

A review on

# Architecture in Muslim Spain and North Africa (756-1500AD)

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A REVIEW ON

# ARCHITECTURE IN MUSLIM SPAIN AND NORTH AFRICA

(756-1500AD)

## Abstract

The Islamisation of North Africa and Spain transformed their socio-cultural and economic structures from poverty and darkness to prosperity and enlightenment. This had engendered major advances in architecture and art. In building, this region, especially Andalusia, produced some of the world architectural masterpieces comprising a number of palaces, mosques and gardens. This article gives a brief historical background on the process of Islamisation of the region, explores the architectural achievement concentrating on important historical and architectural monuments and provides a summary of the main innovative elements and their impact on Muslim as well as European Medieval architecture.

## Architecture of Muslim Caliphate in North Africa

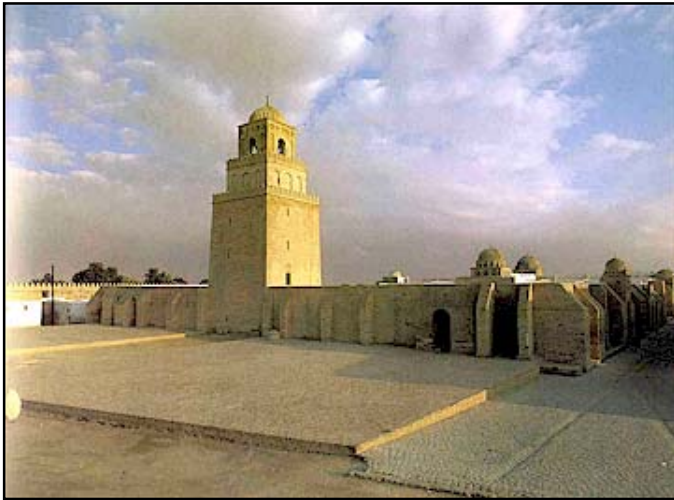
The arrival of Islam to North Africa at the hands of Uqba Ibn Nafi (d.683) annexed this region to the Caliphate in the East, becoming firstly part of the Umayyads and later a province of the Abbasids. This ex-Vandals ravaged region was steered to civilisation and prosperity quickly restoring its important position in the Mediterranean region and later gaining strategic significance in the Muslim world. North Africa was, and still, the main propagator of Islam in Europe, and through it Islam reached Spain in 726, Sicily in 827, Malta in 868, and Syracuse in 876 at the hands of the Aghlabids<sup>1</sup>. The strategic geo-political location at the crossroads between Muslim East and Europe made it a prosperous trade centre. The region became transformed into a construction field resulting in the elaboration and dissemination (to Europe) of building techniques and architectural forms.

## North Africa Influential Monuments

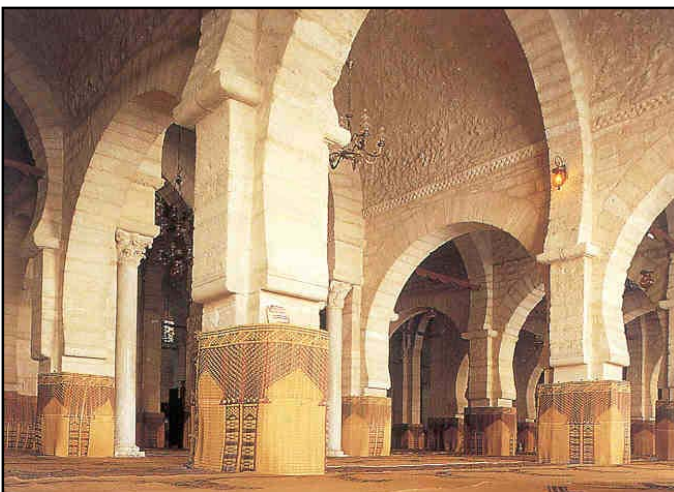
Perhaps the most important monument, and the oldest, is the Kairawan Mosque (670-675AD)<sup>2</sup> in Tunisia (**figure 1**). H. Saladin (1899) found the significance of the mosque in its irregular form as none of the angles being of right angle. Jairazbhoy, (1972) also gave similar importance to the plan, which consists of a large court surrounded by columns and horseshoe arches while the sanctuary (prayer hall) consists of 17 parallel aisles separated with arcades on rows of columns (believed to have been brought from Baghdad). These run to the end of the wall but stop before reaching the last bay. The central aisle is wider and at the *Mihrab* is covered by a dome, and here meets a transverse aisle running the entire width of the sanctuary, forming the T shape. This is believed to be the second instance of this peculiar layout, after the al-Aqsa Mosque plan outlined by the Abbasid Al-Mahdi in 780. This feature was later copied in the Great Mosque of Cordoba and Abu-Dulaf Mosque in Samara.

These features also dominated Aghlabid architecture and we can see them in the Great Mosque of Safax, built in 849 (rebuilt in 988), with the same T shape plan and the rectangular Minaret standing above the central axis of the prayer hall. In the Great Mosque of Sousse (850) we find peculiar features to the contemporary style of the time such as the use of pillars and masonry groin vaults producing an effect

lacking light and weightlessness of the usual mosque, but very similar to that atmosphere found in European Romanesque church of 11<sup>th</sup> and 12<sup>th</sup> centuries (**figure2**).



**Figure 1: Kairawan Mosque showing the rear side of the minaret.**



**Figure 2: The use of robust pillars and masonry groin vaults in Sousse Mosque produced the heavy atmosphere.**

Appearing firstly in the Great Umayyad Mosque of Damascus, the square tower (minaret) became a dominant feature of the North African Mosque. Under Banu Hammad, this minaret reached a cross section of 20 square metres and developed delicate ornamentation consisting of tripartite design as found in Qala (castle) of Banu Hammad 1007 (**figure 3**). The strong resemblance between this minaret and European square towers of the 11<sup>th</sup> and 12<sup>th</sup> centuries suggests some link which can be attributed to the influence of the Qala. However, deeper investigation is needed to confirm this. The other distinguishable period for the sophistication of the North African square towers came under the Almohads, the proclaimers of the oneness of God<sup>3</sup> (1130-1250). From their capitals Marrakesh (Morocco) and Seville (Spain). They took pride in the construction of mosques and paid particular attention to the minaret due to its symbolic significance. Historic sources revealed four examples of large squared minarets. The first three of these was designed a Moroccan named Jabir, at Kutubia Mosque which was built in 1158 in Marrakesh (**figure 4**). The minaret was 67.6 m high and 12.5 square meters with blind simple base, pairs of windows with horseshoe arch pierced

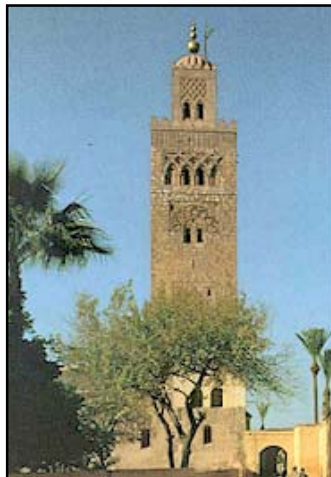
in the first floor and the following sections, and richly ornamented top sections. The other two sister minarets, also designed by Jabir, were the minaret of the Great Mosque of Seville (1172-1182) whose plan was remodelled from Kutubia Mosque, and the tower of Hasan Mosque in Rabat (1195-1196). In Seville, the whole structure does not differ greatly from that of Kutubia but the ornamentation details were significantly developed (**figure 5**). The intersecting multifoil arch décor system (known as *Shebka*) which appeared in Kutubia as single intersection line in the top section was extensively worn by the Giralda. Meanwhile, wooden balustrades in the form of balcony were introduced in front of each pair of windows of each section. By the conversion of the Mosque into a cathedral, after the Christian conquest, in late 16<sup>th</sup> century a belfry and other Christian baroque ornaments were added, and only the orange courtyard (Sahn) of the original mosque remains.

The impressive minaret of Hasan Mosque (1195/96) surpassed the above two examples by its enormous size (16 square meters and 80 m high) making it more like a tower than a minaret (**figure 6**). Although only three sections remain standing today, we find similar design and ornamental arrangements were applied here too, confirming the same inspirational origin.

The fourth example is more recent and found in the Great Mosque of Mansurah, in Telemcen (Algeria). The mosque was built between 1303-1336 by Abul-Hasan Ali who ruled Telemcen between 1331 and 1348. Commentators [such as Marcais (1954) and Hoag (1987)] asserted that the mosque was modelled on Hasan Mosque of Rabat in terms of size (197x 279 feet), the use of stone columns, and the Qibla wall proceeded with three parallel aisles while the remaining aisles were perpendicular to the Qibla. The minaret conformed with the other Almohad minarets, described above, but had a remarkably larger horseshoe gate (**figure 7**).



**Figure 3: Qala beni Hammad  
Minaret (Algeria 1007)**



**Figure 4: Kutubia Minaret  
(Morocco 1158)**



**Figure 5: La Giralda  
(Seville, Andalusia 1172-1182)**



**Figure 6: Tower of Hassan Mosque**  
Rabat (Morocco)



**Figure 7: Minaret of Mansurah Mosque**  
Telemcen (Algeria)

Although the North African minaret had enriched Muslim architecture, it had also influenced the towers of European churches. Male (1924) summed this influence in three main aspects; in the adoption of multi-section composition of the European tower, in the dual character of blind base and well ornamented upper sections, and in the flanking of the tower at the main entrance gate.

### **Architecture of Muslim Caliphate in Andalusia (Spain)**

The arrival of Abd-al-Rahman I to Spain in 756 brought it, as well as North Africa, security and prosperity. The environment became fertile for the growth of agricultural and industrial production. Trade opportunities increased substantially resulting in the accumulation of considerable wealth. This was consolidated by the Caliphs personal interest in science and their good taste for art and crafts. This was later reflected in considerable and outstanding output in intellectual as well as material production especially in arts and architecture. Within this intellectual environment and scientific attainment, artists, masons and architects pushed human creativity to its limits producing some of the most artistic wonders of the Muslim world.

### **Influential Andalusian Monuments**

As customary with Muslim Caliphs, the first important building they erected was the Mosque. In Andalusia, the Mosque of Cordoba (nucleus) was first founded by Abd-ar-Rahman I in 787. Its construction continued for a number of years as each succeeding Caliph added his contribution to the mosque in the form of restoration and extension, yet the building still preserved its unity and harmony as if it was built by one single person (**figure 8**). In terms of architectural and ornamental innovation, the Cordoba mosque introduced several features and techniques that became part of late Muslim architecture particularly in North Africa. The mosque introduced a fascinating technique (more elaborate than that of Quairawan) in extending the height of short columns to achieve a standard height of space (roof and ceiling). In the first

instance, architects of Abd-Al-Rahman I used super-imposed arcades of round arches while in Quairawan Mosque (in 836) this was achieved by stretching up the arch to the desired height. In 961, and under Al-Hakem II, a third technique was introduced in the Maqsura of Cordoba Great Mosque by using the super-imposed trefoil intersecting arches which added more decorative touch to this technique. Meanwhile, the substantial use of both horseshoe and polylobed arches in Cordoba was a source of inspiration for their European adoption. The next development was the use of ribbed domes. It was used in the *Maqsura* (erected between 961-968). This fashion consisted of adding ribs to the vault of the dome to give support to the structure as well as provide a fascinating internal decorative technique in the form of a rose formed by interlacing arches (ribs) (**figure 9**).

After this experience in Cordoba, the use of these ribbed domes extended in Andalusia. It was eventually employed in the majority of buildings including the famous Mosque of Bab Mardum built in 1000. Progressively, Muslims mastered this style and produced remarkable domes such as those found in Morocco, Telemcen and Isfahan. The popularity of this extended also to churches of Christian parts of Andalusia and then to Europe where the majority of domes adopted the Cordoban approach. Some academics, such as Lambert, Male, and Choisy firmly established that this Cordoban technique was the origin of the ribbed vaulting of the Gothic.

Another remarkable feature of this Mosque is its polychromy. The use of red and white coloured bricks, although its first use was the Dome of the Rock where an alternation of black and white was introduced. Its inclusion especially in the voussoirs of the arches of Cordoba Mosque produced a delightful atmosphere emphasising structural unity and aesthetic continuity. European visitors of the 9<sup>th</sup> and 10<sup>th</sup> centuries couldn't resist its overwhelming beauty and wasted no time in introducing it in their buildings.

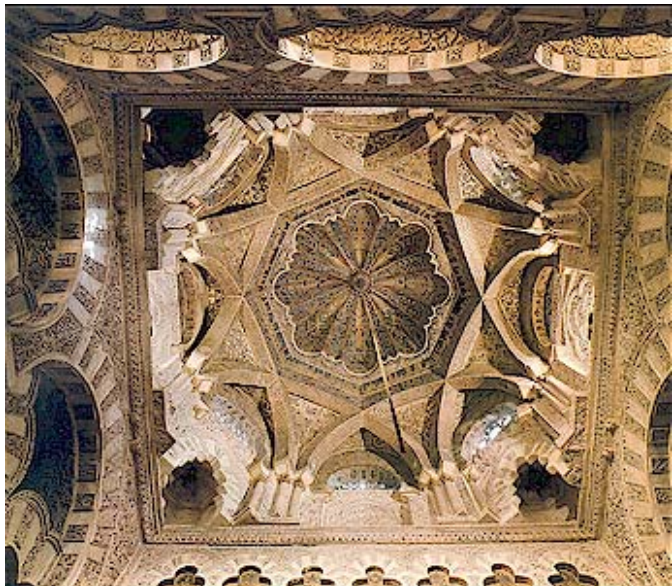
Medinat Al-Zahra was founded by "al-Nasir lidin-Allah", Abd-al-Rahman III who ruled Cordoba between 912-961. Beginning in 936, the town was slowly developed, mainly under Al-Hakem II (961 – 976), into a rectangular complex of about 875 by 1230 yards consisting of residential and administrative quarters enveloped within strong walls.

The town represented an urban unity defined by strong ramparts and composed of topographical as well as functional hierarchy reflecting the socio-economic and political status of the community. The area was organised in terraces descending towards the Wadi al-Kabir "Guadalquivir" valley and comprising a considerable number of gardens, pools, arcades, halls and housing complexes. The northern terrace, the highest, accommodated the Caliph's palace (Dar al-Mulk), which dominated the site and the plains beneath leading to the river. The power of the palace extended beyond the site to the whole of Andalusia and Europe.

The middle terrace accommodated the administrative buildings and palaces of important dignitaries and the Caliph's entourage. The most important buildings of this section were the house of the Prime Minister Jafar al-Mushafi who took this position in 961, and two major public reception halls; Dar al-Wuzara "House of Viziers" , and to the south the Caliphs' main reception hall (**figure 10**). The mosque laid beyond the middle terrace was built by 1000 craftsmen in record time of 48 days (Hattstein & Delius, 2000). The remaining part of the town, the lower terrace, was reserved for infantry and cavalry housing as well as ordinary citizen. It has yet to be excavated.



**Figure 8. Cordoba Mosque showing the intrusion of the Christian Church in its heart.**



**Figure 9. The dome over the Mihrab of the Mosque.**

Al-Zahra became renowned for its high advanced civilisation, style and protocol in addition to the extensively decorated walls, floors and ceilings of its buildings, which were depicted at least in two documentary occasions.

The legendary reception of King Ordone IV of Leon was held in 962. Historic sources described this famous event and what happened to the visiting Christian King. He arrived at the main entrance gate on the northern terrace situated near the large portico. As he entered, he was taken in an official royal procession through rows of guards, with their parade uniforms, lined up on the stone benches, which bordered the walls of the sloping streets. The procession went down to Dar al-Wuzara<sup>4</sup> (House of Viziers) where the king was asked to climb down from his horse and was taken inside for a short rest. Later, he continued on foot to the main Caliphal reception hall where the Caliph waited for him. At the end of the reception with the Caliph, the King went back to Dar al-Wuzara before departing to his country.

The second legendary reception was the one Abd al-Rahman III gave Johannes von Gorze, the monk ambassador of Emperor Otto I (962-973). Descriptions provided by Muslim writers are numerous, but the position of Al-Zahra cannot be better demonstrated than in Ibn Zaidun's poetry (1003-1070), especially the following verses:

**I have recalled you with longing in al-Zahra,  
Between limpid horizon and sweet face of earth whilst the breeze languished at sunset,  
almost diseased with pity for me.**

The city was destroyed in the civil war of 1010, which led to the emergence of *Taifa* Kingdoms. The state of ruin of Medinat Al-Zahra and the destruction of written documents made the task of assessing its contribution to Muslim and European world very difficult. However, there are suggestions that relate its influence on Europe to the spread of the horseshoe arch (in addition to Cordoba Mosque), as well the spread of Royal protocol and reception procession. The full impact of Medinat Al-Zahra still needs further exploration especially by Muslim scholars.



**Figure 10: Al-Zahra main Reception Hall (restored)**

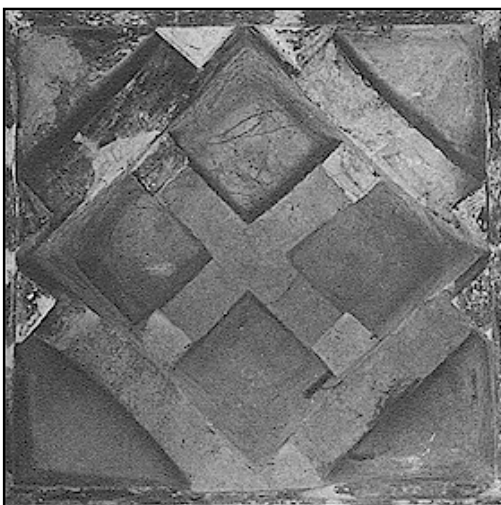
The other influential edifice is Bab Mardum Mosque that was built between 999 and 1000 according to an inscription found on its façade (**figure 11**). The mosque is thought to be a private institution as reflected by its mediocre size (26.4 square feet) and its pavilion type form (Hoag, 1987). Marcais (1954) found a link between Bab Mardum, the mosque of Casa de las Tornerias (Toledo 12<sup>th</sup> century), and Abu Fatata Mosque (Tunisia), while Creswell extended this link to include Sussa Ribat and Mosque of Masjid-I-Tarikh at Balkh. These buildings have one common plan consisting of square shape subdivided into square compartments. In Bab Mardum, Casa de las Tornerias and Balkh, there are nine chambers covered with domes. In Bab Mardum the technique introduced in these domes is very revealing, with the insertion of supporting ribs intersecting each other in similar fashion to that of Cordoba. The ribs of the central dome were arranged in a star form crowning the structure and externally the dome was raised slightly above the rest of the roof. The whole structure is supported by four centred columns which also define its nine bays and above them horseshoe arches were placed.



In one of these domes, the ribs intersect at 90° in the centre of the dome (**figure 12**), a basic form of the quadripartite ribbed vaults of early Gothic architecture which appeared in late 12<sup>th</sup> century. Lambert (1958) firmly believed that the ribs of Bab Mardum must have been the inspiration of the Gothic ribs. Toledo was conquered by Alfonso VI in 1085<sup>5</sup> and Bab Mardum was immediately converted into a Christian church under the name of Cristo de la Luz. Direct imitation was undertaken in the second half of the 12<sup>th</sup> century at the construction of Casa de las Tornerias (also in Toledo) under the Christian rule. Meanwhile, the first quadripartite vault appeared in St. Dennis in 1144.



**Figure 11: Façade of bab Mardum (999-1000) showing the Cordoban intersecting arches while the entrance is marked by the three famous Muslim arches, from left to right; The cinqfoil, the semi-circular, and the horseshoe.**



**Figure 12: The construction technique of ribbed dome in Bab Mardum, that inspired the Gothic earliest ribbed vaulting, the quadripartite vault.**

Following the weakening of the Cordoba Caliphate and the civil war that broke out in 1010 power vacuum was created. This allowed opportunist leaders to establish small kingdoms and states leading to the appearance of *taifa* kingdoms. Internal fighting and divisions gave a golden opportunity to northern Christians to strengthen themselves and recapture some key towns such as Toledo (1085), Saragossa, Seville and Badajoz. Consequently, Muslim artistic and architectural production became limited. The most important monument of this period was the Aljaferia Castle built in Saragossa.

Under mounting threats of Christian invasion, North Africa under Almoravids (1031-1150), and later Almohads (1150-1250) came to the rescue of Muslim Caliphate in Andalusia and in both occasions North African leaders crossed Gibraltar to provide help and sustain the Muslim resistance there. This political unification consolidated much of the existing social and cultural unity leading to greater integration of art and architecture of this region which is better known as Moorish style. We have already referred to some of the works undertaken by these dynasties in previous sections, but here we briefly refer to the enlargement of the Qarawiyin mosque by Almoravid Caliph Ali ben Yousef (1135-1143).

In this work, the stalactite vaulting was introduced to the region in the Mihrab dome of this Mosque. This dome was made of "Muqarnas", plaster structure in the form of suspended and interlocked smaller domes similar to birds nests. This form became universal in Muslim architecture. It should be pointed out here that this had originated from Persia where it first appeared in 1037 at Yazd in the tomb of Duvazda-I Iman (Hoag, 1968, p.24).

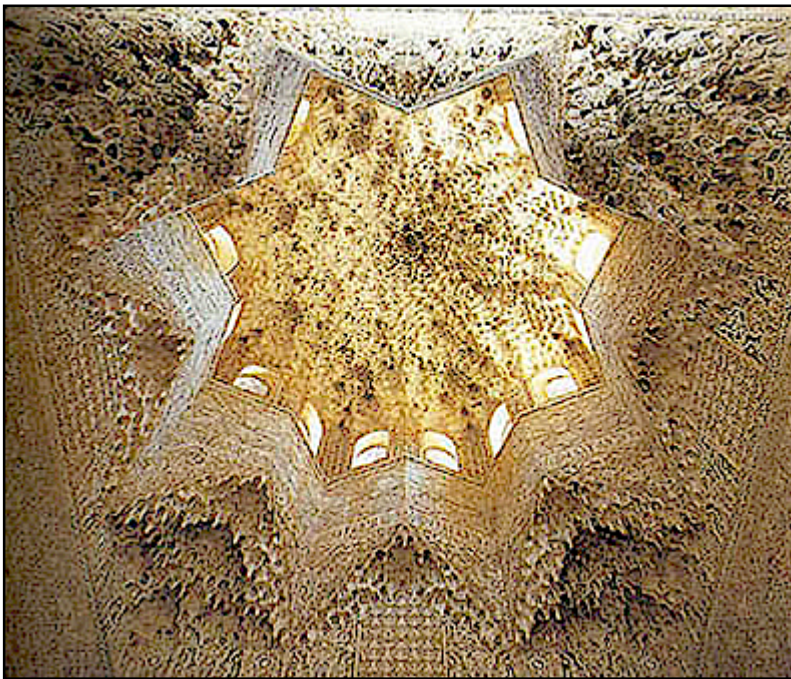
We cannot leave North Africa and Spain without referring to the famous Al-Hambra Palace. The origin of the building is still under debate as most scholars dated to 13<sup>th</sup> century Granada, but there are some indications which suggest that it was first built in the 11<sup>th</sup> century (see Bargebuhr, 1968)<sup>6</sup>, a date with great significance to both Muslim and European architecture. The palace complex briefly consists of series of apartments, halls and courts organised in a delightful interconnected setting of hierarchy. The palace is an architectural masterpiece in every term. The successions of spaces are clearly defined by boundaries and each space contains identical features enhancing its identity as well as its function. The visual effect reaches its peak through careful combinations of colour, light and pattern. The structure cleverly dematerialised by continuous work of stucco, *muqarnas* and faience covering the entire walls, floors and ceilings. The composition of courts, gardens and water meantime expressed the Muslim views of paradise and its eternity rewarding those who strive to reach it. The honey juice is provided (symbolised) by the honey comb vault of the Hall of the Abencerages representing the world most fascinating vault (**figure 13**). Here the interlocking of small squinches of lozenge shapes which project from the walls produced a cell very alike to the honeycomb organised in an eight pointed star. The drum of the star carries 16 windows two for each side of the star allowing enormous amount of light in to dazzle the eye. The rivers of paradise are represented by the four streams, which run from the central fountain of the Court of Lions to supply the rest of numerous springs of the palace. The Pool of the Court of Myrtle is another "river" extending to the eastern side of the Palace (**figure 14**). The golden stucco and calligraphic ornament covering the walls as they appear in the hall of Ambassadors may refer to golden jewellery and silky dresses the believer is promised (for more please consult Grabar, 1978).

The impact of Alhambra in disseminating Muslim Moorish style was substantial. Rich and wealthy Europeans who heard about or visited it could not resist the idea of reproducing elements or parts of it in their own buildings as happened to Owen Jones (1809-1874). His fascination with Muslim architecture in general and

Alhambra's court of Lion in particular was behind his creation of "*Alhambra court*: at the Crystal Palace at Sydenham (Darby, 1974). The Alhambra style of ornamental and internal decoration invaded most European houses especially in Victorian England. The position of Al-Hambra in the European mind can be demonstrated in the writing of Victor Hugo in his "Les Orientales":

**L'Ahambra! L'Ahambra! Palais que les genies  
Ont dore comme un reve et rempli d'harmonies;  
Forteresse aux creneaux, festonnées et croulants,  
Ou l'on entend la nuit de magiques syllabes,  
Quand la lune, a travers les milles arceaux arabes  
Serme les murs de trefles blancs!**

In the Muslim world, architecture seems to reach its complete character as works after this period mostly borrowed from previous buildings and this long established tradition. Nevertheless, several masterpieces were produced especially under the Turkish patronage (see article on Muslim Architecture under Turkish Patronage).



**Figure 13: Hall of the Abencerages (Alhambra) showing the honey comb dome.**



**Figure 14: The Court of Myrtle and the river of paradise in Alhambra.**

## North African and Andalusian Architectural contribution

The above brief account is by no mean a comprehensive survey of major monuments of the region but careful selection aimed at the identification of key edifices that produced innovative elements playing a leading role in the further development of Muslim architecture and having an inspirational impact on European and world architecture. The discussion highlighted a number of areas where Muslim architecture in North Africa and Andalusia made significant contributions in particular in the following:

- North African square towers and minarets had a significant contribution in the development of European church towers. The use of square shape in the form of added sections with decreased size, the dual system of blind base and decorated top sections, and the erection of the tower near the entrance gate were all but Muslim inspiration from North Africa.
- Andalusian and North African Muslims mastered the use and construction of arches. Their ultimate understanding of the properties of the arch appear in the technical innovation of achieving standard height by stretching, or super-imposing arcades of semi-circular or multifoil arches as seen in Cordoba Mosque and Quairawan.
- The extensive use of horseshoe and multifoil arches in the Mosque of Cordoba and Al-Zahra was the source of inspiration for their European adoption.
- There are suggestions which also relate the source of European adoption of the pointed arch to North Africa. Historic evidence revealed that Constantine the African, who played a leading role in the transfer of Muslim Medicine into Europe and the establishment of Salerno School of Medicine, was staying at Monte Cassino monastery at the time it was under reconstruction in 1080, when the pointed arch was employed for the first time in Europe. A Christian from Tunisia where the pointed arch was used since the 9<sup>th</sup> century, Constantine and his Muslim (Saracen) servant must have showed the Amalfitan builders the advantages and how to build the pointed arch.
- The use of polychromy in Cordoba and Al-Zahra was also another inspiration for Europe's adoption of polychromy decore.
- The technical innovation in the construction of dome vaults through the introduction of ribs organised in various shapes including the eight pointed star which appeared in Cordoba Mosque and Bab Mardum was imitated first in European domes and later inspired the Gothic vaults.

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### Notes:

1 Descending from Ibrahim Ibn Alghlab, the Emir designated by Harun al-Rashid (786-809) to rule North Africa.

2 This date refers to the formal foundation of the Mosque, but the remaining structure belongs to two main periods. The minaret is believed to belong to the Umayyad Caliph Hisham built between 724 and 727. The rest of the structure belongs to the reign of the Aghlabid Emir Ziyadat Allah (began in 836).

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3 This is the theological meaning of the title of Almohads, in Arabic "Al-Muwahidun"

4 Also called salon Rico after its discoverer.

5 The first mass took place in Bab Mardum on 25th of May of 1085.

6 This work is being referred to for the dating purpose only, we must warn our readers that it is full of nonsense as the author devoted all his efforts to argue -without success- the Jewish origin of Al-Hambra as if Muslim civilisation in Andalusia was none but Jewish.

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