Understanding the Archetype of Sultani Period Mosques and Its Impact on Contemporary Religious Architecture in Bangladesh.

ABSTRACT: The architecture developed in this deltaic region in the Sultani period (1204-1576) had distinctive features from other parts of the world. To propagate Islam across this area, numerous social structures like mosques, madrasas, khankas, and mausoleums were built during the Sultani Period. The Archetype of this religious architecture developed here was an assimilation of contextual constituents and the knowledge of building structure and art imported from the origin of the Sultani rulers. They had to explore their expertise with contextual possibilities due to the unique climatic conditions and soil formation, which resulted in the creation of a style that encompasses structural ideas, functional usage, material, scale, proportion, and aesthetic appeal. Bangladesh is now renowned worldwide for having the finest examples of practicing both Islamic architecture and functioning mosques. The Sultani era archetype serves as an inspiration for many of them. The objective of the current study is to comprehend how the Sultani period archetype has influenced contemporary mosque and other religious architecture practices. As the case studies of the Sultani period architecture Sixty Domed Mosque (Shat Gombuj Mosque) in Bagherhut by Khan Jahan Ali (1352–1576), Nine Domed Mosque (Noy Gombuj Mosque) 15th century in Bagherhut, Kusumba Mosque (1558) Sultan Ghiyasuddin Bahdur Shah Period, Goaldi Mosque in Panam Nagar, Hazibar Akbar Shah, 1519, period Sultan Hussain Shah will be analyzed. Bait Ur Rouf Jame Mosque, Faidabad, Dhaka 2013, Marina Tabassum Architects, Zebun Nessa Mosque (2024) in Ashulia, Studio Morphogenesis, Shah Muhammad Mohsin Khan mausoleum (2022), Manikgonj, Dhaka, Shapotik, Miazi Bari Jame Mosque (2013-15) in Chandpur, GoAat (Group of architects and thinkers) will be the contemporary case studies for understanding the impact of Archetype of Sultani Period Islamic Architecture. This study will present an Architectural and a morphological analysis of both types of case studies and the result will display how the knowledge of the Sultani Period Islamic architecture is still relevant and inspirational in today's practice.

KEYWORDS: Sultani Period Architecture, Contemporary Mosque Architecture in Bangladesh, Contextuality, Archetype.

1. INTRODUCTION

Religious buildings have always differed from the ordinary buildings surrounding them in terms of their architecture, planning, spatial solutions, and uses. In Islamic religious structures, mosques are not only a space for religious activities but also act as an institution for the community that shapes the nation. The Sultani Period in Bengal was the golden era of Islam in this region. The military campaign led by Muhammad bin Bakhtiyar Khalji in 1204 A.D marked a turning point, bringing Bengal under the control of the Delhi Sultanate and establishing a Muslim political presence (Eaton, 1993). The arrival of Sufi missionaries, mystics, and saints played a crucial role in spreading Islam among the local population. They established religious structures like mosques, madrasas, khanqahs and mausoleums, etc. and actively engaged in social and humanitarian activities, even assisting rulers in politics. These establishments played a remarkable role in reaching the doors of the general people, shaping their cultural, religious, and political landscape (Eaton, 1993; Ahmed, 2001).

During the Sultani period in Bengal, Muslim rulers developed a distinctive archetype that blended Islamic, Persian, Arabic, and local Bengali traditions (Roy, A., 2014). This fusion created a unique Indo-Islamic architectural identity in Bengal, which set it apart from other regions of the Indian subcontinent. The mosques from the sultanate period in the early 13th to 14th century are notable ones in Bengal, for instance, the Adina mosque at Hazrat Pandua of Maldah district, West Bengal, in 1369 AD, the Six Domed Mosque, in 1442-1459 in Bagerhut.

Religious Architecture, especially mosques in the sub-continent, always had a preconceived appearance that was greatly rooted in the Sultani period Architectural practice. Contemporary practices of religious architecture are no different. Some of these contemporary religious architectures have been acknowledged globally for their uniqueness, which is not only functional but was both spiritually enlightening and aesthetically brilliant. Their design, encompassing scale, style, proportion, aesthetic appeal, materials, function and structural integrity, is determined by great contextual sensitivity and sustainability. These works remain rooted in the archetypes of the Sultani period while also adapting to the evolving socio-cultural demands of the present day.

This research aims to understand the archetype that influenced contemporary religious architectural practice embedded in the Sultani period architecture, which is not only architecturally brilliant but also highly contextual, climate-responsive and sustainable.

The research objectives are-

-understanding the Architectural and Morphological characteristics of both types of case studies
- analyzing the Archetype of the Sultani Period Architecture to understand the language of present-day religious architectural practice.

2 RESEARCH PROBLEM

Religious structures serve not only as a space for daily prayers but also as a medium for spiritual enlightenment and the fulfilment of socio-cultural needs. It nurtures conscience and consciousness, helping to maintain balance within society. Consequently, the architectural form and functionality profoundly shape people's lives and reflect their national and cultural identity. During the Sultani Period, religious buildings acted as beacons, spreading the light of Islam throughout the region and establishing a unique archetype. This archetype continues to inspire Islamic architecture in Bangladesh till today. Therefore, it is a critical need to analyze how the knowledge of the Sultani Period Mosque is still relevant in today's architectural practice to lay the foundation for the future language of contemporary religious structures in the region.

3 LITERATURE REVIEW

Being a deltaic region, Bengal has developed a unique way to settle down. The structures in this area displayed temporal characteristics as well as distinctive constructional heritage to deal with this impermanence with a rich architectural vocabulary in the Buddhist and Hindu period (Reza, M.H., 2012). The Muslims had highly sophisticated architecture when they arrived in this subcontinent (Avari, B., 2012). Briefly, they had established certain types of structural elements, such as mihrabs, arches, turrets and domes, which were familiar throughout the Muslim world. However, in addition to their knowledge, a variety of local factors were dominant in various localities and areas. They were humbled to embody the essence of the land where they thrive (Avari, B., 2012).

Richard Eaton has described that the local Muslim culture flourished during the years when the Ilyas Shahi and Husain Shahi dynasties (1342-1487) ruled the country (Eaton, R.M., 1993). The early establishment of the Muslim rulers was Adina Mosque in Hazrat Pandua in West Indian in 1375, which is the only mosque that resembles the traditional hypostyle of early Islamic mosques in Bengal (Alamgir, K., 2014). Although various features in the Adina Mosque, such as the corner towers/turrets, pointed arches, and terracotta decoration-become part of the Bengali mosque tradition, the hypostyle itself did not, perhaps because it was unsuited to the requirements and the climate of this

region (Hasan, P., 1989). The Ulucami of Bursa (1369-99) and the Zincirlikuyu in Istanbul (15th century) bear a superficial resemblance to the Bengali rectangular mosques, but the differences between them were striking (Sanyal, H., 1970). In Turkish mosques, stone is predominantly used as the primary building material, and the interiors are typically supported by robust piers rather than columns (Hasan, 1997); in Bengal, brick is the prime building material for enclosure, and stone columns are more likely to support. Turkish mosques typically feature a single main entrance at the front, along with one or two side entrances, whereas Bengali mosques often include multiple entrances on both the front and sides. The form of the traditional Bengali hut significantly influenced mosque design during the Sultani period, with most structures adopting square or rectangular plans depending on the size and needs of the local community (Hasan, 1997). In mosques of Bengal and North India, each aisle typically ends at the western wall with a mihrab or a series of mihrabs, aligning with the qibla direction, while the eastern side features entrances. The mosque structure is typically roofed with either a single dome or multiple domes, based on its scale and spatial arrangement. In some cases, vernacular roofing styles such as the *Do-chala* (two-sided sloped) and *Chow-chala* (four-sided sloped) forms were recessed into the roof to simplify construction and for effective rainwater drainage (Hasan, 1997).

Fig 1: Sixty Domed Mosque at Bagerhut
Source: https://www.re-thinkingthefuture.com/travel-and-architecture

The Muslim architecture that emerged in Bengal was distinctive and influenced by this deltaic region (Tabassum, M., 2019). In contrast to the green and gold mosaics of Jerusalem and Damascus, or the superb coloring of Persian title work, or the wonderful fantasies of Spanish design, Bengal offer her marvelous art designs in terracotta that take their inspiration from the natural vegetation of this land (Ahmed, S., 2016).

The blending of local construction techniques, available local materials, climatic considerations, and skilled native craftsmanship with Islamic spatial concepts led to the creation of an archetype that is distinctly Bengali in identity while deeply Islamic in faith (Absar, A. B. M. N., 2024). This unique type of mosque architecture has played a significant role in the history of the building art and architecture of later Bangladesh.

The term “archetype” in architectural discourse refers to timeless spatial and formal patterns that embody cultural and functional essence (Unwin, 2009; Eliade, 1959). For religious structure, it emphasized the symbolic and sacred geometry that explained how form reflects spirituality and connects with the users (Matracchi, P., 2021). In the context of the Sultani mosques, the spatial hierarchy, orientation toward the qibla, pointed arch, morphology of the domes and emphasis on symmetry and repetition and the use of terracotta brick echo these archetypal principles.

The distinctive Bengali architectural archetype that evolved during the Sultani period underwent a significant transformation under the Mughal rule. Traditional elements such as exposed brickwork adorned with terracotta ornamentation were largely replaced by smooth, plastered finishes. Furthermore, the characteristic multi-domed mosque structures of the earlier era gave way to a standardised form, typically featuring three domes, which became prevalent in Mughal Mosque architecture (Hasan, S. M., 2007).

Contemporary architects often reference the Sultani archetype to evoke a sense of historical continuity and contextual identity. Architectural and morphological characteristics—such as arched doorways, single-spaced prayer halls, and decorative mihrabs—mark the spatial and stylistic preferences of early Bengal Sultanate structures, and are often adapted in modern abstracted expressions (Hasan, 1997; Ahmed, 2001). For instance, Bait Ur Rouf Jame Mosque, Faidabad, Dhaka, Marina Tabassum Architects, Shah Muhammad Mohsin Khan mausoleum, Manikgonj, Dhaka, by Sthapotik, GoAat, Chandgaon Mosque by Urbana in Chattagram, recent religious architecture in Bangladesh.

4. METHODOLOGY

Considering the research questions, aim and objectives, the qualitative research method was adopted. The research employed two research techniques for analysing the architectural and morphological characteristics, which are a field survey of various historical sites across Bangladesh, including 11 mosques of Bagerhat, Goaldi Mosque, Kusumba Mosque and the contemporary projects, to observe and analyze architectural elements firsthand and photographic analysis, to understand the scale, proportion, spatial configuration, material and texture. And to explore the influence of the Sultani period structures a thorough literature review was conducted, focusing on scholarly articles, books, and historical documents. Primary sources such as architectural drawings, inscriptions, and records were consulted where available.

The data analysis of the architectural and morphological characteristics from both time timelines establishes similarities between Sultani period mosques and contemporary religious architecture through a comparative analysis.

4.1 ARCHITECTURAL CHARACTERISTICS INCLUDE:

- Functionality: Type of Structure (Religious, residential, etc.)
- Spatial Organization: The arrangement and relationship of spaces (e.g., open plan, cellular layout).
- Circulation: How people move through the space (e.g., paths, corridors, access points)
- Aesthetics: Visual aspects like style, proportion, color, material, and texture.
- Symbolism: Cultural or historical meaning embodied in the design.
- Comfort and Climatic Consideration: Lighting, acoustics, ventilation, and ergonomics.

(Ching, F.D.K., 2014, Kostof, S., 1995, Grabar, O., 1987, Neufert, E. and Neufert, P., 2012, Rasmussen, S.E., 1959)

4.2 MORPHOLOGICAL CHARACTERISTICS INCLUDE

- Form/Shape: Geometric configuration—linear, curved, pyramidal, organic, etc.
- Scale and Proportion: Relative sizes of elements within the structure.
- Volume and Massing: The visual and physical three-dimensional presence.
- Structure and Framework: Type of structural system (e.g., frame, shell, truss).
- Material Expression: How materials define the form and convey the structure.

(Ching, F.D.K., Krier, R., 1988, 2014, Unwin, S., 2009, Allen, E. and Iano, J., 2013, Pallasmaa, J., 2005)

5. CASE STUDIES ANALYSIS

5.1 SULTANI PERIOD CASE STUDIES

For this study, the case studies taken for architectural and morphological analysis from the Sultani period mosques are-

Sixty Domed Mosque (Shat Gombuj Mosque) at Bagherhut by Khan Jahan Ali, Nine Domed Mosque (Noy Gombuj Mosque) at Bagherhut by Khan Jahan, Kusumba Mosque (1558) built by Sultan Ghiyasuddin Bahdur Shah, Goaldi Mosque (1519) at Panam Nagar by Hazibar Akbar Khan;

a) SIXTY DOMED MOSQUE (SHAT GOMBUJ MASJID)

The Sixty Dome Mosque, locally known as the Shait Gombuj Mosque, is a landmark of historical and architectural significance located in Bagerhat, Bangladesh (1442-1459) under the Bengal Sultanate with the leadership of Khan Jahan Ali. The structure is considered the largest surviving mosque from the Sultanate era and is recognized as a

UNESCO World Heritage Site. Khan Jahan Ali, a revered spiritual leader and military figure, established a Muslim settlement in the Sundarbans area for spreading Islam and ruling the region (UNESCO, n.d.; Hasan, 1986)

Architectural Characteristics	
Functionality	Large-scale Mosques for Public gatherings and functioned as an administrative hub of the region.
Spatial Organization	• Rectangular plan • The interior is divided into six rows of columns, creating 7 aisles north to south and 11 bays west to east. • The central Archway is larger than the rest • The Central bay is different from others running east to west, dividing the mosques into equal bays on the north and south.
Circulation	• Eleven Access from the East façade, seven on the north and south façades, and one on the west wall. • The mosque has ten mihrabs, and immediately north of the central mihrab is an entry/exit for the imam.
Symbolism	• Symbol of authority due to its monumental fortified appearance • Corner turrets are circular, slightly tapered, raised above the roof, crowned with small domes. • The front turrets have four arched windows at the upper part. • The mihrab niches and arches are pointed and slightly cusped, reflecting Tughlaq and Persian influences • 70 hemispherical domes and 7 chauchala (four sloped) domes • The doorway arches are of the two-centred pointed type
Aesthetics: style, color, material, and texture	• Monolithic bold appearance with red terracotta brick • The cornice of the entire building has a boldly projected band, and the cornices of the corner turrets are adorned with lozenge patterns. • Terracotta designs include rosette and lotus flower within a loop, four-petal flower, etc.
Comfort and Climatic Consideration	• Primarily lit and ventilated through archways • The thick walls help regulate temperature, maintaining a cool interior even in the hottest seasons. • The domed roof also works as an insulator with its height and hollow space • a slightly raised plinth to protect against flooding.

Morphological Characteristics	
Geometric configuration	• Rectangular stucture • Measuring 48.77m from north to south and 32.92m from east to west, including the turrets.
Scale and Proportion	• A monumental scale and fort-like mosque to create influence and rule the state
Volume and Massing	• Its monumental scale reinforced the religious and political authority of the state
Structure and Framework	• Composite structure, thick brick wall, and stone columns • Slender stone columns support the 77-domed roof • Dig and mound construction system creating adjacent large water body.
Material Expression	• Locally made red terracotta brick • Columns are made of black basalt, transported from the Rajmahal Hills. • Detailed terracotta ornamentation and stone carving on Mihrabs

Table 1: Sixty-Doomed Mosque at Bagerhut
Photograph: Internet and author, Drawing: Internet

b) NINE DOMED MOSQUES (NOY GOMBUJ MOSQUE)

The Nine-Domed Mosque is one of the significant religious monuments in the Historic Mosque City of Bagerhat, a UNESCO World Heritage Site.

Constructed in the 15th century under the patronage of Khan Jahan Ali, the mosque exemplifies the architectural style and religious culture of the Bengal Sultanate period. Though it's a modest-scale community mosque in compared to the Sixty-Domed

Mosque, the Nine-Domed Mosque represents a refined example of regional mosque architecture adapted to local environmental and material conditions.

Architectural Characteristics	
Functionality	Community Mosque for daily prayers and Social activities
Spatial Organization	• Square plan, divided into three aisles and three bays by two rows of columns. • Two rows of stone columns create nine independent square bays, each covered with an inverted cup-shaped dome. • All nine domes are internally carried on four intersecting arches springing from stone pillars and brick pilasters attached to the side walls. • Three mihrabs on the western wall. The central mihrab is larger than the side ones and has an outer projection.
Circulation	• Three Arched Access on the eastern façade, and • repeated on the north and south sides, though only the middle one is open
Symbolism	• Circular Corner Turrets, a characteristic feature of the Khan Jahan style • All these turrets, having moulded bases and plain tops, do not rise above the roof level. • Terracotta floral scrolls and flower motifs inspired by the surrounding nature, particularly around the mihrab area.
Aesthetics: style, color, material, and texture	• Monolithic monumental appearance • Exposed red terracotta brick structure • Earthy tone blends with the context
Comfort and Climatic Consideration	• Primarily lit and ventilated through archways, • The thick walls help regulate temperature, maintaining a cool interior in hot seasons. • The cornices are gently curved for protection from rain.

Morphological Characteristics	
Geometric configuration	• Square shape plan • Externally: each side measures roughly 16.76 m • Internally: approximately 12.19 m on each side. • Walls: 2.44 m (8 feet) thick
Scale and Proportion	• Community-scale mosque • maintaining proper square in measurement • Due to its one-storied appearance from the outside, the mosque merges with the surrounding context, but from the inside, the mosque appears larger
Volume and Massing	• Though it's a mosque located inside the community for daily prayer the volume of mosques still larger than the any other surrounding structure.
Structure and Framework	• Composite structure, thick brick wall and stone columns support the domed roof • Traditional Bengali pendentives are employed to hold the domes. • Stone Columns' shafts are octagonal and are separated from the pedestals and capitals by raised bands
Material Expression	• Red terracotta brick • Terracotta decoration is now confined to the archways, mihrabs, corner Turrets, and cornices, mostly lozenge patterns.. • The rectangular terracotta frame pattern on the enclosing the archways,

Table 2: Nine Domed Mosque at Bagerhut
Photograph: Author, Drawing: Book Mosque Architecture of Bangladesh by Dr. Abu Sayeed

c) KUSUMBA MOSQUE

The Kusumba Mosque, located in Manda upazila of Naogaon district of northwestern Bangladesh, is one of the finest and best-preserved examples of late Sultanate-period Mosque architecture in the region. Also known as the Black Stone Mosque, it was constructed in 1558–59 CE during the reign of Ghiyasuddin Bahadur Shah, the last ruler of the Husain Shahi dynasty, under the supervision of a local official named Sulaiman.

Architectural Characteristics		Morphological Characteristics	
Functionality	Community mosque used by the ruler or builder of the mosques for daily and congregational prayers	Geometric configuration	• Rectangular structure • Measuring approximately 21.6 m by 14m meters
Spatial Organization	• Rectangular plan with three bays and two aisles • The central mihrab is the largest and recessed on the west • The interior west (qibla) wall has two mihrabs on the floor level opposite the central and southeastern entrances, • The one in the northwestern bay is above a raised platform ascended by a staircase.	Scale and Proportion	• The building's proportions are carefully balanced, with a slight vertical emphasis achieved through the height of the domes and projected octagonal corner turrets relative to the width.
Circulation	• Three accesses on the east and two each on the north and south sides • The mosque rests on a raised platform (plinth) with steps leading up to the entrances.	Volume and Massing	• The mosque is compact and symmetrical. • Its massiveness of the mosque is enhanced by the solid stone construction and domed roof.
Symbolism	• Monolithic bold appearance with black stone, frequently named black mosque • The arches above the entrances and mihrabs are multi-cusped and horseshoe-shaped, reflecting the influence of Persian and Central Asian Islamic architecture. • The raised stone platform is called the King's gallery or the Badhsha ka Takt, for the ruler or the builder, or their immediate entourage. • The mosque has four octagonal turrets. These turrets invariably form a part of the buildings, and are built either to reinforce the corners or merely as ornamental appendages..	Structure and Framework	• The walls are built of brick core with stone facing up to the bottom of the arches from within and the whole outside surface. • Two freestanding stone pillars and eight partly concealed pilasters support the six-domed roof. • 2.26 m thick wall.
Aesthetics: style, color, material, and texture	• Mihrabs are richly ornamented with stone carvings, showcasing floral arabesques, geometric patterns, and inscriptions in Arabic. • Intricate, detailed stone curving inside the mosque is evidence of local craftsmanship.	Material Expression	• Unlike the majority of mosques in Bengal, built with terracotta brick, this is constructed almost entirely from black basalt stone. • Stoned spouts, for rain water drainage
Comfort and Climatic Consideration	• Primarily lit and ventilated through Archways ways • The thick walls help regulate temperature, maintaining a cool interior even in the hottest seasons. • The domed roof also works as an insulator with its height and hollow space to trap heat. • Sits on a raised plinth to protect against flooding		

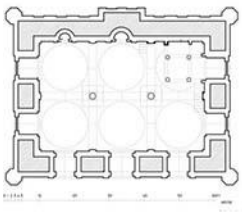


Table 3: Kusumba Mosque at Naogaon.
Photograph and Drawing: Book Mosque Architecture of Bangladesh by Dr. Abu Sayeed and the internet

d) GOALDI MOSQUE

The Goaldi Mosque, located in Sonargaon, near Panam Nagar in Narayanganj district, Bangladesh, is a significant example of early Sultani period mosque architecture in Bengal. Back then, Sonargaon was a major administrative and commercial center, and the mosque reflects the growing urban and religious development of the locality.

The mosque was constructed in 1519 CE during the reign of Sultan Alauddin Husain Shah, one of the most culturally prolific rulers of the Husain Shahi dynasty. A local officer named Mulla Hizabar Akbar Khan is credited with commissioning the mosque.

Architectural Characteristics	
Functionality	Small Community Mosque
Spatial Organization	• Single-spaced prayer hall typology is typical of early Sultani mosques, • Emphasizing functional simplicity and structural clarity • There is one archway on each of the north and south sides. • Octagonal corner turrets rise slightly above the parapet and are capped with small finials. • Octagonal turrets provide a sense of verticality and balance to the otherwise horizontal massing and establish the impact of the structure.
Circulation	• The mosque has three pointed arched entrances on the eastern façade, with the central one being slightly larger.
Symbolism	• The centre mihrab is the most elaborately ornamented remarked the craftmanship of that era. • Motifs used in the mosque are lotus medallions, rosettes, and hanging lamps, combining local artistic traditions with Islamic symbolic forms.
Aesthetics: style, color, material, and texture	• The motifs used in the ornamentation reflect a blend of Islamic and local artisans' influence. • The bold appearance terracotta brick structure announces the glory of Islamic arts and crafts of that time, working as a catalyst for spreading Islam in this region. • Among the three mihrabs on the west, the center one is decorated with intricate stone ornamentation, and the others are enhanced by terracotta ornamentation.
Comfort and Climatic Consideration	• Enclosure walls are 2 m thick that which cools down the interior significantly. • Stone raised plinth for protection from the salinity of the earth and the tropical weather of Bangladesh.

Morphological Characteristics	
Geometric configuration	• a square form • measuring approximately 8.50 meters per side internally.
Scale and Proportion	• The building's proportions are carefully balanced, with a slight vertical emphasis achieved through the height of the domes and projected corner turrets relative to the width.
Volume and Massing	• The mosque is compact and symmetrical. • Its massiveness of the mosque is enhanced by the solid stone construction and domed roof.
Structure and Framework	• Mainly Brick wall masonry, but stone columns are inserted into the masonry to support the dome. • 2 meters thick Brick, measuring 7.59 m each side • A large single hemispherical dome sits on a square base and is supported by pendentives; this technique is a hallmark of Islamic dome construction.
Material Expression	• Brick was the primary building material in central Bengal, due to the scarcity of stone in this deltaic region. • Stone is used in the column inserted in the brick walls. • The central mihrab is ornamented with basalt stone.

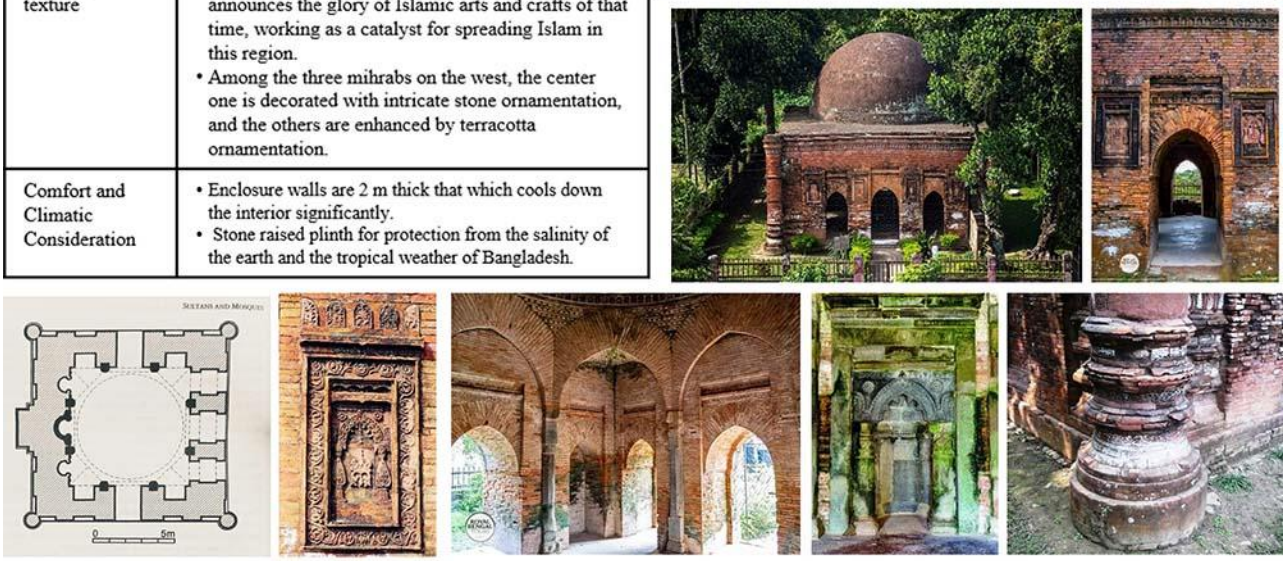


Table 4: Goaldi Mosque at Shonargaon.
Photograph: internet and author, Drawing: Book Mosques and Sultans by Parween Hassan

5.2 CONTEMPORARY CASE STUDIES

The case studies from contemporary religious structures are-
Bait Ur Rouf Jame Mosque (2013) at Faidabad, Dhaka by Marina Tabassum Architects, Zebun Nessa Mosque (2024) at Ashulia by Studio Morphogenesis, Shah Muhammad

Mohsin Khan mausoleum (2022) at Manikgonj, Dhaka by Shapotik, and Miazi Bari Jame Mosque (2013-15) at Chandpur by GoAat (Group of architects and thinkers).

a) BAIT UR ROUF MOSQUE

The Bait Ur Rouf Mosque, designed by Ar. Marina Tabassum and completed in 2012, is an internationally acclaimed contemporary mosque located in a low-income neighborhood of Faridabad, Dhaka. It won the Aga Khan Award for Architecture in 2016 and is noted for its radical reinterpretation of mosque architecture through strong form, contextual sensitivity, and environmental responsiveness. The mosque transforms the

Architectural Characteristics	
Functionality	A community space in addition to being a spiritual center for the residents of the neighborhood, the mosque also functions as a school, meeting place, and playground.
Spatial Organization	• Single-spaced prayer hall typology is typical of early Sultani mosques • Emphasizing functional simplicity and structural clarity • No turrets, mihrab projection, or domes
Circulation	• A colonnade forms a shaded entrance that provides access to the rest of the spaces at the Southern edge
Symbolism	• Emphasizes abstraction and the essence of sacred space, rather than Islamic iconography. • The building engages with the climatic, cultural, and social context, creating a tranquil, meditative space for prayer. • Light is the key element that marked the qibla, identified by a vertical slit in the cylindrical brick wall. • The pattern made by light enhances the space quality and creates a surreal spiritual ambience that connects with the almighty.
Aesthetics: style, color, material, and texture	• Terracotta bricks used for the structure are left exposed internally and externally. • The use of Jali on the façade creates a pattern that breaks the conventional façade treatment
Comfort and Climatic Consideration	• The mosque 'breathes' through porous brick walls, so that even during the summer months the prayer hall is ventilated and remains cool. • Natural light filtering in through the jali and perforated roof into the prayer hall • A high plinth, which not only protects against flooding but also a welcoming plaza for the neighborhood

Morphological Characteristics	
Geometric configuration	• a square floor plan approximately 22.86m x 22.86m • rotated about 13° off the urban grid to align with the qibla direction. • 10.66 m height
Scale and Proportion	• community-scale mosque. • The human scale has been preserved by creating a single-story appearance, but the monumentality of the interior is achieved with structural brilliance, unlike the Sultani period mosques.
Volume and Massing	• The prayer hall is an open, column-free volume enclosed by thick brick walls. • A cylindrical volume was inserted into the square, with the prayer hall rotated within this cylinder to identify the qibla. • Symmetry is used to familiarize the structure as mosque,
Structure and Framework	• Composite structural systems– the load-bearing brick walls that define the outer perimeter and the smaller spaces, and the reinforced-concrete frame that spans the column-free prayer hall.
Material Expression	• Local burned red brick is used, inspired by the terracotta brick of the Sultani period.

Table 5: Bait-Ur-Rouf Mosque at Faridabad, Dhaka.
Photograph: Asif Salman, Drawing: MTA website

traditional image of a mosque for the local community and introduces the idea of a spiritually meaningful space shaped by social and cultural influences.

b) SHAH MUHAMMAD MOHSIN KHAN MAUSOLEUM (2022)

The Sufi saints were involved in the spread of Islam in Bengal through their religious and missionary zeal, exemplary character. The project is a Mausoleum or Dargah for the 'Pir' of Uwaisi Tariqa. Existing graves were originally buried inside the residence of the "Pir". Later on, the ancestors of the 'Pir' decided to build a unique (mausoleum) structure over the graves regarding Pir's memory and contributions.

Architectural Characteristics	
Functionality	Mausoleum
Spatial Organization	• Single-spaced, • Clear functional arrangement • Interiors remain column-free, allowing flexible spatial use
Circulation	• Four identical accesses from four directions • A ramp is employed on the north side for universal access
Symbolism	• Outer envelope representing the notion of the materialistic world, where inner space instigates the spirituality • Abstraction is achieved through bold and simple square massing, unlike Sultani period architecture. • Sixteen vertical concrete cylindrical droppings hang down from the waffle ceiling, forming a luminous chandelier effect, guiding natural light onto the graves—a metaphorical portal to paradise • The Islamic symbol has been used on the iron gates, casting a wonderful pattern on the floor with light. • Repetitive and reinvented turrets inspired from Sultani Period
Aesthetics: style, color, material, and texture	• Jali on the upper part of each semi-circular turret creates lozenge patterns • Perforation on the turrets, interplaying with the daylight in the interior • Light filtered through cylindrical droppings and interplays with spiritual patterns on surfaces, evoking tranquility
Comfort and Climatic Consideration	• Use of perforation in the repetitive turrets for natural ventilation • The four accesses are the source of ventilation and light. • Hot air goes up and flows through the brick Jali on the turrets • Natural Light from the ornamented ceiling and façade perforation • Raised platform for protection from floods and rain

Morphological Characteristics	
Geometric configuration	• Square form • 11mx11m • 7m height
Scale and Proportion	• Monumental scale • Iconic for the locality • the proportion of the structure resemblances community mosque of the Sultani period mosques.
Volume and Massing	• Merges local hut-influenced square form with the Sultani Period mosques' tombs typology • Iconic volume for the locality located amidst the residential context • Enclosed- single-spaced volume • Sits on a high plinth that draws attention
Structure and Framework	• Waffle slab with cylindrical droppings • Column Beam Structural System with brick envelope
Material Expression	• Monolithic Brick massing • A concrete chandelier appeared ceiling • Rust Iron locally constructed gates • The graves rest on the white marble base,

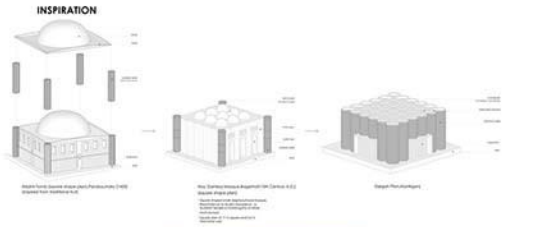


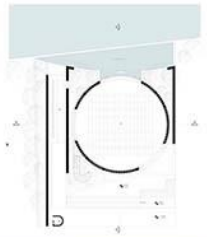
Table 6: Shah Muhammad Mohsin Khan Mausoleum at Hijuli, Manikgonj
Photograph: Asif Salman, Project: Documentation by author, Drawing: Sthapotik

c)ZEBUN NESSA MOSQUE

Commissioned by factory-owner Idris Shakur in honour of his mother Zebun Nessa, and intended as a welcoming spiritual-social space for ~6,500 garment workers (including women) and their children in the industrial area. Completed in 2023, designed by Studio Morphogenesis, located at the edge of an existing water body amidst a fast-growing industrial area on the outskirts of Dhaka City. The mosque becomes the social breathing where it acts as an institution to foster wellbeing.

Architectural Characteristics	
Functionality	Mosque for Industrial Workers, including females and children. It's a social–spiritual space and breathing space
Spatial Organization	• Single-spaced, and the main prayer space is double height • Private balcony space for women • Interiors remain column-free, allowing flexible spatial use • A reflective water body connects the turquoise mosaiced interior through the arched opening to the existing pond, allowing the prayer space to flow seamlessly towards a light-filled infinity
Circulation	• Main access from the north-eastern corner of the structure • Humal scale entryway • A spiral stair is located on the south-eastern corner for female access to the upper floor.
Symbolism	• Emphasizes abstraction through a simple circular form inside a square envelope • The Qibla is defined by a wide arched opening on the subtly curved western wall toward the shallow pool. • Arched façades, generated from the Islamic conventional arch
Aesthetics: style, color, material, and texture	• The thick concrete walls are perforated with small rectangular voids. Filtered light seeping through the voids resembles hanging lanterns of old mosques. • Jali on the façade, interplaying with the daylight in the interior • pink pigmented monolithic volume creating relief from the bustle of the industrial area. • At night, the volume of the mosque on the edge of the water body resembles a lantern floating on the flowing water.
Comfort and Climatic Consideration	• Designed as a "breathing pavilion," cool air flows through the adjacent pond across the wudu pool, cooling the hall • Thermal comfort is achieved via thick walls, water cooling, breezy courtyards, and shaded design. • Lit by four green courts created by the outer envelope. • Ablution water is recycled for the garden

Morphological Characteristics	
Geometric configuration	• Square form • Recessed domed roof • 3.909 sqm area
Scale and Proportion	• Intimate scale has been achieved through human-scale access • Monumental volume
Volume and Massing	• The plan of the mosque is a square surrounding a circular volume, • The outer square volume melts into subtle curves in the east and west directions to interact with the site forces.
Structure and Framework	• The entire building is crafted with thick, double-layered load-bearing concrete walls • The floating dome evokes the structural ingenuity of covering a large space without intermediate supports, inspired by Sultani period domes
Material Expression	• Monolithic pigmented pink concrete, paying homage to terracotta of the Sultani period architecture • Broken-brick terrazzo flooring and Hand-assembled mosaic floors, giving recognition to the craftsmanship of the region. • The doors and other thresholds are all made with perforated metal sheets, keeping the flow of natural ventilation.



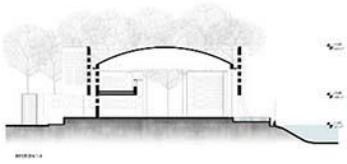


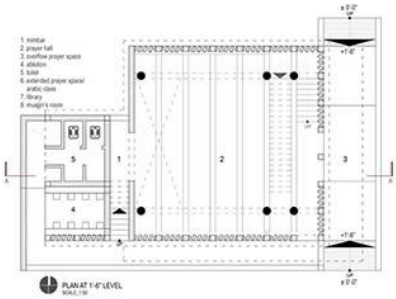

Table 7: Zebun Nessa Mosque at Ashulia
Photograph: Asif Salman, Drawing: Arch Daily

d) MIAZI BARI JAME MOSQUE (2013-15)

Located in Professor Para, Chandpur, this small neighbourhood mosque was built between 2014–2016, initiated by residents led by Mohammad Mahtab Uddin and Kabir Ahmed Miaji. Designed by GoAat (Group of Architects and Thinkers), it prioritises community participation and reflects local socio-cultural life—used daily and for ceremonies like weddings and funerals.

Architectural Characteristics	
Functionality	• Small community Mosque • The mosque also functions meeting place, and a playground.
Spatial Organization	• A two-storied structure elevated on slender columns, creating a compact volume with ground-level semi-open spaces beneath for casual communal use • Emphasizing functional simplicity and structural clarity • The front two bays after the mihrab are double in height • Interiors remain column-free, allowing flexible spatial use
Circulation	• Single access from the north • intimate scale entryway
Symbolism	• Avoid Islamic iconography • Avoid conventional mihrab, corner turrets and archways. • The building engages with the climatic, cultural, and social context, creating a tranquil, meditative space for prayer. • The pattern made by light enhances the space quality and creates a surreal spiritual ambience that connects with the almighty.
Aesthetics: style, color, material, and texture	• Using jali on the façade to achieve an aesthetic harmony with the context, filtering daylight inside the mosque. • Large foliage is used as façade treatment. • single elevated wooden stair supported on steel and wood, highlighting traditional craftsmanship
Comfort and Climatic Consideration	• The roof system is designed with a barrel vault to dissipate hot air and maintain interior temperature. • The porosity of the facade ensures visibility of the activities inside with ample ventilation. • The brick pattern on all sides is to filter the sunlight and offset heat gain during the high-temperature period. • To prevent driving rain inside, a vegetated cover is provided around the brick façade,

Morphological Characteristics	
Geometric configuration	• Square form • Vaulted roof • 153.26 sqm area
Scale and Proportion	• The building epitomizes an intimate scale, • Avoiding monumental expression • Its low profile resonates with human proportion and local context
Volume and Massing	• The volume of the mass decreased through its face treatment and the use of vegetation. • Elevated massing on slender pillars creates a light visual presence and an open ground level, fostering interaction.
Structure and Framework	• Composite structure, column, and load-bearing brick wall structure
Material Expression	• Local burned red brick inspired by the terracotta brick of the Sultani period. • a monolithic cement floor. • The perforated brick facade emphasizes material pattern and shading. • Vegetation softens the envelope, connecting built form to landscape.



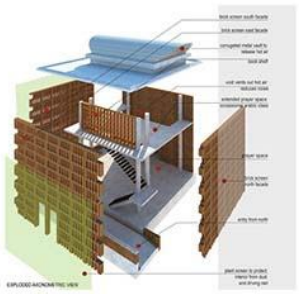


Table 8: Miazi Bari Jame Mosque at Chandpur
Photograph: Context BD, Drawing: Context BD

6. DISCUSSION

The archetype developed in the Sultani period (13th–16th century) in Bengal by adapting contextual architectural characteristics with their rich knowledge of Islamic architecture from their land emerged as a distinct architectural language that reflected

the cultural and religious ethos of the region unlike the monumental mosques and palaces of the Middle East and Central Asia. The mosques and other Islamic structures of this era exert a spiritual and philosophical influence in this region through their generous attempt to establish structures that reflect the identity of the socio-cultural context and harmonize with nature. The archetype that derived from the context of this deltaic region, inspired by the rich tradition of construction with temporality, is still relevant in modern-day architecture.

In recent years, Bangladesh has thrived in the world of architecture with its contextual and sustainable response, which is deeply rooted in the archetype of Sultani Period Architecture in Bengal. The analysis of the architectural and morphological characteristics of both the Sultani period architecture and contemporary religious architecture displayed significant analogy that manifests the contemporary architects' revisit and reinterpretation of the archetype of the Sultani period architecture while addressing contemporary solutions.

The architectural characteristics analyzed for this study included the functionality, spatial configuration, symbolism, aesthetic and comfort and climatic considerations, and the analysis of morphological characteristics included geometric configuration, scale and proportion, volume and massing, structural system and frameworks, and material expression. Based on the analysis, the following attributes can be identified, reflecting the influence of the Sultani Period archetype on contemporary religious architectural practices.

6.1. MINIMALISTIC FUNDAMENTAL APPROACH

The geometry of mosques from the Sultani period was characterised by simplicity, often taking on square forms—as seen in the Nine-Domed and Goaldi Mosque—or rectangular layouts, such as the Sixty-Domed and Kusumba Mosque. These structures typically featured a single-spaced prayer hall and reflected the spatial organization of the Bengal vernacular dwellings. The pointed archways, recessed mihrabs in the direction of Qibla, and single and multiple-domed roofs were the features exported from the Islamic world, incorporated with contextual environmental features. Further, the scale of most of the mosques of that period remains small, community-based, and the significance was generated by the monolithic appearance of terracotta brick structure, the use of decorative corner turrets and arched entrances. Moreover, the terracotta decorations on the mihrab, cornice and turrets were simple, geometrical and nature-inspired. The monumentality of the structures was diminished by their one-story appearance and the symmetrical facade expression. However, the inner single-spaced prayer halls of these mosques remind us of our small existence before the Divine

through their clear spatial configuration and true expression of form, shape and materials.

In contrast, contemporary mosque examples showcase minimalist, bold forms with clean lines, spatial clarity, and compositions of squares or circles, on a more intimate scale. These structures express religious identity through abstraction rather than ornamentation, aiming to enhance the spatial experience through the purity of geometric form. The single-spaced prayer hall has been reimagined in a more contemplative way, fostering a deeper spiritual connection. Unlike traditional mihrabs, each modern mosque defines the Qibla in unique ways: in the Bait-Ur-Rouf Mosque, a slit of light indicates the direction; in the Zebun Nessa Mosque, a glass installation above a shallow pool of water marks it; and in the Miazi Bari Mosque, a simple recessed rectangular niche serves the purpose. Similarly, the inner sanctum of the mausoleum is enclosed within a large, square, monolithic volume, emphasising a sacredness through spatial purity and scale, unlike the Sultani period mosques.

Additionally, today's architects are obsessed with natural light; they observe it as an essential tool to convey the presence of the Divine, not just as an environmental element. The light enhances the space quality through its mystic interplay on the interior surface that instigates the inwardness of the sacred space.

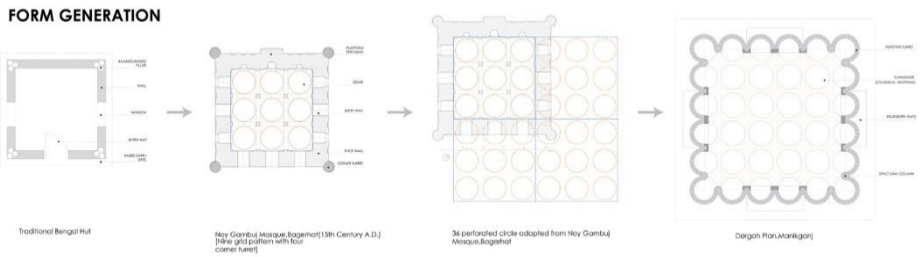


Fig 2: Form generation of Shah Muhammad Mohsin Khan Mausoleum
Project: Documentation by author, Drawing: Sthapotik

6.2. INTEGRATION WITH THE ENVIRONMENT AND SUSTAINABILITY

The Sultani period mosque architecture responded harmoniously to the tropical climate and deltaic landscape of the region. These structures incorporated traditional climate-responsive sustainable features such as extended and curved cornices for rainwater protection, deeply shaded areas for cutting direct heat gain, elevated plinths to protect against flooding and large arched multiple doorways for enough daylight and ventilation. They also employed contextual roofing with rainwater drainage systems, the local "dig-and-mound" technique for making terracotta brick that created water

bodies used for ablution and cooling. Additionally, terracotta ornamentations were inspired by the surrounding natural vegetation, while promoting local craftsmanship.

These climate-sensitive strategies continue to be evident in contemporary mosque design, often expressed in more innovative ways. For example, the water body west of the Zebun Nessa Mosque is a key design consideration that shapes the project. Similarly, the Bait-Ur Rouf Mosque is rotated 13 degrees to align with the Qibla, though respecting the site orientation with a regular form envelope, which protects the inner space from heat gain as well. The Zebun Nessa Mosque includes a recessed, floating dome and shaded spaces, while the Miazi Bari Mosque uses a vaulted roof to release hot air and incorporates vegetation as a natural enclosure. Further, passive cooling strategies like perforated facades, the use of Jali and shaded transitional spaces are reinvented in contemporary facade expressions. Across these contemporary examples, the preservation of the natural environment is prioritized, with minimal use of hardscape in open areas and the strategic use of raised plinths for environmental resilience. Environmentally conscious, sustainable architecture aligns with Islamic principles of stewardship.

6.3. USE OF MATERIAL AND STRUCTURAL SYSTEM

Traditional construction methods relied on locally available, temporary materials, which tended to have a short lifespan due to the deltaic nature of the land. However, Bengal also has a longstanding tradition of building with terracotta bricks, which results from burning the clay in a certain square or rectangular shape. As the land is scarred in stone, Sultani period architecture embraced this terracotta brick technique. Brick production often followed the vernacular dig-and-mound method. True domes were rarely found; instead, corbelled domes and squinch arches were employed to transition from square to circular forms, small domes varying depending on the structural span. Domes were low and squat, adapted to the local aesthetics and building technology. For example, the Goaldi mosque has a single large dome resting on a stone-supported masonry wall construction, the Nine Dome and Sixty domed mosque consists of multiple small domes recessed in the roof, supported by stone columns. The black basalt stones were imported from outside Bengal for the Kusumba Mosque.

The contemporary case studies are deeply inspired by the use of local terracotta red brick for its timeless aesthetics. All three case studies, the Bait Ur Rouf Jame Mosque, Miazi Bazi Mosque and Shah Muhammad Mohshin Khan Mausoleum, use locally sourced brick as the primary material to achieve the monolithic familiar appearance of the religious structure of Bengal, and brick remains the most cost-effective and readily

available material in the region. Except the Zebun Nessa Mosque, which is constructed in monolithic pink concrete masonry influenced by the Sultani period monolithic characteristics as well. A composite structural system, a column beam with load load-bearing wall structural system, is employed in the Bait Ur Rouf Jame Mosque and Miazi Bari Mosque, where the mausoleum employed the column beam structural system for its convenience.

6.4. COMMUNITY-CENTRIC DESIGN APPROACH

During the Sultani Period, most mosques were small, community-oriented structures that served not only as places for daily prayers but also as hubs for social interaction. These mosques typically featured a single prayer space accompanied by a large open courtyard in front, facilitating social gatherings. Notable examples include the Nine-Domed Mosque, Kusumba Mosque, and Goaldi Mosque. In contrast, the Sixty Domed Mosque in Bagerhat was designed as a fortified structure with a spacious compound, reflecting its role in regional governance. Similarly, contemporary religious architectures pursue this principle, creating spaces as the front courtyard at Miazi Bari Mosque, Shah Muhammad Mohsin Khan Mausoleum and Zebun Nessa Mosques that support both religious and social activities, such as weddings, funerals, conflict resolution, awareness programs, and community events and gatherings for the neighborhood. Further, the single-spaced prayer hall is also used for Quranic education, social discussion, and decisions by community leaders. The contemporary religious spaces are also promoting gender inclusiveness and universal access, which are the modern-day requirements of a social space.

7. CONCLUSION

The archetype of the Sultani period in Bengal has left a profound and enduring impact on contemporary religious architectural practice in Bangladesh. Rooted in contextual adaptation, spatial clarity, vernacular expression, and a deep sensitivity to climate and culture, the archetypes developed during the 13th–16th centuries continue to inspire both in terms of formation and philosophy.

Through a detailed analysis of architectural and morphological characteristics, this study manifests how characteristics of Sultani architecture—such as the use of clear special configuration, terracotta brick, modest scale, and integration with nature—are being reinterpreted by contemporary architects in abstract, innovative, and spiritually enlightening ways. Whether through the minimalist forms and symbolic approach of geometry of the Bait-Ur-Rouf Mosque, the integration of passive climate strategies in the Zebun Nessa Mosque, or the community-focused programming of the Miazi Bari

Mosque, the innovation of traditional element in Shah Muhammad Mohsin Khan Mausoleum, today's religious architecture echoes the timeless values of the Sultani period while addressing the socio-cultural and environmental needs of the present day. The amalgamation of historical essence with contemporary relevance reflects an evolving architectural identity that honours tradition without imitation. It demonstrates how archetypes are not just static remnants of the past but living frameworks that continue to guide and enrich the architectural language of faith, community, and place in modern-day Bangladesh.

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