

# **Muslim Architecture under The Abbasid Patronage (750-892AD)**

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# MUSLIM ARCHITECTURE UNDER THE ABBASSID PATRONAGE (750-892AD)

Descending from Al-Abbass, the uncle of the Prophet Muhammed (pbuh), these Abbassid emirs established the second major Islamic dynasty under which Muslim Caliphate reached its highest development. As efforts of spreading Islam receded, these Emirs embarked on an enlightenment mission consisting essentially of the spread of knowledge and elaboration of technical and artistic works. The Abbassids became patrons of a number of gigantic construction projects extending from large mosques and complex palaces to large-scale urban design and city planning, and consequently they played a fundamental role in the development of city planning and its architecture.

This article examines major architectural and urban works of this dynasty highlighting their main innovative signs. It starts with a brief historical background on the socio-political changes they introduced, then explores their major architectural and urban achievement. Finally, a summary of the key innovative elements of Abbassids' architecture is given.

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## 1. Introduction

The arrival of the Abbassids to the throne of Caliphate introduced upheaval in the socio-economic and political life of the Muslim world. That period was renowned for the establishment of intellectual base as Abbassid Emirs nurtured education and learning and founded numerous libraries<sup>1</sup>. Translation work reached its zenith as Muslims embarked on an unprecedented intellectual mission, first through a learning process based on acquiring existing knowledge from other cultures which played a significant role in the making of Muslim knowledge. This period brought to us great translators such as Ibn-al-Muqaffa (d.756), of Persian origin, translated the book of fables "*Kalila wa Dimna*" from Pahlavi into Arabic, and the biographies of Persian kings (*Sirat Muluk al-Ajjam*). Al-Fazari (c.771) translated the Hindu treatise on astronomy the "*Siddhanta*" (Sind Hind). He also compiled the Sassanid astronomical tables (*al-Zij*), and was the first Muslim to construct an astrolabe. The famous Hunayn Ibn Ishaq translated most of Greek works in medicine, philosophy and mathematics, namely works of Aristotle and Galen. Thabet Ibn Qurra (825-901) translated, among numerous works, "*Archimedes*" and "*Apollonius*" of Parga who was famous in geometry and mechanics. He also translated "*Almagest*" of Ptolemy, "*Elements*" of Euclid as well as other works of Theodosius. The result of this hard work generated an academic wealth which enriched the Muslim library, eventually reaching in Spain up to 400,000 volumes at the time of the Caliph Al-Hakem II (961-976). By mid tenth century most of existing Greek and Hellenic works were translated into Arabic. These efforts had influenced the scientific attainment of Muslims which reached its apogee in the tenth and eleventh centuries. In later stages Europeans substantially benefited from their knowledge as well as their translations.

In political terms, the Abbassids' connection with Persia broke traditional Syrian link, giving the former more influence in shaping various aspects of Muslim life. Persia contributed militarily to the succession of the Abbassids especially under the leadership of Abu Muslim, later al-Ma'mun<sup>2</sup> led the coup d'état against

his brother al-Amin (in 813) from his residence in Merv (Persia). In these conditions, we can foresee a possible reason why the Muslim capital was moved from Damascus to Baghdad, nearer to Persia. Furthermore, the strategic location of Baghdad in the midst of the rich and populated Mesopotamia and as a crossroads of the ancient trade routes between Africa, Asia and Europe must have been a decisive factor for its choice as the new capital. Consequently, wealth was accumulated in this city providing an opportunity for the Abbassid Caliphs to develop a lavish taste and lifestyle which reached its peak under Harun Al-Rashid<sup>3</sup>. This was so impressive that Abbassid's religious and political rival in Byzantium tried to emulate such elegance. Historic sources show that in 830 a Byzantine envoy went to Baghdad where he was so impressed by the splendour of Abbassid architecture that on his return to Constantinople he persuaded the Emperor Theophilos (829-842) to build a palace exactly like the ones he had seen. The palace was built at Bryas, now Maltepe (Hattstein and Delius, 2000). It should be interesting to note that Ziryab (789-857), the famous musician who spread the high culture in Cordoba, and later in "Europe", setting the standard of dress, table manners, protocol, etiquette and even the coiffures of men and women was an Abbassid migrant from Baghdad.

Meanwhile, the Persian closeness increased the influence of Persian and Sassanian Royal architecture leaving strong fingerprints on much of the character of princial palaces and buildings and later extending to the general art of that period.

## 2. Ceremonial Gates of the Abbassids

Among the features of the new elaborate lifestyle that had a great impact on the architecture of this period was the ceremonial attitudes of the Abbassid Emirs which led to the spread of monumental gates and *Iwans*. These displayed the power of the Caliph and were reminders of his achievement and authority which were hoped to gain the respect (and allegiance) of the subjects as well as maintain his legacy after his death. In this respect, Baghdad had four large gates celebrating the achievement of the city and its founder Al-Mansur (754-775). The gates were about 25 meters high and comprised a bent entrance passage giving extra protection against attacks (Blair and Bloom, 2000, p.96). The top of these gates consisted of chambers crowned with golden domes and accessed through staircases or ramps. These rooms were used by the Caliph as audience halls to wait for approaching special dignitary guests as well as for their departure. Others suggested that these audience halls were also designed to accommodate a large garrison (Scerrato (1980, p.32).

Another example of these ceremonial gates was the Baghdad Gate at Raqqa (Syria), built by Al-Mansur<sup>4</sup> (754-775). This impressive structure was wholly built with baked brick and its entrance was covered with a pointed barrel vault framed by two large niches and decorated with ornamental brickwork (Creswell, 1959). The pointed arch here was struck from four centres and the higher section of the gate was decorated with niches of polylobed arches, a feature which became common in Samara and later became popular decorative themes in Muslim architecture.

Bab Al-Amma of Samara built by Al-Mutawakkil between 836-837 is a third example exceeding the fame and grandiose of the above gates (**figure 1**). This structure served as palace entrance (for Jusak Al-Khaqani) as well as public audience hall and in its central iwan the canopy of the throne was laid down (*sidilla*). The stucco decoration showed the princial taste and displayed the Caliphal power. Its ornament as reconstructed by Herzfeld (1923) resembled those found in Meshatta and consisted of vine scrolls. The

dado stucco of the great *iwan* of the gate consisted of six lobed rosettes separated with triangles, also resembling those of Meshatta, while its frontal arch was decorated with a series of eight lobed rosettes contained within two borders of vine stalks loops. These rosettes greatly resembled the rose window of 13<sup>th</sup> century gothic churches of Europe, and western scholars admitted this influence (see Otto-von-Simson (1956).

The other feature associated with the use of gates and porches was the introduction of a ceremonial tradition where the Emirs appeared before their subjects from a window (the window of appearances) above the main entrance of their palace (Kritzeck, 1959).



**Figure 1: Bab Alamma, Samara (836/37) with its three iwans.**

Source: Hattstein and Delius (2000), p.97

### 3. City Design and Planning of the Abbassids

The Abbassid period is characterised by large-scale design and city planning. In addition to their famous cities of Baghdad (762) and Samara (836), the Abbassids founded the settlement of Al-Rafiq in northern Syria which was named as the Companion of Raqqa city. Al-Rafiq was built in 772 by Al-Mansur, remodelled on Baghdad in its circular plan and protected by massive wall reaching about 5 kilometres in length and incorporating some 132 round towers. From these fortifications, three gates were opened leading inside the enclosure toward the Friday Mosque which stood at the central place. In relation to Raqqa, there is no confirmation about the date it was built or its founder although Rice (1979) thought it was Abbassid from the circular plan. It is known that Harun Al-Rashid temporarily made it his capital between 796 and 808 and undertook numerous works including improving the city's fortifications and the construction of residential quarter to the north (Blair & bloom, 2000). However, if Raqqa existed before Al-Rafiq as indicated above, then Rice's theory would confirm Creswell (1959) suggestion that Al-Mansur was the founder of Raqqa in addition to Baghdad and Al-Rafiq. It is worth mentioning that the defensive work of Raqqa displayed some of the design and building techniques that were brought to the West by crusaders and consisting of the oblique approach (Rice (1979, p29). These cities, in addition to old ones, played leading roles in world trade, commerce and learning. The circular city of Baghdad and its buildings formed the scene for many tales of Harun Al-Rashid and the Arabian nights. Unfortunately, no remains of its wonders are left as the city was ravaged and entirely erased by the Moguls and their Christian allies in 13th century (1258). Samara was founded by the Caliph Al-Mutasim in the first half of the 9th century. This was in the form of a compound consisting of barracks for his Turkish troops, a palace and a mosque. Its layout

provides an insight into Muslim concepts of city planning and morphology while the ruins of its mosques serve as specimen for the next major edifices in the chronology of mosques, after the Ummayyad. (For details on Abbassid cities see forthcoming articles).

#### 4. The Abbassid Mosques

The building enthusiasm of the Abbassids took a new dimension in the construction of mosques as reflected in their size and character. As mentioned previously, unlike the Umayyads who continued the stone tradition of Syria, the Abbassids adopted the Mesopotamian tradition of mud and baked brick construction often arranged in decorative manner or carved and moulded with geometric and vegetal designs (Blair & Bloom (2000). Furthermore, the minaret of the Abbassids with its monumental character and size undertook another function, in addition to the call of prayers, consisting of advertising the presence of the Friday mosque from afar and sometimes used as landmark providing a sense of direction for travellers as the case of the minaret of Mujda (778)<sup>5</sup> (Creswell, 1959). The symbolic significance cannot be ruled out as these towers expressed the prominent role of the mosque in the Abbassid society as well as a public display of the power of the Caliph.

##### 4.1 Al-Aqsa Mosque

The earliest major mosque construction undertaken by the Abbassids was the rebuilding of Al-Aqsa. The mosque was originally built by Omar (the second Caliph) in 634, but extended and improved upon by a number of Umayyad Caliphs especially Al-Walid. After its destruction by the earthquake of 747-748 the Abbassid Caliph al-Mahdi (775-785) rebuilt it in 780 and according to Creswell (1959) the mosque retained this plan to present times<sup>6</sup>. Al Aqsa is the second holiest mesjid in Islam after the Kaaba and Medinah. Religiously, the platform upon which is constructed is referred to in the Quran and it is also the location from where the ascension of Prophet Muhammed took place. Al-Muqaddisi (10th century) describes Al-Aqsa as follows:

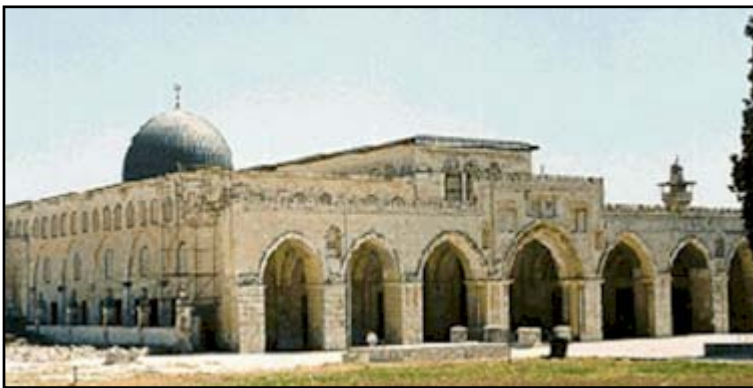
*"the mosque had a building lofty central nave leading to the Mihrab and covered by a trussed timber roof. The nave had a width measured by 15 places of worshippers. In front of the Mihrab, the space was covered by a great dome of bigger diameter than today's and had four minarets projecting high in the sky."* (Richmond, 1926)

On the sides of the nave there were 14 aisles, seven for each side divided by arcades each consisting of eleven pointed arches (**figure 2**). The access to the nave was on the main gate on the north, as well as from numerous secondary doors (7 doors on left and right sides of the nave, and 11 on its eastern side). The major Abbassid addition was the introduction of the arcaded portico in the northern, western and southern side to protect the faithful from winter rain and summer heat as well as sheltering the poor and travellers. The other feature introduced by the Abbassids was the unusual shape of its plan by running the aisles of the sanctuary from North to South parallel to the central nave and intersecting them with the qibla in the Mihrab area forming a T shape. This space configuration was also adopted in North Africa in Quairawan Mosque (Tunisia) (836) and later in mosques of Samara; Al-Mutawwakil Mosque (848/849) and Abu-Dullaf (860). There are suggestions which consider this spatial arrangement to be derived from the Christian cross plan of the church but there is a little evidence of that especially if we knew that the spread of cross as well T planned churches took place only since the 11th and 12th century Romanesque and later Gothic Europe.



## 4.2 Transfer of the Pointed Arch to Europe

In relation to the transfer of the pointed arch to Europe we find historic sources indicating that at the first crusade of 1099 and after the fall of Palastine in the hands of the crusaders, crusading leaders held their first meeting in the Dome of the Rock Mosque. This was to settle their differences and intimidate the defeated Muslims. Those leaders who were interested in architecture could not escape noticing the beauty of both the Dome of the Rock and Al-Aqsa pointed arcades and brought it back with them when they returned to Europe (Lethaby, 1904).



**Figure 2: Leaders of the crusade of 1099 noticed the elegance and practicalities of the pointed arch in Al-Aqsa as well as in the Dome of the Rock and subsequently adopted it in their constructions in Europe.**

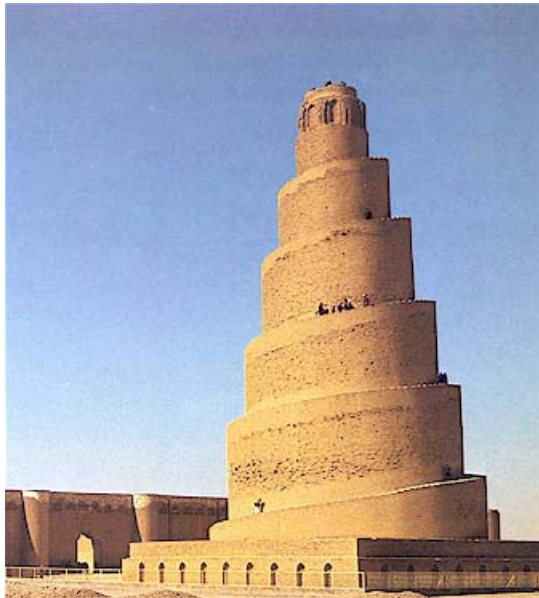
## 4.3 The Mosques of Samara

The next major Abbassid building was the central mosque of Al-Mutawakkil (Samara) which was erected between 848 and 849 (some 140 years after the Umayyad Mosque in Damascus) and was, until recently, considered the world largest<sup>7</sup> with an area of 109 acres and containing some 25 aisles "riwaqs" separated by octagonal piers supporting the teakwood beamed roof. These colonnades run from north to south in the direction of Makka as in the Aqsa Mosque, and not across that direction as in Damascus. These features form the T plan discussed above. The uniqueness of this mosque reveals a new design and architectural techniques showing a great deal of ingenuity and innovation (Creswell, 1959).

Among these peculiarities is the absence of the Mihrab which has been substituted with three arched openings with the central arch being wider than the rest. The external wall, of baked brick and incorporating semicircular buttresses, was decorated with square panels and circular medallions in their centre. The helical minaret al-Malwiya, as it became known, consisted of spiral tower, which stood on its own on the north outside the enclosure wall in an unprecedented fashion (**figure 3**). A number of windows were carefully placed on the enclosure and spanned by cinqfoil arches.

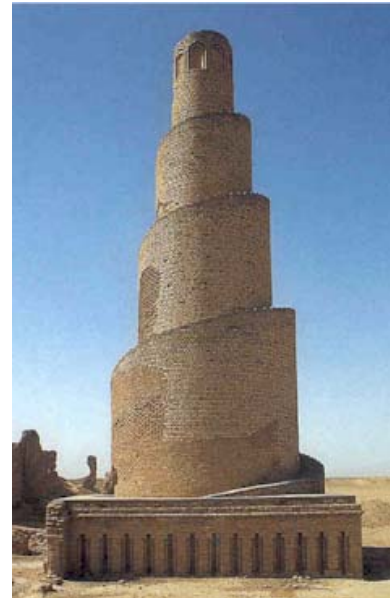
This is again the first appearance of this motif which soon afterwards reached Muslim Cordoba and from there entered Europe where it became a predominant feature in Gothic architecture. Rivoira (1918) claimed that these multifoil arches appeared first in India, then transmitted to Samara and to the rest of Muslim land including Spain (Cordoba Mosque) and Sicily and then to Europe. Richmond (1926) hypothesised that these innovations were due to the contact of Muslims with Mesopotamia and Asia where such features were more common. He pointed out that these changes also mark the break from the Syrian building and artistic

tradition that reigned before and during the Ummayyad period<sup>8</sup>. The substitution of antique columns to carry arcades with brick piers in Al-Mutawwakil Mosque was also the first recorded instance at least 150 years before its adoption in Europe<sup>9</sup>. These were octagonal in form on a square base, and have four circular or octagonal marble shafts to each pier. The shafts were joined with metal dowels and had bell shaped capitals.



**Figure 3: Al-Malwiya Minaret of the Great Mosque, Samara (848/49)**

Source: Hattstein and Delius (2000), p.105



**Figure 4: Minaret of Abu Dulaf Mosque, Samara (860/61)**

Source: Scerrato (1980), p.35

These features were re-employed by Al-Mutawakkil in his second most important mosque, Abu Dulaf (Samara, 860/61) (figure 4), which also adopted the features found in the Abbassid plan of Al-Aqsa Mosque. Here, the sanctuary consisted of 17 aisles perpendicular to the Qibla wall and Mihrab but they connected with two naves running parallel to the Qibla and forming the T shape discussed earlier.

#### 4.4. Ibn Tulun Mosque

Mosques that followed incorporated these innovations in combination with architectural elements of previous mosques. Ahmed Ibn Tulun, a soldier among the troops of Samara who was promoted to Emir of Egypt, built his mosque in Fustat, (Cairo 876) in the same fashion as Samara Mosques. According to Al-Maqrisi, this Mosque was designed by an Egyptian architect and consisted of a sanctuary which occupies the eastern side of the enclosure with six aisles divided by five arcades of pointed arches carrying the roof. Each arcade is carried on 16 robust piers of brick. These piers also appear in the courtyard carrying the two arcades of the cloister (figure 5). This was the first employment of piers outside Samara. The other feature was the systematic use of pointed arches which is regarded as the first recorded example although the pointed arch appeared earlier in Ukhaider Palace (below), the Alqsa Mosque (above), Ramlah Cistern (789) as well as Samara, but all these examples were Abbassid. This was at least two and a half centuries before it was introduced to Europe. Rice (1979) admitted this as he announced "*The pointed arch had already been used in Syria, but in the mosque of Ibn Tulun we have one of the earliest examples of its use on an*

*extensive scale, some centuries before it was exploited in the West by the Gothic architects*" (Rice, 1979, p.45). And according to the same theory, Ibn Tulun Mosque was also the means through which the pier was transmitted to Europe.

The other important feature, in Ibn Tulun Mosque, is decorative connected to the use of an advanced (to Samara) combination of geometrical and floral patterns (Arabesque) on the architrave of its arcades, which in the opinion of Richmond (1926) is also the earliest example found. Later, this feature became a prominent theme in most Muslim decorative art. Other innovations included the introduction of ornamental battlements which crowned the external walls and later became a prototype of Gothic pierced and crested parapets (Briggs, 1924). The transfer of these motifs to Europe according to Ibn Tulun's theory is manifest through the 11th century strong links the Fatimids had with Amalfitan and Venetian traders who often visited Cairo and this monument.



**Figure 5: Ibn Tulun Mosque (878) showing *sahn* and arcades of pointed arch.**

## 5. The Abbassid Palaces

Among the palaces built by Abbassid Caliphs and Emirs that attracted wide interest is the Ukhaidir Palace, a fortified living complex containing halls, courtyards, living apartments and a mosque. The palace, built between 774-775 by Isa ibn Musa<sup>10</sup> some 75 miles Southwest of Baghdad, was a masterpiece of architectural innovation, which had long lasting impact on the development of architecture. The architects and masons of Ukhaidir first introduced a new elaborate technique based on the construction of elliptical (pointed) barrel vaults with bricks in similar technique to building a wall and therefore considerably eased the way vaults were built (**figure 6**). The old tradition consisted of the use of a mixture of mortar and small stones and debris laid out on wooden base. Such method required a lot of wood not available in this arid region and building took considerable time to finish as masons had to wait for the vault to dry to move the scaffolding to another part of the building. This new technique, likely to have been introduced through Persian and Mesopotamian Muslims, provided adequate solutions to these issues. Further elaboration of the vault construction technique was made in the palace's mosque, through the use of flattened arches to support the brick vault, a technique which became later known as ribbed vaulting (Jairazbhoy, 1972). According to Marcais (1954) this method was also employed in Medinat Al-Zahra (10<sup>th</sup> century) in Andalusia. This achievement provided the foundations for the rise of Gothic architecture in Europe.



The other innovation was the first use of pointed arches seen later in Al-Aqsa and other Abbassid buildings as indicated above. The other original element introduced in Ukhaidir was decorative consisting of the use of blind arcading which appeared in the Northern façade of the Court of Honour. Again, this feature became an essential element in Muslim architectural decoration and later transmitted to Europe. Here, one has to point to the attitude of Western scholars which connect the use of blind arcading, as well as the origin of ribbed vaulting and a number of other features, to Lombard architects who are considered (by them) to be the main builders of Dark ages Europe, especially in the 10th and 11<sup>th</sup> centuries (see for example Porter, 1909). The appearance of this feature in Ukhaidir some 300 years earlier clearly denies such claims. Furthermore, for the majority of these scholars Lombardic architecture seems to provide the answer to the origin of medieval revival of Western architecture. I found a strong similarity between Lombardic buildings, especially around Italy, and Muslim buildings in both structural and decorative terms. A proper investigation, by Muslim scholars, in this subject is therefore urgently needed.

Another innovation in Ukhaidir was the introduction of the first fluted dome which appeared at the crossing beyond the main entrance and which later was adopted in Quairawan mosque. Finally, Ukhaidir elaborated the defensive technique found in Raqqa by introducing what's known as *chemin de ronde* along the ramparts. The introduction of arrow slits in its walls enabled defence against attackers. Meanwhile, the four gates, consisting each of a chamber with an inner wall and an outer portcullis which could be lowered in case of assault trapping the attackers inside, provided another defensive architectural technique, again transmitted to Europe through the crusaders.



**Figure 6: Ukhaidir Palace (720-800) showing the pointed arch and barrel vault of the Great Hall.**

Source: Hattstein and Delius (2000), p.100.

## 6. Abbassid architectural contribution

From this brief outline, one can appreciate the architectural changes developed by the Abbassids, which can be grouped in a number of key elements including the following.

- The pier as we have seen was first introduced in the Great Mosque of Al-Mutawakkil (Samara) and later spread through Ibn Tulun Mosque. The rejection of the traditional column was due to the shortage of columns as Muslim constructions stretched over an area involving three continents. The cost and effort involved in the transport of these columns was also another motivator for the invention of the pier. Sources indicate that first European adoption of the pier was in the beginning of the tenth century, inspired by Ibn Tulun.
- The extensive use of the pointed arch as well as the pointed vault as found in Ukhaidir was another major development. In case of Baghdad Gate at Raqqa, the introduction of the four centred pointed arch made of two rings one inside the other was a technical innovation. The introduction of the pointed arch to Europe did not take place until the 11th century when some Amalfitans familiar with Muslim architecture rebuilt Monte Cassino in Italy.
- The Al-Malwiya "helical" type of minaret symbolised a wish to desire to pry into the secrets of heaven. A sign of Muslim quest for knowledge which intensified under the Abbassid patronage.
- The polilobed form of archs appeared in the Abbasside Caliphate, in Samara, and largely in North Africa and Andalusia where it decorated most Moorish buildings especially Cordoba Mosque. Since the tenth century, Europeans fell in love with this form of arches and adopted it in their buildings, plans, and arts. The inspiration of Cordoba in this respect is well maintained.
- The extensive use of Umayyad six and eight lobed rosettes (**figure 7**) resulting in their dissemination in the Muslim world and later reached Europe in the form of six or eight lobed rosettes windows decorating the facades of most Christian churches.
- Finally Samara decorative styles which incorporated vegetal forms (especially vines) and abstract geometry paved the way for the development of Muslim arabesque.



**Figure 7: Stucco decoration from Samara showing a stucco panel of six lobed rosette.**

Source: Hattstein and Delius (2000)

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**Notes:**

<sup>1</sup> Such as the famous "*Bayt-al-Hikma*" (house of wisdom) which was set up by El-Mamoun (813-833).

<sup>2</sup> Al-Mamun's mother was also Persian

<sup>3</sup> Abu Nuwas (d.between 813-815) poetry can provide a glimpse of the luxury of this period.

<sup>4</sup> According to Herzfel (1948), it was built by Harun Al-Rashid (786-809)

<sup>5</sup> Built by Isa Ibn Musa around 778 halfway between Kufa and his Ukhaidir palace.

<sup>6</sup> There were other additions and modification carried out in successive periods, but here we are concerned solely with Abbassid works. For a complete view on Al-Aqsa, please consult our forthcoming articles.

<sup>7</sup> Today the largest mosque is Hassan II Mosque in Casablanca.

<sup>8</sup> Such views deny any Muslim creativity and always attempt to connect their achievement to previous civilisations and other cultures despite the lack of evidence.

<sup>9</sup> We remind the reader that building activity and techniques were at their lowest point at this time in Europe. The continent was in black intellectual and artistic recession known as the Dark Ages. Buildings were a few and mostly made of wood under the influence of the Barbarians. Roman building tradition was lost and relations with Byzantium in Constantinople were at their worst. The only proper contact with civilisation Europe had was with the Muslims by virtue of the above as well as the close proximity and trade exchange. In addition to the pointed arch, the introduction of the pier to Europe was the second major step towards the architectural recovery in the continent.

<sup>10</sup> A nephew of al-Mansur who was exiled by the Caliph due to a dispute about the succession to the throne.

**References:**

Creswell, K.A. (1958) '**A short account of early Muslim architecture**', Harmondsworth, Middlesex; Baltimore : Penguin Books.

Hattstein and Delius (2000) '**Islam Art and Architecture**', Konemann, Cologne.

Herzfel, E (1923) '**Die Ausgrabungen von Samara**', D. Reimer/E. Vohsen,. - (Forschungen zur Islamischen Kunst, Berlin.

Jairazbhoy, R. A. (1972) '**An outline of Islamic architecture**'. Asia Publishing House, Bombay & London.

Kritzeck, James (1959) 'The world of Islam : studies in honour of Philip K. Hitti', Macmillan. – London.

Lethaby, W.R. (1904) '**Medieval Art: from the peace of the church to the eve of the renaissance**', Duckworth and Co London, Charles Scribner's Sons New York, Vol.IV, pp100-111.

Marçais, G. (1954) '**L'architecture musulmane d'occident : Tunisie, Algérie, Maroc, Espagne et Sicily**', Arts et métiers graphiques, Paris.

Porter, K.A. (1909) '**Medieval Architecture, its origin and development**', Volume 1, the Baker &

Taylor Company, New York.

Rice, D.T. (1979) '**Islamic art**', Thames & Hudson, Norwich.

Richmond, E. T. (1926) '**Moslem Architecture; 623-1516 some causes and consequences**', The Royal Asiatic Society, London.

Rivoira G.T. (1918) '**Moslem Architecture: its origin and development**', translated by Rushforth, G. Oxford University Press.