

Conservation of Heritage: A Study of Reconstruction of Mahalaxmi Temple at Balambu

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Abstract

The conservation works in Nepal can be dated back to times long before the introduction of Ancient Monuments Preservation Act in 2013 B.S. that marked the provision of modern concept of heritage conservation in Nepal. In case of Nepal, often architectural heritage is closely linked to cultural heritage of the people due to which conservation of heritages has been deemed important and carried out by the people through institutions such as *guthis* even before the establishment of a conservation administration. Currently there are different stakeholders in the conservation arena in Nepal such as the Department of Archaeology, municipality, community and international actors that pursue widely divergent approaches. For this study the Mahalaxmi temple at Balambu is taken as the subject of the research. The temple was recently reconstructed through the joint efforts of the Department of Archaeology and a committee of local community known as Mahalaxmi Purnanirman Samiti. The conservation of the temple is studied through the analysis of the recent reconstruction of the temple. The objective of this research is to analyze the issues related to the reconstruction of Mahalaxmi temple. To study the reconstruction of the temple field observations were done in addition to interviews of key informants. This study provides a reference for a current conservation project and further organization needed for better results in future projects. Hence this study is expected to provide suggestions for future conservation works.

Keywords

Conservation, reconstruction, cultural heritage, temple

1. Introduction

According to the Department of Archeology, a total of 753 temples, shrines and monasteries across the country suffered damages from the earthquake. The earthquake damaged 241 temples and shrines in Kathmandu, 73 in Bhaktapur and 130 in Patan [1]. Although, the department of archaeology established in 1953 is now responsible for the conservation of heritage sites and monuments in Nepal, it has been found that different stakeholders in the conservation arena such as the Department of Archaeology, municipality, community and international actors pursue widely divergent approaches [2]. One such example of conservation is the Mahalaxmi temple at Balambu which began reconstruction in 2076.

1.1 Background

Balambu is one of the 50 historic settlements in Kathmandu valley [3] and one of the oldest

settlements in Kathmandu Valley. Balambu is a village and former village development committee that is now part of Chandragiri Municipality in Kathmandu district. Balambu is 4.53 kilometers west of Kathmandu between the villages of Satungal and Kisipiri, about 470 metres north of Tribhuvan Highway. The total area of the settlement is 2.17 km² [4]. After the 2015 earthquake, works have undergone for the conservation of heritages including reconstruction of the temples in the area. The Mahalaxmi temple in Balambu has also recently completed reconstruction under the supervision of Department of Archaeology.

Mahalaxmi temple is one of the oldest temples in Balambu and Mahalaxmi is the tutelary deity of the settlement. Similar to other heritages in Kathmandu, the conservation of Mahalaxmi temple was managed by *guthis* before the establishment of Department of Archaeology. After the damages to the temple caused by the 2015 earthquake, the conservation of the

Mahalaxmi temple was of high priority to the local community. The temple had cracks on the upper floor and the timber was rotting due to water leaking through the roof on the upper tier. The temple was reconstructed through the joint efforts of the Department of Archaeology and a committee of local community members known as Mahalaxmi Purnanirman Samiti. The reconstruction has been completed with financial input from both the department of archaeology and the local community.

2. Statement of the Problem

In Kathmandu valley, the number of important cultural and heritage sites is higher in the city center as compared to its outskirts [5]. While historic monuments in the historic settlements in Kathmandu are protected by the ‘Ancient Monument Preservation Act, 1956’, a sufficient system does not exist to preserve the historic townscape which mainly consists of private residences [3]. The monuments in such historic townscapes are also in need of conservation despite being under the protection of the ancient monument act. The heritage sites in the outskirts of Kathmandu are largely ignored and are subject to improper repair and reconstruction. The Mahalaxmi temple at Balambu is one of the at risk heritage sites [5]. However, it is necessary to recognize all sorts of heritages for conservation.

After the recent reconstruction of Mahalaxmi temple under supervision of Department of Archaeology, the role of government authority in conservation of heritage is seen. But there are several other religious and cultural heritage in Balambu that require conservation.

3. Rationale of the Research

Although the attitudes in conservation globally has widened to include the conservation of areas, urban and rural sites, the environment, built heritage, tradition and culture as well as monuments and historic locations, the focus of conservation are the ‘world heritage’ sites [6]. The less dramatic but equally important structures and historic areas that are important to the cultural fabric of their region are often negated. In case of Nepal as well Kathmandu valley has been the focus of heritage conservation programs in Nepal since the legal provisions have been designed [7]. However, most of the focus has

been towards the heritages sites in the core of the cities where the world heritage sites are. This has caused monuments on the outskirts of the valley to be ignored despite being of historical and architectural importance which has resulted in such heritages to be in states of disrepair or being repaired and reconstructed without following the proper policies of conservation in accordance to the DoA. It is also seen that the knowledge regarding the use of authentic materials in the conservation work is also lost or paid less attention as seen in reconstruction of various temples after the 2015 earthquake [8]. This is prominent in most construction works not overlooked by the DoA. Also, responding to Nepal’s diverse cultural contexts, the conservation policy in Nepal needs to count on local cultural institutions, cultural practices and economic bases [7].

The DoA established in 1953 is now responsible for the conservation of heritage sites and monuments in Nepal. Introduction of Ancient Monuments Preservation Act in 1956 marked the provision of modern concept of heritage conservation in Nepal. However, the conservation approach in Nepal, most of which is adapted from international frameworks mostly originating in different contexts abroad - needs to be evaluated in local cultural contexts [7] and conservation strategies need to concentrate on appropriate local distinctiveness [6]. The conservation of Mahalaxmi temple at Balambu is an example of coordination between the conservation authority and local community. Although, overseen by the DoA, there have been issues with the conservation project such as change in the original design of the temple. Hence, this research will be a study of conservation of a temple in a historic settlement of Kathmandu valley and will be helpful in identifying the issues of such conservation work.

4. Objectives

The aim of this research is to study the conservation work in the recent reconstruction of Mahalaxmi temple with the main objective:

- To analyze the elements and issues related to the reconstruction of Mahalaxmi temple.

5. Research Methodology

5.1 Research Design

For the research qualitative approach under case study research is used to analyze the reconstruction of Mahalaxmi temple. Qualitative analysis with observation and unstructured interviews is done using open ended but premeditated questions. The questions related to the reconstruction of temple are used to obtain answers to the research questions. Participants for interview for qualitative research are selected through purposive sampling.

5.2 Data Collection

The primary data is collected for concluding the study by means of interview and observation. Observation of the temple building was done to study the reconstruction works for which observation of reconstruction work was done during site visits. The physical dimensions of the temple prior to the reconstruction was also studied through observation and study of documentation by the DoA.

For the interview, the research employs non-probability and purposive sampling chosen on the criteria of the respondents being involved and having expertise in the reconstruction of the Mahalaxmi temple and expertise in conservation. Interviews with elders and historians are done to get historical and religious information about the temple. Interviews with reconstruction committee members, involved architects and experts are done to understand the reconstruction. Interviews with conservation experts are done to analyze the conservation process.

From the interviews; historical, economic management, political and religious information were collected as background information to understand the context of the temple. For the main study, information about reconstruction which includes decision making, finance and physical attributes of the reconstructed temple were collected on the basis of which analysis of the reconstruction is done.

6. Limitations

The scope of the research is to study the conservation work of Balambu Mahalaxmi temple only. So the research will be limited to the following points:

- This research attempts to study the conservation of the temple mainly through the recent reconstruction of the temple.
- The conservation also focuses mostly on the

tangible aspects of the temple and the intangible aspects of the conservation are not studied but those related to the research were touched upon.

- The experts and members of the local reconstruction committee are considered major source of information in addition to the field studies.

7. Literature Review

7.1 Architectural Conservation

The word "conservation" has been defined in a variety of ways by authors and conservationists. For example:

According to the Burra Charter, Article 1, page 4, conservation may be defined as:

"All the processes of looking after a place so as to retain its cultural significance. It includes maintenance and may according to circumstances include preservation, restoration, reconstruction and adaptation, and will be commonly a combination of more than one of these."

The International Charter for the Conservation and Restoration of Monuments and Sites [9] defines conservation in articles 1–13, the first two of which are as follows:

"The concept of a historic monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilization, a significant development or a historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time. The conservation and restoration of monuments must have recourse to all the sciences and techniques which can contribute to the study and safeguarding of the architectural heritage."

In Esher [10], conservation is defined as

"... the careful management of a limited or vulnerable resource so as to ensure efficiency of use, while at the same time taking such steps as are necessary to ensure continuity of supply."

Conservation can be summed up as any action that has been taken to stop degradation and avoid decay in architectural heritage in case of architectural conservation. The main goal of conservation is to extend the life of the heritage so that future generations can benefit from it. However, due to different approaches to architectural conservation

theory itself, different treatment approaches to architectural conservation are in practice around the world.

7.2 Process of Architectural Conservation

Typically the conservation process deals with the three main stages of documenting, analyzing and action. This can be seen in the process of conservation as given in the Burra Charter in three phases of understand significance, develop policy and manage in accordance with policy.



Figure 1: The Burra Charter Process of Architectural Conservation

Source: [11]

The process of conservation differs from a new construction project as in the conservation process a great deal more of analysis and investigation of existing conditions is done before action is taken [12].

Table 1: Phases of a conservation project

Phase	Stage
Planning	1. Preliminary Assessment
	2. Research
	3. Program Definition
Implementation	4. Schematic Design
	5. Design Development
	6. Construction Documents
Execution	7. Bid and Negotiations
	8. Construction and Contract Administration
	9. Commissioning

Source: [12]

7.3 Values in Architectural Conservation

The purpose of architectural conservation is to protect the heritage and its values. Different values can be attributed to a heritage and often these values can be in conflict with each other. *“The first values to be attributed to heritage places were historic and aesthetic”* [13]. Since then, efforts to identify and categorize the values that embody the sentiments, meanings, and purposes associated with the heritage have taken many different forms. When Australia ICOMOS published the Burra Charter [14], which acknowledged a new category of cultural values called social values, it marked a significant turning point in the evolution of heritage. These values were defined as *“the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group”* [15]. The following year English Heritage added the recreational and economic values to the heritage.

Table 2: Heritage Values in Architectural Conservation

Art Alois (1902)	History Reigl	ICOMOS Australia Burra Charter (1998)	English Heritage (1999)
Age		Aesthetic	Cultural
Historical		Historic	Educational & Academic
Commemorative		Scientific	Economic
Use		Social	Resource
Newness		Spiritual	Recreational
		Political	Aesthetic
		National	
		Cultural	

Source: [13]

7.4 Charters and Acts for Heritage Conservation

Since the introduction of the Venice Charter in 1964, many conservation guidelines have been developed and adopted by international organizations such as UNESCO and ICOMOS in the form of charters, recommendations, and resolutions [16]. Charters contain valuable guidelines on how to maneuver complicated matters such as when to conserve or restore and when to remove old restorations. In some cases, conservation work and investigations can even lead to finding out that certain objects have dubious,

possibly illegal provenances. Charters help to navigate the various aspects of dealing with cultural heritage at the international scale. The summary of the principles stated in the most important international documents regarding reconstruction are as follows:

Charter of Athens (1933): “In the case of ruins, scrupulous conservation is necessary, and steps should be taken to reinstate any original fragments that may be recovered (anastylosis); the new materials used for this purpose should in all cases be recognizable”

Charter of Venice (1964): (art. 15) “All reconstruction work should however be ruled out a priori. Only anastylosis, that is to say, the reassembling of existing but dismembered parts can be permitted. The material used for integration should always be recognizable and its use should be the least that will ensure the conservation of a monument and the reinstatement of its form” (art. 9) “respect for original material and authentic documents. It must stop at the point where conjecture begins, and in this case moreover any extra work which is indispensable must be distinct from the architectural composition and must bear a contemporary stamp. The restoration in any case must be preceded and followed by an archaeological and historical study of the monument” (art. 12) “replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not falsify the artistic or historic evidence”

World Heritage Convention (1972): “That reconstruction is only acceptable if it is carried out on the basis of complete and detailed documentation on the original and to no extent to the conjecture”

Burra Charter of Australia ICOMOS: “Article 1.8: Reconstruction means returning a place to a known earlier state and is distinguished from restoration by the introduction of new material into the fabric Article 20. Reconstruction 20.1. Reconstruction is appropriate only where a place is incomplete through damage or alteration, and only where there is sufficient evidence to reproduce an earlier state of the fabric. In rare cases, reconstruction may also be appropriate as part of a use or practice that retains the cultural significance of the place 20.2. Reconstruction should be identifiable on close inspection or through additional interpretation”

World Heritage Operational Guidelines (2015): “Reconstruction of archaeological remains or historic

buildings or districts is justifiable only in exceptional circumstances” and “is acceptable only on the basis of complete and detailed documentation and to no extent on conjecture” To summarize,

- The principles for conservation by means of reconstruction mainly focuses on anastylosis i.e. the restoration of a ruined monument or building by reassembling fallen parts and, when necessary, incorporating new materials.
- Reconstruction should not be based on conjecture
- Use of new materials should be identifiable

7.5 Architectural Conservation in Nepal

The primary administration of architectural conservation in Nepal is the Department of Archaeology. However other different stakeholders such as municipality, community and international actors are also involved in conservation activities. Conservation takes place in often in collaboration with various organizations and sometimes involves financial support from the other organizations. This causes input to a conservation project from multiple stakeholders and development of different approaches to monument conservation. Voices of conservation with use of traditionally used materials only can be heard while some approach conservation such that modern materials to strengthen the structural integrity of the building is used.

In case of Nepal, however, the concept of cyclical renewal is also necessary to be considered. The idea of “cyclical renewal” has persisted in Nepal for generations as a means of coping with the destruction caused by recurrent earthquake disasters, which occur around every 80-100 years [2]. It refers to the replacement of broken parts and the reconstruction of damaged buildings. It is feasible to make modifications, extensions, or technological advancements that aim to modernize and strengthen the monuments, especially to increase their safety and seismic resistance. Additionally, embellishments and decorations may be added for aesthetic purposes or to correspond to prevailing taste. However, historical configurations should be honored. This keeps craftsmanship alive with the continued practice by providing creators of tangible heritage opportunities to perform their skills [8].

The Nepalese tradition of conservation is based on an authenticity manifested in a temple’s or its constituent elements’ design as well as in the skills and knowledge of craftsmen passed down from one

generation to the next [8]. This is in contrast to the provision of “Basic Guidelines for the Preservation and Rebuilding of Monuments damaged in the Earthquake, 2072”, phrased by the Department of Archaeology, that prescribes under paragraph 32 c the use of “uncarved elements resembling the original size, type and quality” in case evidence is lacking. Moreover, “no gods and goddesses, or other images may be carved based on conjecture” [17]. In such case decisions of embellishments and decorations are left to the demands of the “local residents” as mentioned in §13 of the Guidelines to avoid blank surfaces and to replicate deities, the iconographical details of which in most cases is common knowledge.

7.5.1 Legislation on Architectural Heritage Conservation in Nepal

Ancient Monument Act 2013 The ancient monument preservation act focuses on the declaration of monument areas for their preservation under the authority of the department of archaeology. It imposed a ‘building code’ for its ‘monument zones’ to direct its ‘development as well as heritage preservation’

Basic Guidelines for the Preservation and Rebuilding of Monuments damaged in the Earthquake, 2072 The directory for conservation and reconstruction of earthquake damaged heritages was formulated after the 2072 earthquake and it focuses on the assessment and conservation of earthquake damaged monuments. According to the guidelines, the earthquake damaged monuments are evaluated and the monuments are categorized as monument completely destroyed, monuments partially destroyed and monument with minor damages. There are general guidelines for conservation that is applicable to all monuments. Under specific guidelines for monuments partially destroyed, it provides guidelines for study of structure and materials, detail documentation and reversible use of new materials. It also states that permission from the department should be granted for demolition of monuments. While the directory points to the importance of using traditional materials and technology for conservation works, it provides guidelines for use of appropriate modern materials if necessary with permission from the department of archaeology.

8. Study Area: Balambu Mahalaxmi Temple

The Mahalaxmi temple of Balambu is situated in the Kumari tole at the heart of the traditional settlement area of Balambu.

8.1 Historical Information

The temple is speculated to be commissioned by Balbahu [18] from whom the name of the village ‘Balambu’ is also said to be derived. According to Pruscha, [19] the temple was constructed in the 17th century. Several inscriptions can be found around and near the temple. According to the inscriptions, the lions were added in 1666 and the struts in 1704 [19]. Prior to the 2076 reconstruction, the last major renovation was in 1949 after the 1934 earthquake damage to the temple.

8.2 Architectural Features

The temple is a two tiered temple; 30’3” high with a base of 13’5” x 13’4” on the ground floor. The temple had wooden carved doors on the main entrance to the southern side. There are doors on three facades all except the northern façade which has a lattice window on the ground floor. The doors on east and western facades are simple wooden doors.



Figure 2: Mahalaxmi temple before and reconstruction

The upper two levels have lattice windows on all four sides. The brick walls are whitewashed. The jhingati tiled roof is supported by timber structure. A stone plinth surrounds the temple. A stone toran can be seen above the entrance of the temple. Two pairs of stone statues of lions can be found on either side of the entrance. The struts which support the two tile roofs are carved with Matrikas and Bhairab. Inside the temple, stone statues and stones representing deities are placed in a linear manner. The stone statue of Mahalaxmi is placed at the center.

9. Data and Analysis

9.1 Reconstruction of Mahalaxmi temple

After the 2015 earthquake caused damages to the temple, meetings were called among the locals that included members from Mahalaxmi guthis, political parties and other local members to discuss the earthquake damage and conservation needed for the heritage in Balambu. From the initial meetings, it was determined that the reconstruction of the Mahalaxmi temple was desired as other reconstruction projects were also going on after the earthquake. A committee called ‘Mahalaxmi Purnanirman Samiti’ consisting of seven members was established and they began efforts for the reconstruction of the temple in coordination with the local authority (ward no. 12 office of Chandragiri Municipality). Initially, the plan was to gather fund locally and the reconstruction of the temple to be overseen by the committee. After learning of the requirement of Department of Archaeology involvement in conservation of old temples, the committee and ward office approached the department with initiation through senior archaeology officer Jayram Shrestha.

The department of Archaeology after initial check recommended the reconstruction of temple as the structure was damaged after the earthquake. Cracks were seen in the interior of the upper floor and in addition to this the timber was rotten due to leaks on the roof. The reconstruction project started in 2076 B.S. The reconstruction was completed in Kartik of 2078 B.S. The design and construction contractor was overseen by the Department of Archaeology. The local committee was also involved in the construction supervision and checking the progress of the construction. In later phases, the committee was involved in the design of the decorative elements for the temple.

The majority of the budget was provided by the DoA and the financial contribution by the local is also seen according to committee president Sanjay Maharjan. The local authority which is the ward no. 12 of Chandragiri municipality contributed financially. The ward is involved in the construction of the temple premises. In addition to direct financial contribution, the locals also contributed by donating elements of the temple such as gold plate for the temple spire, northern window on the ground floor, eastern and western doors, jal nhekan on the eastern façade, stone posts for bells etc.

Table 3: Finance and decision making in the reconstruction process

	Decision making	Finance
Department of Archaeology	Budget, design, construction work and construction supervision	NRs. 84 lakhs
Local authority (Chandragiri ward no. 12)	Approving of construction works in the premises	NRs.3.5 lakhs
Local people	Approving design	NRs.18 to 20 lakhs

9.2 Process of Reconstruction

Planning phase: From the preliminary assessment, it was found that the monument was significant as it was found to be more than 300 years old. During the feasibility research, the monument was identified in need of conservation after the 2075 earthquake. There were cracks found in upper floor and timber rot due to water leaks. It was then classified into partially damaged monument for repair according to reconstruction guidelines of 2072. The analysis of the building and its site along with historical research was done by the study of inscriptions and local information. But archaeological study of the site was not done. Architectural research was done to identify the building form, details and devising necessary conservation measures. The documentation of the existing structure was also done. Documentation of existing structure in forms of measured drawings (2 level floor plans, section, front elevation and rafter plan) and photographs was done.

Implementation phase: After study of the temple, the recommended conservation strategy was to reconstruct the temple building. The design for the reconstruction and the intended design details were proposed by the DoA. Initially, changes to temple design showing exposed brick and raised plinth was proposed but the design was changed to whitewashed and existing plinth height after protest from locals. Construction documents required were also prepared by the DoA. Plans on five height levels (including floor, rafter and joist plans), section, and front elevation with measurements were prepared. Changed rafter plan and addition of corner posts were shown in plans. Wall ties, sill and lintel level timber reinforcements shown in section.

Execution: The DoA under the government of Nepal was responsible for calling tenders, funding and awarding the contract to the suitable bidder. Eligible bidders were ones with knowledge in conservation and traditional construction. The construction work was conducted by the constructor contracted by the DoA. The construction took place under the supervision of both the DoA and the local reconstruction committee. The demolition started in 2076 B.S. and reconstruction of temple was then commenced. The materials required were sourced and approved by the DoA which includes sal timber, bricks, surkhi mortar, water proof single plastic layer on roofs, telia tiles for floor and new jhingati on roofs. After the project, as built documentation and maintenance manual were not prepared.

9.3 Changes made to temple during reconstruction

Although the location, orientation and configuration of the temple is not changed, various changes have been made to the design and material used in the temple in the reconstruction. The changes can be classified as follows:

9.3.1 Material changes

Building materials from the demolished structure was reused to an extent but new materials were used a lot. The jhingati tiles (21"x7.5"x1.5") on the roof were changed to smaller ones (7"x3.5"x0.5"). The additional timber used was sal (agrath) instead of the original salla. Sal was used for its preference for ease of carving. The mortar is also changed from mud to lime surkhi mortar. Use of dachi aapa instead of ma aapa on the exposed part of ground floor exterior can be seen. In addition to this, use of materials that were not traditionally found includes modern baked bricks and plastic water proof layer on the roofs.

9.3.2 Structural changes

Various structural changes were made to improve the structure of the temple building. This includes increasing foundation depth, increasing size of posts, addition of reinforcements to masonry walls on both floors and change in rafter plan with addition of rafters. Rafter plan changes and increase of post size is to accommodate the increased weight due to change in timber type from salla to agrath.

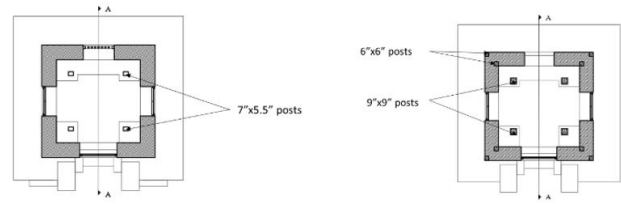


Figure 3: Ground floor plan old (left) and new (right) showing additional posts for reinforcement

Wall plates of timber were added on three levels along the wall height which also acted as sill and lintel for the windows and doors.

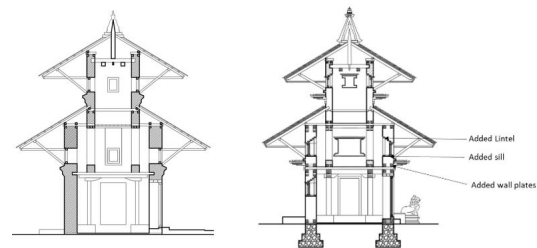


Figure 4: Section old (left) and new (right) showing wall plates added and increased depth of foundation

9.3.3 Decorative changes

Embellishments and decorative changes to the design were made as per the decisions of the local community and committee. These can be seen in the use of decorative brick layers in the plinth and exposed brick portion of the ground floor. The cornice is also changed from plain brick layers to carved wooden layers with addition of carved wooded eave ends called fyo. The old stone gajur is reused but is gold plated and additions of pataka and kusha are made to it. The doors and windows are ornately carved replacing the plain wooden ones before. The plain wooden doors of the main entrance to the south is reused but copper plated with carvings of astamangal on the copper plate.

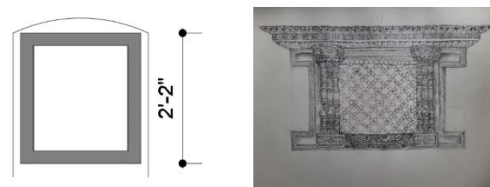


Figure 5: Northern window ground floor old (left) and new (right) showing embellishments in carving

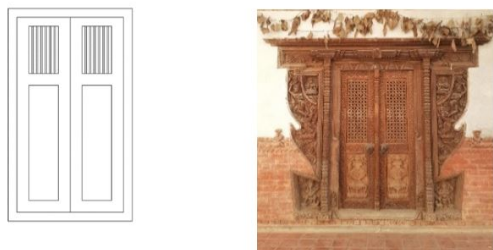


Figure 6: Side door old (left) and new (right) showing elaborate carving in new design

The number of struts in the lower roof remains 20 from old temple to new. For the upper roof the number of struts is reduced from 20 to 12. In the old design only 7 struts were carved on the lower roof and 4 were carved in the upper. The carved ones have images of matrikas and bhairabs. Most of the struts in the original were plain whereas all struts in the new building are carved with images of matrikas and bhairabs.

Metal lamp rail was removed. Metal posts for bells were replaced with stone ones. Metal illhan was added to both levels of roofs. Wind bells and hanging lamps (twaranchas) were added on roofs of both levels. The twaranchas were increased from 2 to 10 numbers. A jal nhekan was added to the eastern façade in place of two mirrors. Inside, the idols were removed and placed in a slightly changed position due to the increased size of posts.



Figure 7: Carved cornice and struts in the south east corner

10. Findings and Discussion

10.1 Changes in Temple Design

One of the major outcome of the local community involvement in reconstruction of Mahalaxmi temple was changes to the design to the temple made to update the aesthetics of the temple. Although efforts were made to retain the appearance of the temple similar to the past one with efforts made to keep the white walls instead of brick exposed, a lot of changes were made to the decorative elements of Mahalaxmi temple for the reconstruction. Most of the changes were made to update the aesthetics and add embellishments to the temple.

10.2 Reuse of Materials and Elements

Although some elements such as gajur, lion statues and main door were reused, majority of the construction using brick and timber used new materials. Also, no effort were made to reuse the old doors and windows, struts and jhingati harvested from the demolished structure.

Table 4: Reuse of Temple Elements

Elements	Reuse
Main door	Main door was copper plated and reused
Gajur	Gajur was gold plated and additions made to it
Stone lions	All four stone lions were reused
Stone toran	Stone toran was coated with protective layer and reused.

Table 5: Reuse of Materials

Materials	Old	Reuse
Timber	Columns and beams	Wall plates, window and door inner frames
Brick	Plinth, masonry wall and foundation	Walls inner layers
Stone	Plinth and foundation	Plinth and foundation

10.3 Confirmation of the Reconstruction to the Conservation Principles

The reconstruction process took place under the supervision of the department of Archaeology for which the Basic Guidelines for the Preservation and Rebuilding of Monuments damaged in the Earthquake, 2072 is supposed to be followed.

Due to the damages caused by earthquake and water leakage, the temple was decided to be reconstructed and documentation including photographs and drawings were done prior to demolition. For the reconstruction, study of damage caused by earthquake on the temple and architecture of the temple was done. The intangible heritage affected by the damage and valuation of the damage is required still. Documentation of the temple with its identification was done with proper measurements in form of architectural drawings. The temple structure itself was based on available measurements, configuration, position of openings, and placement of idols. Changes made were for the purpose of embellishing which were not based on available evidences. Use of traditional construction materials was done in the reconstruction however, use of exact materials previously used was not done such as the change in the timber type. Marble panels added to the front of the temple in previous renovation was removed during the reconstruction. With the approval of DoA, additions of timber reinforcements not visible from the outside were made.

The participation of the local community could be seen in the reconstruction. For the maintenance and periodic renewal of the temple, a local committee with funds raised from the local population has been established. Traditional materials for the use in reconstruction was sourced through the DoA. However, change in brick type with dissimilar quality to original brick used can be seen but not visible from the outside. The reconstruction took place without change in location or orientation with the permission of the department of archaeology and the agreement of local authorities and community.

The reconstruction was done after documentation and study of the temple however, the detail documentation to make the reconstruction identifiable is needed. The incorporation of new materials is not distinguishable from the old. The use of modern materials however is not visible from the outside. The reconstruction of the monument could have reused materials such as jhingati but was replaced with new ones. Existing struts were also replaced without structural study in favor of uniformity in design by using completely new ones. However, reuse of materials can be seen in terms of the bricks, stones and timber from the demolished temple building.

10.4 Change in Heritage Values due to Reconstruction

Due to the changes to the design and construction of the temple in the reconstruction, the values the heritage carried has changed.

Aesthetic value: Aesthetic value includes aspects of sensory perception. The addition to the decorative elements was done to add to the aesthetic value of the temple. Despite the additions, the temple retains the original appearance since the modern materials used are not visible from the outside. The white washed walls and exposed brick look of the original has been reconstructed. However, upon closer inspection, use of decorative bricks, carved struts and cornice that was not present in the old design becomes visible to the eye.

Historic Value: The temple gains the historic value from the historic existence from its 17th century construction till now. The historic value is retained through preserving its original form and materials. In case of Nepal where cyclical renewal is done, the historical character is conserved by continuation of the materials, form, technology and crafts. With the change in use of crafts altering continuation of its existing design, the historic structure and build are lost in the reconstruction.

Scientific Value: Traditional buildings of Kathmandu Valley possess significant interest to the scientific studies due to their use of materials and building techniques. The Balambu Mahalaxmi temple was not completely demolished due to the earthquake and significant damages can be attributed to rotting of timber due to water leakage. But during reconstruction, increasing depth of foundation was considered necessary and the existing foundation was disturbed. This caused scientific value to be lost as the functional foundation and building could be studied but instead was replaced.

Social and cultural Values: The social and cultural values are attributed to the temple by the local community and its people. The people have continued to value the temple as a place for social gatherings and community functions. The cultural aspects such as jatras and rituals are diligently performed by the people showing people still attribute cultural value to the temple.

10.5 Perception of Reconstruction

To understand the perceptions of reconstruction interviews were conducted with key informants from the local community and conservation experts. The perception of the reconstruction varied among the two groups of interviewed people. The local community members were satisfied with the reconstruction and considered the project a success. The community members considered the temple of importance due to its religious and cultural importance. The community members stated that the community itself was responsible for the conservation and maintenance of their heritage, the Mahalaxmi temple while recognizing that coordination and help from conservation authority was necessary. One respondent stated that the local participation was important for the success of this project. Similarly, the importance of institutions such as guthi and dware are also considered important for conservation. The reconstruction project is considered a success due to the community participation according to them. The community also feels the embellishments added was a positive development for the temple as seen in a respondent mentioning that the ornamentation to the temple design was necessary that was successfully achieved in this project. The community also feels the reconstruction validated due to the involvement and decision making of the department of archaeology in the project. The community generally feels the design decision to finish the exterior walls in white plaster instead of initial brick exposed façade a positive achievement. Most feel the appearance of the temple that they have seen throughout their lifetime should be maintained. Overall, the local community members felt the reconstruction process was satisfactory. After the completion as well, the reconstruction committee has been transitioned into a conservation committee utilizing the leftover funds from the reconstruction for future maintenance and conservation activities.

From the interviews with conservation experts however, the reconstruction did not follow proper procedure. For example, the foundation of the temple was excavated and deepened. The failure to the temple structure was not due to the existing foundation that had withstood the earthquake. Instead of reusing the foundation, the land was disturbed and any detail study regarding soil type, mortar use was not done. Use of modern materials should be done when traditional is no longer available. But the temple was reconstructed with use of modern materials such

as baked bricks despite the traditional ma aapa being available and used in some capacity here as well. While the local community were not concerned with documentation, conservation experts pointed out the importance of documentation for future reference and also to distinguish the reconstruction from the old construction. In many cases of conservation and this one the construction work itself is given priority over detail documentation. In the future it can cause problems with understanding the era of construction and authenticity. Another important factor to be considered in a case like this where the community is an important stakeholder, the rights of the community needs to be considered. Conservation has been carried out by community itself long before the administration and improvements deemed necessary by the community have been part of the conservation. Only now this method has gone awry due to use of inappropriate materials and methods such as concrete use in reconstruction.

11. Conclusion

The department of archaeology was involved in the reconstruction of the Mahalaxmi temple. This study shows that even with the involvement of department of archaeology, the reconstruction process presented problems and errors. Despite the DoA's involvement in the reconstruction, the department's own guideline of not reconstructing based on conjecture was not properly followed here. However, this study also shows that community participation can be found for conservation projects in communities such as Balambu. The study also highlights deviations from the conservation directions provided by the department of archaeology in the reconstruction process due to lack of awareness among the participants. The study shows that rights of the community and participation of the community should be given importance. But in the context of lack of conservation knowledge among the community members, conservation can cause loss in heritage values. Despite technical and financial involvement of Department of Archaeology, there is need of conservation awareness among the local residents especially when they are involved in the decision making process. The involvement of the community itself has been a positive aspect as a sustainable conservation and maintenance of the Mahalaxmi temple in future seems possible due to the ownership and responsibility people feel towards the temple due

to their involvement in the conservation.

From this case it can be seen that the conservation guidelines needs to be context based. In this case, the guidelines were not followed as evident by the changes to the temple design that were due to the decisions of the community and the DoA allowed it. In cases like this where reconstruction is done where changes are preferred and done with traditional materials and methods, the balance between changes allowed by involvement of community and conservation principles followed needs to be devised in the context appropriate guidelines instead of out ruling them all.

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