

Nag Mohashoy Temple Complex, Narayanganj: A Case Study of Adaptive Reuse for Hindu Religious Site

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Abstract: With an emphasis on the religious component of reuse potentiality, this study investigates the crucial nexus between spatial development and the conservation model for religious practice with socio-communal dimensions. Adaptive reuse is a critical tactic for global preservation and revitalization to elevate heritage sites in culturally significant locations but provides contemporary functions to them simultaneously. This study examines the various facets of adaptive reuse concerning the religious cultural heritage of suppressed minorities, stressing its insight and importance including the inherent cultural worth of ancient structures and difficulties through creative solutions to modify the temple with modern purposes. The research methodology approaches through an extensive analysis of the literature and case studies and ends with design interventions. It looks into the socioeconomic advantages of adaptive reuse in religious practice, such as the promotion of pilgrimage tourism, community revitalization, and sustainable development. The possible findings will emphasize the conversation on sustainable heritage management by combining theoretical frameworks with practical discoveries as an architectural project with certain concepts.

Keywords: Cultural heritage; Architectural conservation; Sustainability; Adaptive reuse; Community participation

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1. Research aim

Historic pilgrimage and tourist sites should go with the adaptive reuse trend of contemporary conservation architecture. For that, the conservation of religious heritages should be integrated into urban development, tourism, local economy revitalization, and governance. To continue the legacy, protecting traditional resources and promoting cultural aspects of religious heritages are essential for the future sustainable development of human society.

1.1. Objectives

- (1) To preserve the importance and role of the cultural and religious heritages of Narayanganj city with

authenticity and integrity.

- (2) To derive and enhance a city image for any particular religious community, which is crucial for their existence.
- (3) To include adaptive reuse policy in social, political, and urban planning factors for the protection of both intangible and tangible dimensions of any heritage
- (4) To develop value systems in that society, the implementation of the adaptive reuse concept in ancient religious sites needs to be integrated into city inhabitants' daily lives.
- (5) To involve economic factors for achieving sustainability through adaptive reuse in community participation and religious pilgrimage.

1.2. Methodology

- (1) Analysis of the site context with existing regulatory and planning instruments of the Temple site was done in simple free-hand sketches to identify positive aspects of the site.
- (2) The direct, indirect, and induced indicators from Hindu religious and cultural heritage on the entire city system were identified to assess both the impacts of the project on the buildings themselves and the surrounding urban context.
- (3) Deduction and critical analysis of architectural design processes to derive innovative design solutions. The design itself was segregated into three major stages to assess the final design outcomes: religious, economic, and social impacts of adaptive reuse (**Figure 1**).
- (4) The participative phase was based on the involvement of different inhabitants through interviews aiming at understanding the reasons why these urban religious spaces have different impacts and are successful as a distinct and identifiable public culture.
- (5) A field survey was conducted with a focused user group and experts in the local context, including representatives of the Hindu community, religious institutions, and academic scholars, and employees from Narayananj City Corporation.
- (6) Some limitations were acknowledged and excluded during the design implementation. For example, potential land reacquisition from illegal encroachment was not utilized in this study.

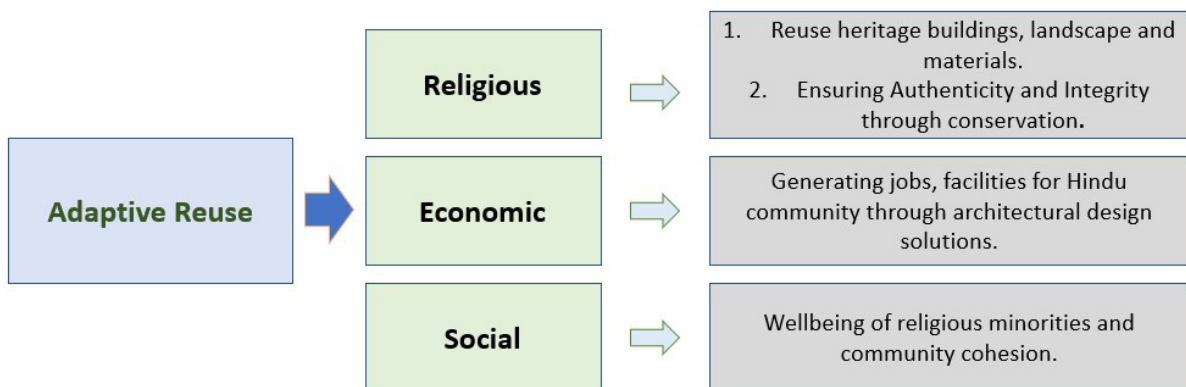


Figure 1. The methodology of adaptive reuse is achieved through three stages of community assessment: religious, economic, and social dimensions of heritage conservation

2. Literature review

Religious monuments in disrepair are not evaluated for their moral worth. Instead, they are burdens and are even targets for demolition worldwide. Heritage sites of today must have a thoughtful and dynamic engagement with our “ancient and recent past”^[1]. Political, social, economic, technical, cultural, regulatory, commercial, management and other variables are among the many stakeholders that must be considered to address a variety of issues by bringing in a variety of disciplines^[2]. Rather than attempting to capture a specific moment in time, adaptive reuse breathes new life into any place by examining alternatives that fall in between demolition and museum conversion. When an adaptable project adds a new layer without removing previous ones, it becomes an essential component of the site’s lengthy history. It is not the end result, rather, it is a step forward^[3,4].

The adaptive reuse of cultural heritage (religion is also an integral part of it) can foster innovation, create productive networks, and contribute to sustainable development by facilitating cross-fertilization, knowledge sharing, and resource sharing in open hubs^[5]. Adaptive reuse of cultural/religious heritage, highlighting its importance in sustainable development, cost-effective architecture, and preservation. It discusses its potential in urban regeneration, vacancy analysis, and industrial heritage repurposing. It discusses methodologies, models, and case studies, highlighting their impact on regional growth, sustainable development, and retail design^[6]. Adaptive reuse involves modifying a building’s function and structure, often through commercial development and retail reuse in historical centers, while preserving facades rather than demolishing authenticities^[7]. Cultural heritage adaptive reuse promotes innovation, creativity, and social capital, fostering productive networks and cost reductions. Local communities and creative enterprises drive reuse through function innovation^[8].

Adaptive reuse is a practice of modifying old structures for new needs, which is crucial in modern architectural practice for sustainable development, economic necessity, and recognition of architectural legacy benefits^[9]. However, stating this; the United Nations Educational, Scientific and Cultural Organization (UNESCO) shifts itself from protection to pro-action, aligning interventions with demand and growth strategies, recognizing heritage potential in regional development priorities, and unlocking funding for adaptive reuse and urban transformation projects^[10]. In its Burra Charter, the Australian International Council on Monuments and Sites (ICOMOS) listed seven guidelines that should be followed to carry out adaptive reuse projects successfully through assembling a multidisciplinary design team, including stakeholders, preserving the character and quality of the legacy, and, lastly, creating a financial model to guarantee life-cycle investment over time^[11]. Adaptive reuse is a tactic used to boost a site’s potential value in structural, artistic, and distinctive ways when a previously inhabited building or piece of land has become obsolete^[12]. Five principles should be combined with adaptive reuse: it should serve the purpose of the redesigned function, last a long time and adapt to new uses, react well and enhance the quality of its context, and be aesthetically pleasing and coherent for both users and bystanders and possess sustainable qualities^[13].

The compatibility of creative values with intrinsic values, or the “admissible limits for changing” is a crucial concern in adaptive reuse initiatives. Intrinsic values are those associated with historical importance and collective memory. Adaptive values, on the other hand, are those associated with new use values, which are problems about appropriate “choices” that require careful decision-making^[14]. As part of the reuse project, the building is first assessed to determine the standards for the best design options. These are derived from the set of values attached to the structure and its intended function^[15]. Numerous scientific studies on the topic of reuse emphasize the possible advantages at the urban and territorial levels, including increased building and soil market value, social promotion, and local economic development^[16]. These concepts of remodeling and

transformation—intervention, insertion, and installation—are all realistic and commonly used in practice ^[17]. The skills and desire of the designer, along with their talent and inventiveness, are the most important factors in the success of creative reuse. It is a comprehensive strategy that considers the psychological requirements of city dwellers, economic value, practical issues, and artistic appeal ^[18]. According to academics such as Rappaport, who distinguishes meanings into three levels, basic values of a community’s religious identity, philosophical systems, and cultural patterns can be found in the higher meaning ^[19].

3. Case studies

3.1. Concert House, Anneliese Brost Music forum, Bochum, Germany

Bez+Kock Architekten of Germany implemented this innovative design over a church in 2016 (**Figure 2**). The concert hall is an ensemble, adjusted by two new concert halls that surround an existing church building and transform it into a foyer. Both the existing and the new facades consist of the same facing brick. The facade concept calls for the new brick to be refined with white plaster, enriching the dialogue between the two elements. The materials of this project convey true expressions of its design decisions and contrasting character. Among three material choices, bricks were the most celebrated element. The facade of the new building is provided with a front shell of white slate brickwork (**Figure 3**), the shards of which correspond to that of the church building.

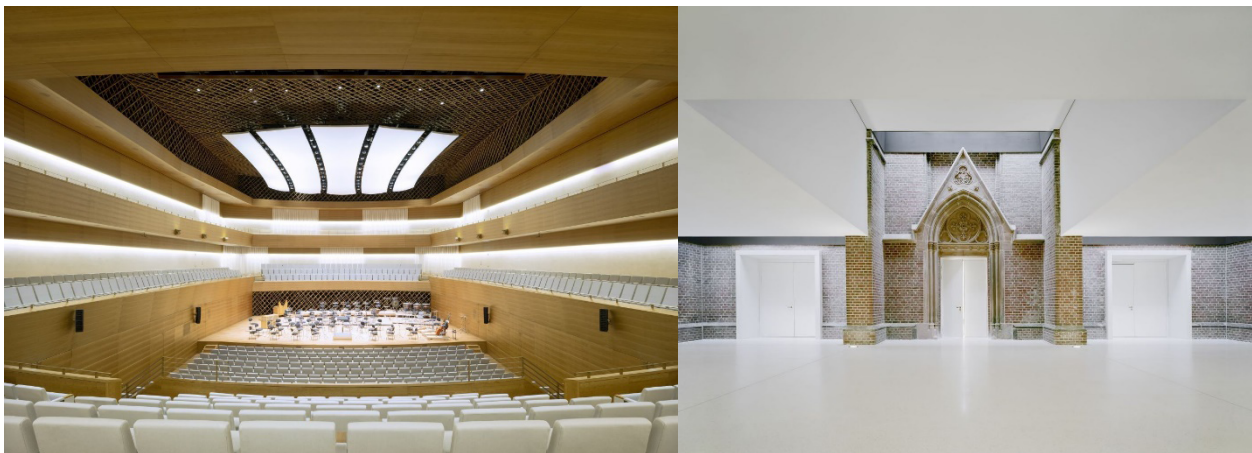


Figure 2. The Concert House, Anneliese Brost Music forum in Bochum, Germany



Figure 3. Concert House, adapted reuse of a medieval church at Bochum, Germany, where a religious site was converted into an amusement function

In the same way, the outer wall of the large hall is also treated as an interior forecourt. In contrast to the new church, the brick was covered with a thin white lime plaster layer. Additionally, its high-quality fabric in interior design consists of three differently colored yarns. The resultant effect creates a different visual effect from near and far in the three-dimensional surfaces. These are distinguished by their high abrasion resistance and are therefore particularly suitable as a material for the concert seats. Lastly, Stucco Lustrum material was applied to the exterior walls of the hall with an incline of 0.5° . Such craftsmanship and feel give the surface a particular quality. Due to its properties as a hard-mineral material, it also fulfills the acoustic requirements^[20].

3.2. Manah Mosque, Manah, Oman

About 160 km from Muscat, the capital of Oman, the Manah Historic Mosque is situated on the outskirts of the sizable city of Manah. It is a historical gem. Inscriptions inside the mihrab attest to the inventiveness of its ornamental engravings, which date back to 1534 AD. However, the mosque is older than this date. It appears that this date only relates to the mihrab's engraving. There is currently no recorded information regarding the mosque's initial construction as a building. There is a small pulpit next to the mihrab that is quite distinctive. It looks like a pulpit from the early Islamic era and has five little steps that rise above the mosque floor during the Friday speech.

This mosque's strategic location has been chosen by the Omani government to become a heritage area, highlighting the natural beauty and rich cultural legacy of Oman. Its preservation is under the direction of the Ministry of Heritage and Tourism, keeping its historical authenticity unaltered to protect Oman's religious and cultural legacy. When visitors enter the mosque's main building, they are astounded by how large the area is and how magnificent the building's historic architecture is. The mosque features eight wooden doorways with ornate arches that lead to its five arcade-filled interiors. The five cylindrical pillars and arches that connect the parts in a geometric pattern that is unique from Oman's historic Islamic architecture define these arcades (**Figure 4**).



Figure 4. Manah Mosque at Manah, Oman where the worshipping character of this Islamic religious site was kept strictly original

The mosque also features several historically significant architectural features, with its mihrab (prayer niche) standing out as one of the most notable in Omani mosques with special archaeological value. In addition to its traditional wooden covering, which showcases traditional workmanship, the mosque has ceiling holes

for lighting and ventilation, which make up for the lack of traditional windows and provide a distinct interior atmosphere while distributing natural light and fresh air evenly. The mosque was built in the traditional architectural style that was popular in the area at the time, utilizing basic materials such as clay, gypsum, and the traditional mortar technique of Oman ^[21].

4. Conservation project of Nagbari Temple Complex

4.1. Life of Saint Nag Mohashoy

This saint was born in 1846. His full name was Durga Charan Nag (**Figure 5**). He was very intelligent from his early childhood. He used to travel 10 miles every day to go to Normal School in Dacca, through a jungle to the west of his home. He continued this for 15 months. He started medical study at Campbell Medical College in Calcutta. But later, he became a disciple of Ram Krishna Paramhangsha and shunned the material wealth for eternal Sannyasi life. He is still remembered for his renunciation and love for God. He wrote a book, “Suggestions for the Boys,” which was a textbook for primary school students in Bangladesh for a long time. He is called the “Jewel of Deovog.” He died in his home courtyard in 1899 ^[22].

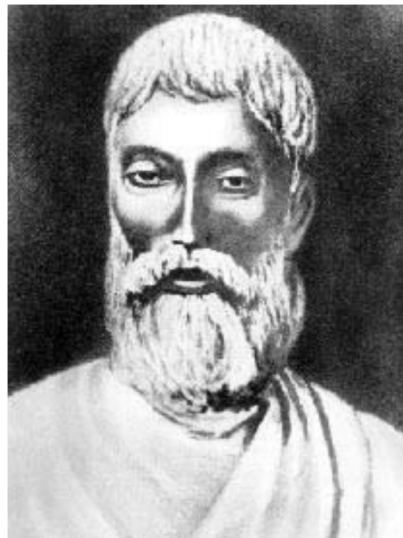


Figure 5. Durga Charan Nag (1846-1899)

4.2. Significance of the project

The Hindu community is one of the notable minorities in Bangladesh, and historically, they influenced Narayanganj city. Particularly, saint Nag Mohashoy’s memory that is associated with this place could be felt all over the diaspora and Bengali Hindus’ minds for his life and teachings. That’s why the Narayanganj city corporation took this initiative to protect the “spirit” of his homestead and enhance communal harmony.

4.3. Location of site

The given site was located on the western side of Narayanganj city, on the banks of the Shitalakshya River. It stretches between areas like Nagbari and Deovog (**Figure 6**). The site is itself a landmark, housing a controversially constructed diabetes hospital. It is accessible by all modes of transportation services, motorized or non-motorized vehicles, that are available in the city.

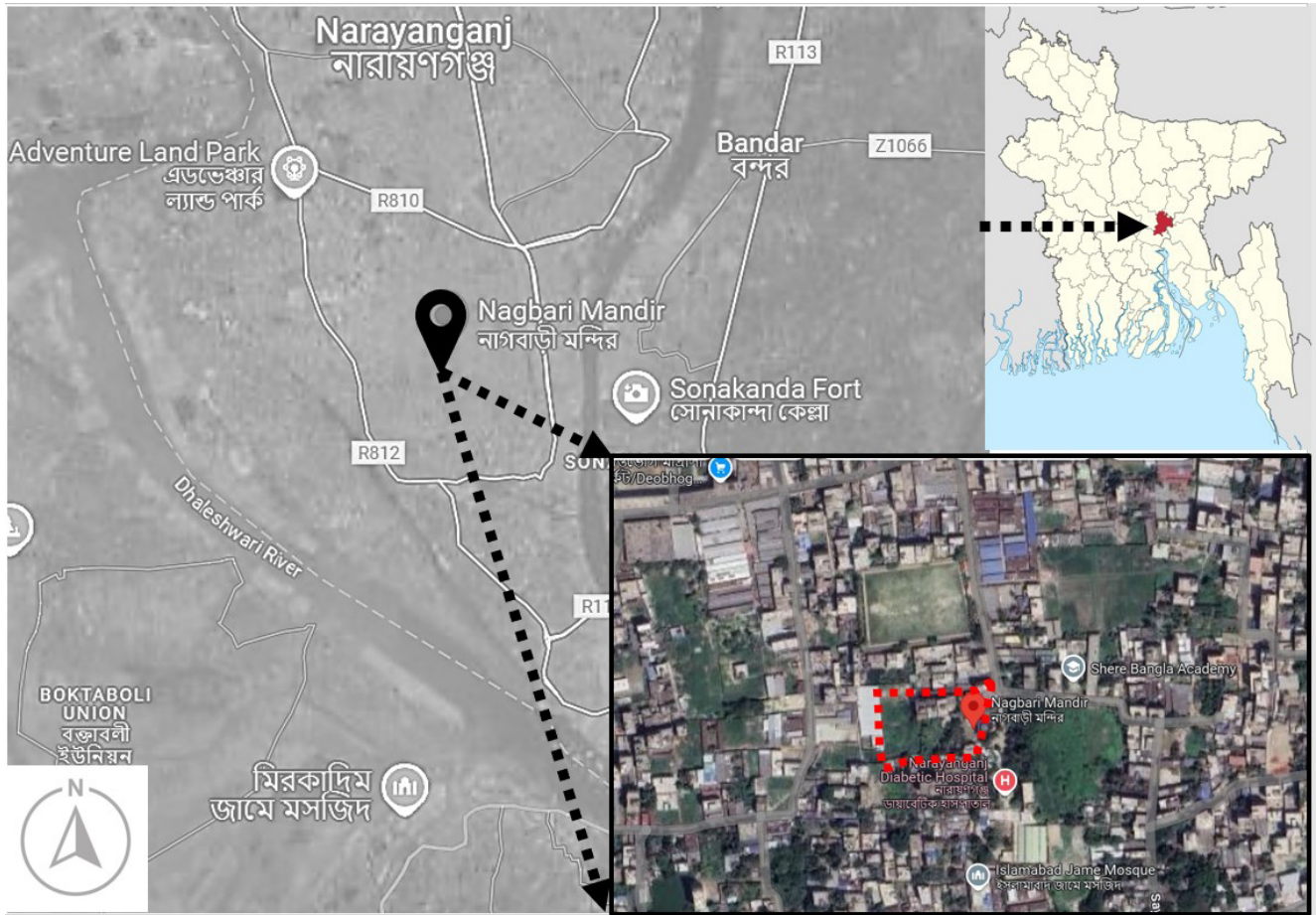


Figure 6. Location of the Nagbari temple site, Poschim Deovog road, Narayanganj City Corporation area at coordinates: 23.61332308181181, 90.49165437929906

4.4. Original state of the project

The original homestead of this saint was struck by poverty. The site was like an island, surrounded by water bodies. The boats used to sail at his homestead at a deck on its north side. Local trees like Bilombo, Koroi, and Chalta were around the homestead. There were four houses in this complex, all scattered to each cardinal according to the vernacular practice of that time, and should have been arranged to center a courtyard (**Figure 9**). The doors of his original houses were perforated. He always wanted to stay in Sannyasi life, and he dreamt about a mythical hut of his own like the Munis and Rishis of the Mahabharata. Even during his last breath, he saw the hut of a Muni in Vordwaj Tirtha, situated in a Himalayan valley. His last resting place was a Toktaposh (bed mat) in his courtyard. He took simplicity in his lifestyle for his preparation for death.

He was always busy with his religious rituals when he stayed in Deovog. Every Saturday, there was a religious event. Every evening, there used to be puja (worship). Some festivals this saint used to perform in his homestead with great enthusiasm were worship dedicated to deities like Rotonti puja, Vograg puja, Durga puja, Kali puja, Swarashati puja, Jagatdhatri puja, and daily enchanting ritual like Songkirton. He used to welcome the local dramatists to stage plays related to religious teachings. A drama dedicated to the life of Nag Mohashoy was staged here when he was still alive. Guests from Calcutta and other parts of Bengal used to reside here for 10 to 15 days. After the saint's death, a Quadruple Square wooden Shikhara-style temple was erected (**Figure**

7) in 1910. It resembles the four qualities of his religious teaching: Dhormo (righteousness), Ortho (grandeur), Kam (illusion and disturbance), and Moksha (highest attainment) ^[22].

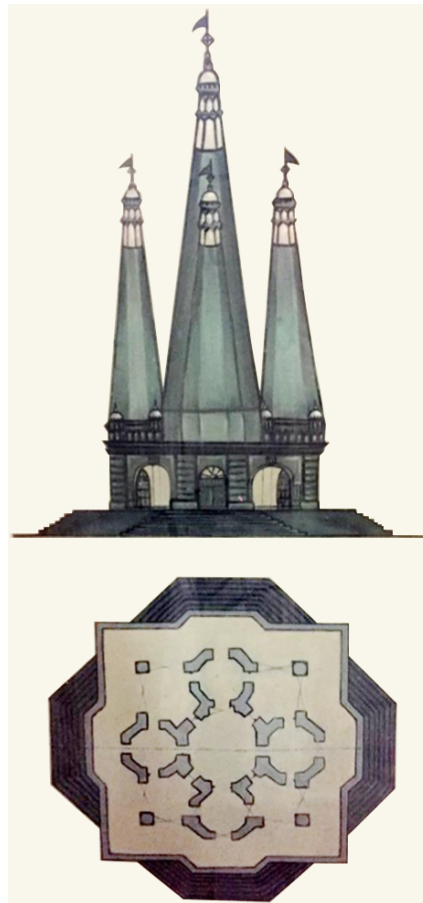


Figure 7. The drawing of the wooden octagonal Shikhara-style temple which is extinct today.

4.5. Existing situation of the project

The old heritage temple standing over the previous wooden temple has been converted into a museum. Its ground floor is used as the community office. This building became vulnerable. Thus, the devotees built an adjacent small temple with corrugated sheets that could not provide enough worship space and large-scale festival arrangements (**Figure 8a**). Land encroachment from surrounding Muslim communities, hospitals, political pressure, etc. has shirked its total land size. Additionally, security problems are acute for this religious site due to local thieves and the potential for violence from extremist groups for their greed on the temple's unprotected lands.

A two-story yellow building with an additional informal floor made with corrugated sheets over its roof was erected at the entrance of the complex. This was built to collect the expenses of the temple. Money collected from its tenants' monthly rentals is the vital income source of this temple to meet all the expenditures (**Figure 8b**). Moreover, a public kitchen built on the opposite side also generates some income and supports its religious functions during religious festivals. A residential quarter for the guests and priests was started but nipped in the bud due to a lack of patronization (**Figure 8c**).



Figure 8. (a) The old temple in the middle, (b) the entrance of the building hidden by unplanned commercial residence development, (c) the incomplete residence of priests due to lack of funding

5. Site analysis

Data particular to the site, such as master plans, maps, historic development, and vintage photos, were gathered. Literature reviews connected to the site's genesis, past planning concepts, expansion, change, and continuity, land usage addressing public and private ownerships, socio-cultural physiognomies, etc. were prepared.

To better grasp the spirit of existing spaces, numerous hand sketches and AutoCAD designs were created. Through the use of analysis tools, natural elements were uncovered through the creation of freehand sketches that showed the terrain, climatic conditions, visual and auditory aspects, and position of the place. To discern the scopes and strategies in design decisions, the built environment study of Narayanganj city was conducted following its religious image. This involved identifying elements such as physical or man-made characteristics, patterns of urban fabric, figure-ground and reverse figure-ground, street network, spatial organization, hierarchy of open spaces, and existing architectural typologies in the drawings (Figure 10). It is now clear that the overall location has a lot going for it, and the residents have high hopes for these areas that are designed to evoke memories.

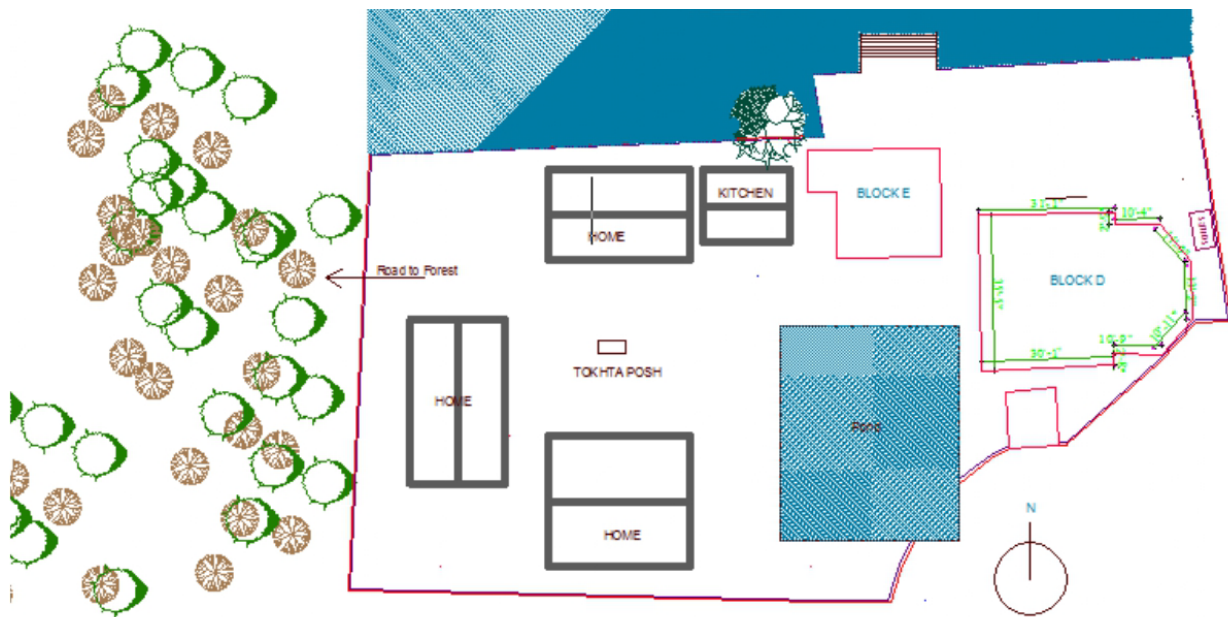


Figure 9. Trace of the original vernacular settlement of the saint: lake in the north with decks to tie boats, pond in the east for drinking water, forest in the west, and three huts around a courtyard while a Koroi tree with the kitchen in the northern corner

6. Findings and discussions

6.1. Design interventions and proposals

Collective consent of the local inhabitants found the adaptive reuse principles and associated proposals positively during the field survey which were later followed in design decisions for the overall temple site. Despite having historic segregation after the partition of Bengal in 1947, the site remained a “socialist tissue” that gives the actual essence of religious tolerance. The design solution wanted to integrate religious aspirations with the past. This might be linked by a “Bridge” to germinate a reflection of the past and prosperity with the future.

The prior challenge was to make the abrupt and dilapidated heritage building of a Hindu octagonal temple so that the whole renewal project would start creating dialogues between old buildings and new buildings. Leftover spaces were treated with mild landscape interventions, which were proposed as the “Mandala” principal of Hindu temple design and ending in an axis, resembling the birth of the universe from the natural

light penetration echoing the symbol of the Hindu “Om” sign of creation and end. Such “mixing” of colonial temple architecture with contemporary brickwork practice will provide a potential psychological diversity to pilgrims, users, and all the devotees.

The sequence of spaces also offers a series of experiences to explore hierarchy from various directions: above, around, and surroundings. For that, the proposed new building’s ground floor was kept vacant deliberately to resemble the courtyard’s (called *Uthan* in Bangla) concept of multipurpose functions. The elongated courtyard was proposed from the inspiration of existing court configurations and modeled after the prevailing human walk flow, regardless of the indoor and outdoor relationship of spaces. The complex’s main entrance invites visitors with waterfall sounds to resemble the “birth of Ganges” and gradually takes them to the series of “mandala-shaped” three landscape areas where people will explore a square aquarium reflecting the scattered lights on the bottom surface of the overhead bridge.

The floors contained by the bridge are proposed to host regular religious congregations, exhibitions, conferences, symposiums, and seminars, and a sale fair for art pieces and antiques. Such a reciprocally designed environment of this Nagbari temple complex will offer a “lost link” between the natural and built environment, which is something new and unique, which the city of Narayanganj is currently “not posed with” but later can be proud of.

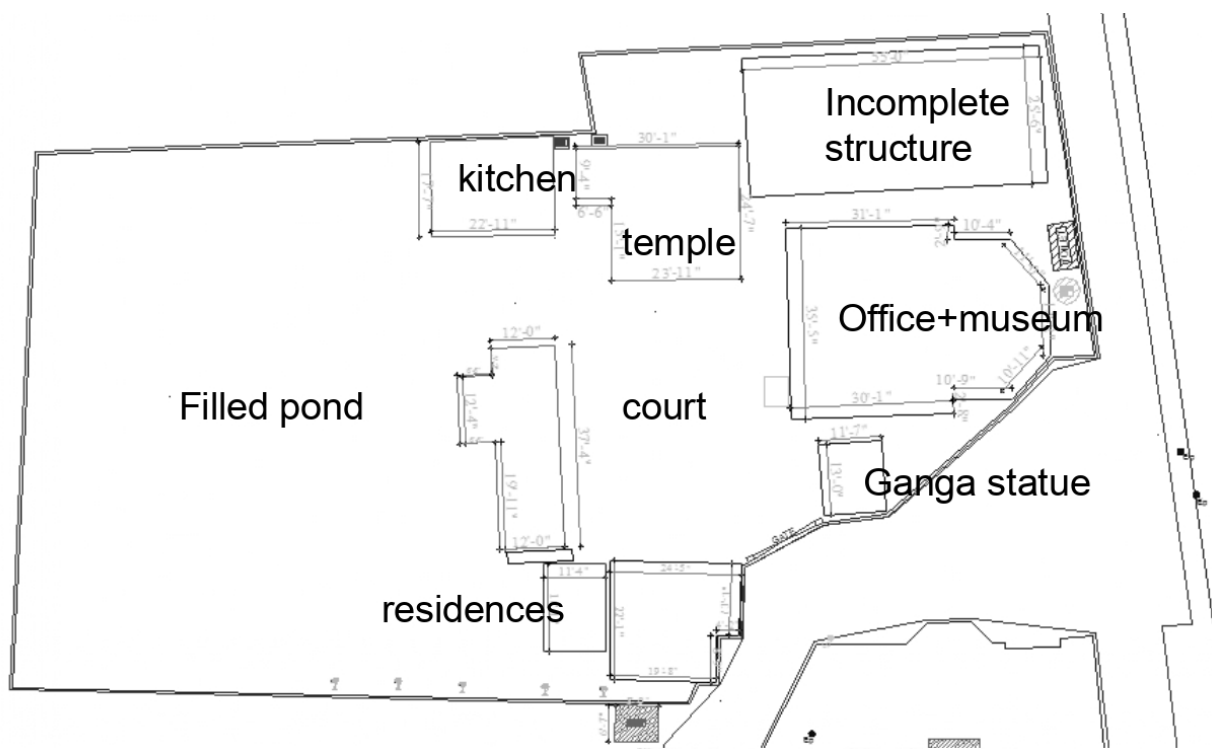


Figure 10. Existing site condition of the temple complex



Figure 11. The four qualities of the design were represented in the landscape by creating the axis connecting four mandalas, Dhormo (righteousness) in rituals and performance, Ortho (grandeur) in stepped Tulsi (sacred tree) alter, Kam (illusion and disturbance) in water body and Moksha (highest attainment) in “Om” sign at the end. The ground floors of all the buildings are kept free-flowing to achieve the openness of vernacular architecture.

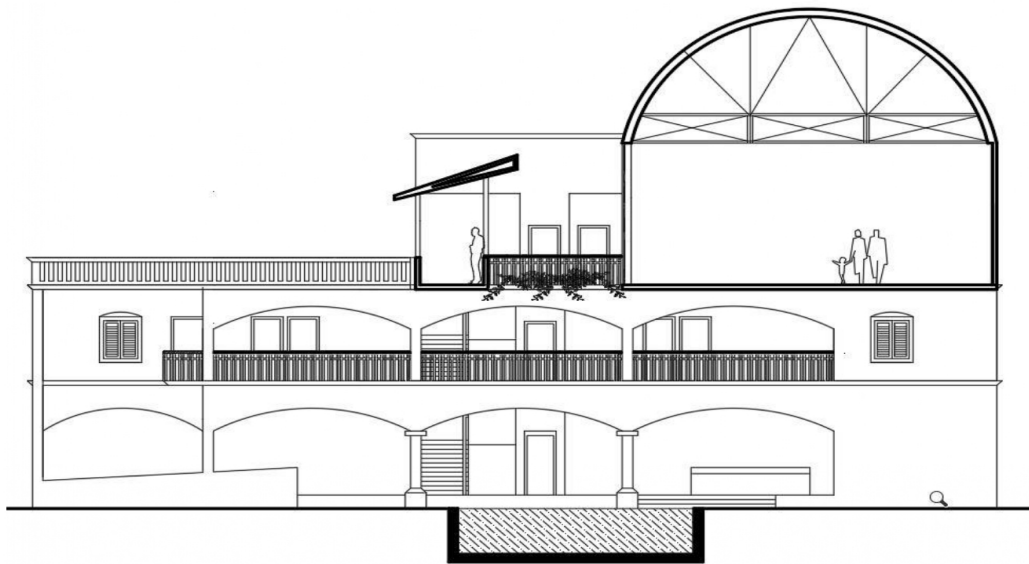


Figure 12. Section showing the permeability and dialogue creation with built spaces with designed landscape

6.2. Analysis and discussion

Religious intervention in architecture could be achieved through collaboration between multidisciplinary and pioneering architectural decisions and concepts that are embedded with spiritual, environmental, as

well as economic benefits for the future sustainability of any community. In addition to these, the design outcomes revealed by this Nagbari temple complex project demonstrate how assets of existing heritages, public policy, social strategy, and multidisciplinary teams can come closer with common ideas of religious rituals and practices, which could be adopted and appreciated by all in the society. Achieving such a goal of resilient heritage conservation practice is not an easy exercise, but it is also achievable if researched properly. Determination and willingness to identify new ways of thinking and cross-cultural collaboration between community members are the key steps for such innovation in Narayanganj's cityscape. The power of landscape design additionally revealed the value of land, memories of Saint Nag Mohashoy, and sense of belongingness, all of which have been identified as significant factors in changing perceptions and creating visions for this project. The implementation of natural elements like water and light in the design concept was the perfect exuberance of Hindu spiritual thoughts to convert built forms according to religious inspiration. If used effectively, the major role of religious architecture in this design outcome will encourage future adaptive reuse policies to make urban communities well aware of their cultural heritage. The built environment represented in SketchUp 3D modeling reflected the design idea and derived spaces properly (**Figure 13** to **Figure 15**).

The design of the Nagbari Temple project tried to analyze and understand how the religious building and its surroundings could be embedded in an adaptive reuse model. However, this article is limited to the development of a conceptual design framework and has limitations in terms of applicability in different cultures and regions. It will raise further fundamental questions regarding the usefulness of such religious complex projects, especially in the Western world, where religion has faded from the everyday lives of the people. Site selection, renovating religious buildings with authenticity and integrity, reactivating different functions, and even guiding future urban regeneration and redevelopment strategies. By admitting comparisons, this conceptual project allows meticulous speculations, and this will help other religious sites calculate the success rate of every initiative of adaptive reuse in a religious context. The importance and application of such remodeling can convert these religious sites into major cultural content and significant physical forms of any city. According to the above discussions, two main points could be explained as research outcomes.

Firstly, one main ritual axis that was formed over the landscape in addition to the basic historic elements like the temple tied up east and west cardinals of the site, which was missing. The tie gives a pleasing experience adorned with different kinds of activities where spirituality captures both winter and summer seasons through a change of light (**Figure 11**). Secondly, religious architecture along with residential quarters and commercial land use is brought under cohesion by the dint of adaptive reuse. Holding art exhibitions, rehabilitation, accommodation for Indian tourists, the Hermitage of Saints, museums, and worship places. But still, public and private spaces are separated exactly from each other and thus ensure maintenance, protection, and repair of designed landscapes and built forms in the design solution. The temple complex is turned into something where inhabitants can feel that they "own" it, interact each other easily through created spaces; which will act as the most important step in this area's communal harmony recovery and motivate the Hindu citizens of Narayanganj against any kind of religious violence (**Figure 12**).

Also, the two case studies, one from Europe and another from Asia give us a clear idea about how the conservation thoughts may vary in terms of religious purpose. The German context accepted a very contrasting function of music hall, but the restricted Middle Eastern context of Oman not only managed to preserve the initial appearance but also ensured its religious functions or even enhanced it to some extent. The case study of

Nagbari Temple followed the Asian context.

As a result, architectural decisions for adaptive reuse in this temple complex had satisfied and ensured three basic aspects: open-minded religious administration, a sense of provocative conservation of historic spaces, and community supervision.



Figure 13. The journey ends in Light, to achieve ultimate freedom (Mokhsha) from earthly miseries.



Figure 14. The past is watching the new, so the new is watching the past. The design incorporates the reflexivity between heritage (conservation) and contemporary buildings (echo in extension)



Figure 15. The sequence of mandalas in the Landscape and its three-dimensional representation in built environment

7. Conclusion

The study highlights the importance of adaptive reuse in fostering religious sites to successful cultural and social innovation, creating productive networks, and contributing to sustainable urban economies through religious sentiment of cooperation. It reveals significant factors influencing commercial aspects, religious conflict, and challenging the market’s preference for large-scale buildings. Instead, choosing traditional and vernacular practices for “ground to earth” design solutions. Recognizing religious heritage as a strategic resource for sustainable development, adaptive reuse is crucial for cultural continuity, economic efficiency, and heritage preservation. The study also emphasizes the importance of conserving historical, cultural, and architectural sites, particularly those that can be restored to their original uses. It reveals that if authorities’ competence is obtained and well supported, then any architect can explore alternative architectural solutions according to occupants’ concerns through adaptive reuse.

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Disclosure statement

The author declares no conflict of interest.

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