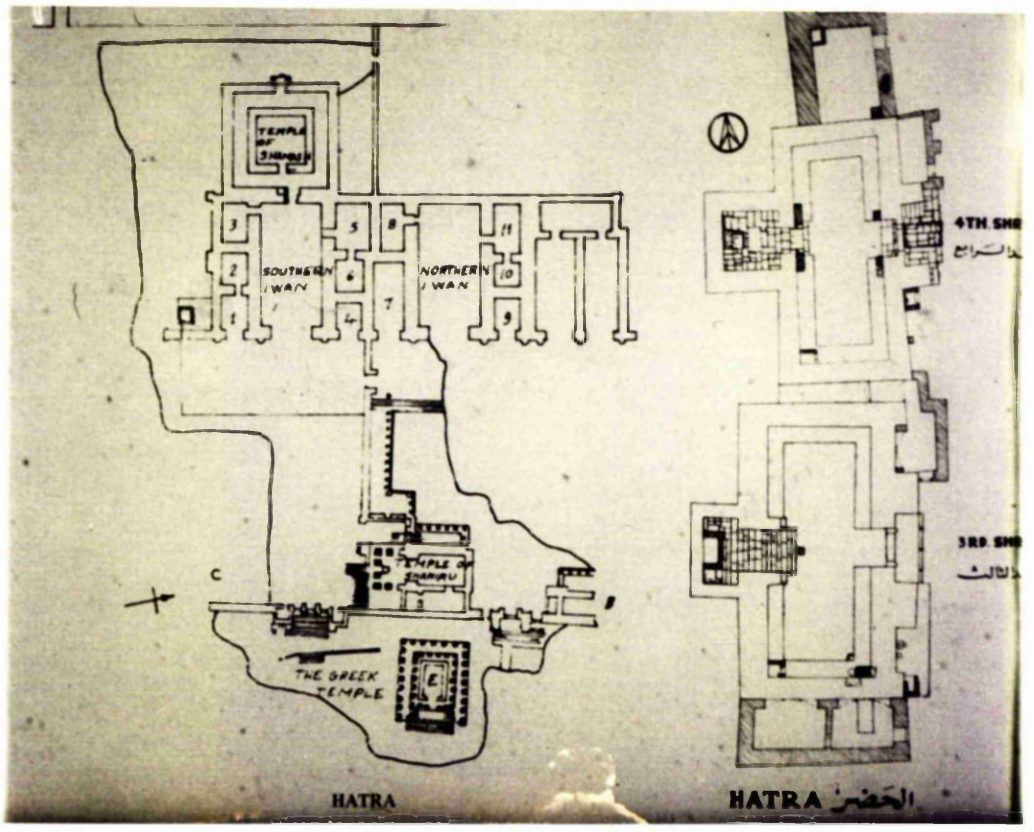


Illustration 30 Palace Complex of Hatra,
Ground Plan.

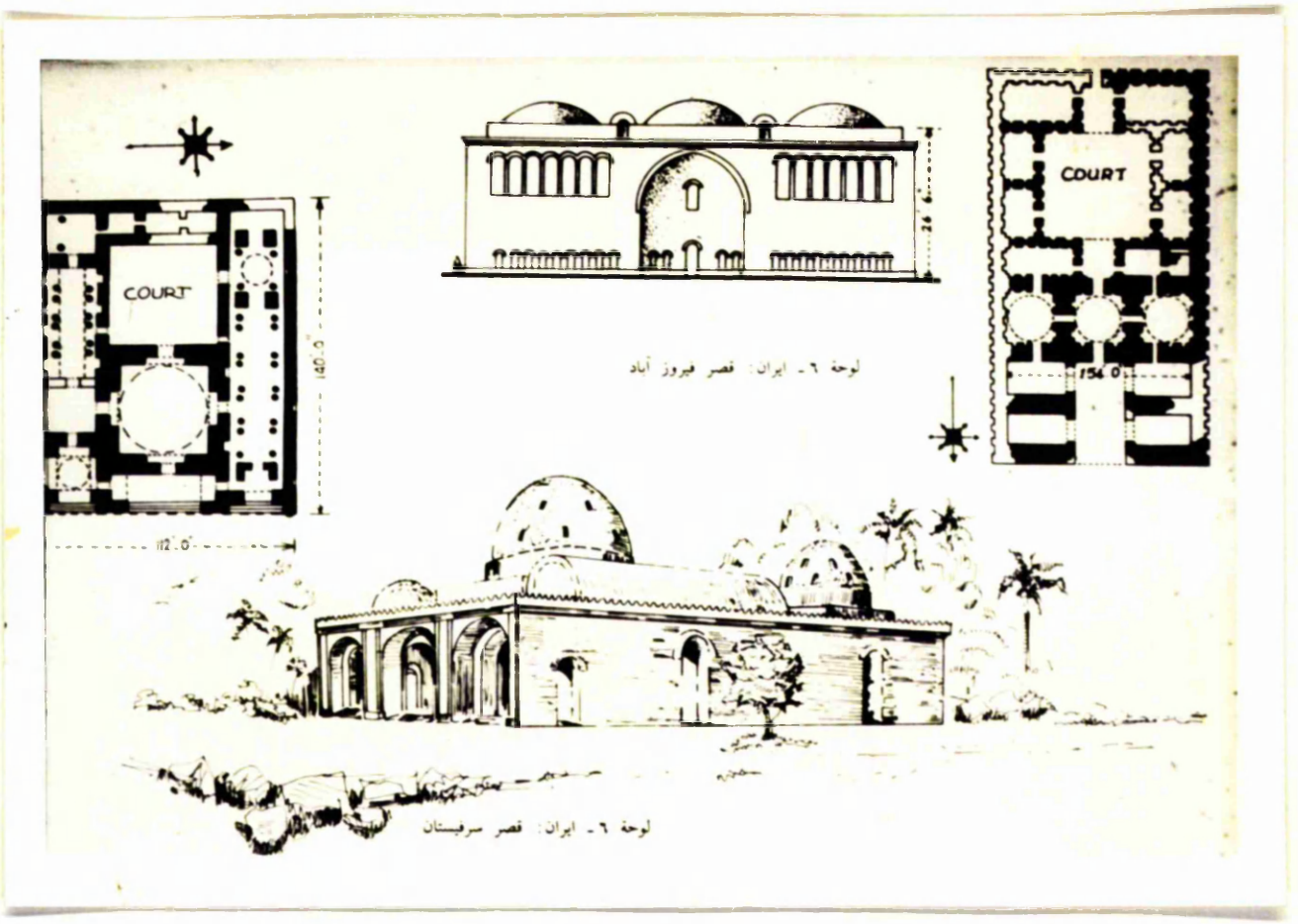


Illustration 31 Palace Complexes of Firuzābād and Sarvistān.

against the Syrian designs and Mesopotamian styles, which employed Christian elements.

Once the dome had become an integral part of the mosque and the teething problems had been overcome both in the practical and in symbolic terms, inherited characteristics from other religious edifices could now be refined to suit the requirements of the House of God and the congregation in close relationship. Inspiration for style and decoration was found in the Qur'ān. Mathematical knowledge, including geometry, inherited from the Greeks and the Romans served as a suitable vehicle with which reality could be transcended in order to experience the abstract. The world of abstract ideas become reality through abstract patterns, which were widely applied as decorative motifs both externally and internally to the mihrāb dome.

Because God belongs to the world of the Abstract, wherein He is Reality, the only way He can be brought into the world of reality is through the abstract. Abstract patterns are still utilised in mosque architecture and considerable harmony has been achieved between the abstract and non-abstract representations.

During the reign of two Iranian dynasties, the Samanids and the Buyids, the pre-Islamic traditions became national traditions. The most important building from this era is the tomb of the Samanid Isma'il in Bukhara. The exact date of its construction is not known, but it can be ascribed to the early tenth century. It is a square

building, resembling a pavilion with all four sides open. There is no trace of any provision for doors.

Such structures were familiar to the people of the area, resembling the Fire Temple pavilion, where the sacred fire used to be displayed to the people. The dome of the tomb is supported by squinches. The decoration is mainly of brick, consisting of angular and circular patterns, with the inclusion of the occasional discreet carved terracotta. Baked brick had been used previously as a decorative item for the Baghdad Gate of Raqqa and later in the Great Mosque of Sāmarrā, but such richness in decoration as in the tomb of Isma'il the Samanid has not been recorded as early as this elsewhere. It was probably the work of brick masons from Transoxania. [8] It is well known that brick is a versatile building material and it seems to have dominated only in the eastern part of the empire, namely in Iran. This might explain the dome construction techniques employed in Iran, contrasted with those employed in Roman and Byzantine architecture. Brick, however, became dominant in building only after the Islamic conquest. Most of the Sasanian buildings were constructed entirely from stone, except for the Tāq-i-Kisra and the Qasr-i-Shirīn and a small palace at Dāmghān. [9]

It was unfired brick that dominated in previous architectural traditions in Iran and dome building evolved from these. In decoration, it was used to provide the elementary components of design, the vertical, the horizontal and the lines of the pointed arch. Iranian

design, decorative and architectural may be related to the available building material. Brick is a meagre medium and, therefore, it is possible that the complexity of decoration is there to compensate for its appearance, being wholly of abstract design and not mechanically integrated into the structure. A definite Iranian innovation was the Mosque Madrasa or the "College", which was later to find its way into Egypt and other parts of the empire. As outlined in the previous chapter, the importance of the relationship between the function and plan of the mosque was stressed, in this way, in that mosque/palace served a particular purpose, as did the Friday Mosque and the Madrasa, hence their particular layout. It is, however, above all, the Sasanian plan, the īwān and the domed square room in communication which became important to eastern Islamic architecture, the domed room being the harām of the mosque.

Before we embark on the discussion of the decorative components of the Iranian mosque, we have to examine its layout in its historical context.

One of the earliest mosques in Iran, the Tārik-Khāna at Dāmghān, is what is called a columnar mosque. (See illustration 32.) Columnar mosques were quite widespread in the first centuries of Islam. There were a number of columnar halls in the form of naves on the qibla side of the court, facing Mecca.

The columnar hall type mosque might have been Hellenistic in origin, but Persian architecture was also columnar in

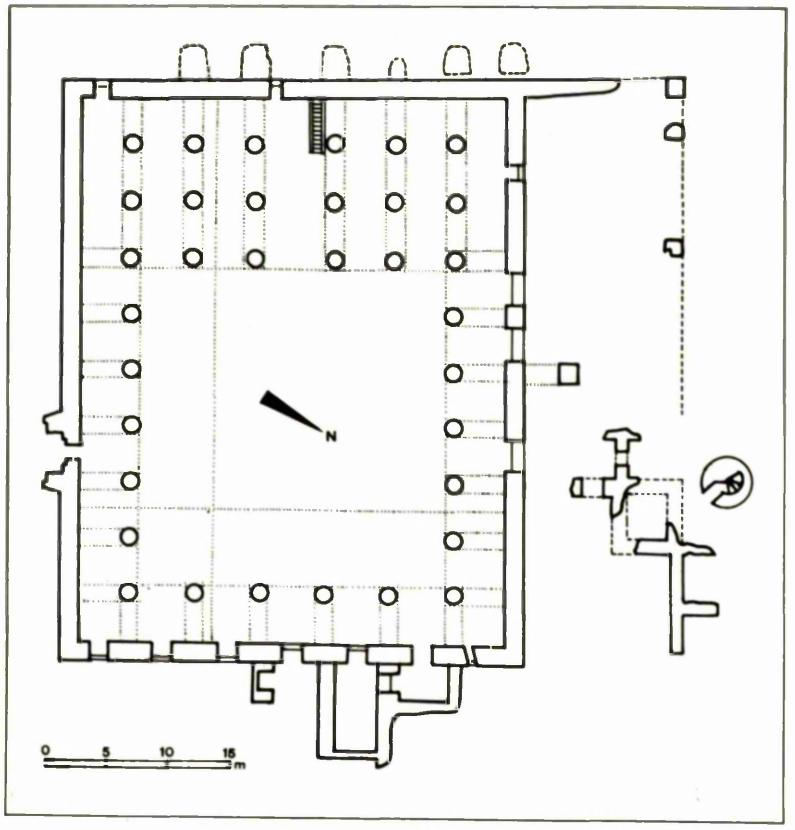


Illustration 32 Tārik Khāna, Dāmghān, Ground Plan.

the Achaemenid times, a tradition which was carried over into the Sasanian period. It is noteworthy that the Baṣra and the Kūfa mosques, rebuilt by Ziyād ibn Abīhi, are also columnar mosques. The architect who worked on these two mosques was reputed to have worked for Khusraw II. [10]

Vaulting, which can be found also in the Tāṛik-Khāna of Dāmghān was widely used in Sasanian palaces, an example of which is the palace at Firuzābād. Vaulting originated in Asia, and represented power. Barrel vaults and domes on squinches are the two basic forms. The dome, the culmination of vault design, probably developed naturally and quite autonomously in Iran without any foreign influence, although the earliest examples are no longer in existence to prove this conclusively.

Iranian palaces from the Sasanian era comprised a domed throne chamber communicating with at least one īwān, but usually more than one. This combination was retained in later religious architecture. The īwān is a roofed space, enclosed on three sides only, with a certain depth. It is well adapted to the oriental climate and it was used as early as the Achaemenid period. It used to have flat roofing, while during the Sasanian times parabolic vaulting developed which, in Islamic times, turned into pointed vaulting. The monumental version of the īwān is the expression, the architectural externalisation of royal, or of divine might. At the back of the īwān stood the royal throne, exerting its authority, somewhat similarly to the mihrāb at the back of the mosque īwān.

A very important building should be mentioned at this stage, which is probably the product of the interaction of eastern and western cultural heritage; viz; the Palace complex of Khirbat al-Mafjar. (See illustrations 33a and 33b.) The palace was built in the Umayyad period under Caliph Hishām, in 106/724-743.[11] During this period, the Arabs had access to the artistic representations of both west and east through their conquests. Workmen were employed from all over the empire and it was inevitable that the various styles they brought with them were fused into a new one. Sasanian features, such as the throne room and its dome and a niche at the back of the throne room, one example these may have been the forerunner of the concept of the mihrāb and its dome.

A curious looking object was found in one of the niches - a cone-shaped pendant, hanging on a thick chain.[12] The pendant was positioned in such a way, that it caught the eye of whoever walked through the entrance. The central nave, which leads to the niche containing the pendant, has a dome in its centre, the highest point of elevation of the structure. There is another dome on the interior of the entrance hall to the nave.[13]

The height and position of the central dome indicates that the area it is marking, is the most important one in the whole building.

The object hanging in the niche was likened to the "hanging crown of the Sasanian kings at Ctesiphon". Apparently, the crown worn by the kings were so heavy,

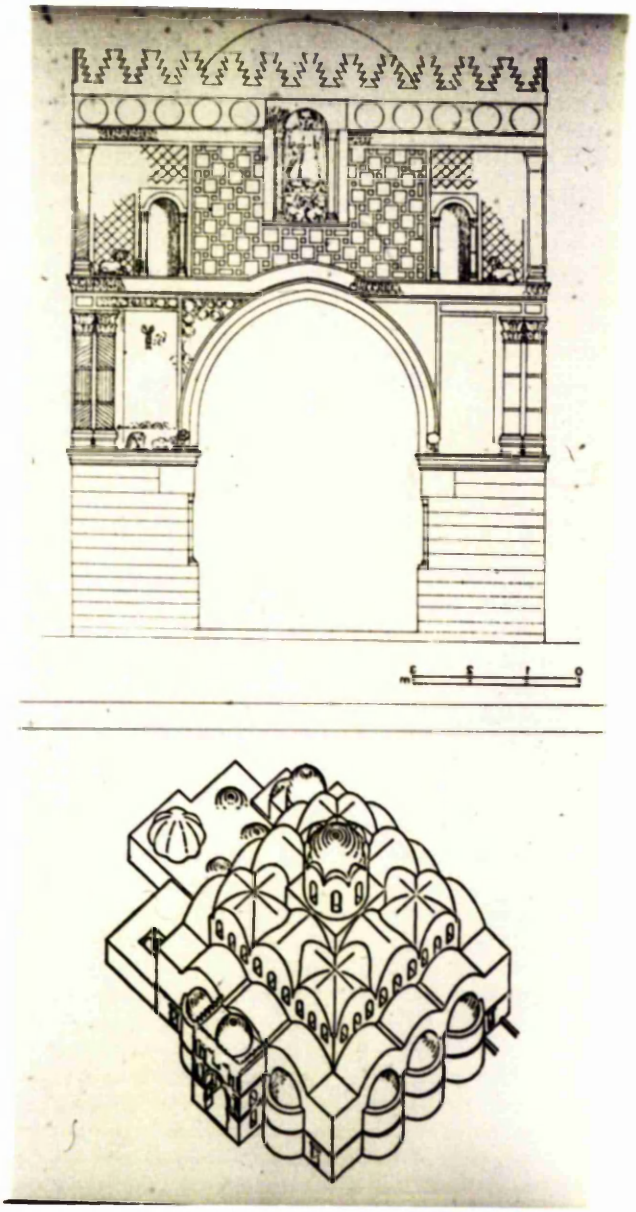


Illustration 33a Khirbat al-Mafjar Dome.

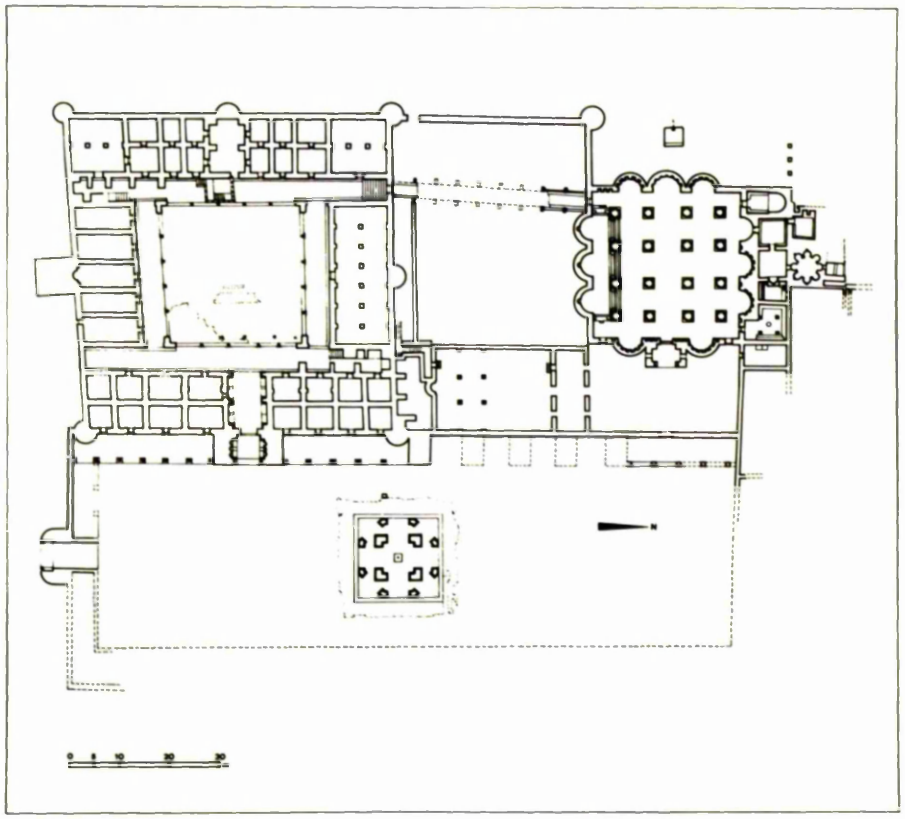


Illustration 33b Ground Plan of Khirbat al-Mafjar.

that it had to be suspended from the ceiling, above the head of the ruler. [14]

Another reference gives the description of the roof of the Ctesiphon palace: "The throne vault was so superbly built, that no one has seen anything like it elsewhere. In it his crown was suspended, and he sat there, when he gave audience to the people. (Khusraw II)". [15]

According to Firdawsi, [16] the crown is said to have been suspended for the ruling king, not only in the permanent throne hall of the capital city, but also wherever he resided, even for a short period during his travels.

The hanging crown was also a part of the Byzantine court ceremonial. It is possible, that the concept of the hanging crown was adopted by the Umayyad rulers. It is known that it was their ambition to equal and surpass the splendours of the ruling Sasanian dynasties and this became technically possible after the conquest of Iran.

The dome was introduced into Islamic architecture during the Umayyads and it was accepted as an integral part of mosque architecture during the 'Abbāsids, who, as we know, came to power with Iranian assistance. It was during their rule that the influence of Iran grew.

On the rather scanty evidence concerning the evolution of the early dome, one can only put forward the hypotheses best supported by the evidence that actually exists.

It was established in the previous chapter, that the dome was a symbol of power in practically all previous civilizations; that the evidence points to the fact, that the Umayyads also adopted it as such; and that they integrated it into a style of Islamic architecture, which was to acquire a specifically Islamic character in the following centuries.

The cone, or dome shape, as a representative symbol goes back even further in history.

The excavations of the Royal cemetery at Ur yielded some very interesting and probably highly significant clues to the nature of the dome. There are a number of blocks of stone in the British Museum, comprising written and pictorial depictions. The engravings illustrate a number of buildings with flat and domed roofing. There seems to be a procession in front of the buildings, headed by a figure, who could conceivably be a priest, or a king. The cone shaped dome of the buildings appear to be ribbed.

The Royal Cemetery dates back to the third millennium, therefore, and must be considered, as possibly the first item of evidence in the history of the dome. The ancient Iranians may have adopted the architecture of the Sumerians, and used the same square building with a dome, for their temples.[17]

There are other interesting excavation materials in the British Museum, such as the giant tablets found in Assyria and later, Mesopotamia. Some of the tablets depict

figures, which could be representations of either priests, or astrologers. Their heads are covered with cone shaped hats, and they are pointing to the symbolic representations of the elements. One of these is the symbol of the Earth, which is cone shaped and ribbed.

If we accept that the cone shape was a universal symbol for the heavens and the earth from the beginning of history, then it is logical, that it should also become an integral part of religious architecture in times to come.

Given its origin in the Middle-East, it is not surprising that one should find a continuity there. Whether it represented Power, or the Universe, the cone shape found its way into Islamic religious architecture, especially in front of the mihrāb niche, most probably through the Persians.

The 'Abbāsid insistence on transforming Sasanian models of rule into their own proved most significant, as was also their dependence on Persian advisers, who were converted to Islam, but of Sasanian descent. The Persians endeavoured to construct an ideology, which would enhance the prestige of their own traditions by casting Islam in the role of successor to the Sasanian struggle against the world hegemony of Rome. In the new constrictive myth which they developed, Mesopotamia, rather than Constantinople became the centre of the world.

Just as the Roman myth acquired credibility because of its city's splendour, the Mesopotamian version of the Islamic

myth was nourished by Baghdad's wealth, population and architectural adornment.

The architectural development of Islamic Iran is inherent, therefore, in its historical development. It is evident, that the model on which Iranian place of worship was built, depended on different criteria from the Syrian and North African ones.

It is difficult to speculate on the extent to which the various visual symbols included in the mosque architecture differed from those of the rest of the empire, not least since the early examples have been largely destroyed.

If, however, the existing evidence is assessed, there is a strong case for reasserting earlier claims that the meaning and origin of the dome in front of the mihrāb is considerably different in Iran from that of the western part of the Islamic empire.

The culture of long term sedentary peoples must, of necessity, produce different architectural styles from those produced by people of nomadic origin. The desert experience is, by its own specific character, conducive to the formation of different concepts, from that of the city experience, and this is one of the underlying causes of the diversity found in Islamic architecture.

In the following paragraphs, it will be argued that the size, position and the decoration of the dome in front of the mihrāb developed independently in Iran, Anatolia and

Turkey and with a different ideological driving force as the explanation.

In order to do this, the first question which has to be asked is: why did the dome appear in the western part of the empire so much earlier than in Islamic Iran. A part of the answer to the question lies in the historical development of the two parts of the empire.

During the reign of the Pious Caliphs, the purpose was purely to conquer in the name of Islam, Islam meaning a religious and not yet a political entity . The first Caliphs forbade their conquering armies to settle in the cities which came under their power. They either pitched tents outside the cities, or built enclosures, where the soldiers and their families stayed. Mingling with the local population was not encouraged, and the Arabs were treated almost as privileged members of Islam. It is relevant, that at the same time, there was considerable internal strife amongst Muslims. It is not surprising, therefore, that their attention was occupied with graver issues than the pragmatic implementation of visual representation of the religion. In the west, the princes, who were later to become known as the Umayyads, were mostly occupied with amassing wealth for themselves and their viziers. They took advantage of possessing such wealth by investing it in the building of extravagant palaces and mosques. In the eastern part of the empire, the Companions of the Prophet and their followers were preoccupied with spreading the faith and managing the everyday administration of the newly converted provinces.

It was the aim of the Umayyads to establish an overall hegemony for themselves, for which they did not shrink from committing single or large scale atrocities. When they finally became the sole rulers of the empire, their job was more difficult in Iran, than anywhere else.

It was mentioned earlier, that government was carried out from Kūfa or Baṣra, so that the influence was not as strong in the east, as in the west. There was much opposition to the Umayyads, who, in fact, showed some contempt for the religious aspect of Islam.

At the beginning of Islam, the Prophet was the chief of the Muslims both in the temporal and spiritual aspects. When he named one of his followers commander of a province, he committed both forms of sovereignty to them. This, however, was to change fairly rapidly and the two positions became dependent on each other, but not universally implemented. The Caliphate, however, remained a combination of spiritual and temporal office.

The connection between government and religion in Islam is different from the connection between the two in Christianity. In the latter, religion spread among the people before reaching the governing class, whereas in Islam it first spread among the governing class, and from there to the people. When Islam acquired strength, the chieftains were anxious for worldly power, the existence of the Caliphate was one of the major causes of their success, owing to the influence of religion over man's

mind at the time. It was only a religious banner that could make them unite, especially in the east.

Having established that there was a different trend in the east from that of the west concerning the role of the caliphs, even after the title was conferred on the Umayyad princes, its effect upon the visual manifestation of religion should now be assessed.

Mosque development in Iran and other eastern territories will be evaluated from the time the Dome of the Rock was built, in 86/687, by ʿAbd al-Malik. Some of the decorative elements of the Dome of the Rock are of Sasanian origin and, it is believed by some scholars, they symbolise Islam's victory over the Persian empire.[18] The decorative elements comprise representations of crowns, necklaces and pendants. Some of the crowns are combined with crescents or winged motifs, which are associated with Sasanian royalty.[19] This is further evidence for the theory that the decoration and the symbolic meaning of the dome originated in Iran.

Although domes have been incorporated into religious and secular architecture for centuries, the most relevant feature to this stage of this study is the adoption of the dome on square base. The square base was transformed into an octagon by means of corner squinches. This technique is significantly different from that employed by the Romans and the Christians, who erected domes on a circular base by reducing the diameter of the circle. (see Illustration 34) The Romans used brick together with

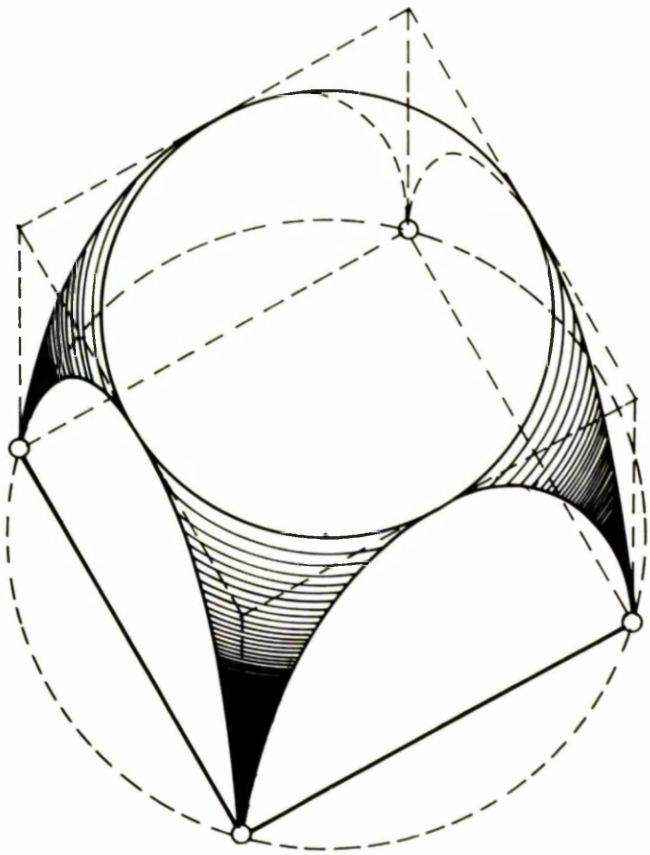


Illustration 34 Roman pendentive, a geometrical analysis.

concrete for construction of domes, while the Persians used only brick. In order to convert the square into an octagon, sophisticated knowledge of architectural techniques was necessary, and there is evidence for this at Ctesiphon, Persepolis and Sarvistan.

The squinch is either an arch, or arches of radii of increasing length projecting one in front of the other or of horizontal arches projecting in the same manner. The dome will have the diameter of the length of one side of the square. Simple squinches were in use at Firuzābād and Sarvistan in the fourth century.[20]

In the Roman-Hellenistic square buildings which were to be covered with a dome corner niches were superimposed on the corners of the square, which converted the square to an octagonal shape; however, these niches had no relationship to the squinches employed in Persia, which evolved from the simple squinch vault. During the period prior to the advent of the Byzantine style, the truss squinch dome was confined to Persia and adjacent countries.[21]

It was from about the fourteenth century, that the spherical dome on a drum, resting on a square base was introduced and cultivated in Persia.[22] Aesthetically this arrangement was more appealing especially on rendering the exterior of the dome. Before the fourteenth century, the squinch dome was manipulated, disguised, decorated, in order to shield its inherent clumsiness. For example, the introduction of a smooth niche, which

overrides the corner, was probably the result of careful study of the Byzantinian solution to the problem. [23]

The Seljūqs used an attractive, but plain squinch, with a sharp groin, running from the corner of the walls in a smooth curve to the crown of the squinch. [24] Aesthetic and practical consideration led to other innovations to the transition zone, which resulted in the circular rather than the polygonal form. The triangle was constructed to resemble stalactites, which are in themselves suitable components for decoration.

In addition, there were other types of squinches possibly more widespread than the one just described.

One of these types include on the first layer eight lateral squinches, which were built on a higher level than the main squinches, over which a uniform arched panel was placed to give regularity to the sixteen sided polygon on which the dome was placed. [25]

Later, the main and lateral squinches were built with their crowns on the same level. The elements, which were incorporated into the structure to produce an extraordinary form, called the squinch-net or groined pendentive were: the lateral squinch; the low-crowned squinch, current in the east, and interlacing arches and half-arches. The squinch-net was used extensively during the Ṣafavid era. Two of the mosques in which they can be found are the Masjid-i Shāh and the Masjid-i Lutf Allāh both at Isfahan. [26]

Later on, a particularly attractive form of dome developed from the squinch-net, the star-shaped cupola, which had its precursor in the twelfth century vaults of the Masjid-i-Jāmiʿ at Isfahan. [27] (see illustration 35)

Basically, the domes of Iran could be divided into three categories: 1) Single domes; these are the direct descendants of the Sasanian domes. There are extant examples for these in the Seljūq period. 2) True double domes, whose prototypes may be found in the tomb of Sulṭān Sanjar at Merv in ca 552/1157. 3) The domes which possess an inner dome, concealed by a polyhedral tent dome, or conical roof, such as the Gunbad-i-Qābūs of 398/1007. [28]

The dome, which belongs to category 1) appears in six monuments. The base is either octagonal or square. At Sulṭāniya, the Mausoleum of Öljeitü is covered with a massive dome of 24.5m span, and it is over one metre thick at its base.

It has an void section, and the inner base rests on tiers of continuous corbels, which convert the hexagon into a circle. The thickness of the shell increases from the base to the apex by means of a series of steps, however, a smooth and regular exposed profile was obtained. [29]

The same type of profile can be seen in the dome of the Masjid-i-Jāmiʿ at Verāmin; it differs only in that there are no traces to indicate that an auxiliary shell was used to regularise the profile.

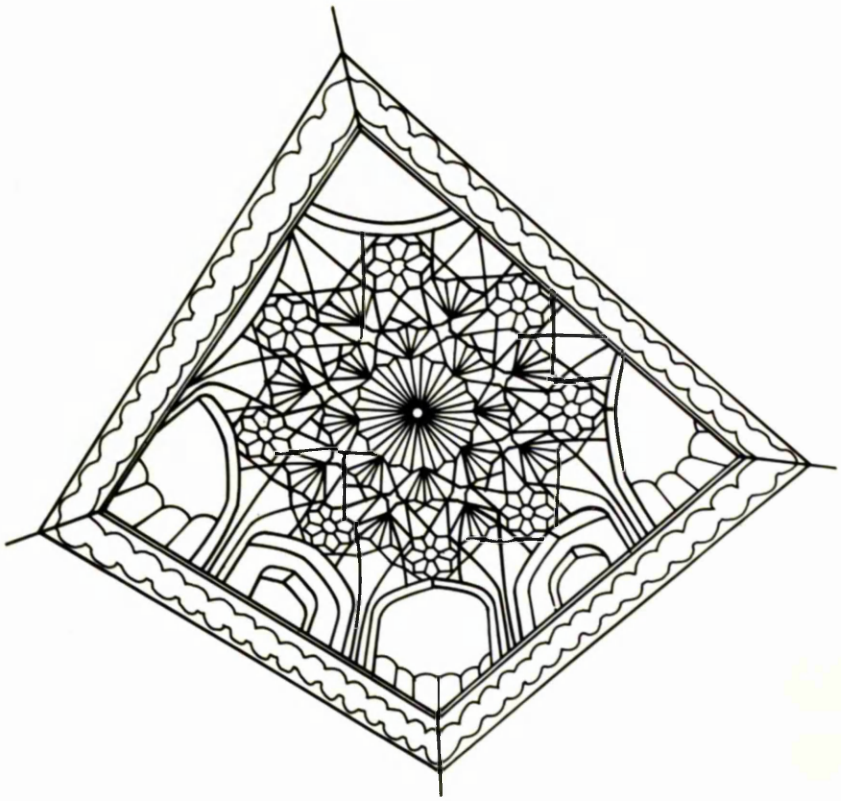


Illustration 35 Persian Vault.

Category 2) domes, the true double domes, appear in ten monuments, covering either a square or an octagonal chamber. (see illustration 36)

The only early example of this type of dome can be found at Merv, in 552/1157 in the tomb of Sulṭān Sanjar. [30]

The double dome did not seem to appear in the eastern part of Iran. This may possibly indicate that it was imported from the western part of the Islamic empire.

The double domes, or cupolas, which were built entirely from wood, were characteristic of the early Christian and early Muslim monuments at Jerusalem, Baṣra and Damascus. There were impressive wooden domes in Baghdad and at Nishapur in the Seljūq period. [31]

There is a possibility that the wooden domes were used to cover the brick domes, which were replaced with other brick domes. This explanation or hypothesis is not very strong on grounds of logic, however, seeing that there was a shortage of wood in Persia - hence the use of brick from ancient times. It has also been suggested [32] that the double dome was inspired by the vault and lantern system of Armenian churches, which covered the crossing of the aisle and the transepts. The stupas of India and Central Asia were also covered with double domes. Either of these two areas could have been the origin of the double dome.[33]

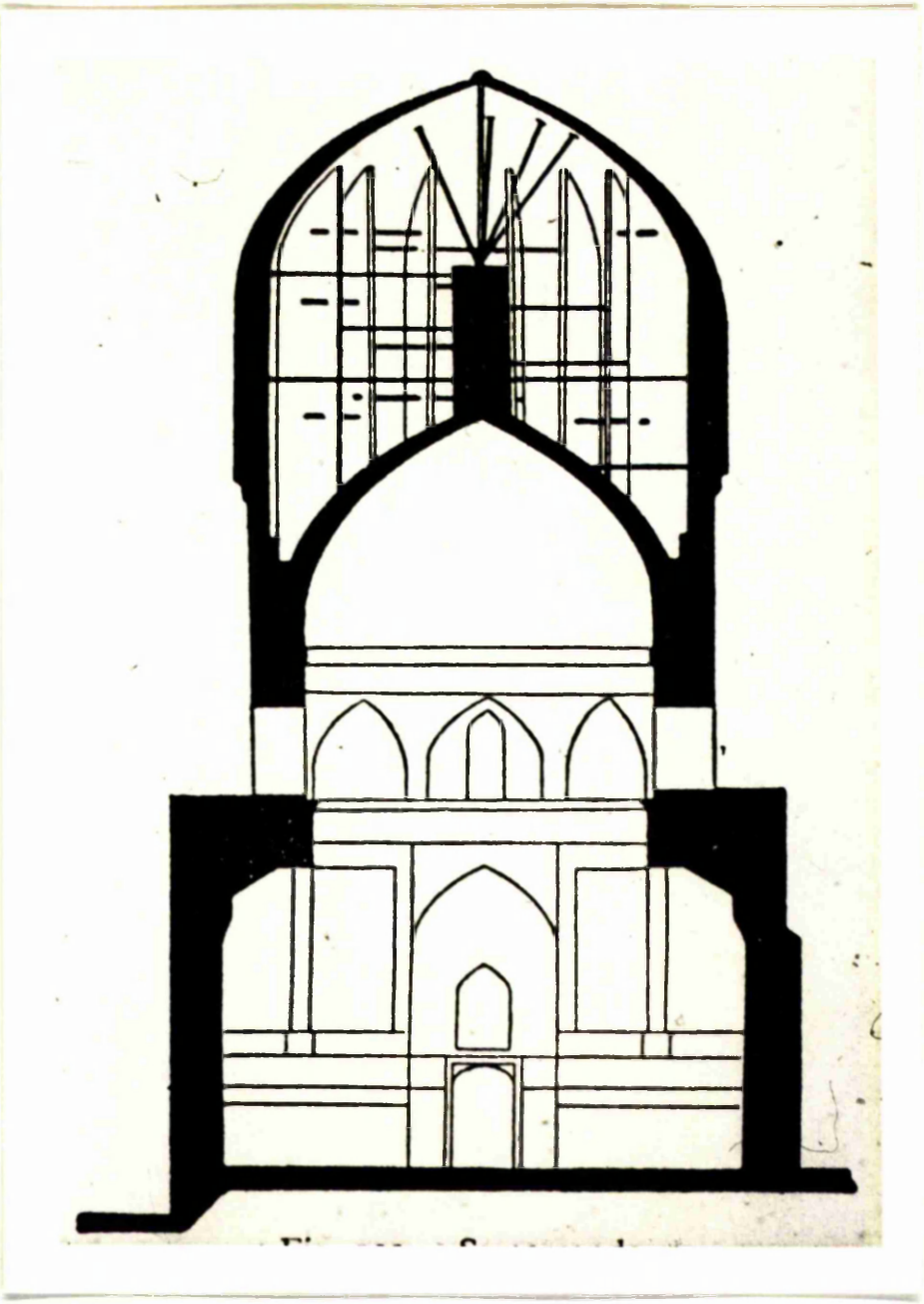


Illustration 36 Double Dome.

In the Ilkhanid period, the system of the double dome appeared fully developed. Examples of double domes can be found at Kharraqān in Iran.

The third category dome, the tent dome, appears on twelve monuments. The "tent" is placed over an inner hemispherical dome, which may be covering square, circular, octagonal, decagonal and duodecagonal plans.[34] Some of these examples resemble the royal tents of the nomadic peoples and one may speculate that there was a measure of nostalgia involved in their use. The octagon is established by means of squinch arches which span the corners of the dome chamber. (see illustration 37) In some cases a secondary zone of transition was also established, a sixteen sided figure was created by a number of wall arches. This figure provided the base for the dome. This method was employed in the Masjid-i-Jami at Veramin and Ashtarjan.[35]

During the Seljūq rule, which lasted until the twelfth century, decoration became an extremely important element of mosque architecture. The artists and architects of the Seljuq period appreciated, understood and transformed the already existing decorative schemes of their predecessors and by combining these two important factors, they produced a magnificent decorative style.

Geometric patterns were executed in brick, terracotta and stucco. Inscriptions were also favoured as decoration, executed in a handsome script. Colour in architecture appeared for the first time under the Seljuqs, but its use

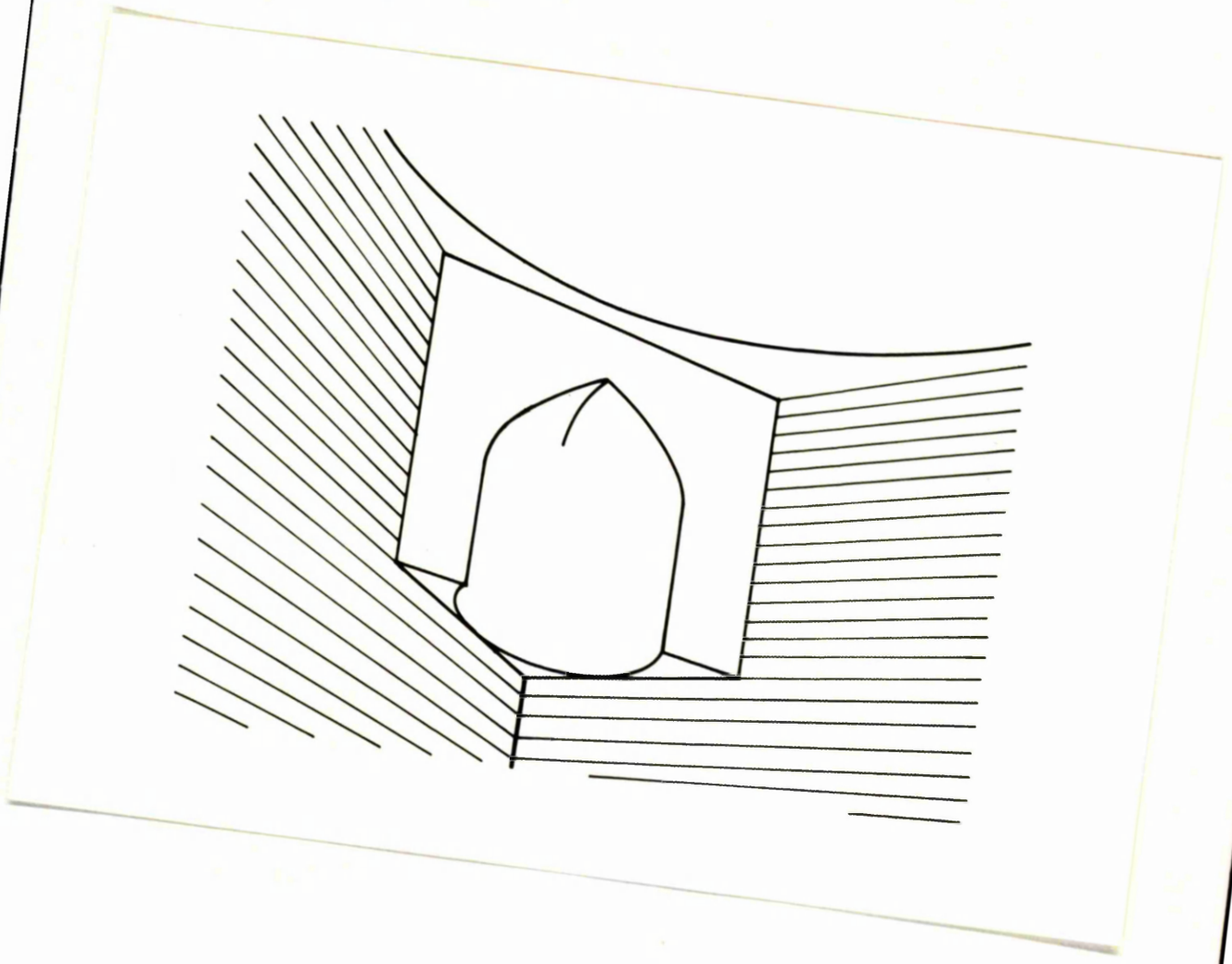


Illustration 37 Corner squinch in the form of a niche.

was perfected only during the following eras. The emphasis was mainly on structure, which tended to be rather massive, with great dome chambers being prevalent under the Seljūqs. These were replaced later by more slender structures. The dome chamber became higher and lighter, while the internal walls became almost flimsy and pierced with wider openings. The concept of space and the importance of light became the primary concern, colours became more vivid and the stucco became much richer. Coloured tiles found their way into mosque decoration and the utilisation of lapis lazuli, turquoise and gold enhanced the richness of the decoration. By the end of the Mongol period, the use of colour became the perfect medium for Persian expression.

This was not new, however, in the Iranian tradition. The Persians always had a tradition for conveying visual beauty even in ancient times. Symbolic plants and natural forms in pre-historic times expressed fertility and abundance, and these found a synthesis with the geometric and calligraphic compositions in the Islamic period. In Iran, calligraphy is a major and, indeed, an elemental component in art. It was developed by the Persians into a variety of beautiful forms, and incorporated into every part of the mosques, turning them into the earthly manifestation of the word of God. The transition zones of the domes in front of the mihrāb of the Iranian mosques are always decorated with calligraphy, which further emphasises their importance.

Stucco and brick is abundant in mosque decoration and colourful polychrome tiles and faiance are incorporated, sometimes in conjunction with the former, to achieve maximum effect. Stucco was not new to the Muslim architect. It was an organic part of Sasanian decorative art.

In Ṣafavid times, Persian mosque architecture, as well as all other art forms flourished. Experimentation in decoration was evident, especially in Isfahan, where extravagantly painted stucco was combined with brilliantly coloured tilework in order to enhance the appearance of the dome in front of the mihrāb. Ṣafavid decoration resembles the colourful semantic expressions of the contemporary poets, without ever reaching the point of saturation, stopping short of losing the meaning for the words.

During the Seljūq period, however, stucco art lost its primary position to the more austere, sober brick. Intricate geometric patterns were perfected to such an extent, that they have never since been rivalled. A perfect example for demonstrating this point is the dome of the Masjid-i-Jāmi' at Isfahan.

Brick was combined with polychrome tiles to produce an impression within an expression effect. Delicate floral, arabesque and geometric forms are inserted into the soberly outlined brick framework, which is composed of angles, squares and triangles. The colours and shapes are chosen in such a way that an illusion of alternating

light and dark is created without actually resorting to the use of light.

The concept of light and dark has been the integral part of every manifestation of Persian culture since Zoroastrian times, where it is organically interwoven into the religious philosophy. It could not be excluded later from the equally rich imagery of Islamic religious thought, it was unconsciously or consciously incorporated into Islamic philosophy, and into the visual expression of that philosophy.

It is interesting to note the contrast that seems to exist between the decorative elements of mosque architecture and those of the minor arts. Although the skill of execution is identical and the application of colour is equally imaginative and varied, there is a crucial difference in the themes chosen. Whereas in mosque decorative design every item is delicate, intricate, almost celestial, creating a feeling of complete peace and beauty, popular themes for the minor arts, especially for metal work, seem to be representations of violence, the struggle between good and evil, and a general restlessness and movement.

This is not to say, however, that delicate 'Paradise' motifs are not to be found in the minor arts; in fact, they are frequently found, but it is so striking to find violence in art at all, after experiencing the serenity in the decorations of the mosques. Perhaps it is this duality of the spiritual makeup of Muslim artists that is the dynamic force behind the ability to produce such

awe-inspiring beauty as the Great Mosque of Isfahan or the Blue Mosque at Tabriz.

It was mentioned at the beginning of this chapter, that the praying habits of the Persian congregation was different from that of the North African or Syrian congregation, in that prayers were offered in the open, whenever possible. With the onset of harsher weather conditions, however, the space within the walls of the mosque was used for worship, hence space, and the illusion of space had to be created. This was partly achieved by the increased size of the mihrāb dome. The Great Mosque of Isfahan, which is the earliest of the Iranian mosques with a dome in front of the mihrāb, has a huge dome, measuring 49ft in diameter. This, however, is not the original dome, which was destroyed earlier. The Seljūq Sulṭān Malik Shāh had it restored and started roofing the walls of the courtyard. The rows of cells as dwelling places had no longer any practical significance and they became an architectural feature. (see illustration 38) Friday service was held in this mosque, which subsequently became the prototype for Friday Mosques in Iran and Turkestan. [36]

Another dome chamber was set into the arcades facing the mihrāb dome, and both were fronted with deep īwāns. The dome chamber also contributes to the feeling of spaciousness.

The mihrāb dome bears an inscription, with a date, 481/1088-9, and its zone of transition rests upon

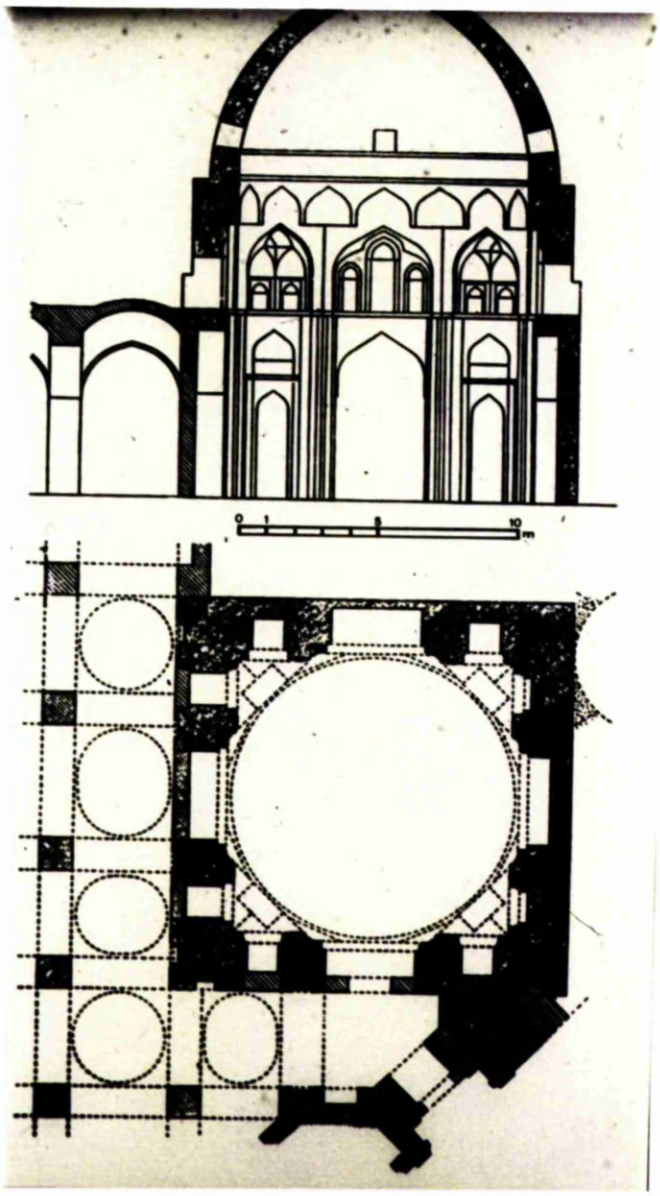


Illustration 38 Masjid-i-Jāmi', Isfahan,

Gurbad-i Khākī

plastered arcades. No dome has been noted in Persia which rests upon a ring of sixteen arches earlier than this one. On the exterior, the zone of transition was masked by an octagonal prism of masonry until the eleventh century. The earliest example of the exposed octagon is in this monument, which is the earliest of the Seljūq domes. [37]

Two tombtowers have been discovered in Kharraqān in 1963 dating from the eleventh century.

Two mosques from the Seljūq era, one which was discussed by R. Hillenbrand in a paper published in 1972 and both of them in 1976, warrant further consideration.[38] One of the mosques is situated at Qorva near Qazvin, while the other one is at Sojas, near Sultaniya. The domes of these two monuments are small compared to the other domes in the area measuring 5.5m and 9.2m respectively.

The zone of transition comprises trilobed squinches, which are to be found in the other mosques of the Isfahan area.

The small mosque at Qorva serves as evidence for the existence of the 'pavilion' mosque prior to the Seljūq era, thereby dispelling the belief that it was a Seljūq innovation.[39] The 'pavilion' was to be integrated into the mosque structure by the Seljūq which probably led to the evolution of mosques with single dome-chambers referred to supra. Another innovation, the tri-lobed squinch which was attributed to the Seljūqs is also found in this mosque.

The Great Mosque of Ardistan was built at the end of the tenth century. In contrast to the rich interior dome structure, which had reached complete maturity in Isfahan, the exterior consists of massive cubiform surfaces of compact brickwork. The dome, which rests on an octagonal transition zone and a cubiform base, tapers slightly. It stands as a symbol for the solidity and strength of the Seljūq domes.[40]

For the first time, the Seljūqs created an original type of mosque architecture in Iran, and in so doing, they utilised the innovations introduced by the Kharakhanids and the Ghaznavids. The dome was to become the predominant feature of the exterior.[41] The decoration is very fine with particularly well balanced trilobe squinches, dating from the same period as those in the Friday Mosque at Isfahān.

The next mosque in the chronology, built by Abū Shujaʿ Muḥammad in 498-511/1104-1117 is the Great Mosque of Gulpaygān. (See illustration 39) The dome is fractionally smaller than the Isfahan dome, measuring 12m in diameter. There are stalactites which fill the arches on which the dome rests. They may be nothing more than a more complicated variant of the Isfahan squinch, yet the multiplication and consequent diminution of the ingredients bring the whole filling of the squinch almost into a single curved plane. The squinches are not visible from the outside. Compared to the Isfahan dome, this can almost be called Baroque.[42]

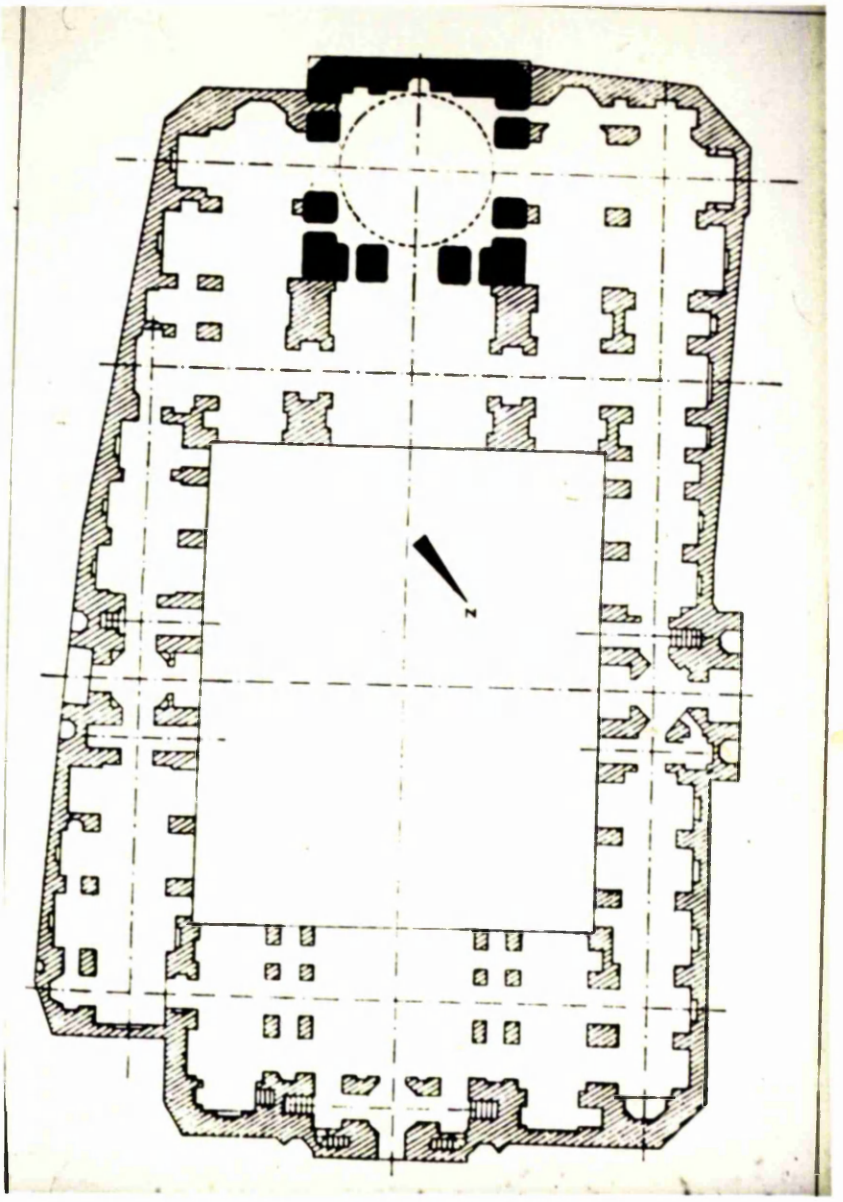


Illustration 39 Gulpaygān Great Mosque,
Ground Plan and Dome.

The construction of such diverse monuments within a period of less than thirty years indicates the number of ways in which the tradition of building developed. The huge dome is decorated with jagged geometric designs. [43]

The Friday Mosque of Zavāreh has a much smaller dome than those of the Isfahān and Gulpaygān Mosques, measuring 7.45m in diameter and the dome has finally taken up its position as an integral part of the whole plan. This dome was modelled on the Ardistan dome and they are identical in size. The exterior of the dome epitomises the majestic simplicity of the great Seljūq domes. The dome rests squarely on its base, supported by the firm line of the exteriorised squinches. [44]

In the late eleventh, early twelfth centuries the 'mosque kiosque' was incorporated into a madrasa, the Great Mosque of Qazvin, which was built in either 507/1113 or 509/1116. The dome has simple joined squinches and wall arches which remain true to native character. [45]

The next mosque, the Great Mosque of Verāmin, originates from the Mongol period, 733/1332-6. The Veramin Mosque is different from other Iranian mosques in that the portal, which is usually quite substantial, is here comparatively low, and as a result, the great dome of the sanctuary chamber dominates the whole building. [46] (See illustration 40) There is, however, a harmony between the splendidly proportioned dome and the portal.

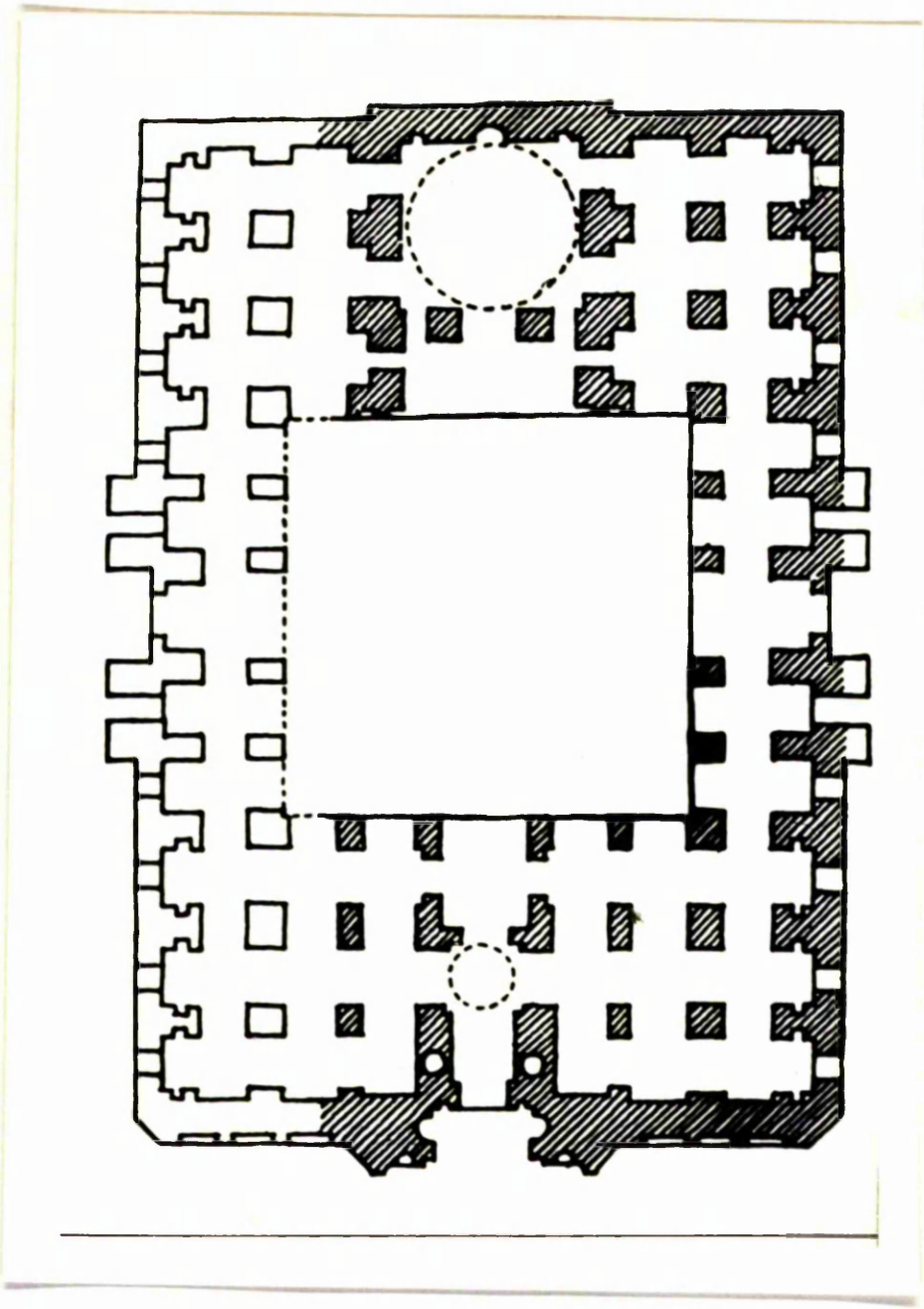


Illustration 40 Verāmin Great Mosque,
Ground Plan.

The interior of the chamber for the first time since the earlier centuries, gives the distinct feeling of verticality, an emphasis on the religious as against the liturgical dimension. The main thrusts of the dome are concentrated at particular points, so that the side walls may be pierced with openings, giving an increased sense of lightness, both from the structural aspect and in illuminating the interior.

The concept of the dome chamber reverts to the old Iranian idea of horizontality and consists of three well marked superposed zones. The squinches are of the old simple arched type, broadly framed. There is an explicit, almost archaistic return to the horizontality and abruptness of such Seljūq domes as that of the Great Mosque of Qazvin.[47]

The dating of the next mosque presented something of a problem to scholars by reason of its style and the execution of construction. Were it not for the inscription, giving the date 777/1375, the Masjid-i-Jāmi' of Yazd would have been assigned to the fifteenth century. The contour of the dome lacks distinction. The squinch is masked on the inside but the high octagon with the squinch shell is still conspicuous on the exterior. The dome has lost the merits of the high crowned type, and did not attain the solemn dignity of the low-crowned dome. The squinches are pierced for illumination, which is the revival of an old practice. Such illumination is distracting, disturbing to the worshipper, and it introduces a feeling of emptiness. It seems, that this is a critical stage in dome construction.

The domed chamber of the mihrāb has a single īwān in front of it and it is flanked by oratories which create a triple īwān type layout, similar to the Sasanian palaces.[48]

The next mosque under discussion is probably one of the most beautiful in the history of mosque building in Iran - the Blue Mosque of Tabriz. It was built during the Turkmen period, in 870/1465.[49] There is a domed sanctuary, which measures 16m across, and is covered by a dome of the same diameter. The sanctuary resembles a Fire Temple and the dome is supported by eight open arches. The chamber is magnificently decorated in rich dark blue, hence its name, and is stencilled with gold patterns.[50] This mosque has no courtyard at all; the central area in front of the sanctuary is covered by a huge dome. Altogether there are nine domes, which suggests a relationship to Byzantine models. The Byzantine model was used in Anatolian mosques which will be the subject-matter of the next chapter. The Anatolian influence on the Iranian mosques was most likely transmitted by the Turkmen. However, there can be no doubt concerning the origins of the superb decoration, which is unquestionably Persian.

The penultimate mosque under discussion is the Royal Mosque at Isfahan. It was built in the Ṣafavid period, between 1021-47/1612-37.[51] (see illustration 41) The four īwān mosque form is brought here to a peak of perfection, with the īwāns and the great dome being reflected in a central pool.

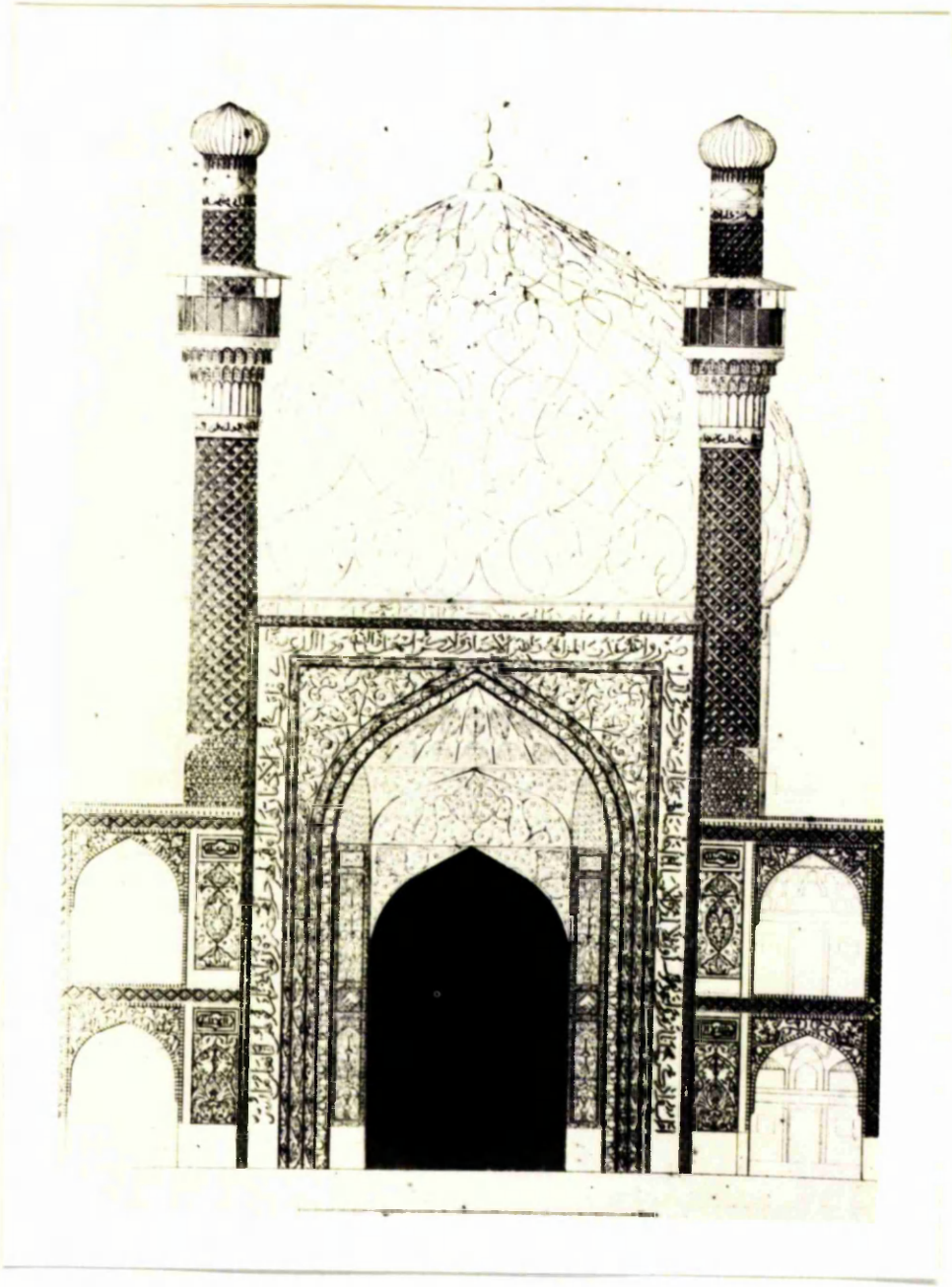


Illustration 41 Masjid-i Shāh, Isfahan, Dome.

The pool is another device, employed by architects to create an extra dimension in space, doubling the size of the image in its reflection. The dome here is one of the largest, yet one of the most gracious in contour. The ceiling within the dome has a splendid decorative theme, a great sunburst medallion. [52]

The Ṣafavid period was renowned for its sophisticated style of building and decoration. Colour became extremely important in decoration, both for creating an external effect, and a the same time for externalising the inner, religious emotions, which, as has been seen, had an accepted vocabulary in the various colours used.

The last mosque to be discussed was also constructed during the Ṣafavid era, in 1027/1617, viz, the Mosque of Shaykh Lutf-Allāh in Isfahan. The dome is substantial, it measures 12.8m in diameter. Mechanically it is a major achievement, and it is one of the few single shell domes of this period.

The sunlight filters through a series of double grilles in the drum of the dome, which rests on squinches, rising directly from the floor. Each of the eight pointed arches supporting the dome is outlined by a turquoise twisted moulding, framing a number of inlays. The interior of the shallow dome is patterned with lozenges, which decrease in size as they ascend to the centre. [53]

The character of the domes of all Iranian mosques thus far discussed give support to the assertion, that they were

basically different in purpose and appearance from the domes of the western part of the Islamic empire or of North Africa. They are substantially larger and more lavishly decorated; the use of internal space is more essential and, therefore, the architectural vehicle for attaining this goal likewise differs from the rest of the empire. Verticality becomes more important and with it, light. The members of the congregation, on the other hand, must be able to internalise, nothing should distract them from worship. It is therefore extremely important to illuminate the interior in such a way, that the internal serenity, which is achieved through architectural features and decorative motifs is not disturbed by inappropriate lighting devices. With a few exceptions, Iranian architects were able to achieve maximum co-ordination of the various factors, in order to ensure that the sanctuary area with its dome became the most conductive path to communicate with God.

Before concluding the chapter on Iran, a mention should be made of the role of the Caravanserai. There were only a few examples of the frontier fort, as the Romans called the equivalent of the Caravanserai, the most important of which is the Ribāṭ-i-Sharàf, built during the Seljūq period, in 508/1114.[54] It is divided into two unequal, four ῑwān courtyards. It has two palatial suites, which are separated by a domed chamber. The whole complex is reminiscent of the early Iranian palaces, which also had a central throne room. In the complex, there are two mosques, neither of which possessed a dome. The Robāṭ can be included therefore amongst the mosque/palace complexes.

The other important Caravanserai is in Lashkari Bazar, built in the early eleventh century. The whole complex is three to four miles long, and has a Friday Mosque, which is two aisles deep. There is a large dome in front of the mihrāb. Lashkari Bazar is important for another reason: the dome, which spans the whole width of two aisles in front of the mihrāb occurs here, before it is found in the first Great Seljūq mosques in Persia.[55] (see illustration 42) The palace suite has a domed throne chamber and the inspiration for its design and decoration probably came from the 'Abbāsid palaces of Baghdad and Sāmarrā.[56]

The layout of the two complexes and the combination of the mosque/palace is further evidence for the theory that early on in Islam, the political significance of the dome was of primary importance and that it assumed a religious significance only when the place of power and the place of worship became separated. The Lashkari Bazar has both, the Great Mosque being built against the southern wall of the Great Palace. The domed throne room is not attached to these two buildings, hence there is no competition between the two domes.

The Ribāṭ-i-Sharaf is relatively small, serving primarily as the residence of the ruler, and for this reason the dome is situated over the area which was to be signified to the outside world.

In the previous chapter the hypothesis was proposed, that the precursor of the dome in front of the mihrāb was in

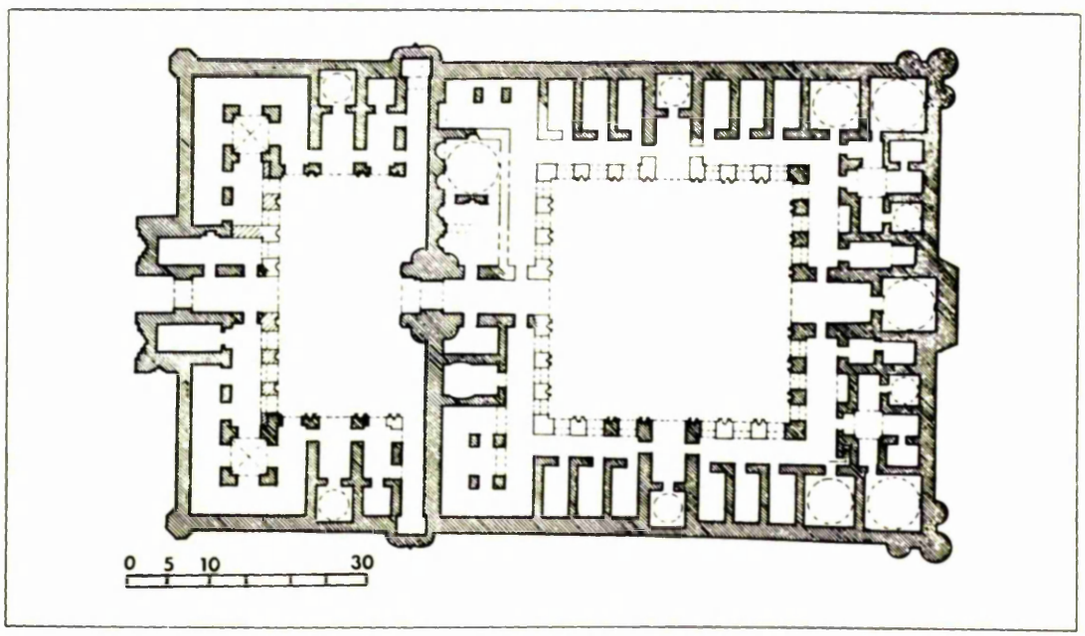


Illustration 42 Nishapur - Merv. Ribāṭ-i-Sharaf.

the Ribāṭ at Sūsa, where it served the purpose of signalling to the outside world, that it was a place of power and worship and that this complex could be entered through the portal. The Lashkari Bazar and the Ribāṭ-i-Sharaf are almost three centuries later than the Ribāṭ at Sūsa; nevertheless, their domes, or dome, whichever is the case, signalled this exact intent to the outside world. [57]

From the historical evidence it can be concluded, that the dome in front of the mihrāb in the western part of the empire and in North Africa primarily signalled power and then religion, while in Iran, it was the other way around - religion came first and power only later.

The amount of the historical evidence cited in this chapter is considerably greater than the architectural evidence. The reason for this is twofold: 1) There are only a few extant examples of early mosque architecture in Iran, and in consequence it was necessary to obtain information concerning the architectural and religious development from historical sources. If it is accepted that architectonic forms and structures are directly related to the historical developments of a society, then, in the absence of the visual manifestation, historical evidence suffices for the purpose of the hypothesis. 2) The architectural evidence is so sparse that it would not be statistically significant for the purpose of interpretation.

Later examples of the mihrāb dome, together with the early history of Iran, present a comprehensive picture, on the basis of which, it can be asserted, that apart from minor western influences, the Iranian dome in front of the mihrāb developed independently from the rest of the Islamic empire and that its meaning, decoration and position is purely Persian.

The influence of Iran on the Eastern part of the empire, Turkey and Anatolia is the subject-matter of the next chapter; in the remainder of this chapter, however, the domes of India and Pakistan and Central Asia will receive a brief mention.

INDIA AND PAKISTAN

Historical Background

The pre-Islamic temple architecture of India and Pakistan catered mainly for the dominant religions of Hinduism and Buddhism. Buddhist temples were usually carved into rock faces and they were known as cave temples, or they were stupas, with hemispherical roofs. [58] Islamic architecture as such entered India from Afghanistan in the 12th century during the Ghūrid dynasty. Hindu and Buddhist temples, like everywhere else were converted into mosques.

It is interesting to note, that it was not the Iranian four īwān plan which exerted influence over Indian mosque design, but the more open Arab hypostyle plan. This may be due to the fact that after the conquest of Bhampore, early in the eighth century, which may correspond to the ancient site of Daybul, a mosque was built on the model of the Kūfa Mosque. This mosque does not possess a mihrāb, consequently, no mihrāb dome.[59]

One of the earliest Indian mosques which possesses a dome is the Ajmer Mosque, where the mihrāb is dated 596/1199. Over the sanctuary there are five domes, each covering an area which is equivalent to nine bays. The domes are carried on columns, which form an octagon. [60] This way of supporting the dome is unusual and in style more like a kiosk than anything else. According to R. Nath [61] these are not really domes, but filled in exteriors of the corbelled ceiling on a mandape plan. Certainly, it does

not conform to the 'ideal dome', which is supported without pillars. The domes are situated in such a way that they are not visible from the outside. This is in direct contrast to the North African and the Iranian domes, where the external emphasis is very important.

The squinch did not appear until the Tomb of Iltutmish in Delhi was built in 633/1235. [62]

The squinch was not the only structural change that took place and which originated in Iran. Just over a century later, ca. 744/1342 the pylon appeared. It took over the dominant role from the dome, in most cases even hiding it. The pylon may have been modelled on the monumental īwāns of Iran, which did not overshadow the dome, but it did compete with it.

In the Friday Mosque at Gulbargā, built during the Delhi Sultanate in 789/1367, the problem of roofing was solved by the introduction of numerous domes and a main dome, which can be lifted for ventilation. The dome is huge; it covers nine bays in front of the mihrāb.

Although the basic model of the mosque architecture of the Delhi Sultanate originated from Iran, there are considerable differences between the Iranian and the Indian dome, in that local building traditions were incorporated, which resulted in the creation of specifically Indian type domes.

In this particular mosque, the dome is almost devoid of ornamentation, which is unique in India. Another interesting feature of this mosque is that it has no courtyard and the sanctuary area is large enough to accomodate approximately 5000 people. [63]

Bulbous domes on high drums characterise the fifteenth century mosques, which have their origins in Central Asia and which found their way to India via Iran.

During the Mughal period, curiously, tomb architecture became more favoured, most of the monuments were adorned with bulbous domes. [64]

The plan of a typical Mughal mosque is very similar to both the Buddhist Vihāra and the Arab style mosque, as established at Kūfa. (see illustration) The buildings in both cases possess a courtyard which is surrounded by covered 'cloisters', but in the case of the Buddhist Vihāra, there is a stupa in the courtyard.

The mihrāb dome of the sanctuary is situated practically in the same position as the stupa, in front of the niche of the Vihāra. Furthermore, the entrance is positioned on the stupa or dome axis, with a dome or minaret as the case may be, on the same axis. [65]

Similarly to the early years of Islam elsewhere, the early mosques of India with few exceptions did not possess domes either. The dome was not in front of the mihrāb, but it

covered the intersection of the axial and transverse bays of the prayer chamber.

The vaults eventually evolved into domes such as in the case of the Pather Masjid and the Akhund Mulla Masjid at Maner (Bihar). These were rectangular vaulted domes and were used even in Mughal times.[66]

The domes of the mosques of the Deccan in the fourteenth century are very similar to those built in Delhi. There is a tendency for them to be flat and they stand on octagonal plinths.

By the late sixteenth century the Timurid dome appeared with its familiar constricted neck which creates the impression of a bulb or onion.

An important innovation in the Deccan which later influenced other mosques and tombs is found in the tomb of Ibrahim Rawza. For the first time the tall dome is used only as an external ornament and it is independent of the interior. The bulbous double dome spread to Iran, but in India it was rarely used before the Mughals. Multiple doming was common in the 14th century around Gulbarga and may have occurred in this part of India earlier than in the North.

There are three mosques which are to be mentioned in this period, in Pakistan, namely, the Wazir Khan and the Badsham Mosques in Lahore and the Friday Mosque at Tatta. They were built within forty years of each other, though

under different influences. The dome in front of the mihrāb in the first mosque was influenced by Ṣafavid Iran. The dome is flanked by another two on either side, onion shaped and slightly pointed at the top. The elevation of the second mosque was modelled on the Friday Mosque at Delhi with three sanctuaries each covered by bulbous domes; however, the central one possesses a larger and higher one than the other two. [67]

The Friday Mosque of Tatta is the most unusual of the three. It has a domed īwān. The question of internal lighting is solved in an extremely unusual way. At floor level in the qibla wall there are screened openings, which admit light. The dome is supported on intersecting arches, which form a squinch-net. The dome has a central medallion around which revolve concentric rings of stellar patterns, which in turn has its own constellation of stars. [68]

With the Friday Mosque at Tatta, the discussion of the domes of India and Pakistan is concluded.

In summary it could be said, that generally speaking the domes of this area, as in Iran, are largely dominated by local traditional elements, which are combined with outside influences, mainly from Iran.

During the early period the domes were supported on sets of pillars, which was later replaced by the squinch and in the case of the Friday Mosque of Tatta, the squinch-net, which originated from Iran.

CENTRAL ASIA

Before Anatolia and Turkey, the area denoted by the title should be briefly considered. The brevity of the section, however, is not a reflection of the importance of the area. Throughout history it served as the trade route between the Far-East and the Middle-East. Wedged in between the two ancient civilisations of China and Persia on the one hand and the nomadic and barbarian peoples of what is now known as Mongolia and Siberia on the other, cultural developments were exposed to these two opposing forces. Inevitably, this conflict was reflected in the architectural forms, which it produced. In the towns, the influence of the civilised cultures prevailed, while in the rural areas the culture of the steppes proved pre-eminent.

Prior to the arrival of Islam, the dominant religion of the area was Zoroastrianism. It is reasonable to assume, therefore that the temples at least, would resemble the old Iranian Fire Temples,a building with a square plan, covered by a single dome, supported by squinches. This assumption, however, cannot be substantiated by extant examples, as there are no surviving buildings from the first centuries of Islam. A surviving edifice from the tenth century is vital evidence of the kind of religious buildings that probably existed at the time and it is one of the two examples which are presented here. Other religious edifices comprise a square plan, an īwān and a dome. Brick was a natural form of roofing, the dome being raised on a drum in order to obtain a larger area.

Before the two most famous monuments are discussed, namely the Tomb of the Sāmānids in Bukhārā and the Bībī Khānum Mosque in Samarqand, another monument must be mentioned, the Mausoleum of Arab Ata in Tim, which was built in 367/977-8. [69] The significance of this monument lies in the particularity of its transition zone. There are, what may be described as exaggerated trilobed squinches, which may have been the forerunner of the stalactite squinches, which were to be found in Iran initially and later in North Africa and Spain.

The two monuments, the Tomb of the Sāmānids at Bukhāra and the Bībī Khānum Mosque in Samarqand were very important indeed in the development of the dome. The Tomb of the Sāmānids in Bukhārā was built at the beginning of the tenth century, [70] a relatively small construction, with a baked brick cupola measuring over 7m in diameter. It rests on eight corner arches, which had not been attempted before. The plan resembles the old Fire Temples, except for the size of the īwāns. Baked brick was used in the decoration which was a significant innovation. The decorative motifs are a hybrid of geometric design based on exact mathematics and of floral compositions from direct observation of nature.

The Mongol invasion of the area in 617/1220 put an end to the architectural activity and only a very few buildings survived the onslaught. Until the Mongol invasion, it was Persia that exerted the strongest influence in Central Asia and this is evident in the Tomb of the Sāmānids. After the invasion, a joint Mongol-Turkish flavour can be

detected in the artistic endeavours, especially during and after the reign of Timūr. The second monument, the Bībī Khānum Mosque, originates from this period, having been built between 802/1399 and 807/1404. [71] The mosque is characterised by a colossal portal, which is neither Mongol nor Turkish in origin, but Persian. The whole plan of the building is based on the Iranian four īwān concept. The courtyard is integrated into the structure of the mosque, and it leads to the qibla īwān, beyond which is the dome chamber. There are eight tall minarets, the whole structure creating a powerful, massive image. It is possible, that this mosque provided the inspiration for the inclusion of the eight minarets into the composition of the Ahmediye Mosque in Ottoman Turkey. The appearance of the domes of the period is different from the Iranian as well as from the Anatolian-Turkish domes. They are often ribbed and decorated externally. They sit awkwardly on a high circular drum, sharing the external dominant feature with the main īwān. Later Central Asian mosques adopted the colourful decorative elements of the Iranian domes and combined them with the unusual shape, to provide them with a distinctive individuality.

REFERENCES FOR CHAPTER FOUR

1) Wilber D.N., The Architecture of Islamic Iran, p. 32, Jairazbhoy, op. cit., pp. 83-9.
2) Encyclopaedia of Islam, vol. 3 p. 379; Jairazbhoy R.A., An Outline of Islamic Architecture, p. 16. Creswell, EMA I op. cit., p. 17.
3) Encyclopaedia, op. cit. loc. cit., Pope, Persian Architecture, op. cit., p. 77.
4) Pope A. and Ackerman P, SOPA I., pp. 439-504; SOPA III, p. 906.
5) Ibid. loc. cit.
6) Jairazbhoy, op. cit., p. 38; Hoag J, Islamic Architecture, pp. 144, 185-6.
7) Creswell K A C, EMA II, pp. 25-6.
8) Wilber D.N., Iran, Past and Present, pp. 34-5, 48; Creswell, EMA I, op. cit., p. 446.
9) Pope, SOPA III, op. cit., p. 946,
10) Ibid., pp. 977, 1147.
11) Pope, Persian Architecture, op. cit., pp. 81-5.
12) Jairazbhoy, op. cit., pp. 237-8.
13) Creswell, EMA I, pp. 21-7.
14) Ibid., p. 60.
15) Hoag, op. cit., p. 28.
16) Ettinghausen R, From Byzantium to Sasanian Iran and the Islamic World, p. 24.
17) Pope, SOPA I, p. 439.
18) Ibid., p. 501.
19) Ibid.

20) Nath R, History of Sultanate Architecture, p. 27.
21) Pope, SOPA III, op. cit., pp. 1252-3.
22) Ibid.
23) Ibid.
24) Ibid.
25) Wilber D.N., The Architecture of Islamic Iran, pp. 61-7.
26) Ibid.
27) Ibid.
28) Ibid.
29) Ibid.
30) Pope, op. cit., p. 439.
31) Ibid., p. 919.
32) Wilber, op. cit., loc. cit.
33) Pope, SOPA III, op. cit. 919.
34) Encyclopaedia of Islam III. 1st ed. p. 379.
35) Pope, SOPA III., op. cit., p. 1011.
36) Aslanapa, Turkish Art and Architecture, pp. 68-9.
37) SOPA III, op. cit., loc. cit.
38) Hillenbrand R, "Seljuq Dome Chambers in North-west Iran", Iran XIV, 1976.
39) Idem. Seljuq Monuments in Iran, Oriental Art, vol. XVIII No. 1.
40) SOPA III, op. cit., pp. 1013-4.
41) Pope A, Persian Architecture, p. 102.
42) Hoag, op. cit., p. 199; Pope, op. cit., loc. cit.
43) Pope, op. cit., pp. 1067, 1094-5.
44) Aslanapa O, Turkish Art and Architecture, pp. 67-8.
45) Hoag, op. cit. p. 199.
46) Mitchell, op. cit., p. 257.
47) Pope, SOPA III op. cit. pp. 1067, 1094-5.

48) Pope, SOPA III, pp. 1064-9; Michell, op. cit., p. 257.
49) Ibid, p. 1130; Mitchell, op. cit. loc. cit.
50) Hutt, op. cit. p. 15.
51) Mitchell, op. cit. p. 253; Pope, SOPA, op. cit. pp. 1185-9; Pope, Persian Architecture, op. cit. pp. 136, 211-7.
52) Lehrman J, Earthly Paradise: Garden and Courtyard in Islam, pp. 133-4; Hutt, op. cit. pp. 17-9.

53) Mitchell, op. cit. p. 254; SOPA III., op. cit. p. 1190; Hutt, op. cit. loc. cit.
54) Aslanapa, op. cit. p. 56.
55) Ibid. loc. cit.
56) Hoag, op. cit., pp. 118-9.
57) Ibid., loc. cit.
58) Codrington K, Ancient India, pp. 51-4.

59) Nath R., History of Sultanate Architecture, p. 15; Jairazbhoy, op. cit., p. 290.
60) Ibid
61) Nath, op. cit. loc. cit.
62) Nath, op. cit., p. 38.
63) Schotten Merklinger E, Indian Islamic Architecture, p. 74; Michell, op. cit. p. 271.
64) Nath R, Some Aspects of Mughal Architecture, p. 82.
65) Codrington K, op. cit. loc. cit.
66) Soundare Rajan K. V., Islam Builds in India, pp. 7 and 8.
67) Schotten Merklinger, op. cit. loc. cit.
68) Michell, op. cit. p. 274.
69) Hoag, op. cit. pp. 184-6.

70) Ibid., loc. cit.

71) Ibid. op. cit. loc. cit.

CHAPTER FIVE

ANATOLIA AND TURKEY

Historical background

The Turks made their mark relatively early on in Islam, when during the 'Abbāsid Caliphate, a small tribe ventured westwards to join the household guards of the ruler.

Unlike in the other areas of the Islamic empire, the Turkic steppe nomads converted to Islam voluntarily. Islam became their accepted religion early in the tenth century. The Turks, under the leadership of the Karakhanids pursued an expansionist policy, capturing Bukhara and thereby putting an end to the flourishing culture of the Sāmānids.

Subsequently it was not only in the near vicinity of what was to become the Turkic area of Anatolia that they exerted their influence. Through the reign of Ibn Ṭūlūn, who was originally a Turkish slave, then military governor, Egypt also accepted some of the artistic ideas of the Turks, which were conducive to the development of the North African style.

The rulers who emerged from the midst of the Turks, such as the Buwayhids and then the Seljūqs, were theocratic. The attraction of power, however, never ceased. The Seljūqs demanded the title of Sultan, the secular

representative of the Caliph, which they achieved through marriage to the daughter of the Caliph.

Clearly, by the eleventh century, there was a marked difference between the two offices, which would have necessitated two different types of building programmes.

The mosque plans of Anatolia and Turkey differ considerably from the other mosque plans, resembling the ground plans of the Caravanserais. The large dome over the mihrāb probably had its precursor in the dome of the Friday Mosque of the Lashkari Bazar. The Lashkari Bazar was built under the Ghaznavids, who although defeated in 432/1040, carried on ruling in Afghanistan. The influence of this mosque determined the plans of subsequent mosques to be built by the Artuqids in Anatolia and by the Turkish Mamlūks in Egypt. (see illustration 43)[1]

The Turks were by no means united in terms of political organisation and aim during the history of Islam, until the Ottomans, and as a result, there were greater and lesser internal and external squabbles, which led ultimately to the downfall of some of the most famous ruling families, such as the Great Seljuqs and the Ghaznavids. Both of these ruling families could pride themselves in the fact that during their rule, art and architecture flourished.

The Mongol invasion brought large scale destruction in the first quarter of the thirteenth century covering the

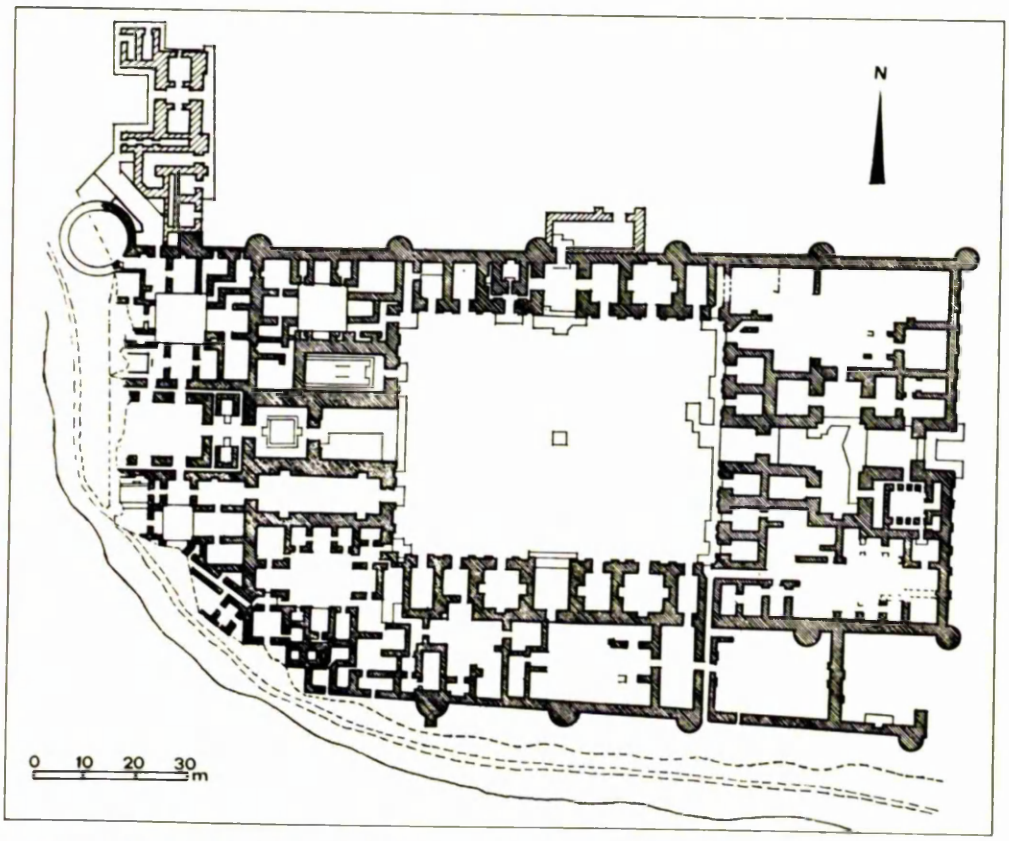


Illustration 43a Lashkari Bazar, Plan of the South Palace.

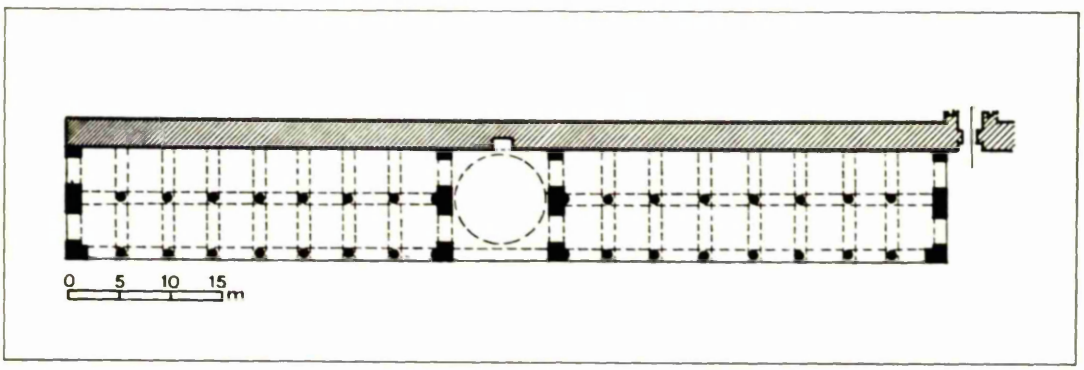


Illustration 43b Lashkari Bazar, Plan of the Mosque.

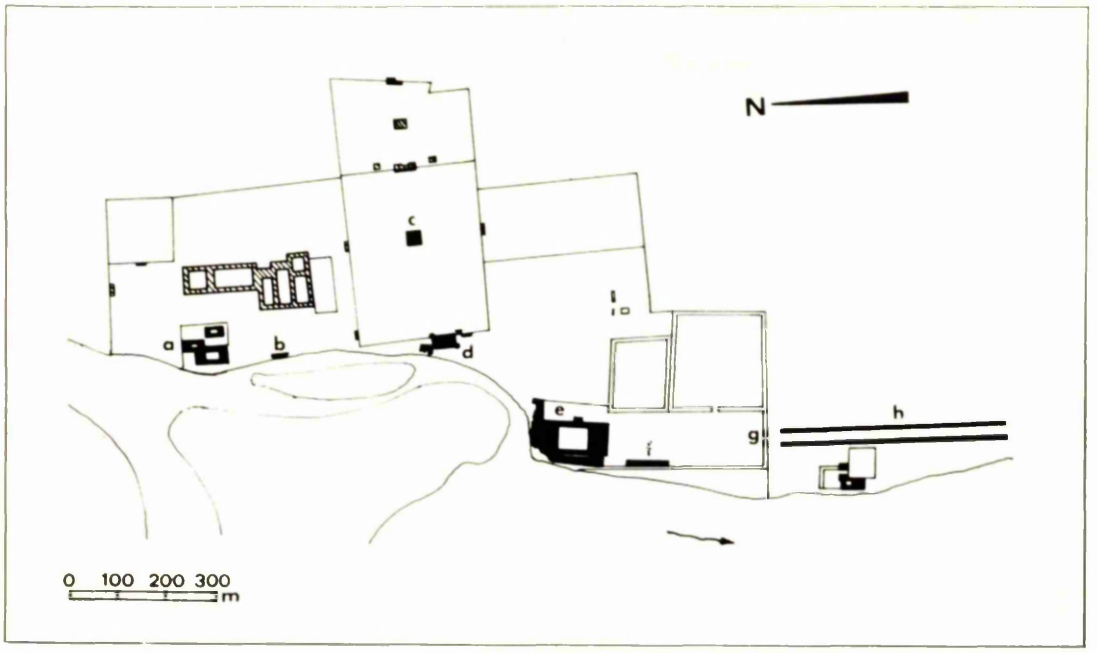


Illustration 43c Lashkari Bazar, Plan of the principal monuments.

whole empire from east to west. Many of the early monuments disappeared during this period, thereby leaving a vacuum that could never be filled. Cultural, architectural and artistic activity was advanced under the reign of the son of Tīmūr in the fifteenth century.

During the first few centuries of Islam Anatolia was ruled by emirs, but their territories were gradually absorbed into the sultanate. The capital became Konya. The influence of Byzantium, which bordered Anatolia should not be underestimated. The population of this area was extremely mixed and in some cases, Christians outnumbered Muslims. During the Mongol invasion Turkmen tribes found their refuge in this area, and by the beginning of the fourteenth century, most of Anatolia became Turkmen.

The first great architectural monuments were created in the Turkmen states, namely at Kayseri, Sivas and Malatya and in the states of the Artuqids (Mardin, Harput and Diyarbekir). These architectural monuments are the products of Turkish artists and architects. The Anatolian dome which was to become a magnificent manifestation in mosque architecture, attained perfection gradually, through Ghaznavids and the Seljūqs and finally the Ottomans.[2]

It was during the thirteenth century that Seljūq culture flourished in Anatolia. Although Seljūq art was closely related to that of Seljūq Iran, it developed quite independently from it. Much of the early architecture in

Anatolia survived, due to the nature of the building material employed, mainly stone. The forms of the mosques, madrasas and the Caravanserais were also different. The difference between the two architectural and artistic styles stems from the different cultural backgrounds of the two areas.

While the four īwān mosque plan was the accepted one in Iran, it was not favoured in Anatolia. Most of the mosques have no court,or a central focal point, usually there is more than one dome in from of the qibla and the domed area is not closed off from the rest of the mosque, but forms an integral part of the design. This type of mosque plan developed independently from the Iranian mosques, partly for cultural reasons, and partly for climatic reasons. The climate of Anatolia is much harsher than that of Iran, so that the courtyard could not be utilised the same way as in other parts of the empire. There was some experimentation with mosques with a courtyard, but it was probably abandoned for this particular reason.

The other type of architecture favoured in Anatolia and a great number of which survived is that of the tomb or türbe. Some of these were modelled on the Iranian examples. The base is square, polygonal or round, almost always covered by a shallow dome, which is in turn covered by a tent dome on the outside. There is an Anatolian variation also, which consists of an open īwān hall. It has been suggested that the tent dome is a nomadic element and it seemed to have been favoured in

the extreme areas of the Islamic empire, on the Great Mosque of Cordoba in Spain and on the türbes of Anatolia. The emphasis on the portal of mosques, madrasas and Caravanserais is obvious, probably an Iranian influence.

Thirteenth century Anatolian Caravanserais are very important and are in Islamic architecture unique. The rectangular court is reached through a monumental portal, opposite a huge hall, which resembles medieval European cathedral architecture. It is divided into several aisles, which are covered, except for the central aisle, which is raised and open to the sky in the middle. The complexes manifest an eclectic mixture of different architectural features, both religious and secular. The fact, that the man-made dome is absent and instead there is a natural one, - the sky - has obvious religious connotations. There are allusions to the "sky being the perfect dome" in the Qur'ān and it seems, see supra that in Anatolia the concept was put into practice.

The Great Mosque of Diyarbekir is the first of the Turkish Anatolian mosques. It was built during the Seljūq period, 484/1091-2 by Malik Shāh. The Seljūq ruler was renowned for his aspirations to copy the extravagance of the Umayyads, using their monuments as models for his own constructions. The Mosque at Diyarbekir was modelled on the Great Mosque at Damascus. There is a wide central nave in front of the mihrāb, though there is no dome. There is, on the other hand an irregular rectangular courtyard along the whole width of the mosque. It is surrounded by covered arcades on the

other three sides. It is noteworthy, that there is no dome on this mosque, which by this time was widely accepted as one of the great symbols of Islam. It is possible, that its religious significance was not yet an imperative.

In the following mosques, the mihrāb dome was a vital element in their plan.

The first one of these mosques to be discussed is the Great Mosque at Siirt. The date given for its construction is 523/1129. [3] The Great Mosque has an interesting ground plan, basically it can be divided into two distinct areas. The rectangular sanctuary comprises three square areas, each with a mihrāb, two of which are identical in size, and the third one, which is a later addition, smaller. All three are covered with domes, spanning the whole width of the areas. The squinches are supported by four massive brick piers. The other section, perpendicular to the domed areas, is divided into two vaulted parts by a central īwān. The Great Mosque of Siirt is different in style from those of Iran. The whole mosque is covered, there is no courtyard, but is fronted with a monumental īwān, which leads to the central dome chamber. Here, the īwān takes over the role of the courtyard, hence its enormous size. The central īwān and the three domed areas form a 'T' shape. The īwān and the square area in front of the mihrāb bay have one side almost equal in length, but not in width. With this proportional relationship, a better balance is achieved between the holy and the unholy areas.

The Great Mosque at Bitlis was built in 455/1150. [4] This mosque, like the one at Siirt, has no courtyard. The dome covers a square area in front of the mihrāb, and there are altogether three aisles running parallel to the qibla. The dome is covered with a conical roof on the outside. The disappearance of the courtyard raised a problem for the architects, as to how to enlarge the mosque and how to determine the relationship between the dome and the rest of the mosque. These early mosques give an impression of being imcomplete, of their builders still searching for a final or more improved form. The aisles are of the same width and length, yet the dome occupies a central position only in the first aisle, directly in front of the mihrāb. It seems that only the liturgical axis was taken into account when this mosque was designed, and obviously it was the beginning of a new trend in mosque construction, where the mihrāb dome is a part of a symmetrical plan.

The Great Mosque at Mayyāfāriqīn (Silvân) was built between 547/1152 and 552/1157. [5] On the outside its appearance is very inconspicuous - a rectangular building with a tent dome. The mihrāb dome measures 13.5m in diameter, rests on stalactite squinches and dominates the whole building. The dome is the result of the combination of the dome of the Friday Mosque of the Lashkāri Bazar and the concept utilised in the construction of the dome of the Great Mosque at Isfahan. The stalactite squinches resemble those in the Gulpaygān Mosque. The overall effect is more appealing than in the previous examples of Siirt and Bitlis, in spite of the

overall dimensions of the prayer hall. The emphasis on horizontality is balanced out by a greater emphasis on verticality in the centre of the mosque. This is due to the fact that the dome is very large, occupies a central position in both width and depth, thus giving an impression of spaciousness and airiness. Subsequent mosques were designed with space in mind, either on the vertical or transverse axis to balance the width, either with height or depth or both.

The Great Mosque at Urfa was built in 550/1155-6. [6] The dome over the mihrāb is a modest one. It rests on squinches and it is positioned slightly off centre. The mosque resembles the Great Mosque at Aleppo, which was built by the Zengids. The mosque is rather depressing on the inside, nevertheless it is important in the history of mosque development in Anatolia, because of the portico that leads to the courtyard through fourteen pointed arches. This is the first time that this architectural feature is found in Anatolia.

The next mosque to be discussed is the Great Mosque at Harput, built in 551/1156-7. The ground plan of this mosque is especially interesting, in spite of its resembling the Great Mosque of Zavareh. The sanctuary area is three bays deep, with a dome in front of the mihrāb, measuring 8m in diameter.[7]

The second bay in front of the mihrāb is also covered, with vaults. The other area is practically square shaped and it can be reached from the inside of the mosque

through the pointed arches. This area is perpendicular to the sanctuary area and has a rectangular courtyard in its centre. There is also a pool in the courtyard which reflects the whole structure.

At this stage, the Mosque of 'Alā al-Dīn in Konya, which is one of the great Seljūq mosques, is to be assessed. Although it was built in 550/1155, it was modified so often, that its overall style is not definable. Its dome probably belongs to the old mosque, but this is disputed by several scholars. [8] There is an īwān, north of the mihrāb dome and this combination may be an indication of its Persian origin.

It was mentioned supra that after the Great Mosque at Mayyāfāriqīn (Silvān), greater emphasis was laid on achieving space, by balancing out the horizontal dimensions, on the vertical or the transverse axis. This can be seen in the Great Mosque at Erzurum, which was built in the Saltukid period, in 575/1179. [9] It used to possess a large dome on pendentives, which rested on slender pointed arches with stepped mouldings. The dome was destroyed and in its place now there is a wooden dome in front of the mihrāb. The whole mosque is rather simple and it has no courtyard. Instead, there is a lantern in the centre, which provides light. The other mosque in his group is the Mosque of 'Alā al-Dīn at Niğde, which was built in 620/1223. The mosque is rectangular and has an open lantern in the centre. There are three domes covering the areas in front of the qibla, the one in front of the mihrāb rests on stone squinches

with stalactite insets. [10] The lantern in the middle breaks up the otherwise heavy interior, providing light to the space beneath.

At this stage, it is still not easy to decide, which of the styles is typically Anatolian and which is Turkish.

There were 'retrograde' steps in ground plan development, such as in the case of the Great Mosque of Dunaysir (Kiziltepe). [11] Although it is undeniably a masterpiece, its sanctuary returns to horizontality, in that the aisles, namely three, run parallel along the length of the qibla wall with a dome in front of the mihrāb. The dome covers a square, which is two bays deep and it rests on squinches, which are all different from each other. The dome measures 9.75m in diameter. There is a large rectangular courtyard, which runs along the width of the wall of the mosque.

Anatolian mosque architecture began its development later, after the foundations had been laid down by the Artuqids. The inclusion of the courtyard into the mosque created one architectural problem - inclusion in the sense, that its function had to be revised, from the angle of space and meaning. The spatial dimension was achieved by increasing the depth of the mosque. The qibla was emphasized either by the inclusion of more mihrābs and consequently, domes, or by one large mihrāb dome and several decorative ceilings in front of the qibla, along the whole of its length.

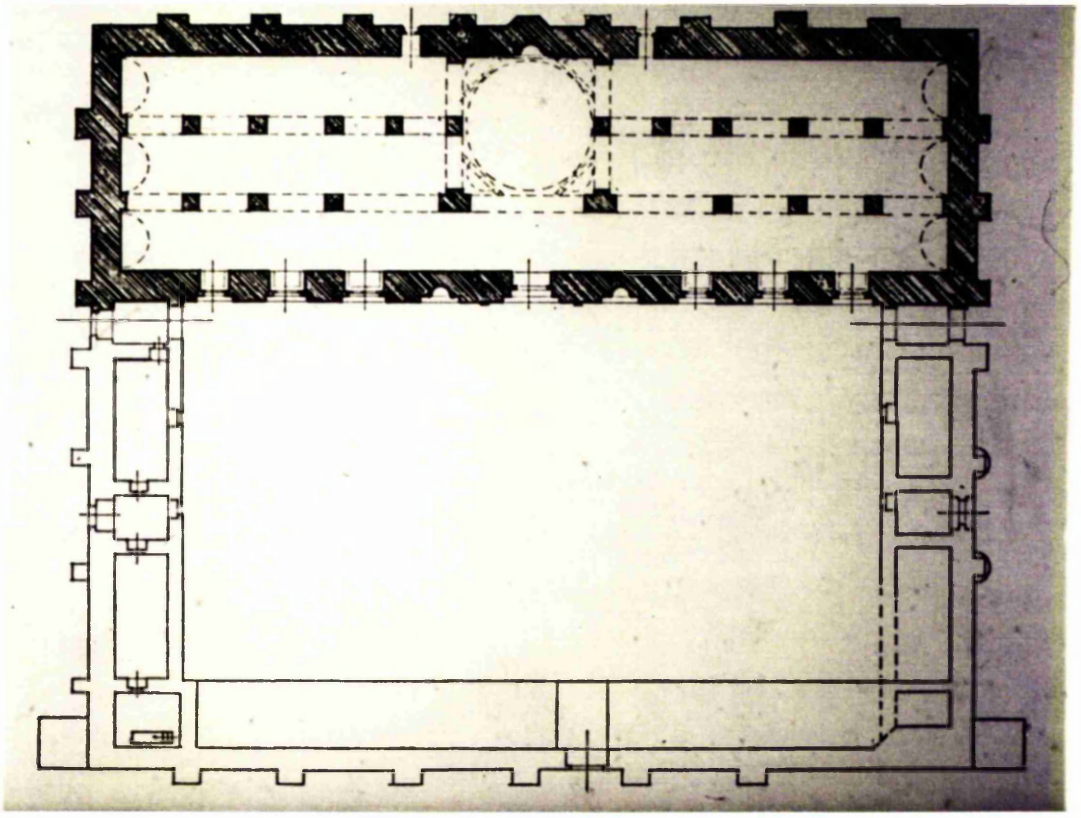


Illustration 44 Great Mosque Dunaysir,
Ground Plan.

The Great Mosque of Malatya was built in 621/1224. [12] This is the only mosque in Anatolia which was built under Persian influence. Its builder originated from Persia therefore it was natural for him to include Persian architectural elements in this mosque. It is an irregular shaped mosque, but that is due to the various additions over several periods. The sanctuary is eight aisles deep. The dome in front of the mihrāb is constructed out of brick and it is supported on an octagonal drum with tripartite squinches. Inside the dome the bricks are arranged in the form of a spiral. There is a six-pointed interlacing star in the centre and the sixteen sided drum is decorated with Nashki inscriptions. There is a small integrated courtyard, which is connected to the sanctuary by means of an īwān and it is surrounded by vaulted bays, which run parallel to the qibla. The combination of the mihrāb dome, the īwān and the small courtyard creates the central axis of the mosque. In the mosques built at a later date, more emphasis is laid on the central axis, with the result that symmetry becomes more essential. Therefore, this mosque can be considered to be another crucial step in the development of mosque architecture in Anatolia. The pool in the courtyard occupies a large portion and it seems, that with the decreasing size of the courtyard, water is given the role of creating the illusion of an extension of space, thus the size of the pool is increased. The later addition also has a mihrāb, which has two domes in front of it. This area is at the other end of the courtyard and it is four bays deep. The

minaret is also incorporated in this section, level with the second dome. The Malatya Mosque can be considered to be the last remaining structure, which provides a direct link with the great Seljuq mosques of Iran. Eventually the triangular dome supports which were implemented whenever structural need arose, were replaced. The more simple looking but very elegant Byzantine pendentive took their places. There is an excellent example for it in the Karatay Medrese at Konya.

This type of pendentive could be altered to lend itself to different decorative effects; for example the equilateral and isosceles and triangular forms.

Squinches were not used frequently and it seems that the Turkish architects used their initiative in the utilisation of already familiar architectural dome supports but they used them with different aims concerning the overall effect.

In the Great Mosque of Van, dated 792-803/1389-1400 and destroyed during World War I, the mihrāb dome measured 9m in diameter and occupied a large square in front of the mihrāb. It was supported on a zone of stalactite squinches, each with different style of decoration.[13] The mosque was almost square and the ceiling was elaborately decorated with star-vaults. The visual effect was more striking with multiple domes and vaults, both from the inside and the outside. The dome stood out over the flat roofs of the city buildings, thus drawing attention to the house of prayer.

It is noteworthy, at the end of this summary of Anatolian mosques, that the dome went through several phases of development, until it became an integral part of mosque architecture. It increased in size in some cases, but not universally. Its whole function was restricted to marking the area in front of the mihrāb. From the examples listed in this section all that we can safely assert is that the dome was raised on squinches, following Persian prototypes, while their size and position probably imitated Byzantinian precedents. Internally their decoration varied, from simple brick to extravagant polychrome tiles. On the exterior the tent and conical domes were favoured. In addition to conjuring up nomadic nostalgia, these domes served another purpose. The simplicity of the tent dome was equivalent to the simplicity of the undecorated, inconspicuous domes of North Africa. The beauty of decoration was hidden underneath, saved for the eyes of the worshipper in communication with God. The nobility of the inner emotion was not visible to the external world, therefore, it is appropriate, that the nobility of the dome, marking the sacred area, should also be hidden from the external world.

Next to be discussed is the Great Mosque at Cizre as the probable precursor of the monumental mihrāb domes that followed it. This mosque was built in 550/1155. [14] It consists of four lateral aisles and the mihrāb dome has a diameter equivalent to the depth of two aisles.

Equally important is the Gök Madrasa at Amasya, built in the third quarter of the thirteenth century. In this mosque is to be found the most significant development in the use of the triple dome scheme. The upper structure consists of a series of triple-domed units, which are arranged longitudinally and transversely, with vaulted bays in between. This mosque could also be considered to be the prototype of the multi-domed early Ottoman Mosques, the interior of which is divided by pillars into equal units, each of which is surmounted by a dome. [15]

The Great Mosque at Divriği, built in 626/1228-9 is a well articulated and refined axial type ornate mosque. [16] It is attached to a hospital on the qibla side, while at the other end of the rectangular mosque is a monumental portal - perhaps its concept was modelled on the great portals of the Persian mosques of the same period. The wide central nave, which terminates in front of the miḥrāb, is separated from the double aisles on either side by four rows of four octagonal stone pillars. The second bay of the central nave is covered with ribs that form a four pointed star, while the third bay is covered by a domical lantern on polyhedral pendentives. The lantern ensures that there is sufficient light within and there is a fountain placed underneath, to reflect the light. This mosque is a perfect example of demonstrating the way in which the concept of the courtyard was gradually integrated into the mosque. The star-shaped vaulting in front of the fountain may be interpreted as a

marker for the first holy area within the structure. The mihrāb dome is the second marker. The dome over the mihrāb is twelve ribbed and is supported by colonnettes on consoles in the drum, which rests on squinches and is encased in a dodecahedral stone cap dominating the outside.

The external covering of the domes with cone-shaped and polygonal roofing became more and more widespread in Anatolia and Turkey from this period on. The pointed upward direction indicated by the domes is further emphasised by the similar shape of the minaret, or minarets, as the case may be. This trend can be seen as an overture to the later Ottoman dome/minaret relationship, which were to set the precedent for the following generations of mosques.

The Eshrefoğlu Mosque at Beyşehir, built during the Beylik period around 699/1299, comprises seven aisles running perpendicular to the qibla.[17] The mihrāb is of an enormous size. The mihrāb dome is faced with glazed brick tiles with lozenge patterns. There are fan-shaped triangles in the transition section and the dome is outlined on the exterior by a pyramidal dome. The architectural emphasis is on depth and verticality, something which is evident even from the height of the mihrāb, which measures six meters. The central aisle on the mihrāb axis is wider than the others, finally terminating in a square area covered by the dome.

The Great Mosque of Manisa, built in 776/1376, was built as a part of a complex of a tomb and madrasa. The prayer hall resembles the plan of the Great Mosque at Mayyāfāriqīn (Silvân). The mihrāb dome measures approximately 11.5m in diameter and covers the square area in front of the mihrāb niche.[18] The sanctuary is divided into several square bays, which are covered with small transverse vaults, resembling small domes. The combination of the square area surrounded by small dome shapes resembles the aereal view of Mecca at the time of the pilgrimage, when thousands of tents are pitched around the cube shape of the Ka'aba. Indeed, this picture may have been the inspiration behind the conception of the multiple domes which were to cover the cube shaped sanctuary of the mosques.

The Great Mosque of Manisa also possesses a square courtyard, which is identical in size to the area spanned by the mihrāb dome. Externally, the dome is covered by a saucer-shaped roof with a wide rim, rising only very slightly above the flat roof of the rest of the building.[19] The overall impression given by the construction is that of symmetry and axiality, which was to be quite common in later mosque architecture.

The other interesting mosque built during this period is the Great Mosque of ʿĪsā Bek at Seljūq, near Ephesus, dated 776/1374. The plan resembles that of the Great Mosque at Damascus, which is hardly surprising, as the architect originated from Damascus.[20] The long aisles

are intersected in the middle of the building by two domes, which are identical in size. The domes rest on triangular pendentives, which are decorated with geometrical patterns of hexagonal stars, with small hexagonal insets in turquoise, dark blue and brown faiance mosaic. On the octagonal drum of the dome there are fragments of stalactite fillings in turquoise faiance, which are Seljūq in tradition. [21] There is a large courtyard, surrounded by arcades, and a pool in the centre.

There are two major types of mosques, which were established and perfected during the reign of the Ottomans, one of the Turkoman tribes, who were eventually successful in establishing their hegemony in the Islamic world.

The first type, the single domed mosque, with or without a portico was perfected during the reign of ʿAlāʾ al-Dīn Bey, a perfect example of which was in the then newly established Ottoman capital at Bursa, built in 736/1335. The dome measures 13.5m in height and is carried on a belt of 16 triangular planes. In these early Ottoman mosques, the provision of light presented a certain amount of problem; the dome is like a lid erected on walls, pierced for light. Later, the inclusion of pier and buttress formed a new conception of structure. Space was created for windows between the wall and the dome, thereby solving this particular problem. [22]

Another of the early Ottoman mosques, which is a good example of the developmental stage of the dome to base ratio, is the Orhan Ghazi Cami at Bilecik, built in the fourteenth century. The prayer hall measures 14.30m x 15.30m along the axis of the mihrāb.[23] The dome is slightly elliptical, the result of the fact that the central area which it covers is likewise irregular in shape. The dome rests on a low octagonal drum, which rides on broken pendentives and not the usual triangles. The dome itself measures 6m in height, but from the floor to its crown, the total height is 16.5m, which is very close to the golden mean. This proportion recurs often in subsequent Ottoman architecture. The concept of these ratios is related to the concept of the perfect circle in a perfect square.

The next two mosques to be discussed are probably the most important in the development of Ottoman dome to ground plan relationship.

The first one of these is the Ulu Cami, or Friday Mosque at Bursa, built at the end of the fourteenth century.[24] The mosque is located in the centre of the city. There are altogether twenty bays each of which is covered with a dome. There is no courtyard, but the first bay from the centre front has a lantern in its dome, which provides the lighting for the interior. (See illustrations 45a and b) As usual, there is a fountain underneath the lantern. The floor level is lowered one

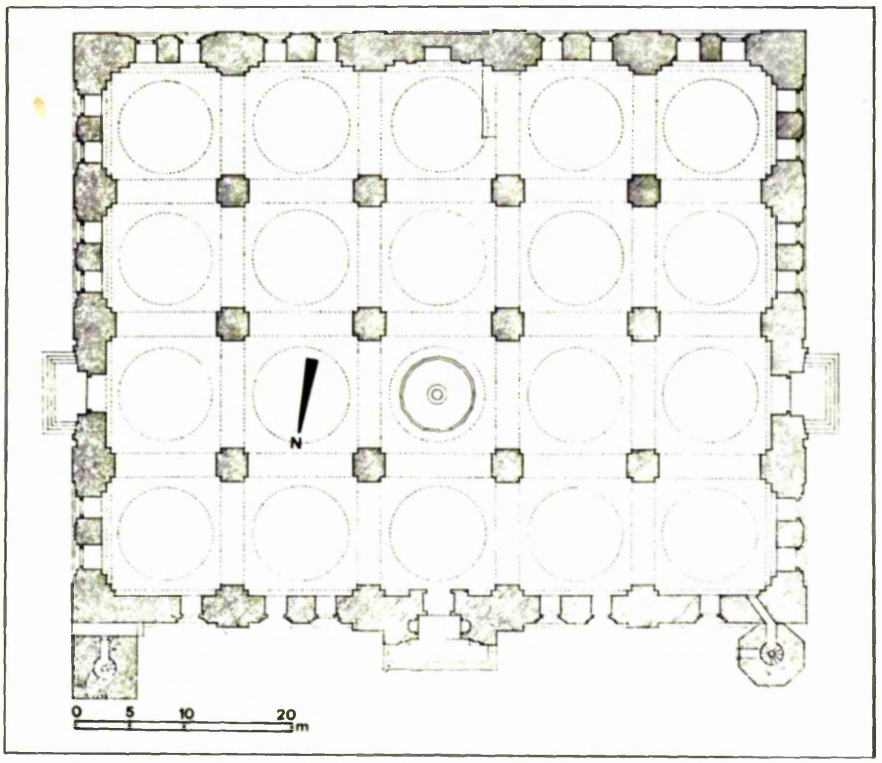


Illustration 45a Bursa, Ulu Cami, Plan.

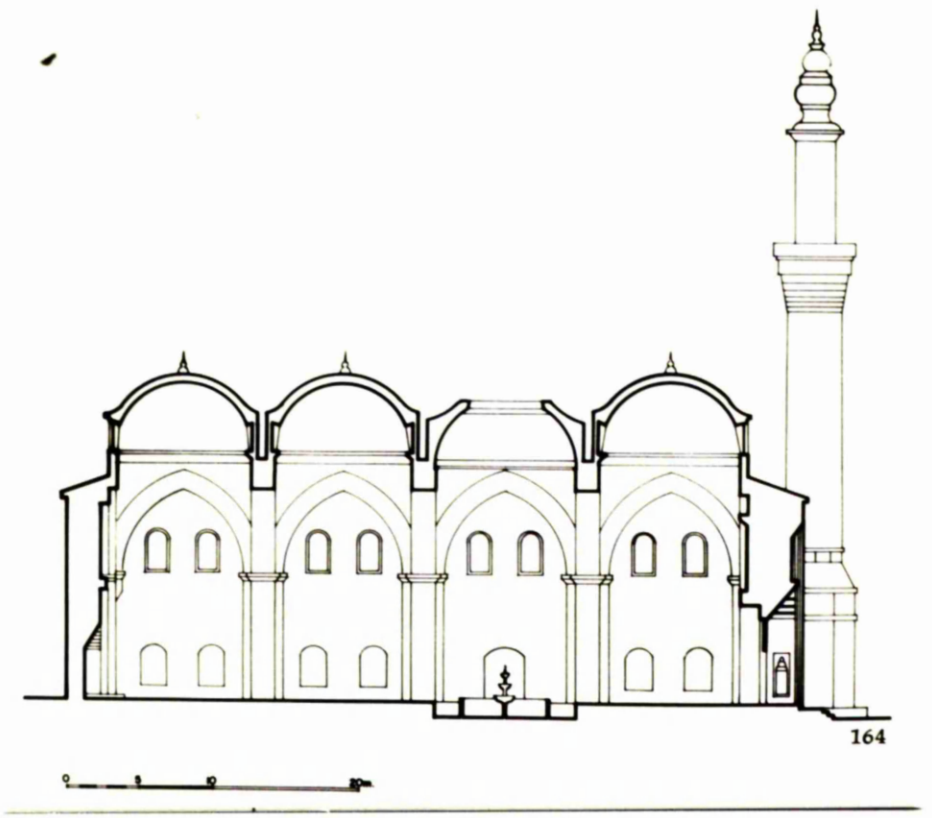


Illustration 45b Bursa, Ulu Cami. Section.

step, in order to emphasise the courtyard character of this area. The rest of the mosque area is considerably darker and assumes a mystical appearance, the nearer one gets to the mihrāb niche. The domes measure approximately 10m in diameter and on the exterior they look very significant, resembling a saucer, with a wide rim. These are called saucer domes.

There are two tall and slender minarets, one of which was probably built earlier than the other. Neither is integrated into the rest of the structure, which is unusual for the Ottoman Mosques, apart from another, later one at Edirne.

Iznik and Bursa can be considered the birthplace of Ottoman architecture, albeit it was not until Edirne that it matured into a national style. Before the most influential buildings in Edirne are discussed, some attention must be paid to the Yesil Cami at Bursa[25] because of the spectacular green tile decoration that once covered the domes. It was built in 828/1424, during the reign of Mehmet I and it is a transition between the Seljūq and the Ottoman mosques. It has an inverted "T"-shaped plan and another feature which is characteristic of the early Ottoman architecture, in that the central hall has been lowered a step and a fountain has been included in order for this area to function as a courtyard. Lighting is achieved via the pointed arch windows which pierce the transition zone of the mihrāb

dome and additional fenestration is also included at the top and bottom of the qibla wall. The central hall is provided with further light through the lantern in its dome. The lighting of this mosque is a deviation from the traditional method whereby the area under the mihrāb dome tended to be unlit and thus giving it a mysterious appearance, while the central area was provided with direct light through the lantern in its dome. The emphasis has clearly shifted from oppressive mysticism to the creation of awe through size, space and light.

Internally, the mihrāb dome is segmented, like a flower whose petals are radiating from a central source. It rests on an octagonal drum, pierced by windows and adorned with muqarnas pendentives and its shape is slightly elliptical. Its internal beauty is completely hidden by an insignificant exterior, but this is a tradition which was encountered earlier.

The slender minaret towers over the domes, like a pointer towards the sky. The relationship of the two domes to the minaret is also worth a comment, since this type of arrangement is found in later Ottoman mosques, especially in the built up areas of the ever growing cities. The mihrāb dome is slightly lower than the dome of the central hall which functions as the courtyard and has a Hilāl on top. The Hilāl is an external feature became highly significant in Ottoman architecture. The origin and the meaning of the Hilāl was discussed in the section

on religious symbolism. The fact that Constantinople was the capital of the Byzantine empire and (with the marginal exception of Trebizond) the last stronghold of the Christian Church in Turkey and Anatolia with its own religious symbols, the cross and the Gregorian cross, played a most influential part in the appearance of the crescent. Islam was to make its mark over the symbol of Christianity, as once the Dome of the Rock had over Judaism in Jerusalem. Symbolically, Constantinople was as important as Jerusalem, where an existing culture and ideology had to submit to the rule of Islam.

Before arriving at the magnificent mosques of Istanbul, the impressive and important multiple dome mosque at Edirne, the Üç Şerefeli Cami is discussed. The mosque was built in 841-51/1437-47.[26] Its plan can be considered as the basic model for the mosques to follow. (See illustration 46) The style is imaginative, original and can be divided into two significant areas. The sanctuary area occupies a rectangular area within the mosque which is covered with four domes. The mihrāb dome is huge, dominates the central area and measures 24m in diameter.[27] It rises from a belt of triangular pendentives which resemble those of the dome at Bursa. This sort of dome size was equalled only much later in the Mosque of Mehmet II in Istanbul dated 980/1572.

The spatial composition is noteworthy in that, strictly speaking, the dome cannot be called a dome in front of

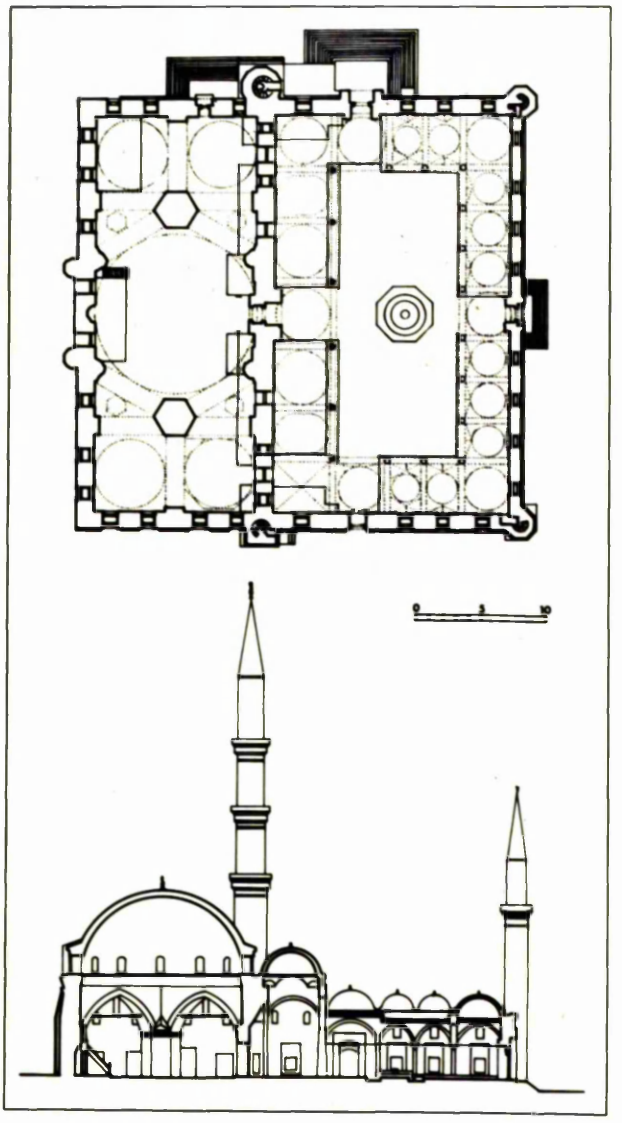


Illustration 46 Edirne Üç Şerefeli Cami.

the mihrāb, because it covers practically the whole sanctuary. For the first time flying buttresses were employed to support the central dome and these also contributed to the creation of space. The character of the prayer hall has completely changed from the traditional one, where the inclusion of pillars and arches broke up the otherwise huge area into smaller fragments, which might have proved conducive to private meditation. Here the prayer area is one large overwhelming space dominated by verticality. It has been suggested by some authors, however, that the low hang of the dome supporting arches actually decreases the impression of space.[28] Strictly speaking this is true; on the other hand, if we were to compare the illusion of space created in this mosque with several previous ones, then it is equally true that the feeling of spaciousness is stronger here.

This mosque must be regarded as an example of transition between those mosques that were designed with mystery in mind and those, where the same sort of religious sensation is experienced through space and light.

In comparison to the Persian and the North African mosques, Ottoman mosques in general and this mosque in particular give the impression of roundness in spite of its rectangular floor space rather than the angularity so familiar in the western part of the Islamic empire. This illusion is created by the sheer size of the dome, which rests on six massive piers. The prayer area is dimly

lit, lighting is provided by the several pointed arch windows that pierce the domes and the side walls. The mosque has a courtyard which is enclosed by cloisters also covered by several smaller domes. On the outside, the mihrāb dome rises gently above the other smaller ones and has a rim. There are also four minarets, which serve as markers for the worshippers, towering over other buildings of the overcrowded city. The inclusion of four minarets instead of one or two is rather unusual at this time, but it was to become customary later in Ottoman architecture. There are a number of possible explanations for this: to mark the four corners of the earth, in this case the courtyard and at the same time point to the path, Heaven, where all paths lead, regardless of the distance in the horizontal dimension. Another explanation is also possible, namely, symmetry. Great emphasis had been laid on symmetry by the Ottoman architects which is strongly evident in this mosque. There are four small domes which flank the larger one in the prayer hall, four even smaller domes fill the areas between the large dome and the other four.

The fountain in the courtyard is positioned centrally on the same axis with the entrance to the prayer area and the entrance to the courtyard on the outside. The domes, minarets and courtyard form a single architectural whole for the first time in Ottoman architecture.

The Üç Şerefeli Cami was a suitable mosque for a capital city, which Edirne was, before the conquest of Constantinople some ninety years later.

When we move to the mosques of Istanbul, the historical significance of the city and its possible influence on the styles that were to develop is briefly assessed. Istanbul was conquered by Sultan Mehmet II in 857/1453. Under his reign some of the finest buildings were constructed.[29] During the early days after the conquest, some of the mosques were built as variations on the side-roomed mosques of the inverted "T" plan. There are no innovations noteworthy in these mosques, all the same it is surprising, that there were no definite guidelines for style and overall plan. It is highly likely that one reason for this could have been the architectonic characteristics of the city and a longing for individuality in composition. The Byzantine Basilica - the Hagia Sophia - no doubt served as a source of inspiration and a challenge for the architects. Its beauty and majesty in appearance as well as in architectural technique had to be conquered and surpassed. One of the several mosques, which was inspired by the presence of the great Basilica, was the Bayazid Cami, built in 912/1506.[30] Again, the most noticeable feature of the mosque is its spatial symmetry.

The prayer hall is a square of sixteen modules, four by four. The central units are covered by a large dome, pierced with several round arched windows and not with the traditional pointed arch windows. This points to the fact that the architects adopted Byzantine practices. The arrangement of the central hall and the side aisles is reminiscent of a church rather than a traditional

mosque. The area directly in front of the mihrāb is covered by a half dome, as is the area between the entrance and the large domed area. Clearly, here the dome and the half-dome in front of the mihrāb appear to have broken ranks from the tradition, the half dome taking over the role of the full dome. Another mosque with a half dome in front of the mihrāb is the Fâtih Mosque of the Conqueror in Istanbul. The mosque is square shaped, with a square courtyard. The central area is occupied by a huge dome, measuring 26m in diameter. The area in front of the mihrāb is covered by a half-dome and there are a further six domes in the sanctuary area, three on each side of the central area. The courtyard is surrounded by dome covered cloisters.[31] This mosque set the precedent for the mosques of Istanbul, where the huge domes and dome complexes were an aim to create large unified space. The symbolic language represented by the mihrāb dome must have changed, from what it signified in earlier times and in other ares of the Islamic empire.

The architecture of Sinan was a landmark in the development of Ottoman architecture. He was born as a Christian in Armenia and was conscripted into the imperial guard. He became chief court architect around 945/1538.[32]

The first of his major assignments, the construction of the Şehzâde Cami, was completed in 955/1548.[33] The diameter of the dome is slightly smaller than the ones described earlier, measuring 19m. In height, in total,

however, it measures 37m. The dome is flanked by four half domes, like a flower with petals. There are four further domes in the sanctuary, one at each corner. In this mosque, the definition 'the dome in front of the mihrāb', as understood in the past tradition, does not apply any more.

Clearly, the dome and half-dome combination and its application has become an architectural and visual exercise. Nevertheless it still has symbolic messages, directing the attention of the worshippers to the house of God, which has to be more magnificent, uplifting and upward pointing, than anything else, previously experienced. The courtyard has been accepted as an essential outside feature of the mosque complex, the attempts that were made in Anatolia and Turkey under the previous rulers, to integrate the courtyard into the covered part of the mosque had been abandoned under the Ottomans. Symmetry is strictly observed, a conscious effort is made for the courtyard to reflect the area of the prayer hall.

The domes that cover the cloister area are carefully spaced out and the inclusion of the elliptical dome which was still present in the Üç Şerefeli Cami has been abandoned. No definite explanation has been offered for the elliptical dome, however, it is not impossible, that its inclusion was purely experimental and therefore limited in number. It is certainly not as aesthetically appealing as the full or even the half dome. It requires

distortion in decoration, a deviation from the ideal form, as a philosophical concept, consequently the half-dome is closer to the perfect form than the elliptical one, because it is exactly half of its diameter.

The architects, especially Sinan, followed the tradition, that anything, that was previously achieved by civilisations belonging to other religions had to be respected, equalled and ultimately surpassed. They had the greatest cultural challenge in Istanbul, which under the name of Constantinople was considered to be the Rome of the east. Its cultural hegemony was destroyed by the Ottomans the same way, as the hegemony of the Romans was overcome by the Sasanians, who in turn were subdued by the Umayyads. Each previous victory had its own particular visual manifestation, which cannot be considered to be a result of gradual process only, but should be viewed, rather as a consequence of history. In spite of this latter statement, certain characteristics in mosque architecture were inherited from previous examples, modified to suit the dominant requirements of the particular society and the dictates of the various rulers.

The assertion, that the Hagia Sophia in Istanbul probably represented the same concept to the Ottomans, as the whole city of Jerusalem to the Umayyads, on the basis of the architectural evidence, is a reasonable assertion.

In order to establish their hegemony over the Islamic empire the Hagia Sophia as it became known had to be surpassed not only in beauty and size but in originality also.

The Hagia Sophia was indeed surpassed by the might of the Suleymaniye. There is remarkably little decoration on the walls which are mainly white. Each of the triangles contains a medallion, surrounded by scroll decoration, with calligraphy within the circle itself. The dome is delicately decorated and there is a medallion in the centre with a Qur'ānic inscription executed in calligraphy. The lower register of the dome and the half-dome is pierced with round arched windows, which provide enough light and creates a bright and airy atmosphere.[34] The buttresses are decorated with alternating black and white stripes, which is a characteristic Byzantine decorative element and is also present in the Hagia Sophia, which was unquestionably used as a model for the mosque.

The mihrāb is marked by a half-dome. The external appearance of the half-dome is modest, there are no outstanding decorative features. Although quite different in appearance the modesty is reminiscent of the North African domes.

With the construction of this complex and especially the mosque itself, Sinan conquered Constantinople, it was now

Istanbul, not only in name but in its individuality also. The square shape of the prayer hall was retained and indeed, it became the standard plan. For the first time in Islamic architecture, regardless of whether it is in the east or west, the actual size of the prayer area is signalled externally by the means of full and half-dome combinations, not as in the past, where most of the time the dome indicated to the outside world only the area in front of the mihrāb.

There are four minarets to mark the four corners of the courtyard. They are slender and tall, and end in a sharp point, reaching high in order to indicate the imperatives of the shahāda.

Sinan built several mosques in Istanbul, experimenting with various spatial arrangements of the full and half-dome combinations, their supports and the ground plans as well. He used examples already in existence, one of which was the Üç Serefeli Cami at Edirne, in the construction of mosques such as the Sokollu Mosque and the Mosque of Sultan Aḥmed.

The most magnificent of his achievements, however, was the Selimiye Cami in the old capital, Edirne. The construction of the mosque was started in 977/1569 and it was completed in 983/1575.[35] The prayer hall has a wide oblong plan. Eight massive piers with the aid of springing arches support the dome which measures 31.5m in

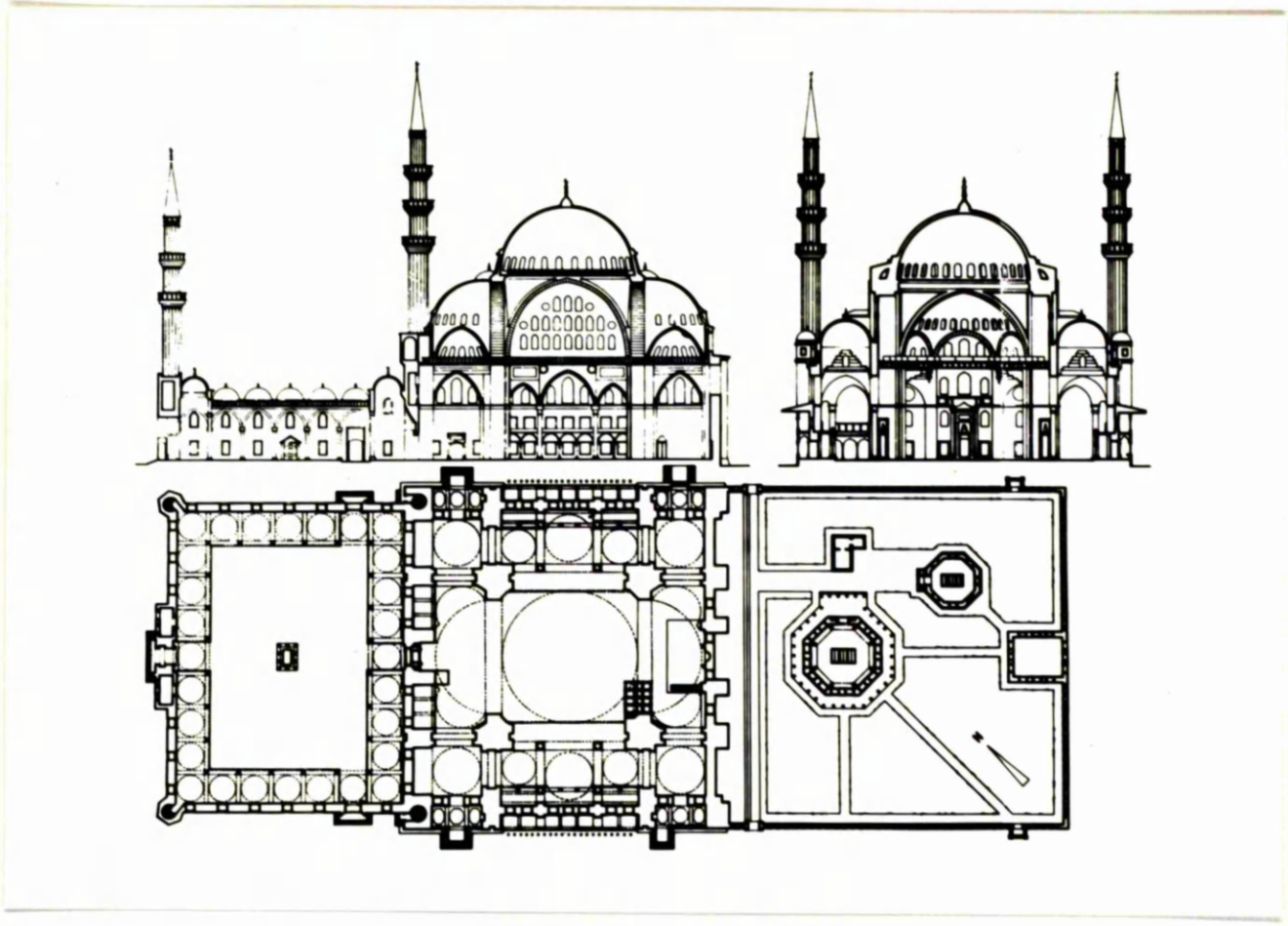


Illustration 47 Istanbul, Suleymaniye Complex,
Plan Section.

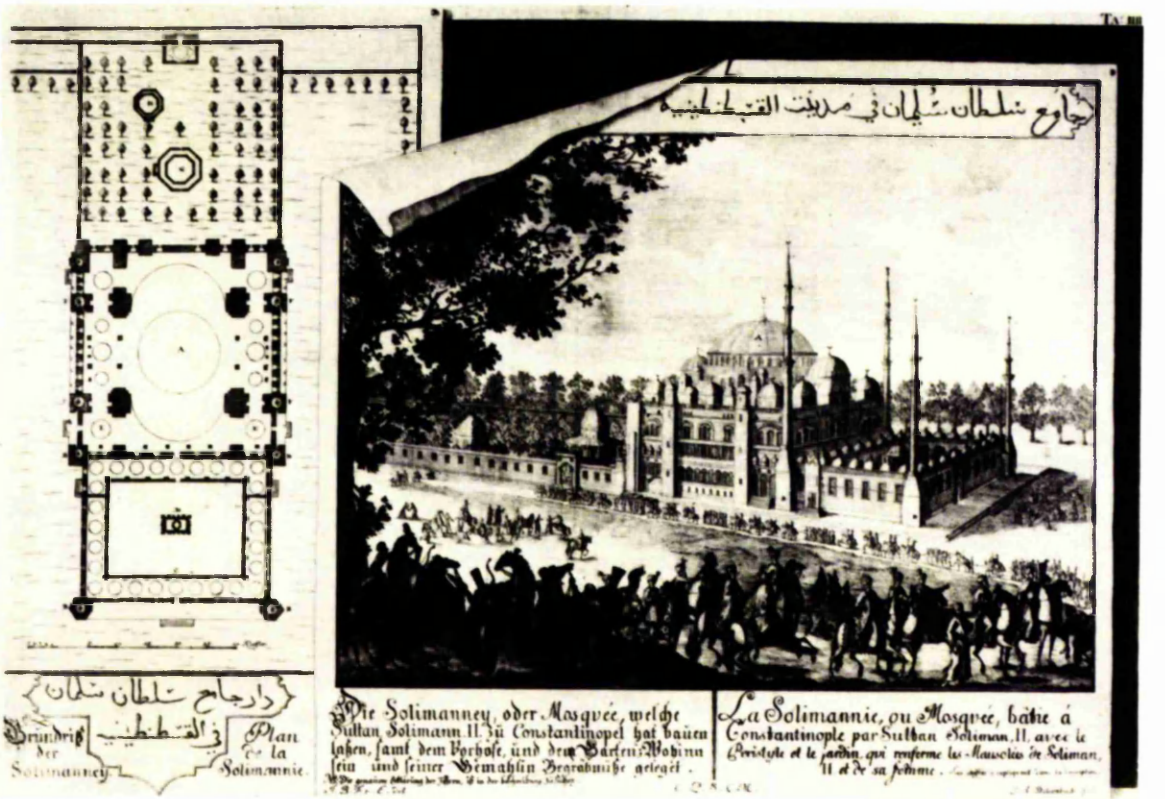


Illustration 47b Istanbul, Suleymaniye Complex,
Ground Plan and View.

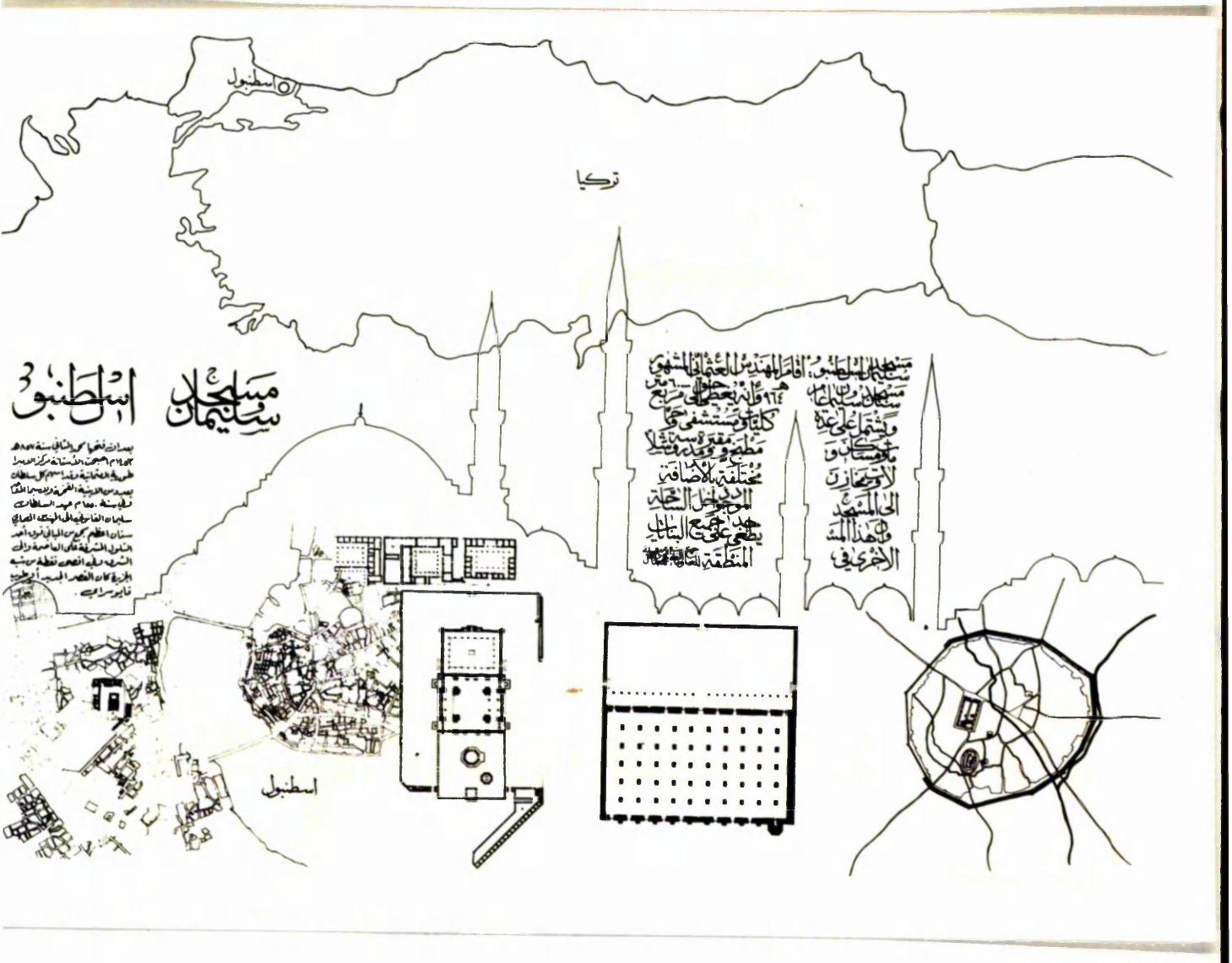


Illustration 47c Istanbul, Suleymaniye Complex,
Ground Plan and Silhouette.

diameter and 43m in height. The dome is supported at the corners by half-domes and the piers and supports by means of buttresses. There is an apse built into the sanctuary hall, which brings this mosque closer to Christian church architecture and removes it completely from all Persian influence. This mosque together with the Suleymaniye in Istanbul represents the epitome in Ottoman mosque composition and construction. The transition from the rectangular plan to the drum of the dome employs a round structure, which is a complete newcomer to dome construction. It results in an unobstructed, concentrated open space, hitherto unachieved in the past. Lighting is provided through a multitude of windows which pierce the huge dome and the walls below. The dome is a central feature between four 71m high minarets which accentuate the vertical aspect of the mosque. Standing under the huge dome inside the mosque, the overwhelming impression of being drawn upwards through the constraining material towards heaven is very real. This feeling is absent, however, externally, which may be due to the belittling effect of the tall, slender minarets, which dwarf anything in sight.

More wall decoration is evident in this mosque, than in the Suleymaniye. The arches are decorated with alternating red and white stripes, which are familiar from Byzantinian decoration. The final triumph of the Selimiye Mosque over all the previous contenders lies in the unique marking of the mihrāb. Placing it at the back

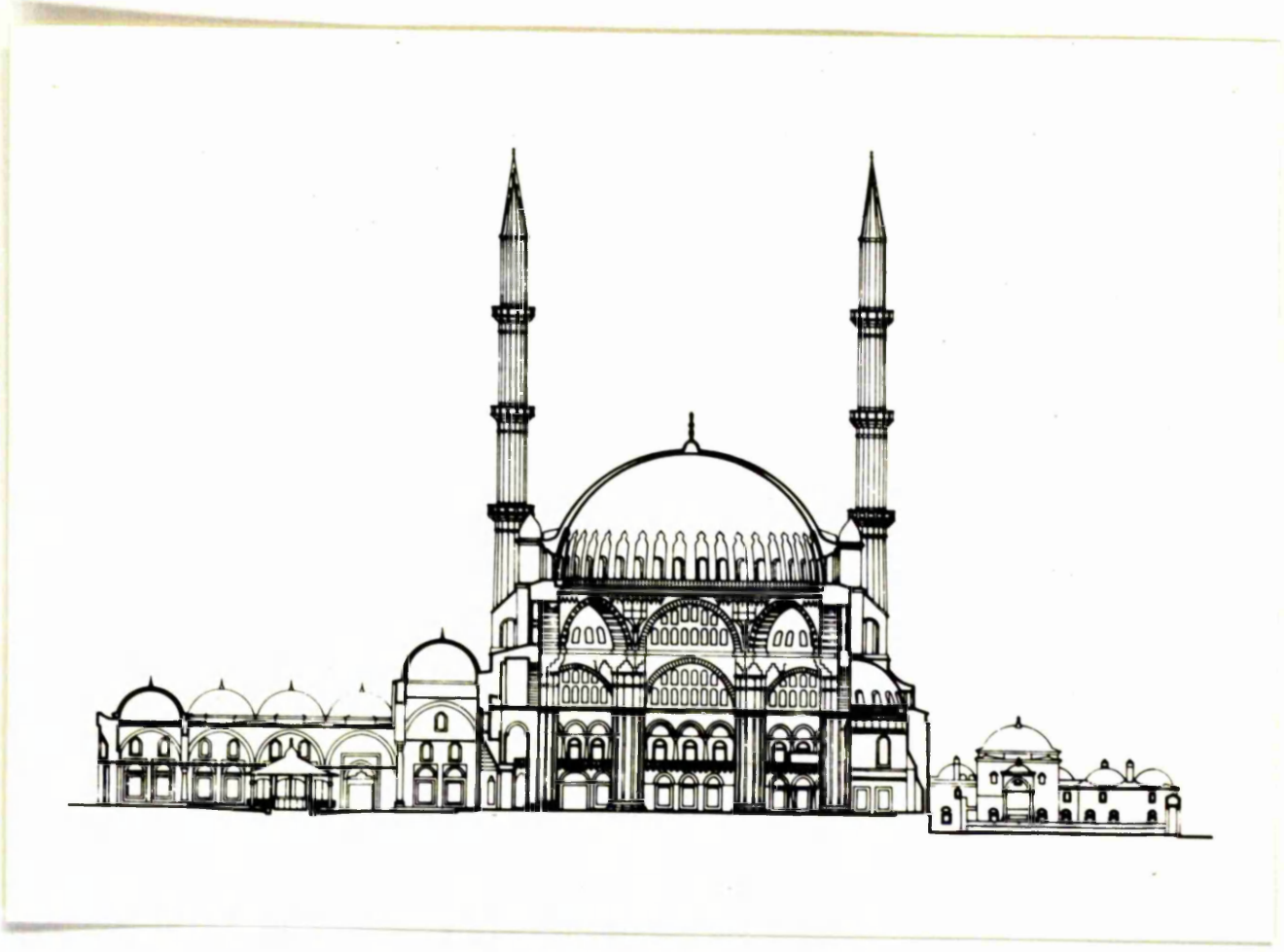


Illustration 48 Selim Mosque, Edirne.
Section.

of an apse, a Christian concept for the altar, emphasises the claim that it is the mihrāb which belongs there. This attitude was manifested before, in Iran, when the mihrāb was placed in the back of the īwān, where the throne of the Sasanian rulers used to stand.

The last of the Turkish mosques for discussion is the Aḥmediye, or Blue Mosque, which was started in 1018/1609 and completed in 1027/1617.[36] It is the largest of the royal mosques and it possesses six minarets. The design of the mosque is based on that of the Şehzâde Mosque, but its execution is far from being as fine. Its tile decoration is extravagant and it is reminiscent of the Baroque style; it is characterised by the excessive usage of decorative motifs and colours. It is by no means impossible, that the blue tile decoration was chosen in order to equal the extravagance of the Blue Mosque in Tabriz, Iran. The triangular areas on the buttresses are adorned with cartouches, a practice, ultimately endorsed as a characteristic decorative element by the Ottomans.

The mosque is based on the four half-dome plan with a central dome, measuring 23.5m in diameter and 45m in height. Lighting is achieved through the numerous stained glass windows, which pierce the lower register of the dome and the half-domes. Emphasis on spatial composition had been the aim during the previous centuries, but it can be asserted with confidence that this mosque is the epitome of this objective.

There is a courtyard attached to the prayer hall, which measures approximately the same as the sanctuary and is surrounded on all four sides by cloisters, which are covered by domes. Two minarets are positioned at the front of the courtyard and one at each corner of the prayer hall. Those on the north facade of the courtyard are lower than the others, which eases the tension between the taller minarets and the dome combination.

The Aḥmediye is probably the last of the mosques which is worth mentioning during the post-Sinan era, after which a lull set in until the eighteenth century. It does not mean, however, that mosques were not built during this period. Rather, their plan and decoration were going through a transitional experimental phase. The small square plan with one single dome was to become a standard practice in overcrowded areas and this type was implemented in the East European territories also. There was a tendency to return to sober simple decoration, regarded as suitable for the House of God.

Finally, it is worth noting that the rate of mosque construction in Anatolia and Turkey, in comparison to that of North Africa and Syria was considerably greater. One explanation for this may be the way patronage functioned in the two areas. In the former case, the decision to build mosques was not restricted to the sultan only, while it seems that in the case of the latter, it was mainly the ruler who gave the order. It is not surprising, therefore, that the frequency and style

with which mosques appeared in the two distinct areas is different.

Summary

The mihrāb dome had come a long way, since the first ones built in North Africa. After evaluating the evidence, it was argued that the Iranian domes had developed differently from the North African and Syrian ones, primarily because of the nature of their histories. The underlying idea and its origin, however, were the same, namely the symbolic unification of power and religion under one and the same dome, a successor to the mosque/palace complex, where the emphasis had been on power, as denoted by the dome.

The Iranian dome in front of the mihrāb is a true mihrāb dome, in that it conforms to the definition offered in this thesis concerning its position. It occupies the area immediately in front of the mihrāb. The size of the dome gradually increased and traditional Persian motifs were included among its decorative elements. The plan of the mosque and the spatial relationship of the dome to it betray national-cultural preferences, such as the four īwān plan and the Fire Temple type, where the square base is covered by a dome. In spite of the dome being larger than the early North African domes, it is not the dominant feature of the Iranian mosque. The emphasis is equally on the portal and the īwān, which satisfied the praying habits of the worshippers. The courtyard is still in evidence most of the time, however, although its presence is not universal.

The domes are supported on squinches, which are characteristically Iranian and point to the fact, that the Iranian dome had developed independently from the rest of the Islamic empire. The external appearance of the dome also differs from the North African domes, in that they are usually covered with polychrome tiles or manifest complicated, intricate brick-work pattern. The intricacy of the decoration reflects the prevalent cultural attitude of the different ruling dynasties and the attitude of the architects and artists to those ideas, which were inspired by the Holy Qur'ān and charismatic Sūfi poetry.

Traditional Sasanian elements combine, therefore, with patterns acquired from other cultures to create a homogeneous new Persian style.

The role of the dome in Iran is to mark the holiest area in the mosque. Its main purpose is not to provide space on the vertical axis. It symbolises the universe and through its decorative and structural design conveys the universal mystery on which the worshipper can meditate. The architectural dimension on the horizontal axis developed further. External verticality is conveyed by the monumental portals and īwāns during the early period, but during the Ṣafavid era more attention is paid to the size and external appearance of the dome. It almost invariably has a drum and the dome culminates in a point, which can be likened to a pointed arch. The drum is decorated with quotations from the Qur'ān. Internally, it is shrouded in a veil of mysticism.

The courtyard forms an integral part of the mosque, not as it is the case in Ottoman Turkey, attached to the mosque as a separate unit.

The most original invention of the Iranians was the mosque/madrasa, where the place of learning and the place of worship was in the same complex, marked by the same dome. It is possible, that the idea originated from the concept of the mosque/palace combination.

The Iranian mosque plan-and-dome design, surprisingly did not affect the overall development of Anatolian and Turkish mosque construction. This is explained by differences in historical and cultural factors.

Whereas in Iran, the national-cultural architectural elements were clearly definable, this was not so in Anatolia. Due to its geographic location it was much more open to foreign influences, with mighty Byzantinium on the one side, Persia close by and Central Asia, each with its own powerful style offering a multitude of stylistic choices.

The large single dome, the dome with lantern and the internal courtyard under a domed roof were first constructed in Anatolia. These domes, apart from a few early eons are not true domes in front of the mihrāb as defined in the thesis. They cover a larger area and frequently end up over the mihrāb niche. The ratio of the mihrāb niche to dome size is also different from the Iranian, the North African and the Syrian ones. In the

last two cases, the mihrāb niche tended to occupy a relatively small part of the qibla wall, generally not exceeding human height. In Anatolia and Turkey, while the size of the mihrāb increases with the height of the dome, its depth decreases. In Egypt, Mamlūk mihrābs are also larger than human size.

The Iranian dome is always decorated externally, while the Anatolian domes are usually completely hidden under a polyhedral external cover, which is completely inconspicuous. There is a conscious spatial relationship between the iwān, portal, minaret and dome which conveys symbolic messages to the outside world.

In Iran and Anatolia and even in the early Turkish mosques the minaret is cumbersome, often wide and squat. It does not contribute to a great extent to the vertical axis but fulfils its primary function as a tower, from where the worshippers are called to prayer.

As the emphasis increases on the vertical axis, as seen in the Ottoman mosques, the minarets become more aggressive, turn into slender exclamation marks and outline the framework within which the single and multiple domes and half-dome combinations fit in with a logical symmetry.

While in Iranian mosques the accent is on the combination of beauty and mystery, the contrast between light and dark to which the dome is an essential contributor, in Anatolia and Turkey it is the quest for space and light

that dominates. The dome proves to be an excellent medium for achieving both aims, as amply demonstrated by the examples cited in this thesis.

There is a similarity between the external appearance of the North African domes and the Anatolian ones in that, the beauty within is carefully hidden without. This is a common link originating in the imperatives of Islam and which require the internalisation of meditation and communication with God. Iran deviated from this line, understandably, because of the nature of the building material employed in dome construction. Brick, unpatterned or undecorated would create an aesthetic dichotomy between the meagre looking dome and the sumptuously decorated monumental portals.

The Ottoman Turkish dome is entirely different from those which existed in the Islamic architecture which preceded it. The aim was the visual conquest of the masterpieces of the Byzantine empire, of which there were so many present in Constantinople, to be renamed Istanbul.

The greatest challenge of all was to surpass the expression of perfection itself, the Hagia Sophia. This was finally achieved intellectually by breaking it up into its constituent elements and reconstructing it in a different combination - the Suleymaniye.

The role of the mihrāb dome while remaining unchanged was redefined. The requirements of a harsher climate demanded a reformulation of the visual dimension and

space now entered the mosque interior. Height, width and depth are all vital and equal components of the spatial arrangement; in the right proportion they yield masterpieces such as the Selimiye Cami at Edirne. The religious dimension, the spiritual counterpart of the architectural dimension, was enhanced by making the qibla more accessible to the worshippers through the creation of a sense of continuity with the aid of domes and half-domes. In reality, the ground plan is square, but the illusion makes it circular.

Externally the Ottoman Turkish domes deny the grandeur of interior decoration. In construction, they are not as modest as it would appear and gradually it is not the domes, but the minarets that dominate the skyline.

Another reason for the minarets to take over domination from the domes lies in urban change. The cities become more crowded and secular buildings increase in height. In order to surpass the height of roofs, domes should tower over them. However, because of the nature of the Turkish dome, i.e. its size this is not possible, the domes would have to be tall, like the Timūrid domes. Aesthetically these would not be appealing and technically it would be virtually impossible to achieve. The ideal solution was therefore to pass the rôle of 'signalling' over to the minarets.

REFERENCES FOR CHAPTER FIVE

!) Hoag J, Islamic Architecture, pp. 222-3.

2) Akurgal E, The Art and Architecture of Turkey, p. 83.

3) Aslanapa O, op cit., p. 94.

4) Ibid., p. 95; Akurgal, op cit., p. 83.

5) Ibid., pp. 95-6.

6) Akurgal E, op cit., p. 83.; Aslanapa, op. cit., p. 98.

7) Aslanapa, op. cit., p. 97; Akurgal, op. cit., loc. cit.

8) Mi chell, AOIW., p. 244; Akurgal, op. cit., loc., cit.; Hoag J, Islamic Architecture, pp. 231-3.

9) Aslanapa, op. cit., pp. 102-3.

10) Ibid., p. 110,; Akurgal, op. cit. p. 85.

11) Ibid., p. 97-8.

12) Ibid., p. 111

13) Ibid., p. 170.

14) Akurgal, op. cit., p. 83.

15) Ibid., p. 85, Hoag, op. cit., p. 242.

16) Mi chell, op. cit. p. 240; Aslanapa, op. cit. p. 105; AKurgal, op. cit., loc. cit.; Hoag, op. cit. pp. 224-6.

17) Aslanapa, p. cit., pp. 122-3.

18) Creswell K A C, MAE II, pp. 162-3; Aslanapa, op. cit., p. 96; Akurgal, op. cit., p. 83.

19) Hoag, op. cit., p. 248.

20) Aslanapa, op. cit. p. 184.

21) Ibid., loc. cit.; Kuran A, The Mosque in Early Ottoman Architecture, p. 176.
22) Goodwin J, A History of Ottoman Architecture, p. 38, Hoag. op. cit. pp. 315-7; Mitchell, AOIW, p. 240.
23) Goodwin, op. cit. p. 18.
24) Goodwin, op. cit., pp. 18, 36; Space and Tradition: Architecture, p. 150.
25) Space op. cit. p. 151.
26) Michell, op. cit., p. 240; Space, op. cit., p. 152; Hoag, op. cit., p. 318-9.
27) Michell, op. cit., loc. cit.
28) Space, op. cit. loc. cit.
29) Goodwin, op. cit., pp. 106-7.
30) Space, op. cit, p. 153.
31) Aslanapa, op. cit., pp. 217-28.
32) Goodwin, op. cit. p. 51.
33) Space, op. cit., p. 158.
34) Goodwin, op. cit., pp. 32, 55-7, 43, 79.
35) Michell, op. cit., p. 160.
36) Space. op. cit., p. 161.

CHAPTER SIX

CONCLUSION

It was the primary aim of this thesis to collect and assess critically the available evidence concerning the development of the dome in front of the mihrāb and to offer the hypothesis on the basis of that assessment, that the incorporation of the dome in front of the mihrāb in the mosque was a direct consequence of the unification of power and religion under the same roof.

The premises for the argument were as follows:

1) Originally, the dome as a symbol of power and of religion was adopted by Islam from other cultures.

2) While the seat of power, as represented by the palace, was attached to the mosque, the place of worship, there was no dome in the mosque.

3) The definition, 'the dome in front of the mihrāb is applicable if and only if, the dome is situated directly in front of the mihrāb niche.

4) When there are domes in the mosque, as in the case of the Medina, Damascus and Aqṣā Mosques which are not positioned directly in front of the mihrāb, but are set back at least one aisle from the qibla, they are referred to as mihrāb domes.

5) The symbolic significance of these domes is determined by the cultural and historical heritage of the area where they occur, a condition which is valid also for other types of domes, including those in front of the mihrāb.

6) The first true dome in front of the mihrāb appeared in the Ribāṭ at Sūsa in Tunisia, which set the precedent for other North African mosques to follow.

In order to support the hypothesis, evidence was cited from all over the Islamic empire which, for the sake of clarity and accuracy is divided into two culturally different entities, namely, east and west.

The architectonic development of the conquered areas was to a certain extent influenced by the living habits of the conquerors who on the whole were accustomed to the desert environment and who brought to the city some of the imperatives of the nomadic existence. Spatial configuration is to an extent the mirror of social organisation, therefore, architecture and, as a matter of fact, art should be viewed with this framework in mind. In pre-modern times architectonic space in the sense of total visual environment was limited to areas of highly concentrated settlements. Even when such settlements were not truly urban, they assumed the symbolic role of the city. Consequently, the Absolutist palace complex of the pre- and post-Islamic ordered space are all symbolic "heavenly cities". This symbol, like the architectonic space itself, apparently originated in Mesopotamia and probably it was in Mesopotamia that the first dome was

erected. Similar visual unity was one of the characteristics of the Byzantine era and the dome was an integral part of its demonstration. The Mesopotamian model was indirectly absorbed into the developing architecture of the Islamic culture of the post-Umayyad period, after the conquest of Sasanian Iran. Byzantine elements were, on the other hand, directly incorporated into Islamic architecture already during the Umayyad period.

With the advent of Islam, architectonic change to the established and flourishing cities became inevitable.

Damascus is probably the most suitable example of a city which underwent drastic cultural and architectonic changes after the Muslim conquest. Prior to Islam, an architectonically well developed Hellenistic style dominated the city. After the Muslim invasion the urban economy and population declined and the great ceremonial spaces became redundant. One of the possible explanations for this may be that the Muslim population did not perform political or social activities in the streets, but restricted them within the confines of the mosques. For this reason the public meeting places which were so vital to the Greek and Roman cultures gradually disappeared, the geometric forum gave way to irregular, rounded and crowded market-places. Eventually the city lost its architectonic quality and the visual unity of the public areas and apart from the minarets, domes and monumental gates the Muslim city had no visual orientation.

This was certainly true for the cities of North Africa in general and for Cairo, Egypt in particular. The Cairene architects resorted to great ingenuity in order to reconcile the contradictions which were inherent in the imperatives of the religion on the one hand and the urban requirements on the other. Domes became taller in order to draw attention to the location of the house of prayer over the roof-tops of the overcrowded city.

Islam was more concerned with individual rather than with public rights, which may stem from the character of the nomadic peoples for whom life in large collectives like the city was totally alien. Inevitably the city had to be divided up into smaller units which were more representative of the needs of the people. The concern with private, rather than public appearance determined the shape, size and composition of these units, which were to be called mosques. The courtyards of the mosques, the enclosures of the Caravanserais and the magnificent gardens of the palaces had similar functions to the forum and the agora in the Roman and Greek cultures.

More often than not the internal extravagance of the buildings were hidden behind an inconspicuous external appearance of massive protective walls and the private space was efficiently arranged within. In some respects, the Islamic urban layout appears to be the reversion to Mediterranean patterns of the pre-Hellenistic period. Whatever were the sources of the Islamic urban pattern, the differences between it and the medieval Christian

city in a frontier region like Spain is extremely striking. While ethnocentrism of the Arabs was evident in the eastern part of the Islamic empire in general and Iran in particular, it was less evident in Spain. The various ethnic groups coexisted in the cosmopolitan city of Cordoba and for this the Great Mosque is the witness.

The continuous shifting of capitals from one place to another and the rapid displacement of the numerous ruling families in the different areas of the Islamic empire must have been crucial contributors to the diversity of architecture in general and mosque architecture in particular. Even when a particular city remained the capital for a longer period of time it was not a stable and homogeneous unit, but was in a state of flux, with frequent additions of new palace or garrison complexes which diluted its potential for communicating symbols of identity. There was one aspect, however, which serves as a symbol of unified identity for the whole of Islam namely the mihrāb and the dome which precedes it in the sanctuary. Apart from the mosque there is no other effective architectonic conveyor of the power and myth of Islam. The penetrative power of the religious organisation for which the mosque stands had important implications for the formation of ethnic identity, even in areas where it was well established in a previous civilisation. This is reinforced during Friday prayer in the Great or Friday Mosques, which also provide effective forum for conveying symbolic and explicit messages. The religious language is another powerful factor for unifying or fragmenting ethnic identities. Symbolic

associations derived from the use of special sacral script were often as influential as they were instrumental in communication. The change of the alphabet was concomitant with religious conversion: changing the Pahlevi script to the Arabic alphabet in the 7th century accelerated the religious conversion of Persia to Islam. Since the early Islamic times religious script remained one of the most powerful messengers of Islam and is widely used as decorative element in mosque architecture. The script is integrated into the design pattern of the dome or the portal to such an extent that it becomes an organic part of the structure. The Qur'ānic imperative: "The Word rules guides and instructs" expressed in calligraphy is the equivalent of the pictorial representations of the Roman-Hellenistic and Christian traditions.

It was mentioned supra that the Absolutist palace complexes mainly in the desert areas fulfilled the role of the city. It was the main contention of this thesis that it was precisely there, that the concept of introducing the dome into the mosque originated. However, in practical terms it was implemented when and only when the mosque became the sole representative of the power/religion combination, mainly in the cities. Until then, in most cases the palace was attached to a wall of the mosque, usually on the qibla side in order to provide direct access for the ruler or the governor into the mosque. The dome of the throne room of the palace provided the signal of power to the outside world and when it became the universally accepted signal than it

found its way into the mosque also, in the Ribat of Susa for the first time.

The historical background which may have exerted influence over the inclusion of the dome into the sanctuary is not the only reason for dividing the Islamic empire into two separate entities. There were technical dissimilarities to setting the dome onto an octagon. In pre-Islamic Persia the squinch was used and this method was adopted by the architects of Islam in the eastern part of the empire also. The earliest squinch domes were discovered in the palaces at Sarvistan and Firuzabad, these set the precedent for Persian structures. The Sasanian squinch penetrated eastwards even as far as Chinese Turkistan. Domes supported by squinches were also found in Armenia as early as the seventh century and their use was wide-spread throughout the Byzantine empire, well before the Arab invasion took place in the region.

The squinch was not known in Syria, Egypt and North Africa and there are only two examples to be found before the eleventh century. In Syria the spherical-triangle pendentive was favoured which found its way into Egypt and North Africa. In Egypt, perhaps the most important mosque in the development of the dome is the al-Azhar Mosque, built during the tenth century. It has the oldest pointed dome over the entrance portal, the transition zone of which does not have either true squinches, nor pendentives. The diagonal sides of the octagon are opened with deep arched niches which resemble

stalactites. These 'stalactites' might have been the forerunners of those which were developed during the eleventh century. The so-called 'stalactite' detail was developed from the corbelled squinch which was constructed from successive layers of brick. The various layers were scalopped out in order to obtain lightness both in weight and pace.

Iran and Mesopotamia favoured more the large and plain surfaces. Domes which are found in this region tend to be smooth and pointed. To compensate for the lack of sculpted stucco, polychrome tiles were introduced for decorative effect. Drastic quadratic simplicity was combined with complex vaulting and domes which had stellate plans. From the complex curves developed the tiered squinches which were to balance out the massive arches.

'Turkish architecture' is going to be used as a collective term for architectural style in the area which is now known as Turkey, but which should really be divided into its constituent parts. However, in order not to increase the length of the conclusion it will apply to the post- the establishment of the Ottoman empire. The prevalent mosque architectural form was inherited from the Byzantines.

After the conquest of Constantinople, mosque design underwent a sharp change, probably due to the conscious effort made by architects and rulers alike to equal the achievements of the Umayyads in Jerusalem and to make

Constantinople the true capital city of the Ottoman empire. Prior to the conquest of Constantinople the mosques were generally built on square plans and were roofed by one single or more domes. Afterwards however, there was a reversion to the Byzantine style, with multiple domes and half-dome squinches being erected in Constantinople and in other cities. The role of the courtyard also changed and the minarets became more slender and upward reaching.

It was also suggested that the inclusion of the multiple domes might have been inspired by the combination of the Ka'aba and the tents which surrounded it during Pilgrimage time.

The domes were supported by massive piers in place of stalactites or pendentives, but they did not exclude the pendentives completely.

Single domed mosques on a square base were erected in occupied territories, such as Hungary and Yugoslavia which were inspired by earlier Turkish models.

In India and Pakistan Hindu and Buddhist elements were adopted into mosque architecture, the ground-plan of the vihāra together with a dome in the style of a stupa was favoured. The dome in front of the mihrāb occupies a central dominant position in the sanctuary in a way similar to the spherical dome of the vihāra and it performs the same function also.

A quotation which was extracted from Creswell's EMA I may be a suitable note on which to end this thesis. At the time of rebuilding the mosque and governor's residence at Kūfa, the architect said to ʿUmar, when ʿUmar wanted to move the mosque: "I will build it for you, and I will build you a palace (qaṣr) and join the two so that they will form one building". [1]

What may be implicitly conveyed in this quotation is that the mosque and the palace should indeed be one unit because of their symbolic significance. However, once earthly power became divorced from heavenly power, it was only the symbol which represented both, namely the dome, that was able to convey the true concept of Islam. It was therefore incorporated in the most sacred spot in the sanctuary, in front of the miḥrāb.

REFERENCE FOR CHAPTER SIX

1) Creswell, EMA I, pp. 1-28.

BIBLIOGRAPHY

Alden Williams J, "Urbanisation and Monument Construction in Mamlūk Cairo", Muqarnas: An Annual on Islamic Art and Architecture, ed. O. Grabar, vol. 2. (1984) The Art of the Mamluks, pp. 37-8.

Akurgal E, The Art and Architecture of Turkey, pp. 83-85.

Armstrong J, Nations Before Nationalism.

Aslanapa O, Turkish Art and Architecture, pp. 56-7, 67-8, 89-90, 94-8, 102-9, 111, 122-3, 170-84.

Basset H & Terrasse H, "Sanctuaries & Fortresses Almohades", Hesperis IV, 1924, pp. 9-91, 181-203; V, 1925, pp. 311-376.

Boothe L.W., The Great Mosque of Qayrawān, Oriental Art, 1970, pp. 321-326.

Bulletin of the American Institute for Persian Art & Archaeology 7, 1934, pp. 7-8, 28-30; no. 4, 1936, pp. 175-84.

Butler, Architecture and other Arts, pp. 411-3; Ancient Architecture of Syria, pp. 217-20, 281-6; Early Churches in Syria, pp. 125-7.

Codrington K, Ancient India, pp. 51-4.

Creswell K.A.C., EMA I, pp. 102-3, 167-9, 208-261, 223, 248-53, 304-23, 315-7, 321-5, fig. 243, 323, 325-8, pl. 91-2, 376-7, 614-9; EMA II, pp. 101-11, figs. 84-5, & 102; MAE I, pp. 12, 25, 29, 39-40, 52-60, 113-4, 136, 157, 222, 229, 248-9, 251-60; MAE II, pp. 72, 138, 156, 162-3, 350; "The Origin of the Cruciform Plan of the Cairene Madrasas", BIFAO 21, pp. 5-6, 11-16 & fig. 2; Mosques in Egypt 1, p. 21; "Coptic Influences on Early Muslim Architecture", Bulletin de la Societe d'Architecture Copte 5, 1939, pp. 29-42; "Problems in Islamic Architecture", Art Bulletin 35, March, 1953, pp. 1-7.

Critchlow K, Islamic Patterns, "An Analytical & Cosmological Approach", p. 102.

De Vogüe, Syrie Centrale I, pp. 61-5 & pl. 1, fig. 18.

Dickie J, "The development of mosque form in relation to the needs of the Muslim liturgy", Islamic Review 53, 1965, pp. 13-17.

Encyclopaedia of Islam III, pp. 379, 381, 612-3.

Ettinghausen R, From Byzantinian to Sasanian Iran and the Islamic World, p. 24.

Foy W, Man's Religious Quest, pp. 501-16.

Gibb E.J.W., Umayyads and 'Abbāsids, Memorial vol. 4. pp. 77-80.

Godard, Les Anciennes Mosquèes de l'Iran, p. 193, fig. 13.

Golvin L, Essai Sur Architecture Religieuse Musulmane I, p. 125 & Fig 48, 149-50, 156-7; vol.2, pp. 80-1, 97-108, 51-2; vol.3,

pp. 85, 128-9, 137, 152, 160-1, 168-70, 213-4.

Goodwin G, A History of Ottoman Architecture, pp. 18-32

Grabar O, Umayyad Dome of the Rock in Jerusalem, Ars Orientalis III, 1959, pp. 33-62; "The Islamic Dome: Some Considerations", Soc. Arch. Hist. Journal 22 Dec. 1963, pp. 191-8.

Grube E.J., The World of Islam, pp. 35-9, 42, 65-6, 70-1, 77-9, 108-9, 132.

Hamilton R.W., Structural history of the Aqsa Mosque, pp. 1-3, 8-16.

Hautecoeur & Wiet, Les Mosquees du Caire I, p. 220-2, 230, 245, 326, 261-2, 216-20.

Herzfeld E E, "Damascus: Studies in Architecture" Ars Islam 9, 1942, pp. 1-53; 10, 1943, pp. 13-70; 11, 1946, pp. 1-71; 13 & 14, 1948, pp. 118-38; Architectural History of Iran, p. 89, fig. 11.

Hill D. and Golvin L, Islamic Architecture in North Africa, pp. 92-3, 95-6, 97, 100-1, 105-15.

Hill D. and Grabar O, Islamic Architecture and its Decoration, pp. 32-3.

Hillenbrand R, "Seljūq Dome Chambers in North-West Iran", Iran XIV, 1976; Seljūq Monuments in Iran, Oriental Art, vol. XVIII no. 1.

Hoag J, Islamic Architecture, Chapter 4, pp. 82, 94, 116, 192-9, 213; The Early Islamic Architecture of North Africa, p. 60, 136, 219, 221.

Hutt A, Islamic Architecture, "North Africa"; Iran 1 & 2.

Jairazbhoy R.A., An Outline of Islamic Architecture, pp. 16, 26-27, 30-8, 45-7, 83-90, 290; "Aspects of Islamic Architecture", Islamic Review 53, May 1965, pp. 19-23.

JRAS, 9. VII. p. 384.

Lambert E, Les Coupoles des Grandes Mosquées de Tunesie et d'Espagne aux IX^e siecle, Hesperis 22, p. 31, 127-32; "L'Architecture Musulmane du X^e siecle", Gazette des Beaux-Arts 1925, p. 152.

Lezine A, Mahdiyā, Reserches d'archeologie Islamique (1965) pp. 69, 73, 74-7; Architecture de l'Ifriqiya, pp. 55-7.

Ling T, A History of Religion East and West, pp. 208-232.

Marçais G, Manuel D'Art Musulman: Architecture I, pp. 24, 32, 35-6, 37, 47-9, 107, 114, fig. 17, 224-41, 314-20; La Grande Mosquee de Sfax, Tunis, 1960; Notes & Documents VIII, "Coupole et Plafonds de la Grande Mosquée de Kairawan", pp. 7-27; "Tlemcen, Ville d'Art et d'Histoire", Revue Africaine 79, 1936, pp. 22-48; L'Architecture Musulmane d'Occident: Tunesie, Algerie, Marocco, Espagne & Sicilie, 1955.

Marçais G & Golvin L, "The Great Mosque of Sfax", Book Review by H. Stern, Ars Orientalis 5, 1963, pp. 289-90.

Michell G. & Jones D.M, "Squinches and pendentives", Aarp., vol. 1.

Mi chell G, Architecture of the Islamic World, pp. 210-5, 223-7, 231-44, 250-272.

Monnoret de Villard, La Necropolis Musulmane di Aswan, pp. 34-6, 42, 50-1.

Nath R, History of Sultanate Architecture, pp. 13, 16, 27, 49, 56, 68, 70, 98, 100-1, Some Aspects of Mughal Architecture.

Papadopoulo A, Islam & Muslim Art, pp. 216-7, 224-7, 233-4.

The Penguin Dictionary of Architecture, pp. 57, 58, 59, 96, 97, 265.

Pope A, Persian Architecture, p. 77.

Pope A U & Ackerman P, SOPA I, pp. 439, 501-3, 538, 560, SOPA II, pp. 502, fig. 131, 950, 1001-4, figs. 343 & 345, pit. 274, 1025, pit. 412;

SOPA III, pp. 954, 983, 996-1020, 1004-1014 figs. 346-7, pits. 288-90, 1064-9, 1092-5, 1131-4, 1185-90, 1252-5.

Rawlingson H.C., "Notes on a journey from Tabriz through Persian Kurdistan, JRGS X, 1844, pp. 77-8.

Rogers M, The Spread of Islam, pp. 90.

Rumpler M, La Coupole Dans l'Architecture Byzantine et Musulmane, pp. 52, 55-7, fig. 77.

Saladin, La Mosquèe de Sidi Okba, pp. 38-40.

Sarjeant R.B., "Miḥrāb", Bulletin of the SOAS XXII, 1959, p. 450.

Sauvaget J., La Mosquèes Ommeyyade de Medine, pp. 84, fig. 5, p. 91.

Schotten Merklinger E, Indian Islamic Architecture; The Deccan 1347-1686, pp. 71-4.

Shafi M, "A description of the two sanctuaries of Islam", A Volume

of Oriental Studies, presented to E. Browne, p. 429.

Shokoohy M, Islamic Architecture of India, pp. 1-2, (to be published).

Smith E.B., The Dome, "A Study in the History of Ideas".

Soundra Rajan K.V., Islam Builds in India, pp. 7 and 8.

Space and Tradition: Architecture, p. 155.

Stern H., "Recherches sur la mosquees el-Aqsa", Ars Orientalis 5, 1963, pp. 28-48.

Terrasse H, L'Art Hispano-Mauresque des origines au XIII^{e} siecle, pp. 60-1; La Mosquee al-Qarawiyyin a Fes, pp. 30-3.

The Anatomy of Architecture, p. 47.

The Concise Encyclopaedia of Living Faiths, ed. R.C. Zaehner, pp. 184-5.

The Holy Qur'ān

Voronina V & Alexandrov A, Architectural Monuments of Middle Asia: Bokhara and Samarkand, pp. 24-37.

Wiet G, Repertoire VIII, pp. 180-1, 199-200, 245, 268; IX, p. 16; The Mosques of Cairo, transl. J.S. Harman, Paris 1966.

Wilber D.N., The Architecture of Islamic Iran, pp. 32-7, 61-7; Iran Past and Present, pp. 34-5, p. 48.

ABBREVIATIONS

AARP	Art and Archaeology Research Papers.
AOIW	Architecture of the Islamic World.
BIFAO	Bulletin Institute Francais Archeologie Oriental.
EMA	Early Muslim Architecture.
MAE	Muslim Architecture of Egypt.
JASER	Journal of Asiatic Series.
JRGS	Journal of the Royal Geographic Society.
SOPA	Survey of Persian Art.

APPENDIX

Chronological order of the dome in front of the mihrāb in each country

also list of mosques with a domed wide transept.

Medina, The Prophet's Mosque

The original mosque, during the lift of the Prophet did not have a dome in front of the mihrāb. The first dome was built during the reign of al-Walīd I in the Umayyad period c. 88-92/706-710. The shape of the dome is a concave indentation in the ceiling, similar to a shield. The cupola was made of wood. The mosque has a sahn (courtyard), approximately rectangular in shape. The mosque was redecorated by the Abbasids, the Mamlūks and the Ottomans. The great green dome before the qibla wall is Mamluk and Ottoman.

SYRIA

Damascus Great Mosque

The original dome in front of the mihrāb was built in the Umayyad period under al-Walid I in 88-97/706-715, or 91-97/709-715. It was shaped like an eagle and at its apex there was an orange and a pomegranate made of gold. The dome was damaged by fire in 462/1069. The new dome is round like a sphere and its structure is made of planks strengthened with ribs of wood with bands of iron. It was restored in 475-476/1082-83. The mosque has a rectangular sahn and the aisles are parallel to the qibla wall.

Hāma, Great Mosque

The mosque was built during the Umayyad and Mamlūk periods 8th and 13th/14th c.

Damascus, Māristān Nūrī

The Māristān was built in 541-570/1146-74. Ayyūbid period. Over the square chamber rises an eleven-tiered muqarnas dome.

Damascus, Māristān of Nūr al-Dīn

It was built in 549/1154. ʿAbbāsid. It has a muqarnas dome.

Damascus, The Madrasa Al-Nūriya Al-Kubra

The tomb was built in 568/1172. ʿAbbāsid. It is covered by a stucco, eleven-tiered muqarnas dome.

Ma'arrat an-Nu'mān: The Shafiʿite Madrasa

It was built in 596/1199 ʿAbbāsid and is roofed by a stone dome in the centre, resting on stalactite pendentives. There is a sahn, measuring 13.63 x 6.37.

Aleppo, Al-Zāhiriya Madrasa

Built in 616-617/1219-1220 Ayyūbid period. The sanctuary is roofed by three domes. There is also a sahn measuring approx. 14.75 x 1839.

Aleppo, Madrasa al-Sultanya

Built in 629-630/1231-1232, Ayyūbid period. The masjid is roofed by a dome on the centre. There is a sahn measuring approx. 19.67 x 16.80.

Aleppo, Al-Firdaus Madrasa

Built in 633-634/1235-36 Ayyūbid period. The masjid is roofed by three domes, the central one stands on a drum. There is a sahn measuring approx. 1623 x 1612.

Aleppo, Madrasa of Shad Bakht

Built for the Hanafites. It is roofed with a shallow dome. There is a sahn of 8.23 x 9.21.

TUNISIA

Sūsa, Ribāṭ

Built in 206/821 Aghlabid period. The place of the miḥrāb is marked by a dome on squinches. There is a rectangular sahn.

Qairawān, Great Mosque

The mosque was built in 224-248/838-862, Aghlabid period. The mihrāb dome was in the shape of a gadrooned half sphere. It is the work of Ziyādat Allāh. The dome rests on shell shaped pendentives. A later date has been assigned to the dome by Creswell, 248-249/862/3 and he attributes it to Abū Ibrāhīm II Ibn Aḥmad. There is a rectangular ṣaḥn.

Susa, Great Mosque

Built in 236/850 Aghlabid period. The dome rests on shell like squinches. The 10th c. dome reposes on corner niches instead of squinches. There is also a ṣaḥn.

Sfax, Great Mosque

Built in 236/850, Aghlabid period. Restored in the Zīrid and the Ottoman Periods 378/988, and 18th c. Due to the restorations it is difficult to tell what the original mosque looked like. There are two domes marking the extremities of the axial and aisle. The mihrāb dome is imposing as are most of the Aghlabid domes. There is an enclosed rectangular ṣaḥn.

Tunis, Great Mosque

The mihrāb dome is dated 250/864, Aghlabid period. Built by the architect Fatḥ. The dome comprises of 20 lines

radiating around the centre. The concavity of the lines gives the effect of more or less a very strong projection of rectangular profile. On the outside the gadrooned dome is supported by a cylindrical drum strengthened by pilasters with capitals and pierced with claustra. Another date given for the mihrāb dome is 381/991, Zirid period. There is a wedge shaped sahn.

Mahdiya, Great Mosque

Built in 304/916, Fāṭimid period. The mihrāb dome was supported on extraordinary compound piers in coursed masonry that imitated eight clustered shafts. The dome conforms to the Aghlabid style. There is a square sahn.

Tozeur, Blad Al-Hadhar Mosque

The mosque was built between 418/1027 and 422/1030, Aghlabid period. Its cupola is modelled on the Qairawān dome.

Mosque of the Kasba

Dated 626/1228. Almohad period. The cupola in front of the mihrāb is decorated with muqarnas corbelling. There is no sahn.

Hawa, Great Mosque

Built between 647/1249 and 676/1277, Almohad period. The dome in front of the mihrāb is carried on Qairawān type squinches. There is no sahn.

PALESTINE

Jerusalem, Al-Aqsā Mosque

Built in 97/715. Umayyad period. The original dome was made of wood and was covered with lead. The dome bearing arches belong to the work of al-Mahdi. The double shelled great dome is painted and is surrounded by a gallery of arches which rest on triple colonettes. The square base is transformed into a circle by a circular projecting corniche, which supports the drum. There is no ṣaḥn.

SPAIN

Cordoba, Great Mosque

The miḥrāb dome was finished in 355/965, Umayyad period. The domes have complex ribbed patterns. The domes are supported by complex rib-systems close in form to dome structures in Armenia and Iran. There is no ṣaḥn.

Seville, Great Mosque

The sanctuary was begun in 567/1171, Almohad period. It was destroyed in the 15th c. It is almost certain that there were 3 domes in the transverse aisle at the back of the sanctuary.

Toledo, Mosque of Bib Mardom

It was built in 391/1000, Umayyad period. There are nine ribbed domes. The rib patterns of the dome are corner versions of the elegant domes in front of the mihrāb of the Cordoba mosque.

ALGERIA

Algiers, The Great Almovarid Mosque

It was built in 491/1097, by Yusuf B. Tashfin, Almoravid period. The dome was destroyed in 1095/1683. There is no evidence as to what the dome looked like.

Tlemcen, Great Mosque

Dated 533/1138. Almoravid period. The mihrāb dome is decorated with ribbed sides, reminiscent of the dome of the Great Mosque of Cordoba. There is also a lantern, the first dated eastern example of stalactite dome. There is a simple sahn.

The Jāmi 'Safīr

It was erected in 941/1534, Ottoman period. After it was demolished, it was rebuilt in 1242/1826. The square prayer hall is covered by a cupola with an octagonal base reposing on four pendentives.

Katshawa Mosque

Built approximately around 1012/1612, and rebuilt in 1209/1794. There is an enormous central dome resting on shell-shaped pendentives.

Algiers, Mosque of the Fishery

Founded in 1071/1660, Ottoman period. The dome is ovoid in shape and is supported on Ottoman type pendentives and semi-circular arches.

MOROCCO

The Qarawiyyīn Mosque

First built in 245/859, Almovarid period. The domes are decorated with stalactites. These stalactites are the exact prototypes of the Tinmel and Koutoubiya mosques. The works of the Qarawiyyin mosque are placed between 527/1132 and 537-538/1142-43. There is a small rectangular sahn.

The Andalusians Mosque

Built during the reign of ʿAbd al-Raḥman III Caliph of Cordoba. There is a dome in front of the miḥrāb in the style of the Almovarid cupolas in the Qarawiyyīn Mosque.

Taza, Great Mosque

It was built by ʿAbd al-Mu'min in 547-559/1152-63. Almohad period. The dome, however is due to Merinid Abn Ya'qub in 685-706/1286-1306. The dome is similar to the one in Tlemcen, ribbed and a small dome on stalactites closes the vault at the summit.

Tinmal, Mosque of 'Abd al-Mu'min

The dome is dated 548-9/1153/4. Almohade period. The domes are decorated with muqarnas, they are exactly the same as those in Marrakesh and the Kutubiya Mosque.

The Kutubiya Mosque

Built between 580/1184 and 596/1199, Almohad period. The domes are deep and the wide stalactites rest on a grooved narrow ornamented surface. The stalactites play the same role as the ribs. There is a rectangular sahn.

Marrakesh, Mosque of the Qasba

The domes were begun in 592/1195. Almohad period. The decoration is similar to the Kutubiya Mosque.

Marrakesh, Muassin Mosque

The dome in front of the mihrāb was built by the Sa'dian Mulāy 'Abd Allāh in 964-981/1556-73. The Almohad influence is visible in the domes. The cupolas have lots of dazzling elements and appear to be flat without hierarchy, complicated and rich.

Marrakesh, Mosque of Bāb Dukkāla

The mosque was built in 965/1557 in Mārinid style. It has six cupolas decorated with muqarnas with emphasised squinches and octagon rising to the central cupola.

Tinmal, Great Mosque

The mosque was completed in 548/1153, Almohad period. The ceiling of the dome is covered with green tiles in the form of pyramids.

LIBYA

Tripoli, Complex of Ahmad Pasha

It was built in 1149-1150/1736-7, Qaramanli period. The bays of the sanctuary are covered with domes on pendentives, the one in front of the mihrāb has a higher dome raised on squinches.

EGYPT

Cairo, Al-Azhar Mosque

It was built in 360-362/970-2, Fāṭimid period. The dome rests on a drum enriched with windows and on three rows of small pendentives (squinches). There is a rectangular sahn.

Cairo, The Mosque of al-Ḥākim

The mosque was built in 380-404/990-1013, Fāṭimid period. The area in front of the miḥrāb is converted into an octagon by 4 squinches. It is surmounted by an octagonal drum. The dome oversails the drum. There is a rectangular ṣaḥn.

Cairo, The Mosque of al-Guyūshī

It was built in April/May 478/1085, Fāṭimid period. The dome rests on an octagonal drum. The transition from the square to the octagon is achieved by 4 squinches. The drum and the dome is made of brick.

Jāmiʿ Ikhwat Sayedna Yūsuf

Dated 480/1087. Fāṭimid period. The dome rests on squinches. Creswell places it at the beginning of the 12th c.

The Mashhad at Aswan

Dated 494-504/1100-1110. Fāṭimid period. The dome rests on a zone of transition formed by 4 pendentives, with a trefoil window between them. On this rests the octagonal drum. The pointed dome is made of burnt brick.

The Mashhad of Sayyida Ruqayya

Dated September 528/1133, Fatimid period. The dome has 24 ribs. Externally it has 24 flutes and the apex is crowned by a bronze finial of three balls, diminishing in size and surmounted by a ring.

The Mausoleums of Al-Ga'Farī and Sayyida 'Ātika

Dated 494-514/1100-1120, Fāṭimid period. The octagon is achieved by stalactite pendentives, which are the prototypes of the Egyptian stalactite pendentives. The four groups of niches support the sides of the octagon. On the octagon is the dome which cuts across its angles.

The Mausoleum of Sayyida 'Ātika

Dated 494-597/1100-1200. The dome is oval, but the pendentives are identical. The interior of the dome exhibits 16 ribs which converge in a flat central circle. The exterior is fluted.

The Mosque of Sultan Baybars

Dated 666-1270/1267-69, Mamlūk period. The dome was large and covered 9 bays unlike the domes of previous mosques which covered only one. There is an almost square ṣaḥn.

Cairo, The Mosque of an-Nāsir Muhammed

Built in 718/1318 and 736/1335, early Mamlūk period. The dome is of extraordinary size. The sahn is rectangular in shape.

Cairo, The Mosque of al-Maridānī

Dated 734-740/41/1333-9/40, early Mamlūk period. The dome is supported on huge granite columns, with gilded capitals. At the corners of the square below the dome are wooden stalactites. There is a rectangular sahn.

The Mosque of Chaikhou

Dated 750/1349, early Mamlūk period. There are two wooden domes in front of the miḥrāb.

The Mosque of the Emīr Aqsunqur

Dated 747-748/1346-47. Mamlūk period. The dome in front of the miḥrāb rests on a high octagonal drum. It is composed internally of simple squinches with double lights.

The Mosque Mausoleum of the Emīr Tankizbugha

Dated 764/1362, Mamlūk period. The dome rests on squinches, there is an ornament which resembles the teeth of a saw.

The Mosque of Ibn Ṭūlūn

The original mosque was built in 263/4-266/876/77-879. Ṭūlūnid period. The mosque was restored by Lajin in 696/1296 Mamlūk period. The wooden dome is erected on a drum, supported by 2 rows of small pendentives. There is a square ṣaḥn.

Mayyāfarīqīn, Ortuquid Mosque

Dated 547-572/1152-76, late Fāṭimid period, built by Ortuquid Alpī. Each pier comes exactly under the springing of the 4 squinch arches and the 4 blind arches below the dome. Above the central dome were three consoles at exactly the same level as those which support the bold cornice at the top of the facade.

The Mosque of Sarghatmish

Dated 758/1356, Mamlūk period. The dome in front of the mihrab is not unusual in its architectural form, but it is unusual in that it is not usually built according to cruciform madrasa plan.

The Mausoleum of Muhammad al-Hasawāti

Dated the first half of the 12th c. Late Fāṭimid period. Being an open dome, it is related to the earliest mausoleums of Egypt, the Saba Banat, not only the setting of its dome, but in its large arched openings which occupy the centre of each face except on the side of the miḥrāb.

The Mausoleum of Shaykh Yūmish

Dated the first quarter of the 12th c., but last in the order of the 4 mausolea. Fāṭimid period. The dome rests on an octagonal drum instead of directly on the pendentives.

The Fāṭimid Mausoleum at Quoz

Dated 514-525/1120-30. Fāṭimid period. The zone of transition is set on a drum. The drum has 16 sides externally and internally it is formed of 8 flutes only, it belongs to the 6 late Fāṭimid Mausoleum group.

The Mausoleum of Yaḥyā, Ash-Shabīh

Probably 12th c. The pendentives are identical with those of the Mausoleum of the Sayyida Ruqqayya. According to Creswell, it is more likely of the second quarter of the 12th c.

Shallāl

Dated Oct. 534/1139, late Fāṭimid period. There are six domed bays. The domes were approximately hemispherical and rested on squinches.

The Mashhād of the Sharīf Tabāṭabā

Dated 332/943, early Fāṭimid period. There are nine domed bays in front of the mihrāb.

IRAN

Damghan, Tārīk Khāna Mosque

The mosque was built in the 8th c. ʿAbbāsid period. The central aisle is broader and higher than the others.

Isfahan, Great Mosque

According to an inscription on the sanctuary dome, it was built in the 11th c. The date the dome gives is 481-482/1088/9. The cupola is made of brick and the zone of transition is resting upon plastered arcades. The dome has interesting foliate ornament in carved stucco. The dome measures 49 ft. in diameter. The restoration of the mosque was carried out under the Seljūq Sultan Malik Shāh. There is a rectangular enclosed sahn.

Gulpaygan, Great Mosque

The Great Mosque was built between 498/1104 and 511/1117, Seljūq period, by Abū Shujaʿ Muḥammad and its diameter is 12m. The squinches have multiplied into decorative muqarnas. The dome is slightly tapering and it rests on thick, massive brick piers joined by arches. The squinches are not visible from the outside.

Zavareh, Friday Mosque

This mosque was built in 530-531/1135-6, in the Seljūq period. The dome measures 7.45 m. in diameter and it

rests squarely on its base, supported by exteriorized squinches.

Ardistan, Great Mosque

The dome chamber of this mosque dates 11th c. or late 10th c. Seljūq period. Squinches are employed for the zone of transition. The interior of the dome structure is rich, while the exterior consists of massive cubiform surfaces composed of compact brickwork. The dome tapers slightly and rests on a cubiform base with an octagonal transition zone.

Qazvin, The Great Mosque

The 'mosque kiosk' was incorporated into the madrasa in the late 11th c. early 12th c. The dome was supported by squinches and wall arches.

Riza 'Iya (Urmiya), Masjid-i-Jāmi^{c}

It was built in 676/1277. The dome is shallow and is pointed. It rests on a 16-sided zone of transition. The upper section of the chamber and the zone of transition are pierced with large windows.

Ashtarjan, Masjid-i-Jāmi

The Masjid-i-Jāmi^{c} was built in 715-6/1315-6 in the Mongol period. The exterior and the interior of the dome surfaces are not parallel; the inner surface is ovoid, while the outer rises to a definite point.

Veramin, Friday Mosque

The Friday Mosque was built in 733-737/1332-6, during the Mongol period. The ratio of the building to the size of the dome is such, that the dome dominates overall. The octagon is pierced with windows and the squinches are masked. The squinches are of the old simple arch type. The dome is superimposed on a very definite zone of transition.

Yazd, Masjid-i-Jāmi[e]

The inscription gives the date of 777/1375. Muzaffarid period. The squinch is masked, and the rear panel of squinches are pierced for illumination. The contour of the dome is inconspicuous.

Mashhād, Mosque of Gawhar Shād

Built in 821/1418, Tīmūrid period. The dome is bulbous and is upported by a low drum on 2 squares. The squinches spring from the angles of the chamber to support a concave hexa-decagonal concave cornice.

Tabriz, Blue Mosque

Built in 870/1465, Turmen period. The sanctuary chamber was octagonal and its dome was supported by means of 8 open arches. The mosque does not have a sahn.

Isfahan, Masjid-i-Shāh

The mosque was built in 1021-1047/1612-37, Ṣafavid period. It has a large dome, but gracious. The decoration is splendid; a great sunburst medallion.

Isfahān, Mosque of Shayk Lutfallāh

This mosque was built in 1027/1617, Ṣafavid period. The dome rests on squinches rising directly from the floor. The pointed arches are outlined by turquoise twisted moulding framing a number of inlays. The interior of the dome is decorated with lozenges. The diameter of the dome is 12.8 m, and it has a single shell. The squinch arches are connected to the adjacent wall panels by pendentive like panels. The residential panels above the arches forming the secondary zone of transition bring the wall forward to the drum of the dome.

IRAQ

The Friday Mosque of Al-Manṣūr

The Friday Mosque was built in 766 A.D. or 149H in the ʿAbbāsid period. Probably there was a wooden dome over the maqsura, but the roofing was flat.

The Imām Dur Mashhād, Sāmarrā

It was finished around 482-83H, 1089 A.D. Uquaylid period. The dome covers the octagon produced by 4 corner niches in the 3rd storey. Eight arcades with little windows and several conchs constitutes the zone of transition.

Jirdis, Jami 'Nabī

This small mosque was built in the 12th c., 'Abbāsid period. It has a slightly pointed dome on the exterior caps a tall drum with engaged columns.

INDIA

Delhi, Quwwat Al-Islam Mosque

The mosque was built in 594/1197, Slave period or 696-716/1296-1316. The dome was constructed with traditional techniques of the Hindus; corbelled arches with agee profile, and the domes constructed as shallow corbelled vaults.

Delhi, Ajmer Mosque

It was built in 596-597/1199-1200, Slave period. There are 5 domes in the sanctuary. They are not domes in reality, but filled in exteriors of the corbelled ceilings brought about on a mandapa plan. Each dome covers the equivalent of 9 bays, and each is carried on a set of columns forming an octagon. Between the angles of the octagon and the rim of the dome are inserted flat slabs to cover the overhang.

Delhi, Jamatkhānanā Masjid, Nizāmmudīn

The masjid was built in c. 710-716/1310-16, by 'Allauddīn Khaljī, Tuqluq period. The nave is covered by a single semi-circle dome.

Begumpuri Masjid

It was built in c. 744/1343, Tuqluq period. There is a dome which covers the nave. It is hidden by a pylon. The dome might have been glazed.

Gulbargā, Friday Mosque

It was built in 769/1367, Deccan sultanate. The mosque is composed entirely of domes and arches, almost devoid of ornament. The main dome can be lifted for ventilation purpose. The larger dome in front of the mihrāb bay stands on a square plinth.

Delhi, Kalan Masjid Nizāmmudīn

It was built in 772-773/1370-71 Tuqluq period. The square bays of the sanctuary are covered by cupolas.

Delhi, Jlirki Mosque

This mosque is dated c. 777/1375, built by Telingani, Kahni-i-Jahān Magbul Snr., Tuqluq period. The cupolas are semi-circular, but externally they are pointed.

Delhi, Shirki Mosque

It was built in 777/1375, Tuqluq period. Each corner and intersection is marked by a cluster of 9 small domes.

Jaunpur, Atala Mosque

The Atala mosque was built in 778-869/1376-1464 or in the Sharqi period, 873/1408. The oblong nave had been converted into a square by massive projecting corbels from the piers of the side walls and the corners and it is roofed by a dome. The zone of transition is achieved by squinches, which have receding planes with fringe of flower-buds. The dome is concealed.

Gaur, Tintipara Mosque

Built in 885/1480 by Mirsad Than. It had corbelled brick pendentives, which originally supported 10 domes, including 2 in front of 5 mihrābs.

Delhi, Moth-Ki-Masjid

This masjid was built in 906/1500 A.D., Afghan period or Dodi period. The whole masjid is superimposed by 3 symmetrical domes on the skyline.

Fatehpur Sikri, Friday Mosque

Built in 979/1571, Mughal period. The prayer hall has separate enclosure sanctuaries each surmounted by a dome and linked arches. There is a central sahn.

Jaunpur, Lāl-Darwāza Masjid

It was built in 844-861/1440-56, Sharqi period. The dome is supported on massive diagonal beams covering the square hall into an octagon above. The dome is concealed by a pylon.

Jaunpur, Jāmi' Masjid

The Jāmi' Masjid was built in 875/1470, by Hussain Shāh. There are brave vaults in the sanctuary, but they do not abut against the central dome. The space between the flanking vaults and the dome is occupied by 2-storied zenana galleries.

Delhi, Friday Mosque

The Friday Mosque was built in 1054-1069/1644-58, Mughal period. It has three white marble domes, which are bulbous and are raised on their drums and are set well back from the raised central iwan.

AFGHANISTAN

Lashkari Bazar, Great Mosque

The mosque was probably built in the first half of the 11th c., Ghaznavid period. The dome was supported by four rectangular piers made of brick. The dome spanned the width of two aisles in front of the mihrāb. The restored mosque has a dome which was reduced in size.

PAKISTAN

Lahore, Wazīr Khān Mosque

It was built in 1044/1634, Mughal period. The mihrāb dome is flanked by another two on either side.

Tatta, Friday Mosque

The Friday Mosque was built in 1054/1644, Mughal period. The dome is supported on a series of interesting arches forming squinch nets. It is covered in glazed tilework. There is a central medallion, stellar patterns and constellation of stars.

Lahore, Badshamt Mosque

The mosque was built in 1084-5/1673-4, Mughal period. There are three sanctuaries with domed mihrāb, the main one is covered by a larger dome which is bulbous.

ANATOLIA

Siirt, Great Mosque

The date given for its erection is 524/1129 A.D. Seljūq period. The original structure had a dome on squinches resting on 4 brick piers. There is no sahn.

Urfa, Great Mosque

It was built in 550-1/1155-6, Seljūq period. There is a modest dome over the mihrāb on squinches.

Harput, Great Mosque

The mosque was built in 551-2/1156-7 A.D. Seljūq period. The diameter of the dome measures 8m. There is also a rectangular ṣaḥn.

The Mosque at Mayyāfāriqīn (Silvân)

This mosque was built in 552/1157 A.D. Artuqids. The dome measures 13.5 m in diameter and rests on stalactite squinches.

Nigde, Mosque of 'Alā Al-Dīn

This mosque was built in 620/1223, Seljūq period. The miḥrāb dome rests on squinches with stalactite insets. It was constructed by Bishara bin'Abd Allah.

Erzurum, Great Mosque

The Great Mosque was built by Abū'l-Fatḥ Muḥammad in 575/1179, Saltukid period. The original large dome with pendentives used to rest on light pointed arches with stepped mouldings. This dome was replaced by a wooden one. There is no ṣaḥn.

Beyşehir, Eshrefoghlu Mosque

The mosque was built in 699/1299 A.D. or in 697/1297, Beylik period. The miḥrāb dome is faced with glazed brick tiles with lozenge patterns. On the exterior the

mihrāb dome is defined by a pyramidal dome. There is no sahn.

Bitlis, Great Mosque

The Great Mosque was built in 545/1150 Artuqid period. The mihrab dome is covered by a conical roof on the exterior. The dome itself is small in size. There is no sahn.

Dunaysir, Great Mosque

The Great Mosque was built in 601/1204 A.D. The mihrāb dome has a diameter of 9.75m and squinches each different from the other. There is no sahn.

Malatya, Great Mosque

The Great Mosque was built in 621/1224. The brick dome is supported on an octagonal drum with tripartite squinches. Inside, the bricks are arranged in the form of a spiral, with a 6-pointed interlacing star in the centre. There is a sahn.

Divriği Mosque

It was built in 626-7/1228-9, Mengujekid period. The mihrāb dome is a 12 ribbed dome, encased in a dodecahedronal stone cap.

Van, Great Mosque

The mosque was built in 792-3/1389-1400. The dome measures about 9m in diameter, it rested on a zone of stalactite squinches, each with different style of decoration and was supported by the mihrāb wall and 5 piers.

TURKEY

The Great Mosque of Cizre

This mosques was built in 550/1155. The dome in front of the mihrāb has a diameter which is equal to the depth of two aisles.

Konya, Mosque of 'Alā Ad-Dīn

It is believed to have been built by Mas'ud before 550/1155. Seljūq period. The western section has a dome before the mihrab, in the Damascus manner. There is no sahn.

Amasya, Burmali Minare Mosque

The mosque was built in 635-644/1237-46. There are three successive domes lengthwise along the nave.

Amasya, Gök Madrasa Mosque

It was built in the 3rd quarter of the 13th c. It has a triple dome scheme. The upper structure consists of a

series of triple-domed units arranged longitudinally and transversely, with vaulted bays between them.

Bileçik, Orhan Gazi Cami

The Cami was built in the 14th c. The mihrāb dome measures 16.5 m in height. The dome itself is 6 m high, the wall is 10.5 m, measuring 16.5 m from the floor to the crown of the dome, which is close to the golden mean. THe dome is slightly elliptical and is set on an octagonal drum on broken pendentives and not on triangles.

Kastamonu Kus Mosque

This mosque was built in 754/1353. The dome is 8.5 m and is carried on semi-circular squinches. There is an upper window in the middle casement on the east and west and one on each side of the octagonal drum of the main dome.

The Mosque of ʿĪsā Bek

This mosque was built in 776/1374 Seljūq period. The dome has triangular pendentives which are decorated in geometrical patterns. The drum is not octagonal, and there are fragments of stalactite fillings in turquoise faience. There is another dome in front of the mihrāb dome. The architect was ʿAlī ibn al-Dimishqī. There is an arcaded sahn.

Iznik, Yeşil Cami

The Cami was built in 780-794/1378-1391. The drums of the domes are exposed internally. Part of the weight of the main dome is supported on columns. The dome is 5 m high. The diameter of the dome is 11 m and is carried on a belt of triangles. The ratio of dome height to total height is close to the golden mean, which is related to the concept of the perfect circle in a perfect square.

Bursa, Great Mosque

It was built in 736/1335, Ottoman period. The dome measures 13.5 m. It is set on a band of triangles broken by 8 windows.

Bursa, Ulu Cami

The Cami was started in 774/1372 and finished in 824/1421. Each of the twenty bays are covered by a dome. Instead of a sahn the first bay back from the centre front has a lantern in its dome.

Bursa, Yeşil Cami

Built in 828/1424. There is a dome covering the whole of the prayer area. In the ante room there is a fountain. There is no sahn.

Amasya, Mosque of Beyâzit Paşa

The mosque was built in the early Ottoman period, 817-822/1414-19.

Insmi, Hoca Yadigar Cami

This Cami was built in 776/1374. The dome is carried on pendentives. On the outside there is an octagonal drum which carried a tent-like roof.

Edirne, Üç Şerefeli Mosque

This mosque was built in the Ottoman period in 842-851/1438-47. The dome is more than 24 m in diameter. It rises from a belt of triangular pendentives, similar to the Bursa mosque.

Manisa, Muradiye Complex

The complex was built in 995/1586 Ottoman period by Sinan. The central cube supporting the dome is muted by pendentives.

Istanbul, Complex of Şehzâde Mehmet

Built in the mid 16th c., Ottoman period. The mosque is centrally domed and it is supported by 4 half domes. Sinan's first major work.

Istanbul, Complex of Suleymaniye

It was built in 957-965/1550-7. The dome is 53 m high and it is the largest in the complex. There is no ṣaḥn.

Edirne, Complex of Selimiye

The complex was built in 977-983/1569-75, Ottoman period. This is the ultimate expression of the domed square.

Istanbul, Nurosmaniye Complex

This complex was built in the 18th c. Ottoman period. The dome buttresses are curved and the muqarnas vaults are planned, still the mosque is a domed square. The dome is 25 m in diameter.

The Mosque of Kayseri

There are two domes, one in front of the mihrâb. This dome is old.

SOVIET CENTRAL ASIA

Bukhāra, Tomb of the Sāmānids

It originates from the Samanid period, 10th c. The transition from a square to the dome more than 7 m. in diameter is achieved by a corner arch. There is an internal gallery running around the drum of the dome, expressed on the outside by a series of arcades, concealing the lower part of the dome.

Samarkand, Bībī Khānum Mosque

The mosque was built in 802/1399, Tīmūrid period. The dome is unique.

HUNGARY

Siklós, Malkoç Bey Cami

The Cami was built in the 16th c., Ottoman period. Originally the square building was covered with a hemispheric dome on a drum. The drum was segmented by springing back the wall face, thereby creating a cornice. At the joint of the surrounding walls and the drum, the angles were covered with slightly tapering masonry filling.

Pécs, Ghâzi Kâsim Pasha Cami

Built in the 16th c., Ottoman period. The cupolas were made out of bluish coloured stone. It has one high dome. The hemispheric dome rests on an octagonal drum. The drum and the building is crowned by a segmented cornice. Above the vault there is a two-tiered stalactite cornice. The corner arches above the pendentives are also supported on stalactite consols.

Pécs, Yakovali Hassan Pasha Cami

Built in the second half of the 16th c. The cupola rests on an octagonal drum. The corner arches are supported by simple stalactite consoles. The joint of the drum and the hemispherical cupola is marked by a belt of broken keel arches. The cupola and the drum is decorated by floral patterns.

Szigetvár, Ali Pashi Cami

The cami was built in the 16th c. 997H. The dome was covered with lead, it is hemispherical and is resting on a drum. The drum is pierced on every side by painted arched windows. The transition zone is achieved by stalactite arches.

Buda, Toighun Pasha Cami

It was built approximately in the middle of the 16th c., Ottoman period. The dome rested on a drum. The drum was pierced by windows. The dome was covered by either lead or tiles.

Pécs, Ferhad Pasha Cami

It was built in the last decades of the 16th c. The cupola rested on a drum. The transition was achieved by means of corner stalactites in various forms. The consols which supported the corner archers were on a triangular base and were decorated with stucco stalactites.