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The Arab Islamic Architecture in Andalusia during Umayyad Era: 138-422 A.H. / 756-1031 A.D

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Abstract

The Arab Islamic architecture brought new vision and innovations, as manifested in Buildings and edifices erected in Andalusia during the Umayyad period. These buildings were unique to the contemporary European architecture. The Great Mosque of Cordova, Bab Mardum Mosque, and Al-Zahra Palace, were among the many edifices constructed by skilled Arab Muslim architects in Andalusia. The use and construction of arches, the extensive use of horseshoe and multifoil arches, the use of polychromy and the technical innovation in the construction of dome vaults through the introduction of ribs organized in various shapes etc., were new innovations in the contemporary architecture.

Keywords: Andalusia, Umayyad period, Islamic art of construction, Architecture, Mosque of Cordova, Bab Mardum Mosque.

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الفن المعماري في الأندلس خلال العهد الأموي: ١٣٨ - ٤٢٢هـ / ٧٥٦ -

١٠٣١م

سحر عبد المجيد المجالي

ملخص

لقد مثل الفن المعماري الإسلامي، خلال العهد الأموي في الأندلس رؤية جديدة لم تشهد مثلها باقي الأمم والحضارات، خاصة ما يتعلق بالإبداع العمراني. حيث جسدت العديد من الصروح العمرانية والقصور والمساجد التي شيّدت في الأندلس أثناء فترة الدولة الأموية، التي ما زالت معالمها واضحة للعيان حتى اليوم، هذه الرؤيا الفريدة في البناء والعمران. ويستطيع المؤرخ المنصف أن يجد الإبداع من خلال فن البناء الذي يجسده كل من المسجد الجامع ف قرطبة، ومسجد باب "مارده Mardum- Marida"، وقصر الزهراء وغير ذلك من المساجد والقصور والصروح التي صممت وشيّدت من قبل المهندسين والمصممين المسلمين الماهرين في الأندلس.

ويمثل تشييد الأقواس وبنائها نمطا آخر من الإبداع العمراني في الأندلس، فقد كان المهندسون المسلمون يشيدونها على أشكال متعددة، كما أبدع الفن الإسلامي في الأندلس في بناء الأقبية والسقوف وتزيينها بمختلف الأشكال الهندسية، والتي شكلت الأسس التي بنيت عليها الهندسة المعمارية الحديثة.

الكلمات الدالة: الأندلس، العهد الأموي، العمارة الإسلامية، الهندسة المعمارية، مسجد قرطبة، مسجد باب مارده-

ماردوم.

i- Subject of the Study:

The Arab Islamic Architecture in Andalusia during Umayyad Era: 138-422 H./ 756-1031 A.D.

ii- Problem:

To analyze the impact and contribution of Andalusia in disseminating Arab Islamic architecture styles to other parts of Europe.

iii- Limitations:

This analysis is limited to the Arab Islamic architecture in Andalusia during the Umayyad era. While analyzing the Arab Islamic architecture, the appraisal has been kept limited to some major monuments constructed in Andalusia, particularly the mosques and palaces. Allusions to other periods and edifices are cursory to prove the point or support the inferences.

iv- Theoretical Framework:

It is a historical topic and no theoretical framework has been developed. However, some brief attempt has been made to conceptualize the notion of mosque in Islam.

v- Methodology:

Major tools of research - historical, analytical and comparative - have been applied. More emphasis is on historical technique. Relevant material available in English, Spanish, Arabic and other languages has been used.

vi- Previous Researches etc:

Broadly speaking, this topic seemingly has not formed a part of serious academic analysis in recent years. Most of the research studies available on this subject have been attempted by Western scholars and there is dearth of such studies by Arab scholars in recent years.

vii- Results and Conclusion:

The trends emerging from this study show that Arab Islamic architecture in Andalusia played remarkable role in introducing new innovations like the use and construction of arches, the extensive use of horseshoe and multifoil arches, the use of polychromy and the technical innovation in the construction of dome vaults through the introduction of ribs organized in various shapes etc.

Viii- Bibliography:

The books and other materials used in the study are shown in the notes. Both Arabic and English sources have been used.

XI-Outline of the Study:

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- (3) Islamic Architecture in Andalusia
- (4) Cordova
- (5) Mosque of Cordova
 - 5.1Phase-1 Abd al-Rahman I [AD 756-788]
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- (7) Bab Mardum Mosque
- (8) Conclusion
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(1) Introduction

Incoming of the Arab Islamic rule in Andalusia during the beginning years of the second half of the eighth century had set in motion a process of the 'dawn' of new civilization in that part of contemporary Europe which proved instrumental in introducing innovative ideas in science and technology that transformed the pattern of life not only in the territories under Arab Islamic occupation in Andalusia but spread those ideas to other parts of Europe as well. This article focuses on Arab Islamic architecture in Andalusia by concentrating on the major edifices built during the Islamic rule in Andalusia.

The notion of a traditional Islamic architecture began in seventh century' Syria and grew to include architecture of lands from the Atlantic to the Indian oceans. There seems to be a dominant style or influence that defines Islamic architecture. The Moorish Alhambra and the Indian Taj Mahal show that Islamic art and architecture has definite regional variations. However, scholars have devoted much effort to the identification of unifying principles in Islamic architecture, geometric design and the arabesque.

It can be said, however, that the architecture of Islamic countries has

long influenced the West. The 17th-century Dutch painter Rembrandt had a personal collection of many dozen Mughal and Deccani paintings which he copied. The influential Viennese publication of Johann Bernhard Fischer von Erlach's general history of architecture in 1721 included Arab, Turkish and Persian architectural representations. International exhibitions held during the 19th-century further introduced the West to Islamic arts. The Great Exhibition of 1851 at London's Crystal Palace included Persian exhibits of carpets and carpet design that held influence over William Morris (1834-1896), the poet, designer and theorist of the Arts and Crafts movement. Morris did not imitate the Persian designs but found inspiration in their geometric patterns. Morris' own carpet designs - with their rich colors, coherent patterns and planar surfaces - show the impact Persian Vase carpets had on the English artist.^{1*}

Ceramics from the Islamic world fascinated many discerning European collectors. Similarly, the British collectors accumulated collections of Ottoman ceramics known as Damascus or Rhodian wares, as well as Persian luster tiles and vessels. This reportedly proved instrumental in reviving an interest of luster techniques in Europe. The designs of ceramicist-artist William De Morgan (1839-1917) reflect the Islamic mood that began to appear in the 1880s. The French painter Henri Matisse (1869-1954) was perhaps one of the greatest Western artists to integrate his own work with the influences of Islamic art.^{2*}

(2) The Mosque Architecture in Islam

In Muslim religious practice, worshippers must all turn to face one single direction during daily prayers. This qiblah is the direction of the Ka'aba in Mecca, in Saudi Arabia. When possible, mosques are constructed in such a way that one side of the building faces the qiblah, to make it easier to organize worshippers into rows for prayer. The direction of the qiblah is also often marked in the front of the mosque with an ornamental indentation in the wall, known as a nihrab.

When Islam spread across the Middle East and into India in the East and all the way to Spain and Morocco in the West, this vast empire began to assimilate architectural styles from many traditions. The religious architecture was to become the most obvious symbol of Islam: the mosques and the holy shrines. Yet the mosques throughout the world do not look alike. They have used local materials and have built upon previous cultural styles. Yet they have similarities. Likewise, palaces, forts, and castles reflect the religion of Islam. They are symbols of power

and the dangers their leaders faced. While the empire became a vast trading network, the buildings that housed the camel caravan traders - the caravanserais - reflected their importance to the empire, as well. The wealth and power of the empire was often directed into buildings that are recognized for their beauty and innovation.

With the passage of time, the mosque, apart from being a place of offering prayers, began to embrace other functions like serving as a venue for learning of religious, scientific and literary subjects; as a court where justice was administered, and as a political forum where citizens could discuss their problems with the Khalifa. The tradition indicates that the ruler, either a Khalifa or an Emir often led the congregational prayer, discussed the affairs of the state, and often Friday Khutba contained political speeches ending with the community renewing allegiance. Thus the changing functional role of the mosque spurred Muslim architects to adapt their structural, spatial and decorative designs to accommodate them in a single remarkable entity in the form of mosque.

The dualism of dome and minaret attained a perfect expression of the submission to God, which became central element of Islamic religious architecture. The dome, popular in most cultures, had two main symbolic interpretations in Islamic architecture entailing the representation of the vault of heaven and a symbol of divine dominance engulfing the emotional and emotional well-being of the faithful. According to James Dickie, in functional terms, it is used to externally define the qiblah and internally lighten it.³ The most common forms of dome are semi-circular, which is the oldest and wide spread. The earliest domes were small and often erected on the crossing before the mihrab as seen in the Quairawan (670-675), Umayyad Mosque in Damascus (705-707) and Cordova (756-796). They progressively grew in size and number and were later used in various areas, including the centre and sometimes covering the entire roof.

The minaret is used for adhan or call for prayers. Its height is mainly determined by how far the call is heard, a method until recently did not require the modern amplifier. The minaret is also given the symbolic meaning giving the highest position to the declaration and attestation of shahada or faith. The declaration of Allah ho Akbar or 'Allah is the greatest' and 'there is no God except Him and Mohammed is His messenger' and the rest of the wording of adhan is in fact a daily confession of Islam for that particular community or city. The shape of the minaret varied substantially, reflecting local taste and tradition. The square minaret evolved in Syria starting from the Great Umayyad Mosque and developed

under the Almoravids who ruled North Africa from 1031 to 1151. The three famous minarets of Kutubia Madrassas in Morocco (1164-1184), Great Mosque of Telemcen in Algeria (1172) and Giralda in Spain (1184-1196) are famous examples.

The other characteristic of the mosque is sahn or courtyard, furnished with a fountain providing a space for ablution and under its covered riwaqs or arcades sheltered its visitors, especially the poor. The edifice is generally oriented towards the qiblah complying with the regulation provided Surah 2, Ayah 145 of the Holy Quran, which states that:

And now we will turn you indeed towards a Qibla which shall please you. So turn your face [in prayer] toward the Sanctified Mosque and ye [o Muslims] wheresoever ye find yourselves, turn your faces [likewise] toward it.^{<4)}

The sanctity of Qiblah was further emphasized by the introduction of mihrab, a niche used to mark such direction. The sanctity of mihrab does not come from the shape per se but from the direction it indicates [Qiblah], James Dickie has pointed out that this meaning had been clearly expressed in Turkey where some fragments of stones of the Kaabah were included in the mihrab of Sokullu Mehmet Pasa mosque at Kadirga in Istanbul as well as the representation of Kaabah underneath the arch of mihrab in some Ottoman Rugs.^{<5)}

The Holy Quran explicitly spoke of mihrab in Surah 3, Ayah 39, referring to Prophet Zakaria being praying in front of mihrab when he was promised the son Yahiya [John]:

Then the angels called to him as he stood praying in the sanctuary [mihrab]: that Allah gives the good news of Yahiya verifying a word from Allah, and honourable and chaste and a Prophet from among the good ones.

In Ayah 37 of the same Surah, Maryam (Mary) is the one described as praying in the mihrab-. "whenever Zakariya entered the sanctuary (mihrab) to (see) her, he found with her food."⁽⁷⁾ The mihrab here was translated as sanctuary rather than the niche. The meaning of niche is also introduced in Surah 24, Ayah 35:

Allah is the light of the heavens and the earth, a likeness of his light is as a niche in which a lamp, the lamp is in a glass, (and) the glass as it were a brightly shining star, lit from a blessed olive oil tree, neither eastern nor western, the oil whereof gives light

though fire touch not it, light upon light, Allah guides to His light whom He pleases.(8)

The word niche here is transmitted in the symbolic form of mihrab where traditionally Muslims put candles and lanterns reflecting the divine description and later was expressed in the use of this lamp under the arch of the mihrab in most prayer rugs and carpets. Such symbolism extended to the lavish use of light in other parts of the mosque.

(3) Islamic Architecture in Andalusia

The advent of Islamic rule in Andalusia under the able leadership of Abd-al-Rahman I in 756 brought it security and prosperity. This period created congenial ambience for the growth of agriculture, industrial production, trade and commerce. The personal interests of Islamic rulers in science and their good taste for art and craft consolidated the path to stability and growth of Andalusia. This was subsequently reflected in huge and outstanding output in intellectual as well as material production, especially in arts and architecture. Within this scientific and intellectual attainment, artists, masons, and architects pushed human creativity to its limits producing some of the most artistic wonders of the Islamic world.

The materials used in the architectural works in Andalusia during the spell of Islamic rule reflect the availability of natural resources and the diversity of cultural influences. The main materials used were wood, stone and baked brick, although mud brick was also used. Unlike many parts of the Middle East, Spain had plentiful supplies of timber suitable for building including both pine and oak. The use of wood was generally made for roofs which were normally gabled and covered with baked clay tiles, although occasionally wooden domes were also used. The pine-roofs of the Great Mosque in Cordoba reflect the plentiful supplies of wood in medieval Spain. Use of stone was made for erecting walls either in the form of ashlar masonry or in the form of coursed rubble. Reuse of masonry from earlier Roman or Visigothic structures was frequently made along with the continuation of fine stone carving continued.

The use of brick which, like ashlar masonry, was perhaps an adaptation of Roman building methods, constituted one of distinctive characteristics of Spanish Islamic architecture. Sometimes stone was encased in brick in the same manner as Byzantine fortifications. Other notable features of Spanish Islamic architecture, inter alia, included horseshoe arches, paired windows with a central column, construction in

brick and stone, polychrome tiles, intricate carved stucco work and overlapping arches.

It is noteworthy that various terms are used to describe Islamic-type architecture in Spain each of which has a particular meaning. The best-known term is 'Moorish' which is often used to refer to Islamic architecture in general although it more properly denotes the architecture of the Moors or Berbers of North Africa. The less well-known term Mudejar refers to architecture carried out for Christian patrons by Muslim craftsmen. Mudejar architecture uses many of the most characteristic features of Islamic architecture including Arabic calligraphy and the horseshoe arch. Many of Christian Spain's most beautiful churches and palaces were built by Mudejar craftsmen and the tradition was carried on into the new world.⁽¹⁰⁾

Another style is known as Mozarabic which pertains to the architecture of Christian buildings under Muslim rule. Besides its influence on Christian buildings, Islamic architecture also influenced the substantial Jewish community in Spain so that many synagogues in Spain were built in an Islamic style, particularly in Toledo.

In the aftermath of the Christian reconquest of Islamic Spain, most of the mosques of Spain were converted into churches, some with very little alteration and others where the architecture was profoundly damaged as in the case of the Great Mosque of Cordova where a cathedral was built in the middle of the structure in the sixteenth century. Notable features of Spanish mosques are square minarets and large mihrabs which are sometimes like a separate room. Where decoration has survived intact it is usually very elaborate and includes carved plaster and woodwork.' '

Some of the finest examples of Islamic palaces, as a legacy of Islamic rule, can be found in Spain such as the Alhambra and the Generalife. The palace of Pedro the Cruel in the Alcazar at Seville is symbolic of continuation of the Islamic palatial tradition even after the reconquest with palaces which are almost entirely Islamic in conception. Hammam is another type of Islamic building generally associated with palaces. Few of these have survived in Spain although fine examples can be found at Ronda and Granada. It is thought that some of the water mills near Cordova may be related to the great water wheels of Syria. Over and above specific buildings and monuments, many towns and villages retain the layout and appearance of Islamic times. Some of the more important cities with substantial traces of Islamic architecture are Cordova, Seville. Granada, Toledo and Zaragoza, but many other towns and cities contain

traces of Islamic buildings including Madrid and Asturias.⁽¹²⁾

The area conquered by the Arabs in the eighth century still contained many remains of the Roman and Byzantine civilizations which preceded the Visigothic conquest. Most of the past basic techniques of construction remained the same throughout the Islamic period. The ubiquitous horseshoe arch is said to be derived from Visigothic architecture. The typical features of Islamic buildings in Spain may in part reflect its early incorporation into the Islamic Caliphate and its distance from the centre of notable influences from within Islam is from North Africa and Syria. The North African influence is easy to explain through its proximity and the successive invasions of Berber tribes under the Almohads and the Almoravids, the most famous example being the Giralda tower in Seville/^{13,}

Viewed in a broad spectrum, construction work in Andalusia was, however, influenced by Syrian architecture, through the Umayyad dynasty who sought to replicate designs of Syrian buildings with the help of Syrian architects. The most striking example of this is the city of Medinat al-Zahra' near Cordova which is meant to recall the desert palaces of the Umayyads and in particular Rusafa. Other notable influences were Byzantine architecture, both through remains of Byzantine structures in Spain and through the friendship between the Byzantine emperors and the Umayyad rulers.

Cordova city, Mosque of Cordova, Mosque of Bab Mardum, Medinat Al- Zahra, etc., are the leading architectural works of the Islamic period in Andalusia, which are briefly appraised here.

(4) Cordova

Cordova, *known as Qurtabat* al-Wadi al-Kabir in Arabic, served as the capital of Islamic Spain or Andalusia. Located on a plateau next to the Guadalquivir River (in Arabic Wadi al-Kabir), it was navigable from the sea in Islamic times. Abd-al-Rahman I made it the capital of Andalusia. In the tenth century Cordoba was renowned as the wealthiest city in Europe with paved streets illuminated by street lighting. Some of the atmosphere of the medieval Islamic city can still be recalled in the Jewish quarter to the north of the Great Mosque of Cordova, next to the Umayyad city walls. Outside the walls Umayyad remains can be seen along the river bank. The bridge known as the Puente Romano was rebuilt in 720 and is 250 m long and rests on sixteen arches. Also alongside the river are remains of water mills which date from Muslim times/^{14,}

(5) Mosque of Cordova

The Great Mosque at Cordova is a unique example of Islamic religious architecture. The Mosque entails many elements belonging to various different periods and, as a whole, was subjected from the late 8th to the late 10th century to a total of five extensions, one merging with another with no apparent break line. Information about tracing of the wall which appeared in M. Gomez Moreno's plan, published in R.A. Jairazbhoy's book^{<15>}, set in motion the process of deciphering the language of the Great mosque of Cordova. In the wake of publication of Moreno's account, the question that bothered the experts was whether this enormous divided mosque structure was pre-planned, which of course seemed a remote possibility because of the numerous later extensions, or could the architectural concept have been allowed to grow and multiply for two hundred years or thereabouts, so that the later structure would still relate to the original principle. What follows is an attempt to unravel this intriguing question. It is noteworthy that Gomez Moreno's survey appears to be the most accurate till date of all the published plans of the Great Mosque.

According one account, the city of Cordova was at the height of its fame in the 10th century A.D., and was 'twenty four miles long by six miles wide and had over 250,000 buildings, including 3,000 mosques, palaces and baths.'¹⁶ However, today these architectural monuments are nothing but ruins, with one exception - the Great Mosque. In order to fully comprehend the architectural issues involved in the construction or extensions of the Great Mosque of Cordova, it seems desirable to briefly analyze its five phases of extensions.

Phase-I: Abd al-Rahman I (A.D. 756-788)

The construction of the Mosque was started in A.D. 785 by the Emir 'Abd al-Rahman I and it was frequently subjected to enlargement and embellishment over the years by his successors. Realizing the incongruity of the Muslims praying in a low-ceilinged improvised shelter, 'Abd al-Rahman I, towards the end of his reign, started negotiating with the Christians with a view to purchasing the site of the church of St. Vincent which, on the advice of the Caliph 'Umar ibn al-Khattab, they had shared for over fifty years.'¹⁷ The Christians rebuilt their new church on the outskirts of the city, while the emir demolished the old church and built on its site the Great Mosque of Cordoba in A.D. 784.

The plan of the mosque comprised a walled sahn or courtyard preceding an eleven-aisled, twelve-bay sanctuary (the prayer hall). Creswell has stated that the mosque originally consisted of a sanctuary 73.5 metres wide and 36.8 metres deep, preceded by a sahn 73.21 metres wide and 60.07 metres deep.<sup>¹⁸⁾ This shows that the sahn was deeper than the sanctuary space, which makes the overall shape of the mosque that of a rectangle.

This is abundantly evident from the drawn plan appearing in Creswell's work and he seemed to arrive at this conclusion even though his larger plan shows clearly that the actually surviving evidence of 'Abd al-Rahman's period only extends northward for approximately 10 metres from the T-shaped piers by the entrance.

On the other hand, Hoag, while describing the Great Mosque of Cordoba, does not mention the sahn's dimensions, nor does he describe its geometric shape, but he notes that the sahn had no riwaqs or colonnades, and communicated directly with the prayer hall through doors set between heavy T-shaped piers'.¹⁹⁾ It is interesting to note that the plan, accompanying Hoag's text on the original mosque building, appears almost perfectly square in shape.

Placing reliance on evidence presented by Gomez Moreno on the basis of excavation and accepted by Hoag, the resultant outcome would be a square shaped mosque with corners at A, B, C, and D, and with diagonals B-D and A-C crossing exactly at V. however, the question arises as to whether this area actually represents the design of the original mosque of 'Abd al-Rahman I, or Creswell is right in regarding the original mosque as a rectangle. This claim is rendered unacceptable if the recent findings by Felix Hernandez are considered of an earlier minaret built by Hisham I in the 790s; its north face was about 36 metres from the present sanctuary facade, whereas the present courtyard is 58.5 m. deep. He also found the remains of a wall parallel to the northern side of the sanctuary facade under Hisham I, which had its south side, aligned to the old minaret. At a time which is still uncertain, the sahn was made deeper by about 24 m.⁽²⁰⁾

On the other hand, Alexandre Papadopoulo has stated that Abd-al-Rahman I in 786-788 erected a mosque that K.A.C. Creswell, H. Terrasse, and J. Sauvaget thought was an oblong about 328 feet long and 246 feet wide. However according to present-day knowledge, as Papadopoulo argues, the original mosque seems to have been an almost perfect square of about 258 feet, thereby following the Medina model.⁽²¹⁾ However,

Papadopoulo does not provide the source for this 'present-day Knowledge'; and the possibility of the archaeological evidence embodied in the present courtyard cannot be ruled out. Viewed in a broad spectrum, contrary to Creswell's view, 'as also suggested by Gomez Moreno's plan, Abd al-Rahman's original mosque was square a building.

Phase-2: Abd al Rahman 11 (A.D. 822-852)

'Abd al-Rahman II had the wisdom of preserving the general character of the mosque's plan with aisles perpendicular to the qibla and with an interior dominated by superposed columns and double-tier arches. Being aware of the pressures caused by population expansion, 'Abd al-Rahman II amplified the mosque by carrying the qibla wall another 8 aisles southward/²²⁾ Although all scholars talk of 8 bays extension towards the South, Creswell, under the heading "History of the Mosque", states, basing himself on the observations of Ibn Adhari, that 'Abd al-Rahman IPs extension of the mosque was 50 cubits deep and 150 cubits wide. Creswell gives the depth of the original sanctuary (prayer hall) as 36.8 m.^{<23)} Thus Creswell seems to give the correct depth of the extension but draws the wrong conclusion from that information, in that he assumes that the extension was 8 bays in depth. According to Ibh Adhari, the new extension must have been at least 12 bays deep, matching the depth of the original mosque.^{<24)}

Phase-3: Abd al-Rahman III (A.D. 912-961)

'Abd al-Rahman III assumed the title of 'caliph' in A.D. 929 under the name of al-Nasir li-Din Allah. Although his principal foundation was the residential and administrative centre of Madinat al-Zahra, he nevertheless was also active in extending the Great Mosque of Cordoba. It was in A.D. 951 that he extended the sahn to the North and built a new minaret for the Great Mosque, according to the south.⁽²⁵⁾ The minaret projected into the sahn and avoided the mihrab (prayer niche) axis as it did at Madinat al-Zahra. Its base covered an area of 91 square feet and its height was 111 feet. He was probably also responsible for 3 riwaqs in the sahn; these have since disappeared. He appears to have left the sanctuary untouched.

Phase-4: al-Hakam II (A.D. 961-976)

Broadly speaking, Abd al-Rahman III confined himself to rebuilding the minaret in A.D. 961 and to extending the sahn. It was his

successor, al-Hakam II, who applied to the construction all the resources of Cordovan art. According to one account, al-Hakam went in person, along with his jurists and architects, to the mosque to draw out the plan,⁽³⁶¹⁾ and set down the details of the third enlargement of the prayer hall. According to 'Abd al-'Aziz al-Dawlati, 'On the appointment of his khilafa (trusteeship), al-Hakam II began enlarging the prayer hall by two-thirds [the size of] the old hall."⁽²⁷⁾

There is no trace of 'Abd al-Rahman II's qibla wall. What is there now and what everyone refers to is an arcade resting on massive piers and running across the prayer hall from East to West. According to CresweU: "If we walk Northwards from the qibla wall until we have passed twelve bays, we come to an arcade, resting on massive piers and running right across. This evidently marks what was the limit of the mosque before al-Hakam's addition. "⁽²⁸⁾ According to Islamic architecture experts like Jairazbhoy and others Creswell's this conclusion is difficult to accept, as it is merely an assumption. However, Creswell attempts to prove his theory conclusively by saying, "... and further confirmation is supplied by the fact that the masonry of the Western wall breaks bond immediately to the South of the point where this arcade strikes it."⁽²⁾ In this regard Jairazbhoy opines: "I am of the opinion that the traces of 'Abd al-Rahman II's qibla wall are still there to be seen. They consist of 2 heavy piers located 3 bays South of the arcade O-N, and I believe that they were to commemorate the old qibla wall."⁽³⁰⁾

Al-Hakam built his northern arcade resting on massive piers lining up with the rest of the aisles, thereby achieving a prayer hall 12 bays deep, a structure as impressive as that of 'Abd al-Rahman I. Al-Hakam left great compound piers to mark the old qibla wall and, as a mark of respect, he went on to build the most spectacular enclosure of multi-leafed arches. Jairazbhoy has described this as follows: "In the central aisle at the start of the new extension is the so-called Chapel of Villaviciosa. It is a vaulted bay whose walls are open screens of complex arch forms carried on marble columns. "⁽³¹⁾

Phase-5: al-Mansur (A.D. 987-990)

Twenty-five years after al-Hakam's extension, the mosque could no longer accommodate the masses of worshippers, especially with the new arrival of Berber settlers/³² Al-Mansur began to enlarge the mosque for the fourth time. His dilemma was deciding in which direction to make the extension. On the West, Qasr al-Khilafa (the Palace of Trusteeship) was

attached to the mosque's wall; Southward the river was only a short distance from the qibla wall, and on the North side 'Abd al-Rahman II had built the new minaret. The only direction left for him therefore was the East side.

Al-Mansur decided to extend the Great Mosque of Cordoba eastward along its full length for another 8 aisles⁽, so that now there were 19 parallel aisles that looped away for more than 30 bays in a Southerly direction. Finally, in the enlarged sahn wlrch had trees planted in it since the ninth century, al-Mansur built a jabiya or underground cistern.

The ribbed domes were used in the Mosque of Cordova and in the Maqsura (erected between 961 and 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.^{<34)}

After this experience in Cordova, the use of these ribbed domes extended in Andalusia. It was eventually employed in the majority of the buildings including the famous Mosque of Bab Mardum built in 1000. Progressively, the Muslims developed this style and produced remarkable domes found such as in Morocco, Telemcan and Isfahan. The popularity this extended dome also to churches of Christian parts of Andalusia and then to Europe where the majority of domes adopted the Cordovan approach. Some academics such as Lambert, Male and Choisy firmly established that this Cordovan technique was the origin of the ribbed vaulting of the Gothic.³⁵⁾

Another remarkable feature of the Mosque is its polychromy. The use of red and white coloured bricks, although its first use was in the Dome of the Rock where an alternation was introduced, especially in the voussoirs of the arches of Cordova Mosque produced a delightful atmosphere emphasizing structural unity and aesthetic continuity. European visitors of the 9th and 10th centuries could not resist its overwhelming beauty and wasted no time in introducing it in their buildings.

The appearance of the mosque was ruined in the sixteenth century when a cathedral was built in the middle of the sanctuary; the minaret of the Great Mosque is now encased within the belfry of the cathedral. Diagonally opposite the Great Mosque is the caliph's palace which has now been converted into the archbishop's palace.

(6) Medinat Al-Zahra

Medinat Al-Zahra, a tenth-century palace city (now in ruins), was located near springs at the foot of the Sierra Morena, six kilometers west of Cordova in Andalusia. According to one source, the Medinat Al-Zahra is normally associated with the name of Al-Zahrawi, who was named after the city, the renowned Muslim surgeon who invented the 'forceps' and the 'catgut'.⁽³⁶⁾ However, another source attributes its name to Abd-al-Rahman III's favourite wife Zahra.⁽³⁷⁾ It was as a palatial residence and administrative centre away from the crowded capital at Cordoba and had a staff of 20,000 people including guards, officials and families. However, its significance lay in its beauty and the power it yielded albeit for a short duration. Al-Zahra was founded by 'al-Nasir lidin-AUah', Abd-al-Rahman III who ruled Cordova from 912 to 961. Beginning in 936, the town gradually developed, mainly under the reign of Al-Hakam II (961 - 976), into a rectangular complex of about 875 by 1230 yards comprising residential and administrative quarters enveloped within strong walls.

The town symbolized an urban unity defined by strong ramparts and consisted of topographical as well as functional hierarchy reflecting the socio-economic and political status of the community. The area was organized in terraces descending towards the Wadi al-Kabir or Guadalquivir valley and comprising a considerable number of gardens, pools, arcades, halls and housing complexes. The northern terrace being 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 assumed this position in 961, and two major public reception halls; Dar al-Wuzara or House of Viziers, and to the south the Caliphs' main reception hall. The mosque laid beyond the middle terrace was built by 1000 craftsmen in record time of 48 days.^(3B) 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. Al-Zahra became renowned for its high advanced civilization, 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.

Madinat al-Zahra'-the palace built only a few years after 'Abd al-Rahman assumed the caliphal title of amr almu'min Zn-was supposedly a fiat construction built at the command of the caliph who employed skilled

artisans from near and far and imported the best materials from Constantinople, Carthage, the kingdom of the Franks, and various places on the Iberian Peninsula.^{1-39,}

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 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 hosted for 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 rae,"^{<40)}

Across a bridge from the Salon Rico is the main mosque of the complex with an arcaded courtyard leading on to the sanctuary five aisles deep. Next to the raosque is the Dar al-Yund (or army headquarters) which is made up of a cruciform basilical hall with triple-arched arcades and a ramp leading out on to the parade ground. The upper part, occupied by the Caliph's personal residence known as the Dar al-Mulk, consisted of several apartments based around courtyards which in turn enclosed a central hall. It is likely that these apartments were at least four storeys high although they are now much damaged,

The city was destroyed in the civil war of 1010, which led to the emergence of Taifa Kingdoms. Material from the palace was re-used by Pedro the Cruel to build his palace in Seville. The complex was built on three terraces surrounded by gardens with pools and water channels. On the lowest terrace is a garden pavilion built for Abd al-Rahman as a formal reception and ceremonial centre. This consisted of four pools and the pavilion itself known as the Salon Rico which has intricate decoration carved in stone to match the stucco work of the maqsura at the Great

Mosque in Cordoba. 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.

No palace provoked the contemplation of the past more than Madinat al-Zahra'. As one Andalusian remarked, 'Madinat al-Zahra' after its destruction became a place of wild birds and beasts.⁽⁴¹⁾ Ibn Hayyan lamented that the Umayyad palaces ultimately became quarries for whoever wanted them: "Most of the structures were destroyed ... the copper was pulled off the doors, the lead of the pipes and other materials taken away. With this ruin, that carpet of the world was folded up and that beauty which had been an earthly paradise was disfigured."⁽⁴²⁾

(7) Bab Mardum Mosque

Bab Mardum Mosque was built in Toledo Spain between 999 and 1000 according to an inscription found on its facade. The mosque is thought to be a private institution as reflected by its mediocre size (26.4 square feet) and its pavilion type form.⁽⁴³⁾ Its significance lies in its contribution to early gothic architecture. Marcais found a link between Bab Mardum, the mosque of Casa de las Tornerias (Toledo 12th century) and Abu Fatata Mosque⁽⁴⁴⁾ (Tunisia), while Creswell extended this link to include Sussa Ribat and Masjid-i-Tarikh at Balkh.⁽⁴⁵⁾ These buildings have one common plan comprising 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 Cordova. The ribs of the cent -fn 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 900 in the centre of dome, a basic form of the quadripartite ribbed vaults of early Gothic architecture which appeared in the late 12th century. Lambert 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 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 12th century at the construction of Casa de las Tornerias (also in Toledo) under the Christian rule.^{(46>} Meanwhile, the first quadripartite vault appeared in St. Dennis in 1144.

Following the weakening of the Cordova 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 division gave a golden opportunity to northern Christians to strengthen themselves and recapture some towns such as Toledo (1085), Saragossa, Seville, and Badajoz. Consequently Muslim artistic and architecture 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 Almoravids (1031-1150) and later Almohads (1150-1250) came to the rescue of Muslim Caliphate in Andalusia and in both occasions African leaders crossed Gibraltar to provide help and sustain the Muslim resistance there. This political unification consolidated much of the social and cultural unity leading to greater integration of art and architecture of this region which is better known as Moorish style.

(8) Conclusion

The aforementioned brief appraisal is by no means an exhaustive survey of major monuments of the Andalusia under Islamic rule. Nevertheless careful selection of major monuments has been made here with the avowed objective of identifying the 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 architectures. The foregoing analysis highlights a number of areas where Muslim architecture in Andalusia made significant contributions in particular in the following:

1. Andalusian 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 superimposing arcades of semicircular or multifoil arches as seen in Cordova Mosque.
2. The extensive use of horseshoe and multifoil arches in the Mosque of Cordova and Al-Zahra was the source of inspiration for their

European adoption.

3. The use of polychromy in Cordova and Al-Zahra was also another inspiration for European adoption of polychromy décor.
4. The technical innovation in the construction of dome vaults through the introduction of ribs organized in various shapes including the eight pointed star which appeared in Mosque of Cordova and Bab Mardum was imitated first in European domes and later inspired the Gothic vaults.

Notes

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7. Holy Quran, 3:37.
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22. Jairazbhoy, n. 15, p. 77; Al-Maqarri, Shehab Al-Dien Abu Al-Abbas Ahmad bin Mohammad la-Talmasani, Nafeh Al-Teeb *fi Ghoson Al-andalous Al-Rateb*, edited by: Ehsan Abbas, Dar Sader, Beirut P.I., 1968, p.347.
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24. Cited in Jairazbhoy, n. 15, p. 77.
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29. Cited in ibid.
30. Jairazbhoy, n. 15, p. 81.
31. Ibid.
32. Al-Dawlati, n. 27, p. 27.
33. Allan, n. 18, p. 293.; AHdrisi, Nuzhat Al Mushtaq fi Ikhtiraq Al Afaaq, p..576.
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