

Reintegration of Bhaidega Temple: A Temple at Patan Durbar Square

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Abstract

After the earthquake, many of these heritage sites and monuments experienced damage and demolition. Most of them have undertaken conservation works such as restoration, reconstruction, while some are still in need of conservation. This study sheds light on the case of Bhaidega Temple, a temple that is being restored to its original form after being neglected for a long period of time. Bhaidega Temple is part of the world heritage site – Patan Durbar Square. With the urgency of the temple to be rebuilt in order to protect its religious values, the architectural and historical values were compromised back in 1934 AD. Finally, this temple is regaining its original state. This resurgence of architectural authenticity will also revive the values that were being overlooked. There are multiple monuments with similar context to Bhaidega Temple. This research includes the 3-phase history - time series analysis of the Bhaidega Temple and literature regarding the temple. It includes comprehensive study and documentation on the elements of the Bhaidega temple. Methods used in this research to collect data include documents review, interviews, fieldworks, and in-depth observations. This research aims to study the process of reintegration of Bhaidega temple, while also identifying changes in material and construction technology, as well as point out challenge and issues that arise during the reintegration process. The purpose of the study is to provide detailed information about the temple itself and emphasize the importance of conservation in the field of architecture. This study has made an effort to gather accurate information based on information gathered from diverse sources. In its conclusion and recommendation, this study highlights the timeless values that monuments establish as well as the significance of community participation in the long-term sustainable heritage conservation.

Keywords

Bhaidega temple, conservation, reintegration, cultural heritage, tiered temple, community-participation, earthquake

1. Introduction

In the Kathmandu Valley, there are numerous historic settlements accompanied by rich intangible cultural heritage. The Kathmandu Valley is home to more than 50 historic settlements [1]. The Kathmandu Valley is regarded as the country's administrative, cultural, historical, and economic centre. Kathmandu, Lalitpur, and Bhaktapur's historic districts are listed as UNESCO¹ World Heritage Sites [1]. The Kathmandu Valley has managed to hold onto its cultural and historical inheritance for millennia and has retained a vast collection of exquisite art and architectural carvings inscribed on wood and metals by the ancestors.

These cities exhibit the finest examples of traditional Nepalese art and architecture in the form of- Durbar Squares and other ancient historical structures like temples and shrines. Within residential areas, along with temples and shrines, there is a hierarchical arrangement of communal buildings, and public infrastructure such as rest houses (pati), platforms (dabali), sunken waterspouts and wells. All these monuments come under a general term "cultural heritage". In addition to their physical forms, these towns also exhibit an intangible cultural history, mostly because the culture was essential to their long-term survival [1]. The temple architecture in Kathmandu Valley, is evidence of the area's rich cultural legacy. These temples, some of which date back more than a thousand years, feature diverse architectural styles, including pagoda (multi-tiered), shikhara, and stupa styles. Most temples have a similar architectural design and are typically composed of

brick, stone, or wood. They are adorned with intricate woodcarvings, stone sculptures, and metalwork, reflecting the exceptional artistry of the local artisans, particularly the Newar community. Other typical characteristic features of the temple are carved wooden struts for structural support and columns with images of people, animals, and significant deities on them. These temples are of great cultural and religious significance and serve as centres for festivals and cultural activities, and draw pilgrims and tourists.

1.1 Earthquake Scenario

Earthquake of 2015

In 2015, Nepal faced an earthquake of 7.8 magnitudes. Temples, shrines, and monasteries all around the country were partially or completely destroyed by the earthquake of 2015 and its aftershocks. According to the Department of Archaeology, "... a total of 753 temples, shrines and monasteries across the country suffered damage from the earthquake. The earthquake damaged 241 temples and shrines in Kathmandu, 73 in Bhaktapur and 130 in Patan..." [2]. Many heritages and monuments that were destroyed back then, are now gradually regaining their original form. Several temples and monuments are undergoing restoration, but if appropriate attention is not provided, it is possible that their architectural, social, or religious significance might get lost.

Earthquake of 1934

A similar incident occurred in 1934 as well. The earthquake of 1934 caused the destruction of numerous monuments. Many

¹United Nations Educational, Scientific and Cultural Organization

of these monuments were renovated, while many were neglected. Few were given simpler forms – Dome Shaped Structure, to protect the religious and social values where; architectural aspects were undervalued [3].

“The reconstruction that took place after the 1934 earthquake shows that in places of lesser importance work was carried out hastily and the workmanship was shoddy. Many monuments were never reconstructed, and if a deity needed protection, a simple white cubical with a dome-shaped roof was often constructed, possibly indicating the lack of resources and timber. Plans for the reintegration of monuments in Bhaktapur and Patan were still going on when this latest earthquake struck” [3]. After the 2015 earthquake, people are now attempting to reconstruct the destroyed temples and monuments in their original configurations, since it has given them the opportunity to reclaim the authenticity and identity that were also lost in the earthquake of 1934. Along with the tangible form, it is believed that these reconstruction processes will reinforce and redeem its cultural and social beliefs.

1.2 Bhaidega Temple

Bhaidega is the temple of lord Shiva, located at the southwest part of Patan Durbar Square. Bhagirath Bhaiya, the *Chautaria* (prime minister) of Patan, constructed the temple in 1678. He was a commoner and did not belong to a royal family [4]. The temple was allegedly constructed as the replica of Kashi Vishwonath of Benaras, which was built to honour the Shiva Linga, that was demolished by emperor Aurangzeb of Mughal empire [5].

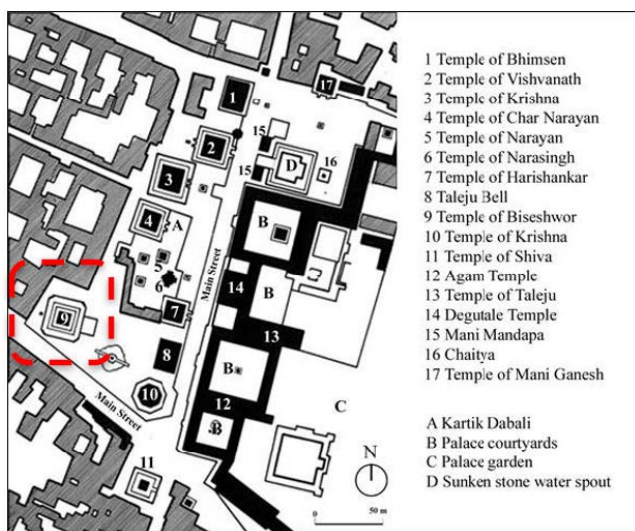


Figure 1: Site Plan of Patan Durbar Square

Source: *The Significance of Historic Urban Squares* [6]

2. Statement of Problem

The Bhaidega temple is rarely visited by a few people, and it receives little attention compared to other nearby temples. A significant portion of the ambience of the cultural heritage — Bhaidega temple, has been destroyed due to a delay in the reconstruction process of the temple. People didn't feel the temple's significance as strongly as it should have. It was

necessary to reintegrate the temple into its original state as a sign of respect for the person who built it and the people who have worshipped that temple for years [5]. Bhaidega is a story demonstrating the value of preserving physical monuments to protect the intangible history of the Kathmandu Valley [7]. The cases of today's cultural heritages are similar to the Bhaidega temple. Intangible culture will deteriorate the longer people wait to rebuild tangible heritage. Cultural heritages are collective identities, so these are to be preserved before they get lost.

3. Rationale of Research

Need and Importance of Research

People do not tend to visit the Bhaidega Temple frequently, as a result, the heritage is losing its intangible value. This research will help attract people's attention to establish the value of the temple, which has been forgotten for eight decades [8]. The intangible elements of the heritage must be preserved swiftly during the reconstruction process, or else they risk being lost [5]. The alienating architectural style has altered the public's perception of and devotion towards the temple. As the temple became inferior, people felt its importance less. The negligence is evident in the various reconstruction projects of cultural heritage and monuments in Nepal. It is also evident in UNESCO World Heritage. It shows that if work can be delayed at the UNESCO site, it is likely that other temples will experience the same problem. This research will make it possible for the appropriate authorities to identify such instances and aid in their prevention. This research will be important to students, aspiring academics, future policymakers, and anybody with an interest in the field of conservation of cultural heritage.

4. Research Purpose

The study makes an effort to investigate the background and case area study (inventory) of the reconstruction of the Bhaidegah temple. The aim of this research is to study the reintegration and conservation works of Bhaidega Temple. This research will also help create documentation of these temples.

Research Questions

1. What are the issues and processes of reintegration of the Bhaidega Temple?
2. What are the changes that appeared in material and construction technology during the process of reintegration of the Bhaidega Temple?

5. Research Methodology

Research Design

This research uses qualitative research approach based on Case Study research. In order to gather context and in-depth understanding, Case study research has been employed to study the Reintegration process of Bhaidega temple. The

research uses an Interpretive/Historical paradigm and aims to explore the conservation process of Bhaidega temple through the reintegration process. To understand the various aspects of the conservation project, a qualitative analysis is required. In order to accomplish the goal of the study, open-ended questions have been employed as a guide for conducting qualitative analysis through interviews. Regarding methods used in the research, to collect data In-person interviews, document reviews, and direct observation have been carried out. Case studies were reviewed. Photographs of each element were taken and tallied with the relevant literature via. Direct observation. Interviews with conservation experts and involved stakeholders were conducted in the process. Data obtained were studied and analysed to attain the information regarding temple and its reconstruction process. Participants for interviews were selected through purposive sampling. Purposive sampling is the sampling technique used to recruit participants who can provide in-depth and detailed information about the phenomenon under investigation [9]. Secondary sources, including books, journal papers, web articles, and other publications, were studied for document reviews. Validation has been done through triangulation.

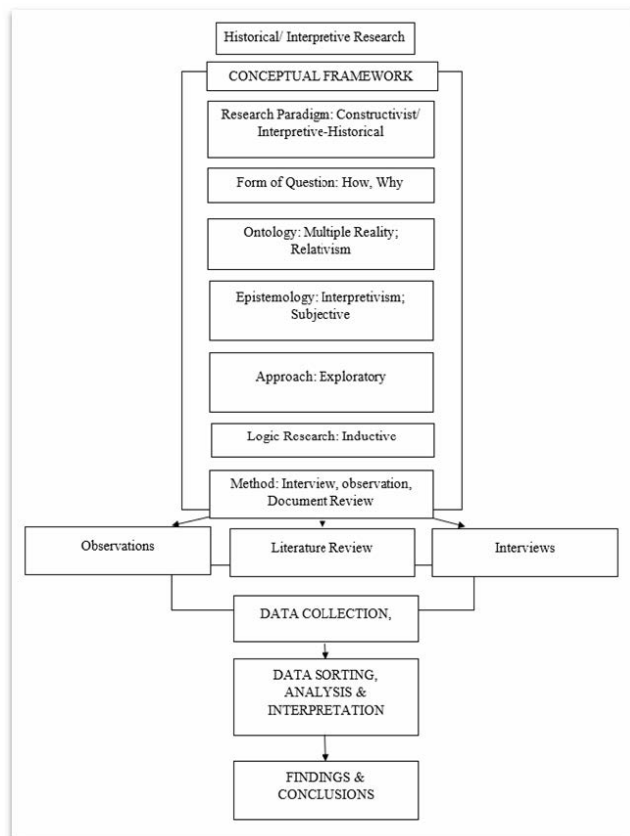


Figure 2: Flowchart of Conceptual Framework

6. Scope and Limitation

The scope of the research is to study the conservation work of Bhaidega temple at Patan Durbar Square only. It attempts to study the conservation process of the temple, through the ongoing reconstruction of the temple. The Study will be able to generate necessary information regarding the Conservation process – Reintegration used to redeem back architectural

values of cultural heritage (based on Temple Heritage). It will help to understand major issues/challenges during the process. Also, this will help clarify changes that appear in material and construction technology during the process of reintegration of Temples. The tangible elements of the temple are the primary focus of the research study, while intangible aspects of the temple remain secondary. The documentation of the temple structure before the earthquake of 1934 and prior to demolition is based on photographs, field observations and limited documentation available by the conservation team. Along with the field studies, the experts and members of the local reconstruction committee are considered key sources of information. In addition to the fulfilment of the research questions, the parameters as following will be studied:

1. Safety
2. Preservation
3. Financial reassurance
4. Learnings
5. Norms and Regulations
6. Remains as Proof
7. Ethical Decision
8. Material Used
9. Changes and Adaptation
10. Community Participation

7. Literature Review

7.1 Cultural Heritage

The term "cultural heritage" refers to contemporary society's use of the past [10]. Cultural history depicts the past. It makes little easier to picture what the livelihood was like back then. Use of period-appropriate construction materials, authentic construction methods etc. represents how things and processes used to be in the past. Today, Cultural heritage serves contemporary purposes as economic, cultural, political, or social. [10]. UNESCO defines cultural heritage as “the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations” UNESCO [10]. According to UNESCO, there are three dimensions of the cultural heritage, consisting of monuments, groups of buildings and site [10].

7.2 Architectural Conservation

Conservation is the act of preserving or protecting natural and cultural heritage. The aim of conservation is to increase the lifespan of heritage for future generations. There are many different definitions of "conservation" that have been offered by authors, scholars, and conservationists. For example:

According to Feilden (2003), “*Conservation is the action taken to prevent decay. It embraces all acts that prolong the life of our cultural and natural heritage, the object being to present to those who use and look at historic buildings with wonder, the artistic and human messages that such buildings possess...conservation must preserve and, if possible, enhance the messages and values of cultural property.*” [11] The Conservation of cultural heritage has changed over time. The

term "conservation" of Cultural heritage covers a wide spectrum, from little elements like as inscriptions on rocks, monuments to large built settings like historic buildings or historic sites.

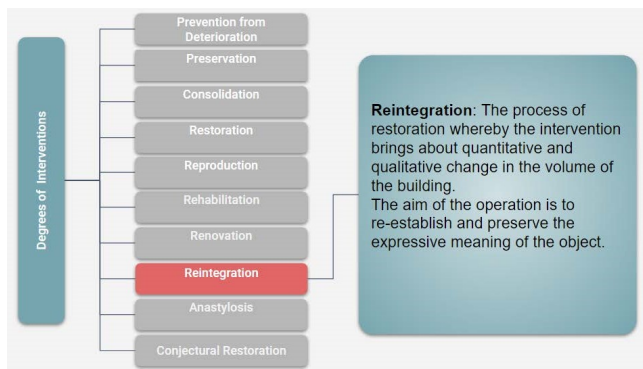


Figure 3: Degree of Intervention – Reintegration

7.3 Reintegration

Reintegration is one of the degree of intervention in Architectural Conservation. The process of restoration, whereby the intervention brings about quantitative and qualitative change in the volume of the building. The aim of the operation is to re-establish and preserve the expressive meaning of the object. Reintegration is the process of combining disparate parts into a cohesive system. It is the product of an effort to bring together many components so that the information and beauty within the monument may be readily integrated into a bigger whole and shared with ease when needed. [12]

7.4 Community Participation

Community participation has been recognized as an important approach in the reconstruction of cultural heritage in Nepal. The importance of community-led reconstruction has been progressively being acknowledged by the government and the general public [13]. For a while now, the concept of community participation has been brought up in the discussion of heritage conservation. Community-based participatory approach involves active participation of the community in decision-making process, planning and implementation of heritage reconstruction projects. The community is involved in every step of the process, from identifying needs to monitoring the progress [14]. Community participation helps ensure that the reconstruction process is inclusive, equitable and sustainable.

7.5 Architecture of Tiered Temples

- Since ancient times, traditional building culture seems to have adopted measures to mitigate the effects of nature's weathering action [15].
- In response to the torrential monsoons and the necessity to preserve the brick walls and ornate woodwork of windows and doorways, tiered temples acquired enormous overhanging roofs with a characteristic slope [15].
- Struts of the temple hold up large overhangs; these are covered with elaborates carvings and intricate

decorations.

- The brick consists of glossy characteristics. This technology was developed to shield brick and brick-wall from moisture penetration [16].
- Few Technological developments could be seen in conventional brick-making process to prevent moisture intrusion: The rough brick faces were tamped, beaten, solidified, and compressed using mallets to lessen the brick's absorptivity. Since, the brick-wall was made of mud mortar, to reduce impact of moisture on mortar by rain, wedge-sectioned bricks *Dachi appa* were created.
- In order to protect carved windows from rain grazing on wall surface, eye-brow-bricks (*mikhafushi*) were placed along the window lintel. This effectively illustrates the relationship between intricate architectural design and climate [15].
- The windows were designed with multiple frames in order to ease the replacement of the outer decorative window without requiring the brick wall to be opened, it reduced the weathering of the excellent carvings. Brick-encased inner frame held up well and lasted for long time.

8. Case Area: Bhaidega Temple

8.1 Background

Bhaidegah Temple, one of Patan's great cultural assets, stood proudly for almost three centuries until the 1934 earthquake devastated it. It was once more destroyed by the 2015 earthquake. After 84 years, the temple is finally being reconstructed to its original form, i.e. tiered temple [8]. Before the earthquake, the Bhaidegah Temple in Patan Durbar Square had the look of a tier-style temple. Made of wood, clay, bricks, and roof tiles, it was an incredibly beautiful three-tiered temple. The temple was later rebuilt with a considerably smaller Moghul-style dome structure. The temple is currently being rebuilt after nearly 84 years in the initiation of *Sanskritik Sampada Samrakshan Samuha*, while technical support has been provided by KVPT². The work to reconstruct the temple in its original style, however, is said to have begun two months before the 2015 earthquake hit Nepal.

Community participation has not been carried out in the reintegration process of Bhaidega temple. As stated by Ar. Rohit Ranjitkar, conservation works must be handled carefully, and only someone who appreciates and comprehends conservation works will be able to do so. The work of conservation should not be seen, superficially. Local participation should be carried out to increase people's feelings of sense of ownership, rather than only to maximize financial gain. Skilled manpower have better expertise. It can be time-consuming and less productive to quickly train and explain to other non-expert persons. Community-led reconstruction would be a wise decision, but it should only be taken into account in specific situations. To increase a sense of ownership and help people recognize the monument as their own, local engagement should be encouraged.

²Kathmandu Valley Preservation Trust

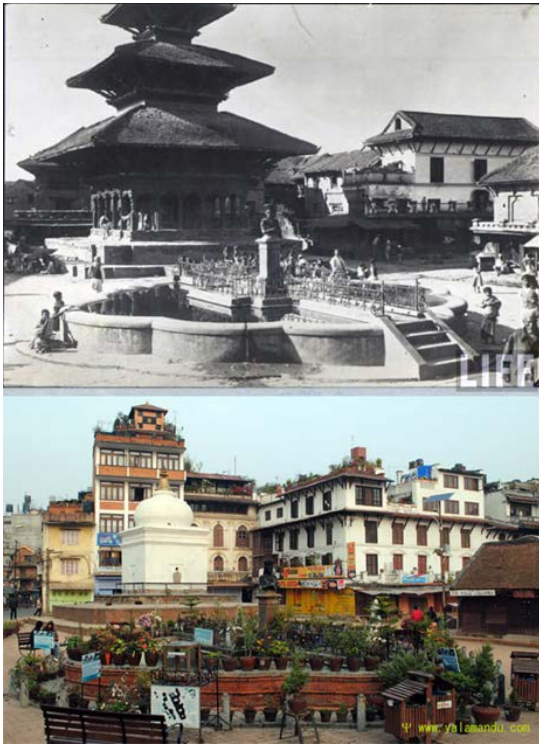


Figure 4: Transformation of Temple before and after 1934 earthquake (Source: *The Story of Bhai Dega* [4])

8.2 3-Case Scenario of Bhaidega Temple

8.2.1 Before the Earthquake of 1934

- Bhaidega temple stood for nearly 300 years before being destroyed in the 1934 earthquake [8].
- It was a three-tiered spectacular temple constructed from wood, brick, mud, and *jhingati* tiles.
- Before it was destroyed by the earthquake of 1934, it is believed that Bhaidega was the second-tallest temple in the square [5].

8.2.2 After Earthquake of 1934 and before 2015 Earthquake

- The statue of Lord Shiva of Bhaidega from an earlier tiered temple was ironically encased in the Mughal stucco dome architectural style which gathered relatively less attention.
- Reconstruction of the temple was started on 26 February 2015, which was 2 months prior to the earthquake [5].

8.2.3 After the Earthquake of 2015

- Currently, the temple is being reconstructed in its original style—tiered temple by the Cultural Heritage Conservation Group, in coordination with the Department of Archaeology and the UNESCO office in Nepal. Technical assistance is being provided by KVPT.
- After it is fully reconstructed, Bhai Dega will be among the largest structures in Patan Durbar Square, second only to the *Degu Taleju* and *Bhimsen temples*.
- After the 2015 earthquake, progress on the reconstruction process was slowed as attention was diverted to other temples, however, this setback also provided an opportunity to build back better [5].



Figure 5: Bhaidega Temple before 1934 earthquake (Source: *Tangible restoration*[5])



Figure 6: Bhaidega Temple after 1934 earthquake and before 2015 earthquake (Source: *Tangible restoration*[5])



Figure 7: Bhaidega Temple after 2015 earthquake (Source: *Author*)

8.3 Reintegration of Bhaidega Temple

8.3.1 Evidence for Reintegration

- Twenty-two original wood-carved *tunals* (struts) of Bhaidega temple were discovered in the Patan Museum storeroom, kept safely. The architecture and design developed will incorporate those existing struts in the new structure.
- A detailed watercolour painting made by Henry Ambrose Oldfield in 1853 was found that depicted the woodwork of the first-floor struts of the temple. This provided guidance for the new woodwork [5].
- Photographs of the temple in the collection of Felix Brandt in Germany, taken about 1920 were discovered. These helped provide a sense of the size and original design of Bhaidega [5].

- For iconography of the doors, Harishankar temple of Patan Durbar Square was taken as the reference.

9. Data Collection and Analysis



Figure 8: Bhaidega Temple after 2015 earthquake (Source: Author)

9.1 Material Used

- Bricks
- Timber: *Sal* wood is used in structural elements such as columns, brackets, joineries etc. while stone is used in the flooring of circumambulatory and pavements.
- Stone
- Mud mortar and *Surkhi* mud Mortar

9.2 The Temple Configuration

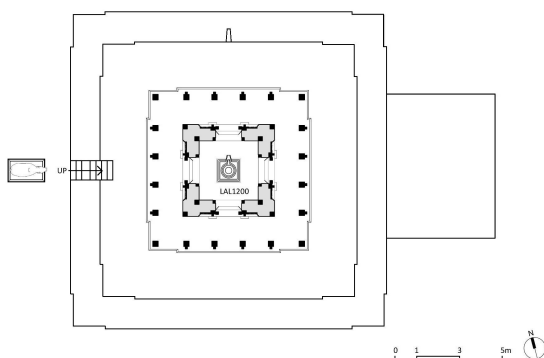


Figure 9: Proposed Plan of Bhaidega Temple (Source: KVPT)

9.2.1 Foundation

The foundation of the temple was intact in the earthquake of 1934 and after the earthquake dome-shaped temple structure was constructed over the same plinth and foundation. The temple's foundation was examined following the 2015 earthquake. Without affecting the original foundation, the surrounding soil of the building was excavated for testing purposes. At two locations of the foundation, the boulder stones (riverbed round stones) were found. 8' to 10' on the southern side and approximately 9' on the north side.

9.2.2 Plinth

The plinth of the temple was also intact and was not damaged by the earthquake of 1934 and 2015. The plinth remains unchanged from before the earthquake in 1934. It measures 39'-1" by 38'-9" and has a single plinth with an approximate height of 3'-2". The temple plinth protects the temple from flooding and dampness [17]. The outer wall of the plinth is covered with *Dachi appa* and stone Aprons—*Illon*.

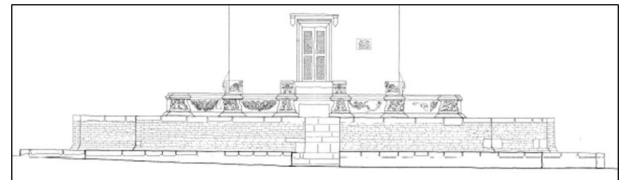


Figure 10: Plinth of Bhaidega Temple before 2015 earthquake (Source: KVPT)

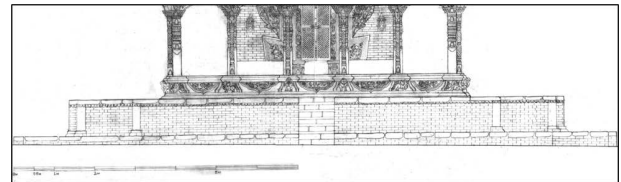


Figure 11: Plinth of Bhaidega Temple after 2015 earthquake (Source: KVPT)

9.2.3 Circumambulatory

Bhaidega temple has a circumambulatory path formed with brick walls on the inner side and isolated 20 timber columns placed in a single row on the outer side. The columns stand on dressed stone threshold—*lakashin* and natural stone aprons—*Illon*. The width of the circumambulatory is 5'-0".



Figure 12: Circumambulatory of Bhaidega Temple before 2015 earthquake (Source: KVPT)

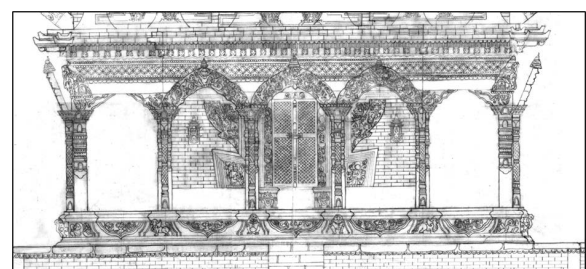


Figure 13: Circumambulatory of Bhaidega Temple after 2015 earthquake (Source: KVPT)



Figure 14: Circumambulatory of Bhaidega Temple after 2015 earthquake (Source: Author)

9.2.4 Column

Columns are made up of Sal timber (*Shorea Robusta*); *Agrakh wood*. The wooden column supports a wooden bracket that transfers the load of the temple structure from the lintel and beam to the wooden column.

The circumambulatory consists of 20 timber columns; 4 corner columns and 16 intermediate columns. The corner columns are of single slender units, while the intermediate column has an extra circular column unit attached to its outer face. Five bays are formed by circumambulatory columns on each of the four sides of the temple.



Figure 15: Columns of Bhaidega temple (Source: Author)

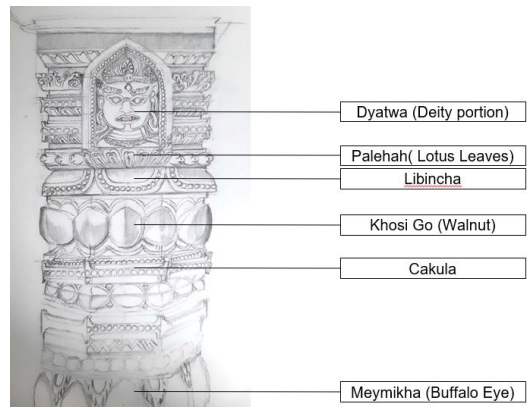


Figure 16: Column details (Source: Author)

9.2.5 Brick Masonry Wall

Walls of the temple are made up of brick masonry and mud mortar. Wall has a depth of 2'-6". Surkhi mortar has been used on plinth due its higher strength than mud mortar. The external face of the wall is made up of *Dachi appa*. Various kinds of brick have been employed for both structural and ornamental purposes.



Figure 17: Brick Masonry (Source: Author)

9.2.6 Niches

Niches are Similar to windows, but are smaller and measure 2 feet tall by 18 inches wide in general [17]. Niches have *torana* and are carved in the customary style, mounted to lean forward from the wall. Below its sill, there is an extra wooden half-circle, reversed in *torana* shape, but not carved similar to the torana. While, blind windows are closed and do not have any functional requirements [17].

On either side of the cardinal doorways of the Bhaidega temple, the 4 walls of the temple have eight *astmatrika* niches, 2 niches on each side. Hindus view the eight mother Goddesses- *Asta Matrika* as their protectors. The figures depicted have several arms, colourful clothes and jewellery, and symbolic *Vahan* (vehicles).

Rudrayani or *Vajrayani* rides a bull, *Brahmayani* rides a goose, *Vaishnavi* on Garuda, *Indrayani* on an elephant, *Kumari* rides on a peacock, *Chamunda* or *Kali* on a demon, *Varahi* on a buffalo and *Mahalakshmi* on a lion. They can be easily identified by their colour as well as by the number of hands and their *vahan*, which are typically animals or birds [17].

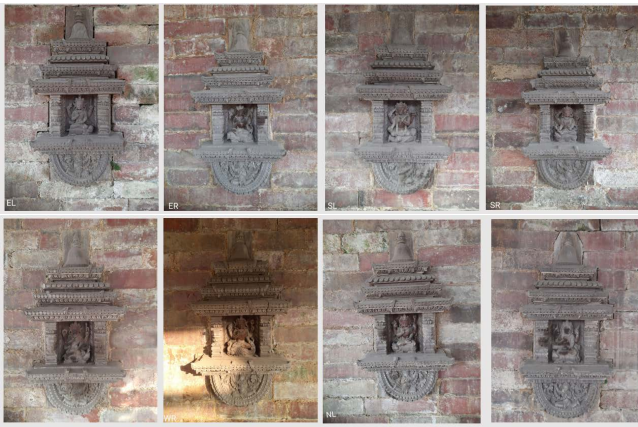


Figure 18: Niches on the ground floor of Reintegrated Bhaidega Temple (Source: Author)

9.2.7 Struts

There are 22 existing struts. The total struts of the temple are 44, among which 22 still need to be recreated. A total of 18 struts are missing, only 6 struts are there of lower roof. Even historians and iconographic artists are involved in the process but are still unable to identify the exact iconography, so the team has not started work on struts yet. Even though the struts need to be constantly replaced due to natural degradation, the positioning of the struts is not random. It follows the systematic rules of tantric iconography. So, the remaining struts have not been replicated yet. Research is still going on for the iconography of the remaining struts.

The corner struts—*Kushalan* is the largest struts and supports the most weight. These struts have legendary depictions of the mythical creatures—griffins, with the face of a male, a lion's body and bird's wing. Overall, just one strut, *Kushalan* (corner strut), of the Ground level has been made. There are 3 existing *Kushalan*. There are 4 corner struts in any tiered temples: 2 males and 2 females. So the missing one has already been reproduced on the basis of the existing 3 *Kushalan*.

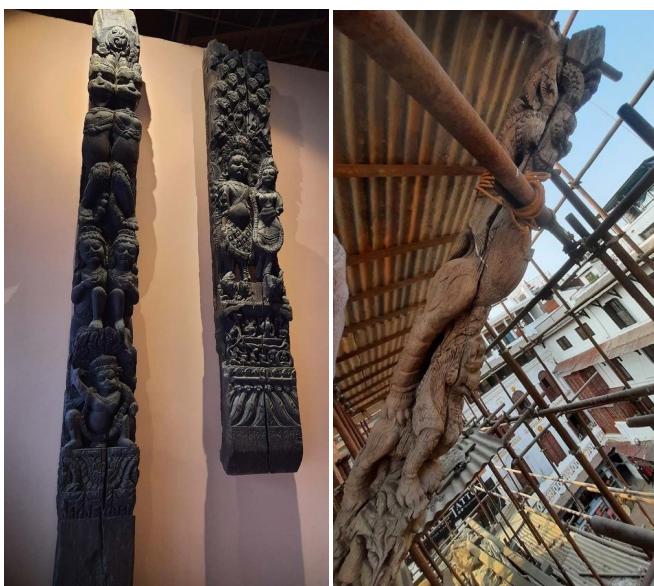


Figure 19: Strut (left) and Corner Strut-Kushalan (right) of Bhaidega Temple

Source: Author

9.2.8 Roof and Pinnacle

The roof of the temple is crowned with a golden pinnacle or *Gajur*, which symbolizes the essence of the heavenly universe [17].

As stated by Rakesh (*project supervisor*), the original pinnacle made up of brass, from before the 1934 earthquake will be placed on the roof. The pinnacle has not yet been installed. The Pinnacle is currently under surveillance DoA³.

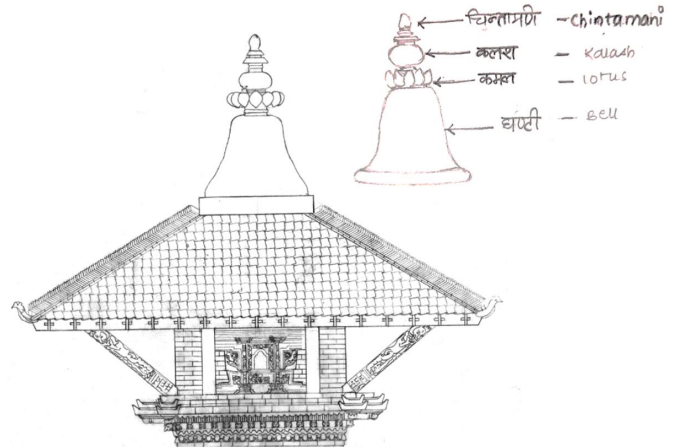


Figure 20: Proposed Roof and Pinnacle of Bhaidega Temple
Source: KVPT



Figure 21: Elements of Existing Pinnacle of Bhaidega Temple of before 1934 Earthquake

Source: Author

³Department of Archaeology

9.2.9 Peripheral Elements



Figure 22: Peripheral Elements
Source: Author



Figure 23: Dabali at eastern side of Bhaidega Temple
Source: Author



Figure 24: Stone Bull Statue of Bhaidega Temple
Source: Author

9.3 Issues and Challenges

- The construction of Bhaidedega: the temple was stopped midway through the reconstruction process, due to lack of adequate financial support.
- Priority was given to other temples with comparatively high importance, after the earthquake.
- Lack of Availability of Authentic Materials and Skilled Artisans. The availability of authentic materials has now become one of the biggest issues.

10. Comparative Analysis

10.1 Attributes and Features of Bhaidega Temple

Table 1: 3-Phase Analysis of Attributes and Features of Bhaidega Temple

S. N.	Attributes and Features	Before Earthquake 1934	After 1934 Earthquake and before earthquake of 2015	After Earthquake 2015
1.	Architectural Style	Tiered Temple	A simple dome-shaped temple.	It is being reconstructed in the original Tiered-Temple style that existed before 1934 earthquake
2.	No. of Storeys	4 storeys	1 storey	4 (will be second-tallest temple)
3.	Material	Made up of timber, bricks, mud mortar and jhingati roof tiles	a stucco dome form made up of Bricks	It is being made with traditional materials: timber, bricks, mud mortar and jhingati roof tiles Stones and surkhi mortar used in plinth for improving durability
4.	Construction Technology	3-Tiered Temple, Load Bearing Structure	Moghul style with a stucco dome. Painted White Load Bearing Structure	3-Tiered Temple, Load Bearing Structure
5.	Year of Standing	Almost 300 years	84 years	Under Construction
6.	Cause of Destruction	1934 earthquake; Bihar-Nepal earthquake	2015 Earthquake; Gorkha Earthquake	-
7.	Purpose of Construction	Built as replica of Kashi Vishwonath Temple, to allow for religious practice	Intended to preserve religious values rather than preserving architectural values.	Intended to conserve religious as well as historical values and retain its authentic architectural values

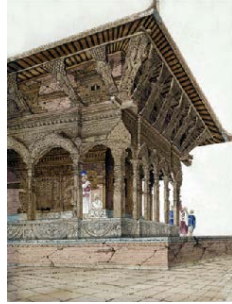


10.2 Elements of Bhaidega Temple

Table 2: 3-Phase Analysis of Elements

S.N	Attributes and Features	Before Earthquake 1934	After 1934 Earthquake and before earthquake of 2015	After Earthquake 2015
1.	Foundation and Plinth	Brick foundation and plinth filled with mud and brickbats.	Not affected by 1934 earthquake, structure was rebuilt in dome shape above the intact foundation and plinth.	Same existing plinth as base, over which new tiered temple is being reconstructed. Foundation was reinforced, new wall was added beside existing foundation.
2.	Columns	Consists of 20 columns of Sal wood	Absence of Columns	20 columns of Sal Wood; 4 Corner columns, 16 Intermediate columns
3.	Circumambulatory of Temple	Circumambulatory made with columns and internal wall (based on photograph)	No columns ; open circumambulatory with surrounding oil lamp stands	Enclosed Circumambulatory with the wooden columns and internal wall
4.	Masonry Wall	Brick Masonry wall on mud mortar. Timber Elements as structural component	White stucco plastered dome structure, standing on former masonry wall footprint	Masonry wall of 2'6" depth on mud mortar over the same base. Brick and timber in mud mortar.
5.	Niches and Blind Windows	-	No windows present, only a puncture each on 3-sides except West.	Consists of Astamatrika niches on either side of cardinal doors. Windows carved by artisans from Bhaktapur.
6.	Roof and Pinnacle	Brass pinnacle over 3-tiered roof.	Pinnacle of smaller scale was positioned over stucco dome-shaped roof	Original Pinnacle will stand over 3-tiered roof after reconstruction is completed.

10.3 Images of Bhaidega Temple

Table 3: 3-Phase Analysis of Elements

S.N	Time Series	Images
1.	Before Earthquake 1934	 <p><i>Source: Nepal in the Mahabharata Period, Part 29 [18]</i></p>
2.	After 1934 Earthquake and before earthquake, 2015	 <p><i>Source: Bhaidegah being restored to its original style [19]</i></p>
3.	After Earthquake 2015	 <p><i>Source: Author</i></p>

11. Findings and Discussion

The built monuments are the treasures left by forefathers for their future generations. They must be used wisely, protected and given to the next generation in the best possible condition. People would lose their identity, culture and civilization if these heritages were lost.

Safety and Protection: In the process of reconstruction, the approach should also be for human safety along with the conservation of the heritage. Keeping the heritage safe should also focus on keeping the heritage users safe. In the process of reconstruction, together with enhancing the architectural details of monuments or any structure, structural and seismic strengthening must also be taken into account to make the building safer.

Preservation: Any element with possible historical significance should be preserved as far as possible. The

previous foundation was left intact in Bhaidega Temple, and only nearby soil around was excavated. All historical discoveries are valuable, so they ought to be preserved and not changed hastily.

Financial reassurance: A lack of financial security may cause the project to be delayed. This delay in work may further cause damage to the rebuilt structures and the materials on the site.

Learnings: Temples or other monuments in the past were constructed by workers utilizing their experience, knowledge, and skills that were passed down through the centuries. Even if there wasn't much economic prosperity in the past, there were plenty of materials and skilled artisans, which helped every construction project succeed. Efforts should be taken to learn from the ancestors, who were experts at creating structures in proportions that are both aesthetically and functionally pleasing. To better comprehend traditional architectural style, there should be significant literature and research in the academic field of heritage conservation.

Norms and Regulations: The conservationists are required to work under the DoA's conservation laws and are not allowed to change the monument's design after they are registered as National Heritage. In reconstruction work, any findings, modifications, and interventions made during the reconstruction process should be properly documented. The documentation aids in restoring the monuments' originality and validity. This is a valuable resource for the future and demonstrates the transparency of the conservation work being done.

Remains as Proof: Along with photographs and the painting, the existing plinth served as a solid base for reintegration in the case of the Bhaidega temple. Likewise, historical photographs, paintings and relevant documents will serve as strong evidence for the reconstruction process of any monuments. In the absence of any evidence, temples of similar types, and styles can be taken as a reference to some extent.

Ethical Decision: When there is a lack of precise details in the struts or other elements of the temple, it should be kept simple. Repeating is not advised because it won't be ethical without solid supporting proof and could lead to conflict.

Material Used: In conservation work, the same kind of materials should be used to replace them. However, when there are no other options, reversible materials, like steel, can be used to reinforce a building during conservation. The availability of materials has now emerged as one of the major problems. So, in the modern day, materials are to be gathered based on their availability. Although, one should be aware of whether the available wood or other materials are appropriate for the site, proper, mature enough, suitable or not.

Changes and Adaptation: Normally, photographs and written documents are used as references for designs and reconstruction work. When reconstruction is done solely from pictures and paintings, minor adjustments like height, etc. are permitted in the absence of good documentation in conservation. There should not be a significant deviation from the original form. In critical conditions, as conducting conservation activities without dependable written documentation, we can reconstruct the monument using oral

history, common tales, insights, and statements that explain the monument's characteristics, such as its shape, number of stories, materials used in its construction, and architectural style. Also, similar temples or monuments can stand in for missing testimonies.

12. Conclusions

The heritage conservation of the Bhaidega Temple at Patan Durbar Square is studied in this research to give readers insight into the reintegration process. Many such cultural heritage sites have undergone restoration and renovation after the 2015 earthquake as part of conservation efforts. The reconstruction work of the Bhaidega temple has created a fresh pathway for reviving the nearly forgotten historical, religious and social identity of the temple. The reintegration process of the temple has benefited all culture enthusiasts as well as the people who are personally connected to it. Bhaidega Temple has set an example. It has been able to demonstrate that when people want to cooperate and work together, it is possible to revive lost heritage. The temple will serve as a reference for cases with a similar context. Thus, this research provides information about the Conservation process in architecture and prepares the documentation of the Bhaidega temple.

13. Recommendations

- The lack of materials and financial issues have created a tremendous problem in the reconstruction work of Bhaidega Temple. Work has been stopped due to the funding issues. So, it is recommended that the project should start only after financial reassurance, as the financial setback might result in the delay of the reconstruction process. It would expedite the completion of the work and prevent future material degradation, lowering the possibility of material and component damage.
- Land constraints and urbanization make it difficult to build new temple structures. Protecting the existing temple structure has become a significant challenge. Required materials are not readily available, and people are left with no choice but to choose materials that are available. Despite the fact materials are not easily available, it should be ensured that authentic, relevant, and appropriate materials of the same kind or similar are used in reintegration work.
- Proper documentation in detail features of the temple structure and the interventions made during the reconstruction is necessary for future references. The information about the reconstruction and changes done should be made available to visitors and enthusiasts. Also, conservation work should focus on the surroundings and context of the temple.
- Community participation should be encouraged to some relevant extent in order to improve conservation awareness among the locals. The monument will need maintenance and conservation in the future. This might cut down labour charges as well as aid in the funding of materials. Participation from the community ensures long-term preservation because of the sense of ownership and responsibility that individuals feel towards their heritage.
- The general recommendations are for the improvement of

future conservation works in Bhaidega Temple and to adapt similar conservation strategies in similar heritage sites or monuments. The conservation guidelines should apprehend the conservation culture of a place.

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