



A PRELIMINARY REVIEW ON DESIGN CONSERVATION OF MUGHAL MOSQUE ARCHITECTURE IN DHAKA: A CASE STUDY BETWEEN KHAN MUHAMMAD MRIDHA MOSQUE AND RASULULLAH'S (PBUH) PROTOTYPE MOSQUE IN MADINA

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ABSTRACT

Mughal architecture reigned supreme in the Indian Sub Continent including Bangladesh for over five and half centuries from 12th -18th Century. Home to the fourth largest Muslim population in the world of about ninety percent of the total population, the Mughals had left many relics including mosques for the Muslims. The capital city of Bangladesh, Dhaka, is studded with mosques of Mughal Period and aptly regarded as 'the City of Mosques' as the same level as Cairo or Istanbul [2]. However, majority of these mosques have disappeared, in ruins, preserved or repaired by giving a modern look, thus giving an impression that conservation of this invaluable 400 years mosque heritage of Dhaka has always been ignored. This paper analysed the current state of architectural conservation of Mughal mosque architecture in Dhaka through a historical review of existing literature with Khan Mohammad Mridha Mosque as the conservation case study. The prototype mosque of Rasulullah (PBUH), the An-Nabawi, in Madinah, Saudi Arabia, is used as a reference for this study to provide guidelines on the extent of conservation to historical mosque-in-use in the light of needs to accommodate the worshippers with the modern requirements. With the limitation of written literature on Dhaka's architectural history and access to sites, the study had identified characteristics of Dhaka's Mughal mosque architecture as heritage traits and had compared them to newly conserved Mughal mosques of its authenticity. Findings on design authenticity of the conserved mosque denote the absence of essential details and characteristics of the Mughal. Constant debate in deciding what needs to be conserved and what had to adapt to meet modern needs between conservators and as practicing Muslim never ends. This preliminary study provides recommendations as a balanced guide for conservators and architects in dealing with heritage mosque as modern buildings.

Keywords: Mughal mosque architecture, design, criteria, conservation.

INTRODUCTION

Mosque Architecture, as a building typology for Islamic ritual, existed in the Bengal region after the establishment of Muslim rule in from 1205-1765 before British rule. The arrival of the Muslims to Bengal marked the beginning of an era in which Islam was the creed of those who ruled most of Bengal as well as most of the Indian subcontinent. A glimpse of Muslim architecture belonging to Pre-Mughal and Mughal Periods of Bangladesh, according to Hassan (1981)[2], can be seen from some of the existing old Mosques of Dhaka. The most spectacular and creative phase of Bengal architecture were demonstrated by the harmoniously balanced, skilfully planned, beautifully carved and decorated monuments of the pre-Mughal times. The establishment of the Mughal sovereignty in Bengal and the transfer of the capital to Dhaka, according to Hasan (1987)[3], brought about a new era of peace and prosperity in the Subah of Bengal.

Rationale and inquiry on the issue of Mughal mosque relevance

Bangladesh was developed as an autonomous and sovereign nation on 16 December 1971 after a nine-month War of Liberation achieving independence from Pakistan and its capital Dhaka (formerly 'Dacca'). Dhaka's long history of advancement prominence, as the Mughal capital of Bengal, was an urban and business focus centre in the

seventeenth century, under the Sultanates beginning from the 14 century and later under Mughal, before it rose to prominence. It then went under British control in 1757. In spite of Dhaka's religious predominance of Islam, it also declares to be diverse countenances of the rich history of pre-Islam. Mughal Mosques are the among the significant legacies of the long history of Islam in Dhaka. However, the uncontrolled urbanisation with changes in land utilisation, designs, the development of new settlements and transportation system had resulted in a rapid change to the chronicled texture of the Mughal settlements. Subsequently, Mughal mosques are progressively transforming into the irrelevant components in present day Dhaka. Literature had acknowledged that (i) Only monumental or dominant Mughal architectures are considered to be of heritage value; (ii) Conservation of invaluable heritage Mosques in the 400-year old city of Dhaka inherently ignored and (ii) most of the Mughal Mosques are currently in ruins while others are preserved or repaired to give a modern look. Thus, as a result, the Mughal mosque loses its real Mughal essence as envisaged by its founders. Why are Mughal mosque been left to ruins? What are the criteria for heritage building in Dhaka deem relevant for conservation? What is considering characteristics of Mughal Mosque in Dhaka? Is Mughal mosque architecture adherent to the teachings of Islam? Does the current conservation design of Mughal



mosque achieve its heritage preservation and yet meet contemporary needs?

Given the above issue, this study, therefore aimed at the following:

(i) To identify the inherent characteristics of Mughal Mosque of Mughal heritage essence; (ii) To evaluate the newly conserve "Mughal mosques for modern use with the traditional Mughal traits; and (iii) To compare both (i) & (ii) to the teachings of Islam based on the development of Masjid a Nabawi, Madina, as the reference. The objective is to provide recommendations as a guideline to the method of design conservation of Mughal mosques, especially in Dhaka. The move is to upheld the value of architectural design and the historical importance attached to appropriate conservation method to accommodate modern amenities in heritage mosque. This is to enable contemporary needs in be considered during conservation line with the teachings of Islam.

METHODOLOGY OF THE RESEARCH

Qualitative method is adopted for this research basing primarily on an empirical survey of qualitative data through observation and documentation conducted using the sequential steps as follows: 1) Content analysis of literature including historical records of the following: (i) what constitute the original characteristics of Mughal mosque architecture; (ii) Current design conservation

methods used; (iii) understanding the principle of mosque architecture from the teachings of Islam; 2) Conducted a field survey on selected case studies of Mughal mosques to interview, observe and record through photography as well as sketches on the existing states of the Mughal mosques and compare them with the old records of Mughal mosques characteristics; 3) Analysis and discuss the data collected including architectural, drawings, documentation of old photographs and current photographs to determine the findings as per the research aim; and 4) Conclude and list recommendations based on the conclusions that will give guidance on design conservation of heritage mosques in line with the teachings of Islam.

Bangladesh – The ancient land & arrival of Islam

Bangladesh is a land of ancient culture, which is deeply saturated with cultural ingredients derived from various sources. Chronologically the antiquarian history of Bangladesh is divided into two distinct phases: (i) Pre-Muslim (Hindu-Buddhist) Phase, and (ii) Muslim Phase (Early Islam, Pre-Mughal & Mughal). Each of these phases is marked by distinctive material culture as evident by the surviving architectural antiquities observable in the different parts of the province as described in Table-1.

Table-1. Development during pre-Muslim and Muslim phase in Bangladesh architecture.

Pre – Muslim Phase (Hindu-Buddhist)	Muslim Phase (Early Islam and Pre-Mughal & Mughal period)
<p>Over 2,000 years ago, it was believed that gods came to show iconographical qualities that had place them as significant religious customs found in different parts of South and South - East Asia. In the Bengal delta, these conventions now known as Buddhism, Jainism, and Hinduism [9]. The most intriguing wonder in the history of Bengal art and architecture is the early Muslim occupation at different pre-Muslim sites, as apparent by the revelation of Muslim relics i.e. the Mainamati (Figure-3) two coins with legends in Kufic character belonging to the Abbasid Khalifahs. The gold coin found from the upper levels at kotila Mura bears the name of Abbasid Khalifah Abu Ahmed Abdullah-al-Mustansir B'illah (1242-58 A.D.). Coins of Harun-al -Rashid were found at Paharpur (Figure-1). These coins give first narrative confirmation of the business transaction of the Arabs with South-East Bengal during the Buddhist time frame. Indeed, the ancient site of Mahasthan (Figure-2) was in occupation from the fifteenth century A.D. as evident by the Muslim coins found at the site [3].</p>	<p>Islam entered Bangladesh in two separate waves: (i) From the sea as a by-result of seaborne exchange between the eight and twelfth centuries. At this point, Arab and Persian travellers and traders were Muslims. A significant number of them settled along the south-eastern drift, where Arab sources specify a port city, Samandar, potentially an early name for contemporary Chittagong; (ii) By land route in the thirteen century as the religion of powerful invaders-The Turks. Unlike India, majority of the population in Bengal gradually adopts Islam as their religion and thus the establishment of the twenty-first-century state named Bangladesh[9].</p>



Figure-1. Paharpur.



Figure-3. Mainamati.



Figure-2. Mahasthangarh.

Bengal- The Mughal period (1576 A.D. -1757 A.D.)

The establishment of the Mughal sovereignty in Bengal and the transfer of the capital to Dhaka brought peace and prosperity in the Subah of Bengal. 'With the influx of this new population, writes Dani, [3], 'the older tastes and manners of life lost their importance, and new decorum and refinement obtained in the towns. The political line-up of Bengal with northern India led to the inter-flow of the cultural trends that were to bear fruit in the various fields of life. The local developments of the earlier periods that had confined to the bounds of the deltaic land now opened to a wider world of influence. How deep the change was can be estimated only when the entire socio-religious life of Bengal is surveyed. In the field of architecture that departure is quite definite.' [3]. Mughal monuments of Bangladesh among them are forts, bridges, hammams (bath), katras (caravanserais), tombs and buildings including mosques have a peculiar charm of their own [3]. Table-2 described the salient characteristics of Mughal Mosque.

Table-2. Characteristics of Mughal mosque to traditional mosque.

Mosque Architecture in Bangladesh	Characteristics of Traditional Mughal Mosque Architecture
Mosque starting from a simple one Rasulullah's (PBUH) Mosque in Madina, in the evolution through time and regions, has attained a significant degree of architectural magnificence and established itself as a distinguished building type. In 601 AH/1204 AD, the Muslims came to Bangladesh and erected mosques to meet the fundamental religious requirements with the help of indigenous building materials, artisans and local building techniques. The nature of the soil and incessant rainfall have a tremendous impact on the formation of mosque architecture of Bangladesh obviously it provide expression of the regional character of religious architecture; which was widely followed and practised from the early Islamic to Mughal Period [1]. Hasan (1987)[3] stated that the use of brick as building material and decorative media, the universal employment of pointed arches, hemispherical domes, characteristic innovation of the curved cornice and hut shaped buildings make the pre-Mughal architecture of Bengal quite distinct from among the provincial school of Indo-Muslim architecture.	There are two kinds of Mughal Mosques according to the uses: (i) Jami Mosque and, (ii) Waqtiya Mosque. Generally, there is open space or courtyard in front of the Mughal Mosques. The principal elements introduced by the Mughal architects were dominant central domes and tall axial entrances. Mughal Mosque architecture's prominent elements are arch, minarets and domes. Mughal adopted the three -domed prayer hall, and among the three bulbous domes, the central dome is bigger and rested on high shoulder ornamented with typical blind Marlon. Corner turrets used to enhance the verticality of the mosque. Corner turrets are slender, extended above the roof level, and has a kalsa type base. Besides the four octagonal corner turrets, there is corner turret of smaller in size placed at each corner of all projected panel for the entrance opening. The traditional terracotta ornamentation replaced by plastering of the walls which show decorative panels, rectangular type or arched type; the arches being of various kinds, such as flat arch, multi-cusped arch, four-centered arch, horseshoe arch. The interior of dome and entrance came to be decorated with net and foliage pattern in plaster. Straight cornice and horizontal parapets ornamented with blind merlons in plaster. Powdered brick with lime was introduced as mortar and plaster material. After mixing the powdered brick with wet lime, a new reddish yellow or pink colour occurs automatically, which resemblance with the red sandstone buildings of central Mughal[1].



ANALYSIS AND FINDINGS



Figure-4. Allakuri mosque (1680).



Figure-7. Sat Gambuj mosque (1680).



Figure-5. Lalbagh fort mosque (1678-79).



Figure-8. Khan Muhammad Mridha mosque (1704-5).



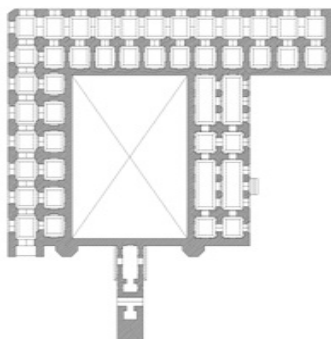
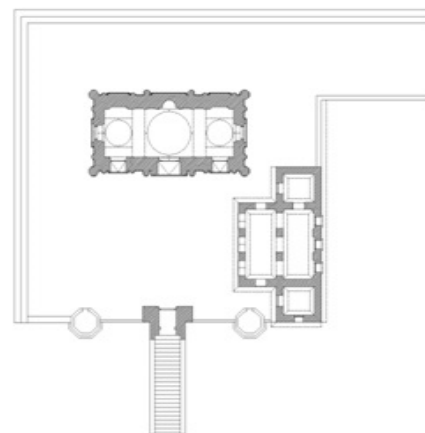
Figure-6. Kartalab Khan mosque (1700).

Mughal Mosques are classified in the following categories: (i) according to the varying ground plans, (ii) physical appearance and (iii) roofing patterns such as Single -domed mosque and the Three-domed Mosque (refer Figure-4 to 8). Table-3 described the Bengali indigenous Architectural features of case study Khan Muhammad Mridha Mosque to traditional Mughal mosque characteristics.

**Table-3.** Description of Khan Muhammad Mridha mosque.

Case Study of Mughal Mosque : Khan Muhammad Mridha Mosque	
Description of Mosque and its location	Nearly three hundred years old pictorial Khan Muhammad Mridha Mosque is located in the area called Atishkhana close to the north-west corner of the Lalbagh Fort in Old Dhaka. One of the most characteristic features of the Mughal architecture of Bengal is terraced substructure, commonly known as Tah-Khana, as exemplified by the Mosque of Khan Muhammad Mridha [3].
Architect or builders of Mosque	It was erected by one Khan Muhammad Mridha, who was probably the chief mason or architect. It is presumed that Khan Muhammad Mridha was instructed by Qazi Abdullah [2].
Physical Appearance of Mosque	The mosque complex is encompassed by a 3.65m high boundary wall, the openings and recessed panels of which are designed in pure geometrical order and symmetric manner[1]. The mosque is situated in the south –west corner of a walled compound of 0.8 acres. The mosque and its supporting structure take up about one-third of the compound, the rest being garden. South-west corner of the mosque is the intersection of two busy roads.
Description of platform and underneath rooms	The mosque stands on a raised platform (refer Figure 8), and this platform supported by a series of vaulted chambers on all sides except the eastern side. In the eastern side of the mosque, there are two octagonal projected spaces. The central part of the podium is inaccessible. A nine-foot wide corridor runs along the northern and western part serving seventeen 9 x 9 foot (3 m x 3 m) chambers beneath the podium. There are four more chambers on the southern side. The reason of these chambers is not very clear (Architectural & Urban Conservation in the Islamic world (1990). Khan Mohammad Mridha is a three dome oblong type of structure which occupies a small portion of the enormous platform. The large platform is about 38.10 m long from north to south and 28.96m from east to west. Platform's height is about 5.18m from the ground level.
Description of Stairway of Mosque	One the east side of the mosque there is a 2.74m wide single flight stairway to reach on platform, its starts from garden and end with a platform gateway (arched gateway) aligning the central doorway of Mosque where the main prayer hall is to be found. The staircases contain twenty-five steps and these steps are partially covered with stone slabs held in place with metal clips. Khan Muhammad Mridha Mosque measure 48 feet by 24feet (14m x 7m) with corner towers which one rising above the parapet and these slender, towering corner towers are capped by cupolas, ribbed in shape (Dani (1981)).
Description of entrances of Mosque	Three arched entrance doorways in the eastern wall and respectively, the western qibla wall contains three mihrabs niches, and central mihrab being larger than other mihrabs. The subsidiary pilaster borders each entrance and the projection of the mihrab at the back of the western wall. These pilasters originally ended in pinnacles, but now are missing (Abu Sayeed M. Ahmed(2006)). The northern and southern wall of mosque contained one opening each; these openings had been closed by perforated screen. The mosque interior is divided into three bays by two lateral arches, each containing a decorated mihrab under multi-cusped arches, which are framed with rectangular panels (Architectural & Urban Conservation in the Islamic world (1990), Volume one).
Description of domes of Mosque	Among three domes of central mosque (refer Figure 6), the central dome is bigger and higher than other two. All domes are onion shaped, and three squats domes stand on high shoulders. The high shoulder of these onion shaped domes embellished with relief of blind merlon in plaster. The side domes reduced size is achieved by using intermediary pendentives. All external facades were decorated profusely with panelling. Ornamental merlons are seen at different stages of the parapet. On the northern corner of the terrace, there is a hujra where it is use as the living space for the Imam of the mosque.
Material of Mosque and serves of mosque	Due to the absence of red sand stone in Bengal, the Mughal builders in Bengal used red powdered bricks with lime stone mixture in the outside plaster work to give the essence of red sand stone architecture of the imperial Delhi empire (Abu Sayeed M.Ahmed (2006). Khan Muhammad Mridha Mosque serves for the five-time daily prayers. The Jumma and Eid congregational prayer extend to the podium terrace and the surrounding garden.

Architectural drawings of Khan Muhammad Mridha mosque

**Figure-9.** Ground floor plan.**Figure-10.** First floor plan (Plaza level).

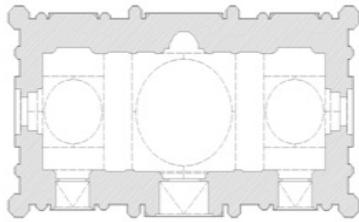


Figure-11. Plan of mosque.

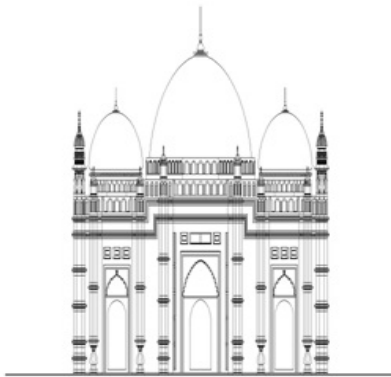


Figure-12. Front elevation of mosque with three dome features.

Analysis of Rasulallah's (PBUH) Prototype mosque In Madina to Mughal's mosque

The evolution of the Prophet's mosque was the encapsulation of the Prophet's contributions to the development of the progressive wonder of Muslim Architecture (Omer, S. (2016). The first and immediate task relating to community building mission was constructing the city's principal mosque after at the point when Prophet Muhammad (PBUH) migrated from Makkah to Madinah. According to article of Omer, S. (2016) during the time of the Prophet (PBUH), the Prophet's Mosque, An Nabawi, serve as a community development centre. The form of the Prophet's Mosque was incredibly simple based on the subsequent themes as described in Table-4.

Table-4. Summary of characteristics of Prophet's mosque to traditional Mughal mosque.

Criteria	Prophet's Mosque	Mughal's Mosque
Function-form relationship:	Functions of buildings in Islam are to be optimised rather than the form of the building. Buildings are designed to be at the complete service of users. The principle of the Prophet's Mosque evolved from a simple enclosure to a multi-functional community centre to the spiritual, educational, social and political needs of the Muslim community. Ultimately if the form is justifiable on the strength of the functions and aims of buildings, the form is acceptable. For that very reason, whenever a genuine need called for enhancing the physical appearance of his Mosque, such as in the cases of re-roofing of the Mosque; paving a section outside one of the Mosque's entrances; providing lamps; establishing a minbar (pulpit); a dukkan or seat; enlarging the Mosque and many more, the Prophet (PBUH) was very supportive.	Mughal Mosque were designed in respect of function-form relationship; and does not serve only the daily prayer, but it also serves religious education, people interaction and provides charity for people's of neighbour. Mughal mosque's the principal elements were dominant central domes and tall axial entrances. In Mughal mosque commonly doorways in the eastern wall and respectively, the western qibla wall contains mihrabs niches, and central mihrab being larger than other mihrabs, a number of mihrabs depend on the numbers of doorways of the mosque.
Respect for the environment	According to article of Spahic Omar, 2016 the architecture is conceived, created and used must conform to a peaceful co-existence between people and the environment; as well as between the realms of natural and built environments. Architecture must be an environment-conscious enterprise, realising and then inviting and accommodating nature's advantages, and also realising and then repelling its disadvantages. In other words, architecture must be sustainable.	Bangladesh is a country of heavy rainfall due to this effect the design of mosque roof, wall, floor and platform inform of the mosque need to respect the environment well. Around the mosque there are a well designed garden



Cleanliness	Cleanliness to the cleanliness of the body, dwelling places, courtyards, streets, markets, rivers and the whole surroundings – constitutes a branch of faith (iman) in Islam (Muslim, 2005, Hadith No. 328). Muslim architecture should be identified for typifying and promoting it. The Prophet (PBUH) was very much concerned about the cleanliness of the whole of the city-state of Madinah in general, and about the cleanliness of his Mosque in particular (al-Tirmidhi, 2010, Hadith No. 2723).	The cleanness of mosque itself and the neighbouring are must be ensured.
Comprehensive excellence	Muslim architecture with every aspect has to represent the idea of comprehensive excellence because recommended for Muslims in all circumstances. In every aspect of the process of designing buildings, from choosing a site; conceptualising; making a design; over a selection of building materials; quality of work; to the final execution of buildings; energy-efficient; the activation of their function as environment-friendly and catering to the exact needs of their users, need to meet the spirit of excellence.	Islam is a global religion, in the context of every country mosque designed in a different architectural consideration but it follows the essence of Rasulullah (PBUH) Mosque.
Promoting just social interactions	Muslim architecture has to encourage social interactions. Thus realising some of the most prominent Islamic values and principles. Prophet (PBUH) the best example to get inspiration from strengthening fraternity among the migrants (muhajirs) from Makkah and helpers (ansar). The primary aim of the Prophet's actions depended on the strength of the relationship between these two groups as determinant on the future of Islam and the Muslim society in Madinah.	The Large platform serves interactions of people, Jummah Prayer, Eid prayer. The room beneath the podium can be serving as female prayer space.
There is neither inflicting nor returning of harm.	One of the most consequential Islamic principles in architecture and in built environment in general is the one highlighted in a hadith of the Prophet (PBUH): "There is neither inflicting nor returning of harm" (Ibn Majah, 2008, Hadith No. 2331). Unquestionably, people's physical, psychological and even spiritual wellbeing depends on the conduciveness and productivity of the environments that their architecture provides.	Mosque design as well as its activities always ensures that there is inflicting nor returning of harm.
Indigenous versus foreign influences	The Mosque promoted the concept of Islam's conclusiveness and universality, as well as the notions of universality and unity-in-diversity in Islamic civilisation. Mosque was built not only as a prayer space but serving as to other collective worship ('ibadah) practices, was the seat of the Prophet's government, a learning centre, a place for some medical treatments and nursing, a detention and rehabilitation centre, a welfare and charity centre, and a place for some legitimate leisure and recreational activities (Spahic Omar, 2016).	In Bangladesh the use of local material is paramount. It respects the local environments and craftsmen's techniques of Bengal give a look of Mughal Mosque architecture.

CONCLUSION AND RECOMMENDATIONS

Bangladesh has colourful past and its diverse culture as it navigates the extraordinary twists and turns that have created modern Bangladesh. In Mughal periods the city decorated with well-laid out gardens, tombs, mosques, palaces and forts from bricks. Mosques are the most important architectural typology. As a place for daily prayers, the Mosque is one of the mostly visited Mughal structures in Dhaka. Preliminary findings of this research however denote the lack of control over heritage building mutilation therefore justify that design conservation of Mughal mosques be made mandatory as follows:

- 1) Policy and plans should be formulated to focus on the design conservation of historical mosques with consensus among Muslim religious institution, public administrations, academic institutions, heritage trust,

and citizens' representatives with the purpose to avoid any act that may damage the meaning and image of the monument for the general interests of Mughal Mosque as nation's legacy.

- 2) Ensure that any conservation works in heritage and Mughal mosque to be conserved to its traditional design as per stipulate guidelines (to be formulated).
- 3) Law and regulations as per (2) to be adhered to strictly by both architects and the stakeholders in the spirit according to the teachings of Islam.

Without respect on the deep root of own culture and the inherent heritage value and ensure religious viability, authorities should take some steps to protect and preserve heritage buildings, which are already in danger of disappearing, as legacy to the future generation without



discontinuation its use as mosque for eternity. Hence the need conserve Mughal Mosque design is critical.

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