Journal of Social & Organizational Matters

Vol 3 No 4 (2024): 503-521

The Architectural Legacy of the Abbasid Empire: A Study of Islamic Architecture in Iraq (8th-13th Centuries)

Syed Farjood Ailya Rizvi[*1], Atifa Usmani[2], Momina Arshad Malik[3]

[1*]Assistant professor, Department of Graphic Design, College of Art and Design, University of the Punjab, Lahore, Punjab, Pakistan.

[2]Associate Professor HOD, Textile Design Department, Govt. College for Women Gulberg, Lahore, Punjab, Pakistan. ORCID: 0000-0001-7381-5460

[3]Assistant Professor, Department of Textile Design Government Graduate College for Women Gulberg Lahore, Punjab, Pakistan. ORCID: 0009-0009-8576-7262

Corresponding author: farjood.cad@pu.edu.pk ORCID: 0000-0001-5468-8363

Keywords: *Baghdad, Islamic Architecture, Town Planning, Domes, Geometric Ornamentation, Arabesque*

DOI No: https://doi.org/10.56976/jsom.v3i4.153

This research examines the evolution of Islamic architecture in Iraq from the 8th to 13th centuries, focusing on the monumental developments during the Abbasids' Empire. It analyses key architectural and urban planning characteristics such as Baghdad, Samarra, and Raqqa. The study highlights significant architectural themes, including the innovative use of brick, vaulting techniques, and arch styles influenced by earlier Eastern Christian architecture. The study also addresses the aesthetic implications of decorative geometric ornamentation and the emergence of distinct arabesque motifs in Islamic art. Furthermore, it investigates the factors contributing to the Abbasids' expansion, their cities' circular planning, and the Persian influences that shaped these developments. The paper concludes by reflecting on the grandeur of Baghdad and its architectural legacy, underscoring its historical importance as a centre of culture, knowledge, and urban sophistication.

1. Introduction

Baghdad, established by the second ʿAbbasid caliph, Abu Jafar al-Mansur (754–775), represents the inaugural circular city in the architectural history of Islam. This city, known as the City of Peace or Madinat al-Salam, extends approximately 1.7 miles (2.7 kilometres). The city was referred to as Madinat al-Mansur, Madīnat Abī Jaʿfar, and al-Madina al-Munawara, reflecting its circular design, which was influenced by Parthian and Sāsānian architectural models. The construction occurred near the Tigris River, with al-Mansur soliciting experts, technicians, and building materials from various nations. Construction commenced in 764 CE, utilizing a daily workforce of around 100,000 labourers and technicians. The term Baghdad, translating to "gift of God," probably derives from a pre-Islamic Indo-European term. Baghdad, representing the celestial city, featured a central area dominated by the ruler's palace (Creswell, 1979).

The collapse of the ʿAbbasid dynasty led to the emergence of smaller dynasties in Iraq, which thrived until the Mongol invasion destroyed Baghdad in 1258 CE. In this period, ʿAbbasid architecture developed, incorporating decorative stucco features like the muqarnas dome, a design initially observed in Iraq. The diverse architectural styles integrated features such as madrasas, Seljuq-inspired arched entrances, and Pīshtāq's internal portal systems. Architectural innovations encompassed pointed and segmented arches, vaults, cross-vaults, domical vaults, and muqarnas vaults (Creswell, 1979).

The rule of Marwan II (744–750) represented a pivotal moment, as ʿAbbasid conspiracies led to the downfall of the Umayyad dynasty. The ʿAbbasid leaders acknowledged the strategic significance of Persia and promoted intermarriage with Persian families, thereby facilitating the integration of the Persian language and culture. The cultural amalgamation incited a rebellion among settlers who perceived themselves as victims of injustice and inequality. The ʿAbbasids exploited these grievances, ultimately succeeding in their conquest of the Umayyad Empire (Creswell, 1958; Jairazbhoy, 2000). This research examines the historical and architectural importance of the ʿAbbasid period, with a particular emphasis on the integration of Islamic traditions with Persian and Sāsānian influences.

1.1 Objectives of the Study

This study aims to explore:

1. The reasons behind the adoption of the circular city layout for Baghdad.
2. The architectural innovations were introduced during the ʿAbbasid period.
3. The socio-political and cultural factors influencing ʿAbbasid urban planning.

2. Literature Review

The ʿAbbasid period is recognized as one of the most pivotal eras in the evolution of Islamic architecture, distinguished by innovative urban planning and notable artistic accomplishments. The founding of Baghdad referred to as the Round City, stands as a quintessential example of ʿAbbasid creativity. Scholars like Creswell (1958) and Jairazbhoy (2000) have analyzed how the circular design represented both political and strategic authority. Furthermore, Ṭabarī (1989) has highlighted the architectural influences of Persian and Sāsānian traditions on this layout.

The construction of circular cities has historical precedents before Islam, exemplified by sites such as Sinjerlī (8th century BCE) and Dārābjard (present-day Iran), which may have influenced later developments. Sinjerlī exhibited double walls and gateways bordered by towers, whereas Dārābjard demonstrated authentic circular planning with uniformly distributed gates. The earlier cities served as a model for ʿAbbasid innovations, integrating efficient urban designs with symbolic architectural features (Creswell, 1958 ; Jairazbhoy, 2000).

Advancements in structural designs, including domes, vaults, and muqarnas, demonstrate a synthesis of Islamic and pre-Islamic techniques. Stucco decorations and geometric patterns highlight the cultural exchange between the Islamic world and adjacent regions. Researchers have observed a progressive transition from naturalistic designs during the Umayyad era to more abstract and infinite patterns typical of the ʿAbbasid period (Michell et al., 2002; Creswell, 1958).

2.1 The Foundation of the City & Town Planning (762-764)

After making so many journeys Manṣūr chose the best spot for his new capital near the river Tigris. On 1st August 762 AD Manṣūr wrote to request engineers be sent to the city, architects, and land surveyors. Thousands of men were assembled according to Yaʿqūbī[1] the number of workmen was fixed to one lack. According to Ṭabarī[2], the city layout was drawn on the ground using ash lines so that al-Manṣūr could see how it looked. On the line so traced that the seeds of cotton were placed and set on fire and then dug up exactly where the lines were traced. The plan which was conceived by Manṣūr was circular with four equally spaced gateways, each named for the city or province it opened towards. The names were the Kūfa Gate Southwest, Baṣra Gate Southeast, Khurāsān Gate Northeast, and Syrian Gate Northwest.

Baghdad was measuring two miles square exactly as divided by Yaʿqūbī. The name of the architect of the walls was Rabāḥ. Moreover, over wells were dug and a canal was made to provide water to the city for drinking and wetting the mud for brickmaking. Nonetheless, Manṣūr's choice for the round formation seems to be a local architectural influence, which had a history of making circular constructions. But the question of why Manṣūr opted for the round city is still a mystery.

The walls were made of sundried bricks (libn). They were cemented with mud and reeds. The burnt bricks were set in gypsum for tunnel vaults and the domes. The walls were made by reducing the number of mud bricks from 12,000 to 10,000 each time to the third wall of the city inside. The height of the inner wall which one that of the city wall was 17.5 meters. On it were towers 2.5 meters. The walls with crenelation [3] and their thickness was 10 meters. Then came the faṣīl between the two walls 30 meters wide. Finally, the first wall therefore the outer wall of the faṣīl beyond the ditch. All four gates were composed of two gateways, the first gateway of the faṣīl and the second of the city. The second gate of the city gave access to the vaulted chamber which was an audience hall with the staircase to ascend it. These audience halls were covered with 25-meter-high domes, each was mounted with different figures on it to indicate the wind direction. Tower to give a flanking fire with no doubt in a semi-circular plan. Further confirmation is provided by the towers of the horseshoe-shaped city of Raqqa which was modelled on Baghdad.

Besides the pair of great iron gates placed on each gateway, which were moved with the united effort of many men. Between the palace and the main wall was a residential area. The vaulted galleries, which extended from the main gate to the palace gate, separated this area into four equal quadrants. Right street surrounded it on the inside and the outside. Which ran like the spokes of a wheel. All streets were named after clients and generals who were emotional with the building as a recognition of them (see Figure 1, 2).

Figure No 1: Baghdad: The Round City of Al- Mansur Plan by Herzfeld, Early Muslim Architecture by K.A.C. Cresswell page 9.

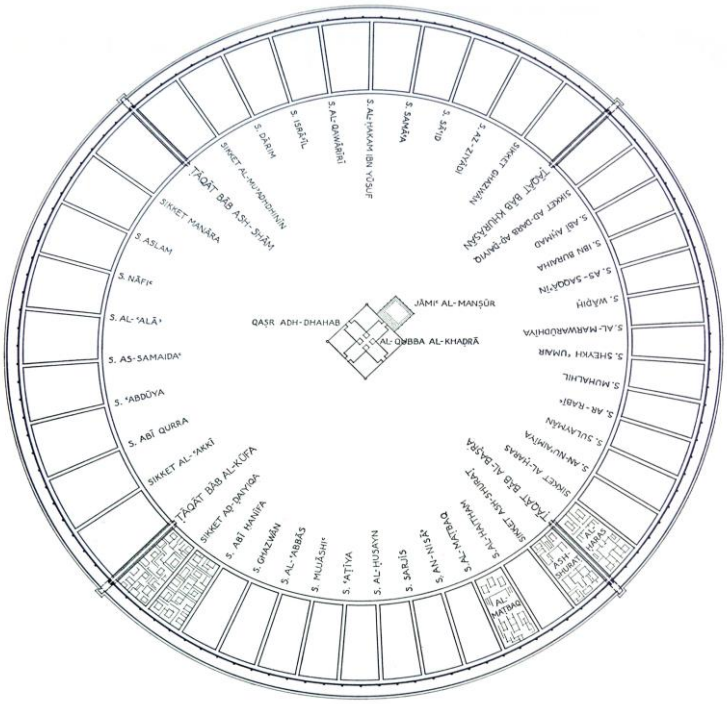
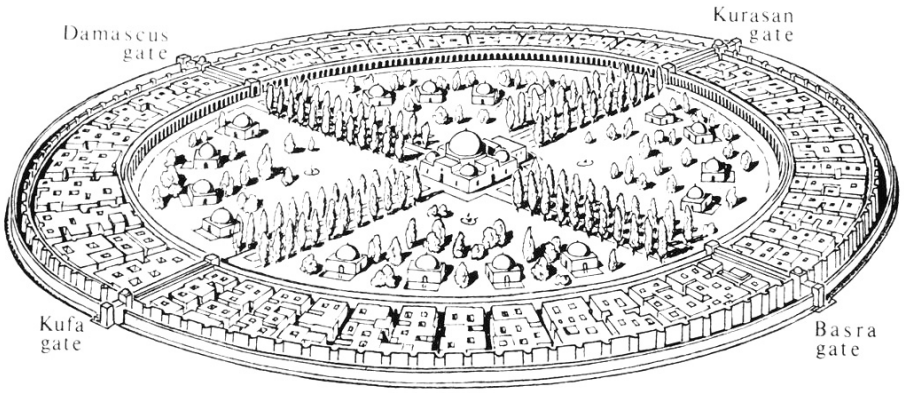


Figure No 2: Baghdad: The Round City of Al- Mansur



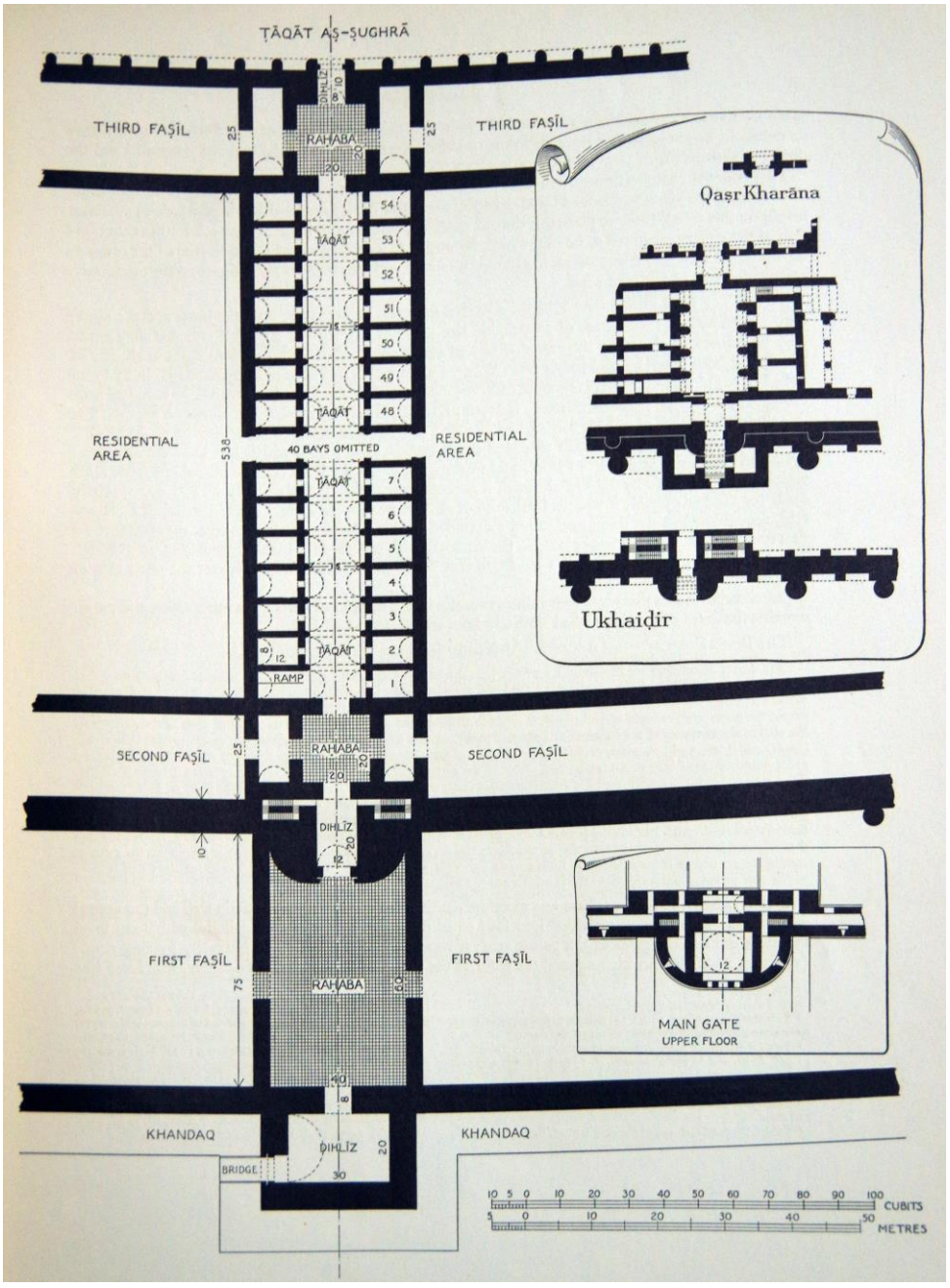
, https://i.pinimg.com/736x/4e/0c/79/4e0c798e2adfaf3022d0a0c9643f05f6.jpg

2.2 The Ṭāqāt or Great Arcades

The long gallery of 104 meters between each of the transverse arches right and left were rooms to watch. There were 54 rooms on one side and a total of 108 rooms for 1000 guards at each gate. 100 rooms for guards each room for 10 soldiers and 8 rooms for their officers. There is no doubt that these transverse arches had served to support the transverse vaults. These

arcades[4] were originally the markets of the town until a Greek ambassador remarked it was unsafe to have them so close to the palace area. Al-Manṣūr decided to move markets into the area of Karakh which was founded outside the walls to keep market activities away (see Figure 3).

Figure No 3: Plan of Outer and Inner Gates Raḥaba and Ṭāqāt by Herzfeld, Early Muslim Architecture by K.A.C. Cresswell, page 13.



2.3 The Great Raḥaba and the Central Area

Round the Raḥaba was the residence of younger sons of al-Manṣūr, seven Dīwāns (Government Departments), and a kitchen. The total cost of the fortification, mosque, and palace estimated by Ṭabarī was 4,000,833 silver dirhems. Unfortunately, nothing is left to be seen on the ground of this great venture but a few evidences like the first wall of the city was

destroyed during the assault of Ṭāhir which ended the first siege in 814 CE. By the end of the tenth century, the foundation of al-Manṣūr had lost its individuality. Though the remains remained formed part of the city grew up outside the walls.

2.4 Architectural Origins of Circular City

As one of the most extravagant examples of town planning, the circular city was assumed by Muslim historians as the first ever circular city known before. It's not the case. Earlier circular military camps of Assyrians existed near 858-824 BCE. The palace of Sennacherib at Nineveh with crossroads from north to south and east to west. At least nine more cities had been dated back before Islam.

1- From the eighth century BCE the Sinjerlī remained an almost circular city with double walls 700 meters in diameter. Three double gateways with flanked by a pair of towers and 94 towers on both inner and outer walls. The citadel is the almost centre and it is assumed to be due to Assyrian inspiration.
2- Abra circular city 450 meters in diameter with 35 towers regularly spaced. Built of a massive block of basalt laid dry as serving for the foundation of mud bricks. Only one entrance.
3- Hagmatāna known to the Greeks in the first half of the second century BCE.
4- Mantineia was built by Epaminondas in 371 BCE. The walls were of stone which were above probably mud-bricked.
5- Ctesiphon built by Parthians and surrounded by a wall of 10 meters. Partly washed away by the river Tigris, which now flows in the centre of the site.
6- Hatra 1st to 2nd century CE nearly a circular enclosure 1700-2000 diameter. Three gates with the palace in the centre.
7- Ḥarān is dated 588 CE.
8- Dārābjard (modern Dārāb) this site in the Persian province of Fārs, which is believed to be Parthian. A true circle of 1220 meters surrounded by a ditch about 25 meters wide. There are traces of eight gateways equally spaced.
9- Hiraqla perhaps Parthian.
10- Iṣfahān 3,000 meters in circumference with four gates but not evenly spaced.

Before the establishment of Baghdad, the circular pattern was commonly utilized in Eastern Asia Minor and Western Persia for about fifteen centuries. Most probably the plan of Dārābjird (Iran) inspired the plan of Al Manṣūr. Apart from inspiration, there are some practical considerations of these circular plans. The economy of walling for a given area to be closed with the shortest boundary is circular (see Figure 4-7).

Figure No 4: Relief Inscription King of Assyria, Early Muslim Architecture by K.A.C. Cresswell page 18.

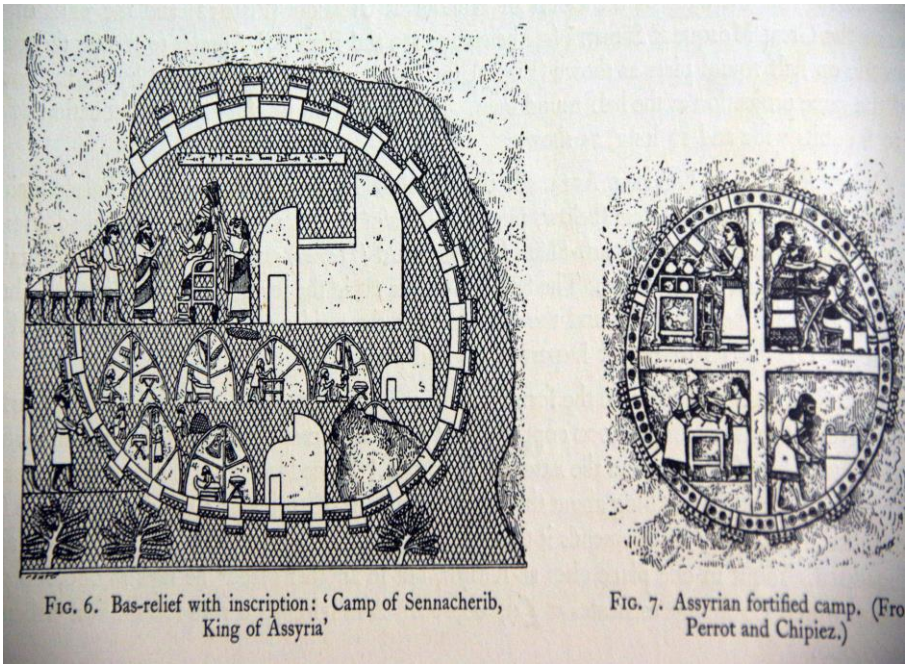


FIG. 6. Bas-relief with inscription: 'Camp of Sennacherib, King of Assyria'

FIG. 7. Assyrian fortified camp. (From Perrot and Chipiez.)

Figure No 5: Plan of Circular Cities dated back from Islam, Early Muslim Architecture, by K.A.C. Cresswell page 19.

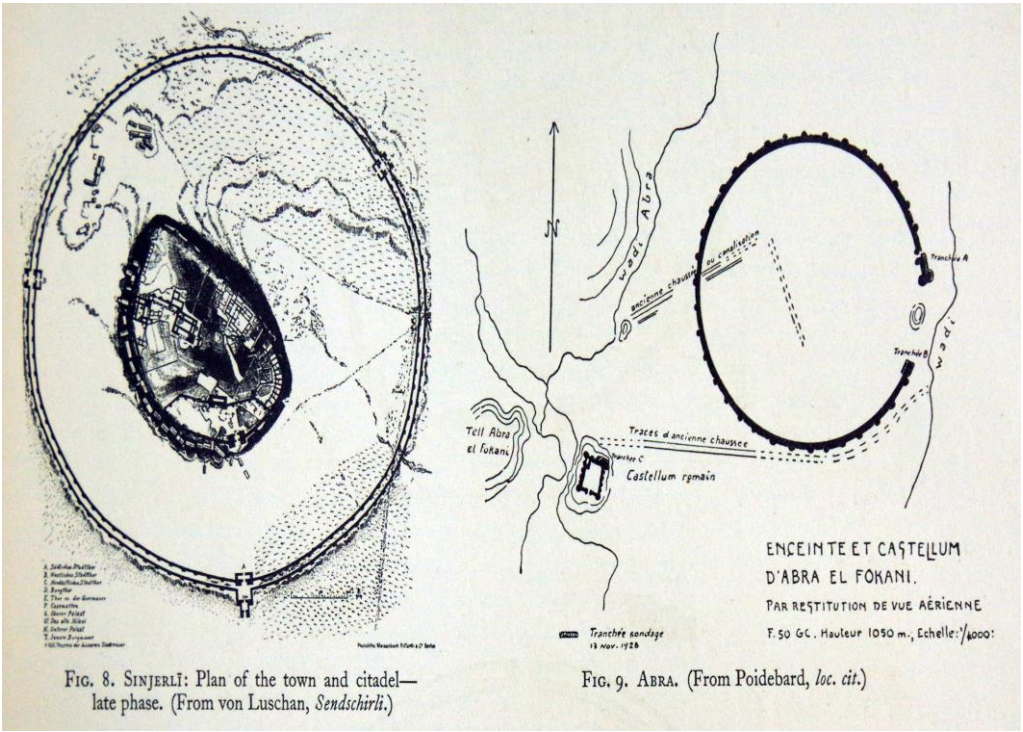


FIG. 8. SINJERLĪ: Plan of the town and citadel—late phase. (From von Luschan, *Sendschirli*.)

FIG. 9. ABRA. (From Poidebard, *loc. cit.*)

Figure No 6: Plan of Circular Cities dated back from Islam Hatra 2nd century AD and Dārābjard modern Dārāba Persian province of Fārs, Early Muslim Architecture by K.A.C. Cresswell page 20

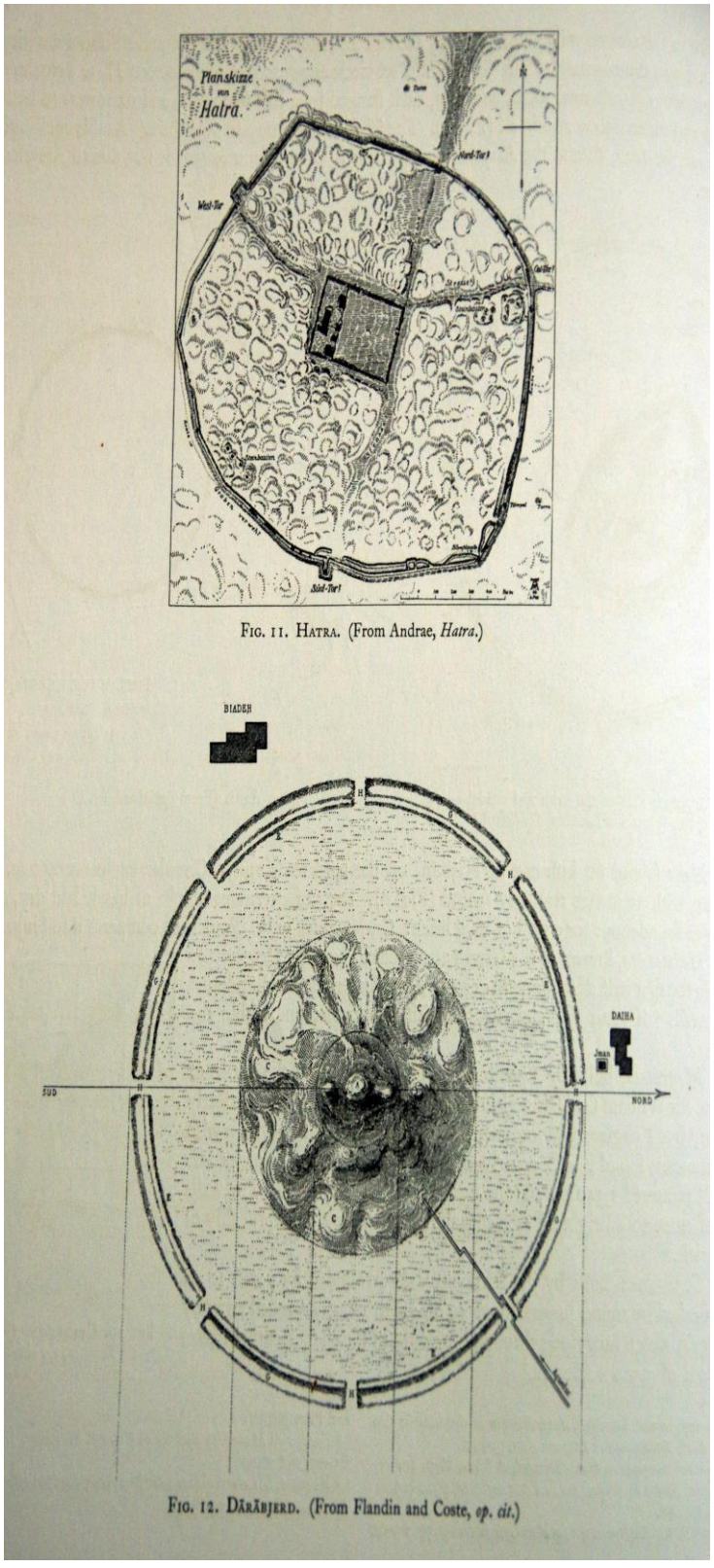


FIG. 11. HATRA. (From Andrae, *Hatra*.)

FIG. 12. DĀRĀBJERD. (From Flandin and Coste, *op. cit.*)

Figure No 7: Circle and Square Enclosing Equal Areas, Early Muslim Architecture by K.A.C. Cresswell page 21.

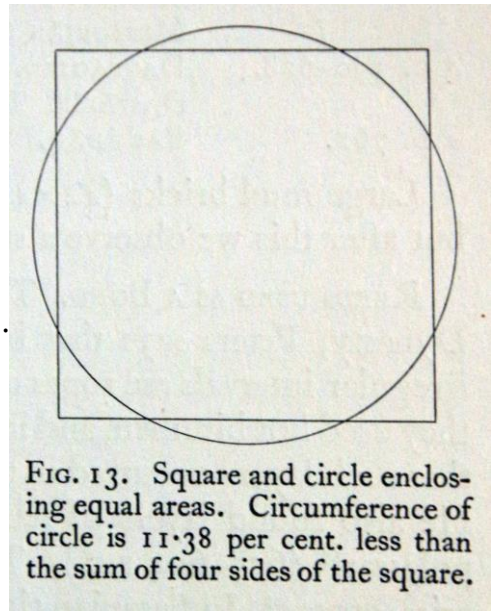


FIG. 13. Square and circle enclosing equal areas. Circumference of circle is 11·38 per cent. less than the sum of four sides of the square.

2.5 Architectural Innovations in Ancient Military Entrances

Figure No 8: Bird Eye View of Outer and Inner Gates by Herzfeld, Early Muslim Architecture by K.A.C. Cresswell page 14.

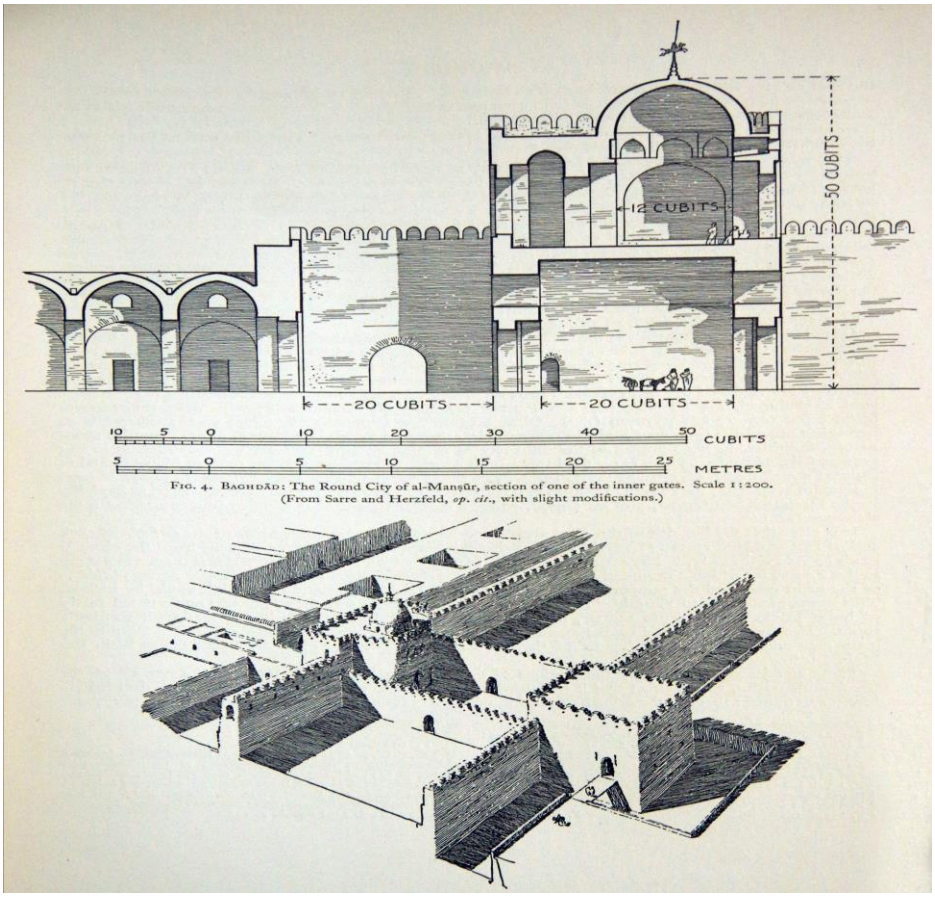


FIG. 4. BAGHDĀD: The Round City of al-Manṣūr, section of one of the inner gates. Scale 1:200. (From Sarre and Herzfeld, *op. cit.*, with slight modifications.)

This is an ancient technique of Babylonian and in Sāsānian the same thing occurred in Dawālīb (a water wheel). The bent entrance with a right angle was found in Egypt. The Romans built the first step forward was to arrange things so that the assailants[5], after entering the outer wall should enter to the left faṣīl (between the two walls) towards the main gate. This would compel them to present their right side, the portion of the inner wall that is not protected from the fire by the shield. The L-shape is planned in front of the outer gateways. To form a courtyard. The front is completely commanded by a tower 20 meters. These types are used in the entrance of Baghdad. The East gate is similar except that the L-shaped screen wall was turned towards the left, which is a fault as the assailant would not be compelled to expose their right side. On the West gate the same L-shaped entrance with a screen wall of diagonal approach. It is said that the bent entrance in the form of a tower first appeared on the fortresses of Justinian in North Africa (see Figure 8).

2.6 The Al-Manṣūr Palace

According to al-Khaṭīb the Palace of al-Manṣūr was also called Qaṣr Bāb adh-Dhahab or the Palace of Golden Gate. It was also known on account of his architectural feature as al-Qubbat al-khaḍrā or the Green Dome. It was a site of 400 square dhirā (=207.12m) in the middle of the round city with its four sides facing the four gateways of the town. In the middle of the Palace was Īwān a vaulted hall opened at one end. At the back of the Īwān was a hall covered by a dome. Above the dome was the second in the same area with a dome over it. The transition between the circle and square was doubtless affected by squinches, which is typical of Persian fashion. Thus, each room was a double cube. These figures are of great significance for the reconstruction of the buildings of that era in which round numbers played a great part. At the peak of the dome was a revolving equestrian finial [6] the figure of a man on horseback holding up a spear in his hand which turned with the wind. A legend does exist that indicates the direction of the enemy coming forward towards Baghdad. It was the crown of Baghdad the landmark of the town. The monument ofAbbasids. The dome fell under a thunderstorm on 10th March 941 CE.

2.7 The Great Abū Ja̓far Al-Manṣūr Mosque

Alongside the Qaṣr Bāb adh-Dhahab, the palace of al-Manṣūr, the city's standard mosque, Jāmiɑ al-Manṣūr, was constructed. It was constructed using clay and sun-dried bricks. The mosque's wooden columns, except five or six close to the minaret, were joined in two sections using clamps and iron. Each column had circular, wood-like composite capitals. The Qibla of Ruṣāfa was more exact, therefore it was necessary to turn slightly in the direction of the Baṣra Gate. Until Hārūn ar-Rashīd, the big mosque stayed in the same condition. Hārūn was ordered to be destroyed and reconstructed using gypsum and bricks baked in a kiln.

Following this, the mosque was engraved with the name of Hārūn. Even now, the name of the carpenter, architect, and date are inscribed on the outside of the mosque wall facing the Khurāsān Gate. In Ṣaḥan al-Afīq, the Friday prayers were said. Before its expansion, it included the Dār al-Qaṭṭān, also known as the Dīwān (administration office), which was built on Mutliḥ the Turk's orders by his friend Qaṭṭān and named after him. This served as the people's prayer palace before eventually joining the mosque through seventeen arches in the wall separating it

from the Old Mosque. The four arches led to the side walkways and thirteen to the Ṣaḥan (courtyard). He carried the Miḥrāb and the Pulpit into the new mosque (see Figure 14).

There were three building periods of reconstruction.

1. The original mosque of al-Manṣūr in 766 CE was 103.60 meters of mud bricks and wooden columns. Each of the two trunks joined together endwise. The flat roof must have rested on these columns
2. The reconstruction of Hārūn ar-Rashīd 808-9 CE of the same size but with walls of burnt brick and mortar with an inscription on the wall outside to the Khurāsān Gate. The nucleus of this building was the Ṣaḥan al-ʿAfīq.
3. In 892 CE after the return of the caliphs from Sāmarrā the mosque became too small that the area of the mosque at Sāmarrā was nearly four times as great as that of this mosque. People had used the connecting building as a hall for prayers. To remedy this Můtaḍid undertook the enlargement of the mosque in 893/4 CE.

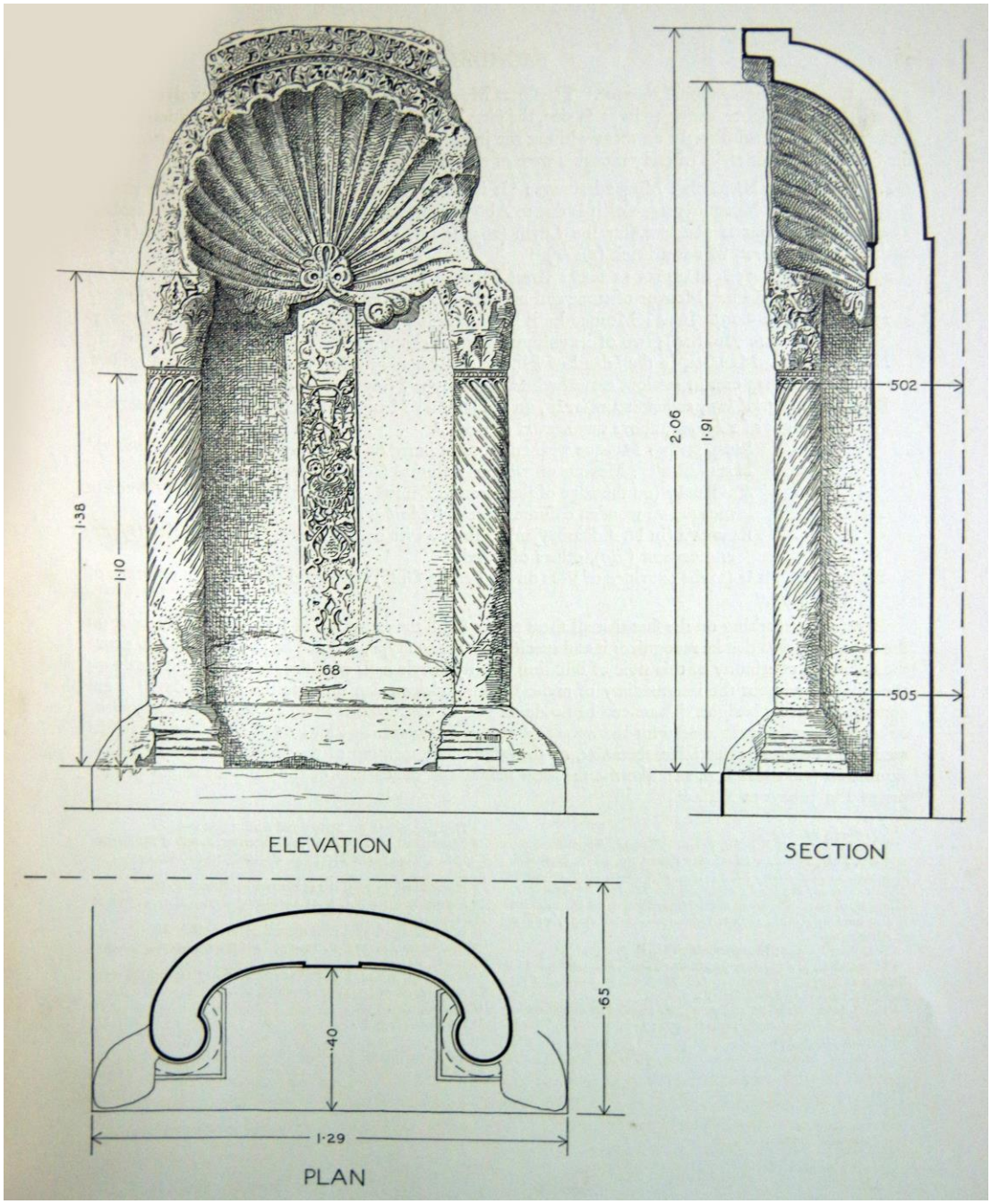
By a series of arches, a connection was made with the old construction of the mosque by perforating the dividing walls in between them.

Herzfeld's reconstruction of the mosque and its transformation as shown in his book Early Muslim Architecture by K.A.C. Cresswell pages 33 and 34, shows that the mosque was built against the south-western side of the palace enclosure, the added part of the Ṣaḥan al-Awwal was added to the front. On the northeast side, the seventeen arches are opened in the wall to make communication. The Dār al-Qaṭṭān was added to the qibla side at the very time. Another seventeen arches were cut in the wall for the same function. Because of this addition, the Miḥrāb and Pulpit were transferred. But according to Creswell who made the reconstruction of the mosque based on Al-Khatib's statement that the inscription of Hārūn ar-Rashīd's reconstruction was doubtlessly on the side near the Khurāsān Gate. So according to this, there is no need to suggest Dār al-Qaṭṭān was any longer used for prayer.

Ibn Rusta[7] says that this mosque was decorated with Lapis Lazuli. This of course can refer to the mosque seen in 903 CE. No part was shown older than Hārūn ar-Rashīd. The mosque is mentioned in several later centuries therefore by Benjamin Tudela in 1160 CE, who says that the caliph only left the palace once when he went to the Metropolitan Mosque at the Baṣra Gate. It appeared to have passed over the horrors of the Mongol siege and sack in 1258 CE. Its name was not in the list of mosques and shrines which were burnt and restored on the order of Hūlāgū. [8] Additionally, it is further mentioned by Ibn Baṭṭūṭa[9] 1358 CE in his description of the west bank as the mosque of al-Manṣūr in the quarter of the Baṣra Gate.

A monolithic whitish crystallized yellow marble block in front of the dome hall prayer. It consists of a shallow niche measuring about 2.06 meters. The columns have twisted fluting and capital of bands of beads without moulding. The two capitals vary and consist of acanthus[10] leaves, acanthus palmettes,[11] and corner supporting leaves. The acanthus leaves differ from the left capital and the right capital is toothed like the Syrian type (see Figure 9).

Figure No 9: Miḥrāb in the Meuseum Probably from the Mosque of Al-Manṣūr, Early Muslim Architecture by K.A.C. Cresswell page 37.



The architectural origins of the combination of the palace and the mosque were already found at Wasiṭ and Marve. It is assumed that the evolution of congregational mosques started from here as the great mosque at Sāmarrā evolved from here. But later on, owing to its size the piers of brick, the marble replaced the wood and the roof had rested directly on them without intermediary arches. The whole series of early mosques were of this type as follows

1. Jidda: mosque built by Umar Ibn al-Khaṭṭāb or Hārūn ar-Rashīd, two of its columns are ebony.
2. Ninth-century Menāma on the island of Beḥrain carved with Sāmarrā type ornament.
3. Before 985 CE Ṣaghāniyān mosque with columns of burnt bricks with arches.
4. Before 985 CE Marv-Ar-Rūd Mosque on wooden columns.
5. Before 985 CE Ar-Rubāṭ ancient mosques east of the Caspian Sea on wooden columns.
6. Before 985 CE Bardhaa in north Ādharbayjān

According to Herzfeld except for Jadda, the mosques were Persian or on the edge of Persia, so he recognized them as Persian type. The Hypostyle[12] halls with flat roofs resting directly on the columns without intermediary arches from the ancient times to till modern days.

2.8 Expansion near Baghdad the Karkh a New City in 774 CE.

Because of the markets in Baghdad, the people used to come into the city frequently. During this time a Byzantine ambassador visited the city and suggested al-Manṣūr that it is unsafe and reveal the secrets of the government to the disguised spy traders. After this advice, al-Manṣūr decided to build a new city near Baghdad called Karkh in Aramaic[13] means fortified city to the south of the round city on the west bank of Tigris see Figure 3-5. Like the first one, this new city was full of markets with specific merchandise and a mosque for people. There are a few more reasons for deciding to build the Karkh. Like Baghdad became more polluted with the population and with the smoke buildings were becoming black. (Gonzalez)

2.9 Mehdia or Ruṣāfā Palace

After the accomplishment of Baghdad, al-Manṣūr built an enormous palace for his successor son Mehdi and it was known as Mehdia at that time. When Hārūn ar-Rashīd built a palace in his era, named Ruṣāfā near the shore of Tigris, later the city was known by its place name. Al-Manṣūr had given pieces of land to his sons and military soldiers. Ruṣāfā was capacious in comparison with Baghdad. This city was as populated as Baghdad. Within no time this new site became a big trading market and industry. Mehdi built a Jamia mosque here. In a few days due to its expansions, Ruṣāfā became equally important as Baghdad. Hārūn ar-Rashīd's daughter made a palace here named Qaṣr-e-Umme Habib. During Hārūn's reign, Baghdad touched the beacon of its developments.

2.10 Samarra 836 CE

Al-Muʿtaṣim 833-842 CE built the new city Samrra from 70 miles north of Baghdad. One major drive was to settle Turkish soldiers there since they were involved in ferocious clashes with local Arab residents. But Samarra turned out to be a place of evil as several caliphs were assassinated there and as a result, this place was abandoned in 892 CE. Most recently the Ariel surveys have established that it was 40 kilometres long and had six palaces each more than five hundred meters in length. Besides 125 other major buildings which are visible from the air.

The land on which Samarra was planned was unfertile. So, to make it fertile land, Manṣūr invited the land surveyors and dug out canals. Numerous gardens were planted. They were expanding to the extreme. Manṣūr's palace measured 107 meters whereas the Jausaq palace of Al-Mutasim 836 CE was seven times larger. Today there are only a handful of ruins

with excavations the plan and palaces, stucco, and fragmentary wall paintings may be seen in the museum. It takes dreams to see how it was a legendary city. (Jairazbhoy 49-51)

2.11 The Friday Mosque at Sāmarrā

The Friday Mosque measuring 784x512 feet (239x156 meters) was built to serve the garrisoned soldiers of Khurasān. The structure's proportions are similar to those of numerous mosques from this era. It was surrounded by a 41-acre perimeter. It was the biggest mosque in the world for many centuries. The mosque's main wall was constructed with semi-circular towers and mud bricks. The walls were topped by a frieze of stucco and brick. The interior was reached through sixteen doorways, with hypostyle halls encircling a central courtyard. A flat wooden roof was held up by hundreds of bricks and stone. Cut marble panels and glass mosaics adorned the inside. The Miḥrāb was rectangular, adorned with mosaics of gold glass, and flanked by two pairs of rose-coloured marble columns. A movable minbar was stored on the right, while the imam had access on the left through openings on each side of the Miḥrāb.

The Malwiya (spiral) tower is located outside the mosque but inside the outer enclosure's walls, reversing the Miḥrāb. The tower is a helicoid ramp that rises more than 165 feet (50 meters) above the ground in an anticlockwise direction to a pavilion. To make each level the same height, the ramp becomes vertical as it rises, making it both aesthetically attractive and impractical to ascend to the top. The tower's peculiar shape has been compared to the ziggurats of Mesopotamia. The traveller's story of Malwiya was inspired by European depictions of the tower at Babel. (Markus Hattstein 102-103).

2.12 Comparison of Raqqa and the Baghdad Gate's Entrance Arches

After its foundation by Alexander the Great, it was conquered by Arabs under Iyāḍ ibn e Ghanm in 639 CE and renamed Raqqa. The caliph Al Manṣūr in 772 CE made it the new city on the west side of Baghdad named Al-Rafīqa (the companion) and garrisoned[14] it with Khurasanian troops to guard Syria from constant raids of Greeks. It was built the same as Baghdad with double walls of mud bricks. Small flanked round towers were made at a distance of about 35 meters. There were probably four gates in the city, one at the southeast corner of the present Baghdad gate, one at the southwest corner towards Euphrates, one at the riverside, and one at the north side.

According to the surviving fortification, Rafīqa was a horseshoe-shaped area of 0.8 miles (1.3 kilometres wide). (Blair)

The Baghdad gate's entrance arch is a centred arch of the type with which we are familiar. But the part near springing is turned sharply by suddenly reducing the radius of the curve. The arches are closely related to Sāsānians except they are slightly towards point. The arches at Raqqa were not formed with two curves meeting at a point see Figure 15. Its soffit and sides are decorated with two simple motives executed in brickwork itself. The designs were made entirely with brickwork the elements and the pattern both with one brick bound. This is the first example of the technique known locally as Hazarbāf, this was intended for eventual development in Persia (see figure 16, 17). (Jairazbhoy 39-45)

2.13 The Mosque at Raqqa in Comparison with the Mosque at Baghdad

The great mosque was built to serve the garrisoned soldiers of Khorasan. It stood the northern half of the enclosure a little to the east-north-south axis. The area consists of rectangular 92.90 meters in width and 108.10 in depth in proportion almost 6:7. The great wall of the mosque was built with mud bricks with semi-circular towers. Brick piers supported hypostyle halls that encircled the internal courtyard. Three bays deep were the prayer chamber on the qibla side. Two deep trenches behind the arches. The only thing standing is the minaret perhaps from the 12th century and a row of twelve arches that formed the façade of the asylum. The early foundation of the mosque by al-Mansur in 772 CE is typical of the mosque and enclosures at Samarra. (Creswell 47-48)

2.14 Palaces and Gardens Outside of Baghdad

After the declaration of the new capital Samarra, people came to live here and the cost of the land was quite high. After Al-Mutasim's (833-842 CE) reign, Al-Wathiq (842-847 CE) built buildings at Samrra. The palace Qaṣr-e-Harūn was built. After Wathiq, Al-Mutawakkil stayed there in the palace and built two new roads named Al-ʿAskar and Al-Jadīd. Due to Qaṣr-e-Jʿafariya, there were consecutive habitations from Samarra to Karkh leaving no space unpopulated.

ʿAbbasids were inspired by non-Arabs so that is why their caliphs and amīrs[15] were found in gardens. They planted Dates from Kūfa and Baṣra and different kinds of fruits. In gardens, they built buildings for sittings, entertainment water fountains, ponds, and vast lands. A few names among these gardens were Qaṣur, Shamasia, and Raqa. These gardens were supposed to be outside of Baghdad.

The reason for these architectural changes was the Persian ideas of kingship increasingly prevailed in Islamic rulers and the mosques became institutions rather than attached to the ruler but associated with ulama. Theoretically, Islam has no distinction between religion and secularity. In the Abbasids' period, the two had deviated in practice.

2.15 Building Decorations

Almost all the buildings were made of mud bricks. By overdoing of carved and painted plaster the walls were covered. Both backed brick-rammed earth and gypsum were used. To invigorate the large expense of stucco carvers developed three abstract styles of decorations, which describe how both subject matter and technique changed with time.

1. Carved technique of geometrical vegetal decoration.
2. Carved crosshatching for surface
3. The Bevelled style, a molded technique

The first style with vegetal decoration was widely used by the Umayyad dynasty. Dissimilar to the plants at Raqqa it was divided into compartments filled with plants without grapes see Figure 18. In the second style, the leaves become an abstract form and do not grow naturally. The third style the bevelled is distinguished by symmetrical and rhythmic repetitions of curved lines including bottle-shaped motifs, trefoils, palmettes, and spirals. Despite stucco, it was also applied on wood for doors and architectural fittings.

The original contribution of Sāmarrā decorators to the development of Islamic arts for the geometric vegetal subjects and the quality of infinite extendibility are key elements in the arabesque decorative scheme. (michell 245-52). The findings of wreckages of paintings at Sāmarrā show a figural decoration as in the Umayyad era. The reconstruction of one mural shows a pair of dancing girls with interlocked arms. Pouring wine into each other's cup. The subject depicts the kind of activities that took place in ʿAbbasid palaces. (Markus Hattstein)

2.16 Tombs

Sāmarrā produced another type of building standing on the west bank of Tigris the Qubbat al-Su-labiya an octagonal dome structure 62 feet in diameter. Herzfeld identified it as the tomb of caliph al-Muntasir (861-862 CE) built by his mother who was a Greek slave. Two other caliphs al-Mutazz (869 CE) and al-Muhtadi (870 CE) were buried there. The prophet disapproved of building tombs but tombs were raised on the graves of the prophets and their descendants. This monument seems to be the first example of this type.

2.17 Data Collection

The historical documents and archives were analyzed to comprehend the establishment and evolution of cities such as Baghdād and Sāmarrā. Additionally, architectural blueprints, urban layouts, and illustrations from sources like Herzfeld's "Early Muslim Architecture" were examined to discern essential design aspects. Consequently, the research juxtaposed Abbasid architecture with preceding Persian and Sāsānian examples, such as Dārābjard, to underscore continuity and innovation.

2.18 Analytical Tools

A geometric study of circular city layouts is conducted to assess their efficiency and strategic design. Additionally, decorative styles such as muqarnas and arabesque are interpreted to track their growth.

3. Results and Discussions

Baghdād's circular city, founded by Caliph al-Manṣūr in 762 CE, is a prime example of Islamic urban layout. Baghdād's circular plan, including a central palace and radiating streets, represents the caliph's power and strategic concerns. The circular shape was inspired by previous Persian towns such as Dārābjard. In 836 CE, al-Mu'taṣim constructed Sāmarrā, a military and administrative centre for Turkish soldiers. Unlike Baghdād, its rectangular structure and wide proportions reflect its military duty and the increasing complexity of Abbasid rule.

The Abbasid period saw outstanding architectural achievements. Innovations in the use of brick for domes and vaults, such as the Muqarnas dome, demonstrated a balance of utilitarian and aesthetic concerns. Furthermore, methods such as the bevelled style emphasized abstract geometric and vegetable patterns, which marked a shift from Umayyad naturalistic themes. The Abbasid architecture incorporated Persian elements, such as the use of squinches to transition from square to round domes. The Baghdād Gate in Raqqa features Sāsānian-inspired characteristics, including pointed arches and elaborate masonry. The emergence of arabesque motifs throughout the Abbasid period demonstrates a stronger connection with abstract and

limitless patterns, which represent divine oneness. Geometric embellishment throughout Baghdad's palaces and mosques demonstrates the Abbasids' dedication to creative brilliance.

4. Conclusion

The study has provided a comprehensive analysis of the Islamic architecture of Iraq during the 8th to 13th centuries, a period marked by significant architectural and urban planning advancements under the ʿAbbasid Empire. The examination of key cities such as Baghdad, Samarra, and Raqqa describe how ʿAbbasid leaders implemented avant-garde designs and construction techniques, particularly through the use of brick and the development of vaulting and dome structures. The unique circular city plan of Baghdad, founded by the Caliph al-Manṣūr, exemplifies the innovative town planning strategies that emphasized strategic accessibility and security.

The contributors to these architectural achievements were multifaceted, including influences drawn from prior Persian, Parthian, and Sāsānian traditions, as well as the adaptation of Eastern Christian architectural elements. The intricate decorations, such as geometric ornamentation and arabesque motifs, reflect the artistic evolution of the time and underscore the long-lasting impact these architectural forms had on Islamic art.

Moreover, the ʿAbbasid innovations marked not only a transformation in architectural styles but also a shift toward a more culturally nuanced representation of identity and power. As the empire expanded, Persian influences became increasingly salient, leading to an architectural legacy that would serve as a precursor to the later development of Islamic architecture. Baghdad, characterized by its vast networks of streets, mosques, and gardens, stood as a monumental hub of culture, knowledge, and artistic expression, solidifying its reputation as a beacon of civilization in the medieval world.

Ultimately, the findings of this research highlight the importance of medieval Islamic architecture in Iraq as a dynamic and influential period that shaped the architectural discourse, reflecting the complexities of cultural interactions, status, and identity within a rich historical context. The legacy of these architectural innovations continues to resonate in the fabric of contemporary Islamic architecture, underscoring the enduring significance of this era.

5. References

Al-Dujaili, S. H. A. (2013). *[Title of the document]*. Retrieved May 29, 2014, from http://www.iasj.net/iasj?func=fulltext&aId=76850

Blair, S. S. (2006). *Islamic calligraphy*. Edinburgh: Edinburgh University Press.

Blair, S. S., & Bloom, J. M. (1994). *The art and architecture of Islam 1250–1800*. New Haven & London: Yale University Press.

Creswell, K. A. C. (1958). *A short account of early Muslim architecture*. Baltimore: Penguin Books.

Creswell, K. A. C. (1979). *Early Muslim architecture, Volume II: Early Abbasids, Ummayads of Cordova, Aghlabids, Tulunids, and Samanids, A.D. 751–905*. New York: Penguin Books.

Gonzalez, N. (2013). *[Title of the book]*. Retrieved May 29, 2014, from https://books.google.com.pk/books?isbn=0984225218

Harper, D. (2001–2014). *Baghdad*. Retrieved June 19, 2014, from http://www.etymonline.com/index.php?term=Baghdad

Hattstein, M., & Delius, P. (2001). *Islam: Art and architecture*. Köln: Könemann.. ASIN: B002KHN33O. ISBN-13: 978-3829025584

Jairazbhoy, R. A. (2000). *Islamic architecture*. Lahore, Rawalpindi, & Karachi: Ferozsons Ltd.

Michell, G. (2007). *The majesty of Mughal decoration: The art and architecture of Islamic India*. London: Thames and Hudson.

Michell, G., Grube, E. J., Dickie, J., Grabar, O., Sims, E., Lewcock, R., Jones, D., & Petherbridge, G. T. (2002). *Architecture of the Islamic world* (pp. 236–237). London: Thames & Hudson

Nadvi, S. M.-u.-D. (2003). *Tarikh-e-Islam (Volume 4)*. Lahore: Urdu Public Library.

End notes

[1] **Yaʿqūbī:** Al-*Yaʿqūbī*, died 897, Egypt Arab historian and geographer, author of a history of the world.
[2]**Ṭabarī:** In full Abū Jaʿfar Muḥammad ibn Jarīr al-Ṭabarī (born *c.* 839, Āmol, Ṭabaristān [Iran]—died 923, Baghdad, Iraq), Muslim scholar, Early Muslim historian and collector of hadith and author of enormous compendiums of early Islamic history.
[3] **Crenelation:** A battlement in defensive architecture, such as that of city walls or castles, comprises a parapet (i.e. a defensive low wall between chest height and head height), in which rectangular gaps or indentations occur at intervals to allow for the discharge of arrows or other missiles from within the defenses. These gaps are termed "crenels" (also known as *cartels*, *embrasures*, or *wheelers*), and a previously unbroken parapet is termed a crenellation.
[4] **Arcades:** A series of arches supported by columns, piers, or pillars, either freestanding or attached to a wall to form a gallery.
[5]**Assailants:** A person who attacks another.
[6] **Finial:** A sculptured ornament, often in the shape of a leaf or flower, at the top of a gable, pinnacle, or similar structure.
[7]**Rusta:** Ibn Rusta, Abu Ali Ahmad Ibn Umar: Arab scholar and encyclopedist of the late ninth and early tenth century.
[8] **Hūlāgū:** Hulagu Khan (ca. 1216-1265) was a Mongol conqueror and the founder of the dynasty of the Il-Khans of Iran.

[9]**Baṭṭūṭa:** One of the world's most famous travelers and authors of travel books (*riḥla*).

[10] **Acanthus**: leaves have a classical appearance and were the source of the Corinthian leaf motif developed and used as a decoration in ancient Greek and Roman art and architecture.
[11] **Palmettes:** A stylized palm leaf used as a decorative element, notably in Persian rugs and in classical moldings, reliefs, frescoes, and vase paintings.
[12] **Hypostyle:** The word *hypostyle* comes from the Ancient Greek *hypóstȳlos* meaning "under columns" (where *hypó* means below or underneath and *stŷlos* means column). Having a roof supported by columns.
[13] **Aramaic:** (Languages) an ancient language of the Middle East, still spoken in parts of Syria and Lebanon,
[14] **Garrisoned:** A military post, especially one that is permanently established.
[15] **Amīrs:** Commander, governor, prince in Arabic.