



PERSIAN ARCHITECTURE: A SOURCE OF INSPIRATION FOR MUGHAL IMPERIAL MOSQUES IN NORTH INDIA

| Received April 27th, 2023 | Accepted September 14th, 2023 | Available online December 30th, 2023 |
| DOI <http://dx.doi.org/10.18860/jia.v7i4.21013> |

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ABSTRACT

India and Persia have had a strong socio-cultural relationship since the ancient period. There had been a cultural link between the two countries. Indo-Persian cultural amalgamation enhanced with the advent of Islam in the Indian subcontinent. The syncretism of these two cultures influenced all aspects of life, including literature, art and architecture. This paper discusses the influence of Persian architecture on Mughal imperial mosques in North India. A review of literature from various scholars on possible influencing factors is presented, accompanied by an observation-based analysis of the architectural features of Persian mosques. Subsequently, the paper identifies and examines various Persian architectural elements existing in Mughal mosques in India. Findings indicate that Persian architecture significantly influenced Mughal mosques in North India and the use of locally available materials made these mosques unique in their architectural styles.

KEYWORDS:

Architectural Elements; Mughal Mosques; Medieval India; Persian Architecture; Safavids

INTRODUCTION

From the ancient period, Persian culture and architecture influenced the Indian subcontinent as, at some point in time, they were ruled by a common ruling dynasty and had a trade link [1]. There was a cultural link between India and Persia from the pre-Islamic period; it was further rejoiced with the arrival of Islam in India [2]. Persian architecture, including Seljuk, Ilkhanid, Timurid, and Safavid traditions, became the basis of medieval Indian architecture [3]. The political and socio-cultural relationship between Persia and India peaked during the Mughal period. In the sixteenth century, India was observing the establishment of the Mughal dynasty while Safavids were rising in Persia. The relationship between Safavid Persia and Mughal India had multiple facets, including politics, diplomacy, culture, literature, trade, and religion.

Many scientists, literary and cultural workers, scholars, political figures, and artisans from neighbouring countries or other areas migrated to different cities of India during the Mughal period. They were attached to the Mughal Court [4]. However, in this regard, the Persians from the Safavid period were undeniably important. Humayun, the second ruler of the Mughal dynasty who spent almost a decade in exile in Persia, was fascinated with Persian culture and architecture [5]. After reclaiming his Delhi Kingdom, Humayun invited many Persian artisans and administrators to India, and many others travelled on

their own and joined services under his reign [6]. The Mughal Emperors, especially Akbar, Jahangir and Shah Jahan, also assembled brilliant gatherings of Persian scholars and poets at their respective courts. Safavids were at the top of the nobility in the Mughal courts, especially during Jahangir and Shahjahan's reign [7]. They were deputed almost at all levels of politics in administration. Persian ladies played a significant role in the Mughal court with their multidimensional capacities, such as Hamida Bano Begum, Nur Jahan, and her niece named Mumtaz Mahal, the famous wife of Shah Jahan. Persian was the official language of India during the Mughal period and remained the language of the allied class in India even after the fall of the Mughal Empire [8]. Husain [9] has recognised the impact of Persian poetry on Mughal architecture.

Various Persian Artisans, such as Abdus Samad of Shiraz, Mir Sayyid Ali of Tabriz, Faroukh Qalmaq, Muhammad Nadir Samarqandi, Mir Hashemi, and Mohammad Faqirullah Khan from the Safavid dynasty, worked in royal Mughal courts. These Artisans worked on several visual objects such as miniatures, buildings, calligraphy, coinage, bookbinding, carpets, Jewellery, and pottery under the Mughal patronage [10]. Naskh and Nastaliq Persian calligraphy had been widely used to ornate Mughal mosques in South Asia [11]. Ziauddin [8] claims that more than a hundred skilled artisans from various cities of Safavid Persia visited the imperial court during the reign of Mughal emperors. Several contemporary Persian architects played a role in

creating significant buildings in Mughal India. Ustad Shah Mohammad and Mirak Mirza Ghiyas made contributions during the Babur reign. Amini Mashhadi and Rafiq Amuli contributed during the Akbar period. Ali Esfahani and Dost Mohammad were notable during Jahangir's period, while Ali Mardan, Ustad Ahmad Esfahani, Mulla Ala-ul-Mulk Tuni, Amanat Khan Shirazi, and Ustad Isa also made contributions during Shahjahan's era. [12]. The rulers of three contemporary empires, Ottoman, Safavids and Mughals, built the great monuments of its resonance with a common visual vocabulary. Despite the existing literature available about Persian cultural and literary influences in medieval India, Persian architecture has not been analysed for its influence on Mughal architecture in India [13]. This paper investigates the influence of Persian architecture on Mughal mosques in India as an inspiration for contemporary mosque design.

METHODOLOGY

The methodology comprises a literature review on the Persian influence in Mughal imperial mosques in Northern India and its historical context. The paper then addresses the architectural elements of Persian mosques and uses the observation method to investigate their presence in Mughal mosques in India. The Mughal mosques studied were Ghaziuddin Khan Mosque, Qila-e-Kohna Mosque, and Jami Masjid at Delhi and Jami Masjid Fatehpur Sikri at Agra; both cities were the capitals of the Mughal empires. All structures exhibit the development of the architectural style and refinement in the use of geometry and proportion during their period [14]. The architectural characteristics and elements of these Mughal mosques were compared, and the subsequent influence of Persian Architecture was analysed in terms of their typology, structural form, decorative devices, and the experiential quality of spaces.

RESULT

HISTORICAL BACKGROUND

After Babur's victory over Sultan Ibrahim Lodhi at the Battle of Panipat in 1526, the Mughals founded their empire in India. Apart from his military excellence, Babur was an art lover, too. He built various gardens and mosques during his reign. He introduced the concept of "Chahar Bagh" (four gardens) in India, which became ideal for his descendants. Most of the monuments he built does not reflect any distinguishing feature; the design is an extension of the previous Lodhi style. During most of his tenure, Babur's son Humayun, was busy with aggressive fighting and could not distinguish the features of Mughal architecture in most of his buildings. However, Humayun's stay in refuge in Persia for almost a decade had developed his deep understanding and love for Persian culture and architecture, influencing the architectural work of the later period in Mughal India [15].

Consequently, Humayun's tomb, a remarkable monument with distinguished Mughal features was built during Akbar's period, greatly influenced Persian

architecture [16]. The triple dome and single-aisle form of the mosque were already developed by the end of the reign of Lodhis, which was further continued and innovated by the Mughals. Jahangir's reign was a transition period and an era of innovation and transformation when the red sandstone was replaced with a white marble surface ornamented with Pietra dura.

During Shahjahan's reign, an innovative tradition of adding minarets as a part of the mosque structure began [17]. However, minarets at Quwwatul Islam Mosque can be seen more as a victory tower rather than a minaret associated with the mosque. Apart from the Qutub complex, the minaret was not a part of the mosque structure throughout the Sultanate period. Even though in a diminished state, the first minaret that appeared in the Jami Masjid at Agra was built by Jahanara, the daughter of Shah Jahan. However, the minaret at the entrance of Akbar's tomb at Sikandra seems to be a work of Shahjan's period because it is finished with white marble. The well-developed slender form of minaret started flourishing only after the construction of Jami Masjid Delhi, and Later, it was reflected in Jami Masjid Lahore and Wazir Khan Mosque during the Aurangzeb period. Other mosques of Aurangzeb's reign are Moti Masjid, constructed in white marble at Red Fort Delhi; Badshahi Masjid, built in red sandstone with white marble inlay work; and a more austere mosque at Mathura. Most mosques built during the Aurangzeb period show sinuous ornamentation, emphasising more verticality and physical seclusion from the exterior world by high boundary walls. The Shahjahan period can be seen as a zenith of Mughal architecture with the highest level of influence of Persian and Central Asian architecture.

PERSIAN ARCHITECTURAL ELEMENTS IN MUGHAL MOSQUES

Some common architectural elements of Mughal Mosques borrowed from Persian architecture are Ivan, domed chamber, double dome, squinches, intersecting and pointed arches, and mosaic faience. A brief discussion is presented here to help identify these elements in Mughal mosques.

IVAN

Ivan is a unit consisting of a barrel vault roof, open to the exterior, either facing onto a court or forming a part of the facade of a building. The Ivan, often projected from the facade of the building, is called a *Pishtaq*, usually much larger and more massive than other Ivans. The Ivan of Persian mosques is a pre-Islamic element derived from Sasanian architecture [18]. Generally, there are two Ivans and four Ivans around the courtyard of a Mughal imperial mosque; one at the center of each facade, and the principal Ivan leading to the prayer hall is more prominent than other Ivans [17, 18]. The Ivans are covered by semi-domes or barrel vaults and flanked by turrets that define and emphasise the ending line of the Ivans. Khazae et al.

[19] categorised the Persian mosque into one, two, or four Ivan types of mosques.

DOMED CHAMBER

In the Persian traditional mosques, the domed chamber adopted the concept of Chahar Taq from the Sasanian fire temple. The square layout of Chahar Taq was elongated in the direction perpendicular to the *qibla* by the Muslims to suit the liturgical way of Islam. This synthesis developed into the standard norm for prayer halls of Persian mosques. The domed chamber had an advantage and could cover larger spaces compared to areas covered with traditional flat roofs [20]. A domed chamber consists of three major parts: a load-bearing system, a transition system, and a dome.

DOUBLE DOME

Persian domes include one, two, and three shells with a considerable space between the shells. On the one hand, these multi-shell domes separate the weathering surface from an internal shell and simultaneously provide a more proportionate form of the building's dome interior and exterior form. The components of Persian double-shell domes are a load-bearing system, transition tier, drums, shells, high drum and internal shell [21]. Sometimes, there is no considerable space between the shells, or they are joined by connectors at certain intervals [19, 22]. The double-shell domes were conical, bulbous or onion-shaped [20]. Bulbous domes are the last generation of Islamic domes in Persia, greatly influenced contemporary monuments' architectural style in Persia and neighbouring regions.

SQUINCHES

Small arches called squinches were used at the corners of a historical building to convert a square space into an octagonal base for a dome. Squinch arches have been used as a transition to construct domes in Persia since the tenth century [18]. Islamic architecture of Persia borrowed squinches from the Sassanian precedent of Persia. The transition tier of the dome from a square space to a circular base was of two types, i.e. squinches and pendentives. These elements served the same primary purpose and were essential components of the dome (Figure 1).

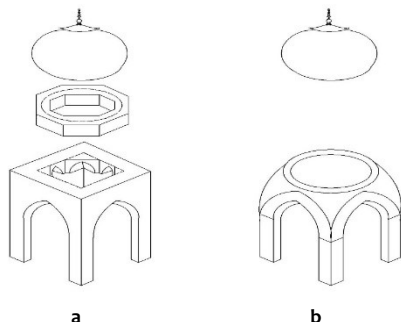


Figure 1. (a) Squinch (b) Pendentive

INTERSECTING ARCHES AND ARCH-NETTING

The curved surface of the transitional system of a dome is broken up by a pattern of intersecting arches

(Figure 2), generally referred to as "arch-net". The Persian builders called the arch-net of a larger composition as *rasmi sazi*. The space between the lines of arch-netting was generally divided by secondary ribs at right angles to those lines. They were vaulting and radiating from a central axis and were filled with decorative shapes of semi-domes, quarter-domes, rhomboidal facets, polygons, and stars [18]. Arch-netting was introduced during the Timurid period and peaked during the Safavid period in Persia.

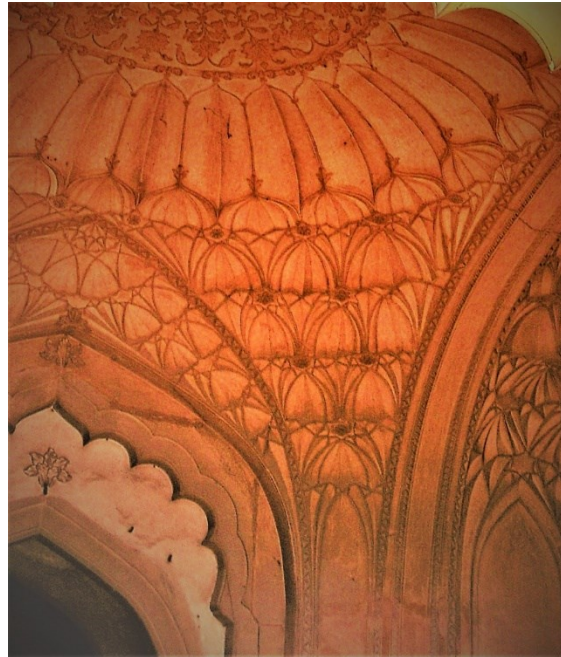


Figure 2. Intersecting arches and arch-netting

POINTED ARCH

Arches, domes and vaults are distinguished features of Persian architecture. Pointed arches are two, three, or four-centred, exerting less structurally outward thrust. Some of them are load-bearing arches, while others are non-load-bearing, which are used only for ornamentation. Four-centred arches were frequently used in Persian mosques.

MOSAIC FAIENCE

The surface of Persian mosques was finished with a patterned arrangement of closely fitted small pieces of tiles in different colors, generally displaying floral forms as this technique lends itself to curvilinear design. There are, however, panels where the small pieces establish geometric patterns. It was widely used, especially in interiors, during the Ilkhanid period but flourished mainly during the Timurid era. However, architects preferred to use *haft rangi* tiles instead of mosaic faience during the Safavid period.

DISCUSSION

The experiential quality of spaces within the Mughal mosques is defined by the character of the prayer hall's interiors and the courtyard's exteriors. The spatial arrangement and architectural form of the prayer hall of the Mughal mosque originated from

Persian Chahar Taq. They were elongated on both sides perpendicular to the *qibla* direction to accommodate a maximum number of people in each row. The *mihrab* is located at the center of the *qibla* wall, providing a space for the Imam to lead the prayer. The prayer hall is separated from the courtyard with an arcuated screen. Cloisters also surround larger mosques' courtyards and have a central ablution tank.

Domes and Ivans are the most dominant architectural forms portraying the exteriors of these mosques. The prayer hall is covered with a triple dome. The Persian Ivan is a vital element of Mughal imperial mosques in India. The four Ivans around a courtyard can be observed in Jami Masjid, Fatehpur Sikri, and Jami Masjid Delhi. At the same time, Ghaziuddin Khan Mosque has a single Ivan at the prayer hall's center (Figure 3).

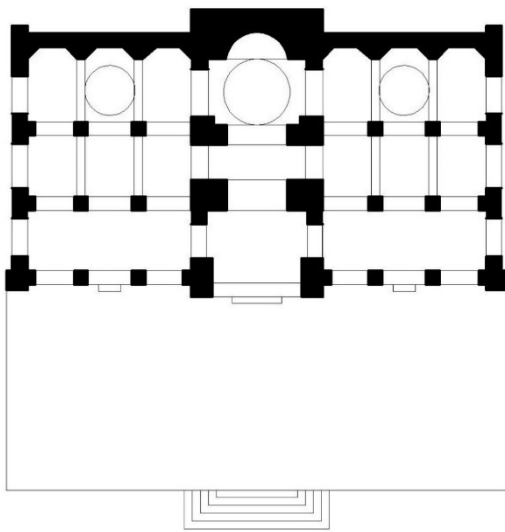


Figure 3. Single Ivan at Ghaziuddin Khan Mosque

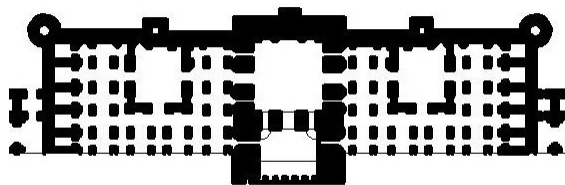


Figure 4. Domed chamber, Jami Masjid Fatehpur Sikri

The structural system of the Mughal mosques is the domes to cover the roof and the arches to bear their load through the arcuated system. The domed chamber and double-shell dome were the architectural elements, which are frequently used in Central Asia and Persia since ancient times. Mughals adopted these elements in their mosques (Figure 4 and Figure 5). The transition system of these domes in the form of squinches can be witnessed in medieval monuments of the Sultanate period, e.g. at Qila-e-Kohna Mosque, Delhi (Figure 6), while arch-netting was introduced by the Mughals in India. However, These two systems were already present in Persian mosques.

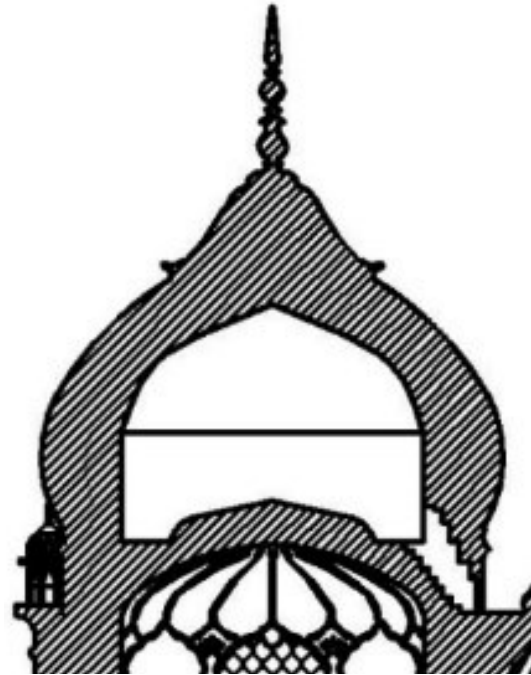


Figure 5. Mughal Double-shell dome Jami Masjid Delhi

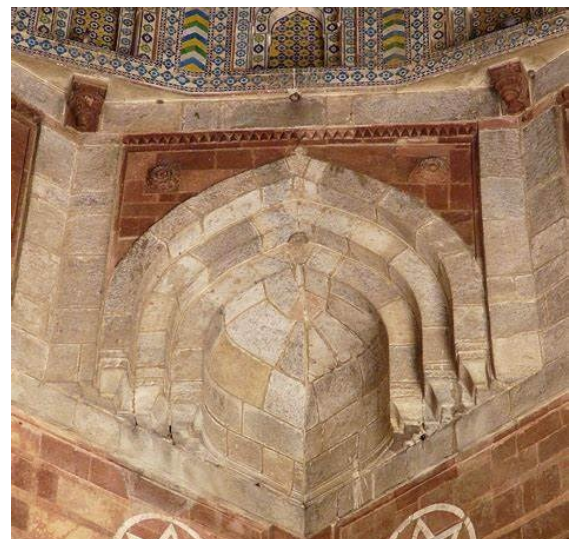


Figure 6. Squinches at Qila-e-Kohna Mosque Delhi

The arcuated system was introduced in medieval India by Muslim immigrants. It developed during the Sultanate period and reached its peak during the Mughal period. As Islam travelled to India through Central Asia and Persia, the arcuated system was borrowed by Muslims and later used by the Mughals. Mughal mosques were embellished with different types of arches, such as three and four-centred, nine-cusped, and multifoil arches. Three and Four-centred pointed arches in Mughal buildings were adopted from Persian architecture (Figure 7).

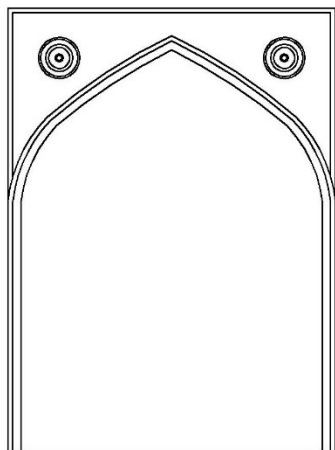


Figure 7. Four-centred arch at Jami Masjid Fatehpur Sikri

In contrast to Persian mosques, Mughal mosques were finished with various stones such as red and yellow sandstone, marble, grey sandstone, etc., as the stone was a locally available material in some regions of the Mughal kingdom.

Table 1. Occurrence of Persian architectural elements in Mughal mosques

Elements of Persian Architecture	Occurrence in Mughal Mosques
Ivan	✓
Domed chamber	✓
Double dome	✓
Squinches	✓
Intersecting arches and arch-netting	✓
Four-centred arch	✓
Mosaic faience	x

CONCLUSION

The earlier Persian influence on Indian Architecture gained momentum with the advent of the Sultanate dynasty and reached its zenith during the Mughal period. The influence was more visible in the mosques built in both cultures.

The architectural features of the Mughal mosques included the prayer hall and mihrab in the interiors of the prayer hall and the courtyard. The exteriors were characterised by domes and ivans, defining the architectural character of the mosque. Domes and arches defined the structural form with the materials used for decorative elements.

Findings of this study show that Persian architectural features like the domed chambers, double shell domes, squinches, intersecting arches, and four-centred arches had a significant influence on Mughal architecture [Table 1]. However, in contrast to Persian Mosaic Faience, Mughal mosque architecture is more diverse due to the materials used that were

available, such as red and yellow sandstone, quartzite, and white marble.

The study presents a qualitative assessment of the Persian influence on Mughal mosques. However, further studies may be carried out to quantify the extent of architectural impressions of the Persian style on Mughal mosques. This enables us to understand the statistical significance of the influence studied.

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