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DEPARTMENT OF ARCHAEOLOGY
MINISTRY OF CULTURE, TOURISM AND CIVIL AVIATION
GOVERNMENT OF NEPAL

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The World Heritage Committee,
1. Having examined Document WHC/19/43.COM/7B,
2. Recalling Decisions 39 COM 7B.69, 40 COM 7B.41, 41 COM 7B.95 and 42 COM 7B.12, adopted at its 39th (Bonn, 2015), 40th (Istanbul/UNESCO, 2016), 41st (Krakow, 2017) and 42nd (Manama, 2018) sessions respectively,
3. Acknowledges the ongoing commitment of the State Party and of national and international organizations towards the recovery of the property, through the implementation of the Recovery Master Plan (RMP), as well as through repair and conservation works already undertaken;
4. Reiterates its requests that the State Party integrate the RMP within an overall socio-economic revitalization programme for urban communities, encourage residents and local business to engage in the recovery process, and ensure that it delivers wide-ranging social and economic benefits;
5. Notes again the scale and scope of the 2015 earthquake disaster, as described in the reports of the 2015 and 2017 joint World Heritage Centre/ICOMOS/ICCROM Reactive Monitoring missions to the property, and expresses concern at the serious deterioration of the property's architectural and town-planning coherence;
6. Considers that the recovery process needs to be further improved and hastened, and requests the State Party to:
   1. Initiate with technical support from, and in on-going dialogue with, the World Heritage Centre and the Advisory Bodies, an International Scientific Steering Coordination Mechanism tasked with assisting with the development of structures and resources to guide the recovery of the property and its OUV,
   2. Invite a joint World Heritage Centre/ICOMOS/ICCROM Reactive Monitoring mission to assess the state of conservation of the property, to review progress with the implementation of the recommendations of the October 2015 and March 2017 missions, to assist with the development of a strategy for the implementation of the six-year RMP, and to provide guidance on its review,
   3. Seek further technical support from the World Heritage Centre and Advisory Bodies in order to coordinate and guide the recovery of the property, based on documentation, research, analysis and use of appropriate traditional methods and materials, and
   4. Ensure all recommendations and outcomes of the above are fully integrated within the 6-year RMP;
7. Also requests the State Party to implement fully the recommendations of the ICOMOS Technical Review of the Patan Durbar Square Monument Zone sewer project;
8. Further requests the State Party implement fully its already declared six-year plan and complete all rehabilitation works by the end of 2021 and report to the World Heritage Committee;
9. Calls upon the international community to continue supporting the State Party’s recovery work through financial, technical or expert assistance, including support for local communities and their housing and social needs;
10. Requests furthermore the State Party to submit to the World Heritage Centre, by 1 February 2020, an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 44th session in 2020, with a view to considering in the absence of significant progress in the implementation of the above recommendations to address the ascertained danger to the Outstanding Universal Value of the property, the inscription of the property on the List of World Heritage in Danger;
11. Underlines that the State Party’s cooperation in conducting the requested and overdue mission will be a key consideration for the Committee at its 44th session;
Finally reiterates, consistent with Decision 40 COM 7, that the inscription of a property on the List of World Heritage in Danger, should not be viewed negatively by the State Party; its purpose is to marshal international support to help the State Party effectively address the challenges faced by the property by engaging with the Advisory Bodies to develop a programme of corrective measures to achieve the desired state of conservation for the property as provided for under Paragraph 183 of the Operational Guidelines.
1. **Executive Summary of the report**

A review of the discussions held at the 43rd World Heritage Committee session in Baku and the World Heritage Committee decisions have been presented to the **Honourable Prime Minister of Nepal Mr K.P. Sharma Oli**. The Prime Minister has shown concern and is committed to ensuring that the government carries out necessary steps for the appropriate rehabilitation of the Kathmandu Valley World Heritage property to protect its **Outstanding Universal Value**. Accordingly, the Honourable Minister for Culture, Tourism and Civil Aviation Mr Yogesh Kumar Bhattarai and the newly appointed Director General of the Department of Archaeology Mr Damodar Gautam, have initiated a detailed review of the present status of post-earthquake rehabilitation of the Kathmandu Valley World Heritage property. The State Party is committed to put aside the required funds to ensure the required activities can be carried out smoothly as defined in this report.

A joint **ICOMOS/ICCROM Reactive Monitoring Mission (RMM)** took place from 16 to 21 October 2019. The outcome of the discussions was noted, however, the RMM report has not yet been received by the State Party. An **International Scientific Committee is being established** with international partners that have been working within the Kathmandu Valley World Heritage property. The State Party requests the international community to assist in carrying out workshops and research, particularly focused on technical issues such as structural assessments of traditional load-bearing structures, as well as material dating and testing.

Furthermore, the State Party has initiated the process of **reviewing and amending the Integrated Management Framework (IMF) document**. The IMF will address the architectural and town-planning coherence within the World Heritage property. Furthermore, the socio-economic recovery of the World Heritage Monument Zones, which has largely already taken place, will continue to be monitored and, where necessary, further economic revitalization of the urban communities will be initiated.

The State Party has carried out a detailed review of the rehabilitation process which will be realigned to the changing circumstances through an **updated Rehabilitation Master Plan** (based on the Recovery Master Plan RMP). Focus must be set on ensuring appropriate rehabilitation procedures are followed, while hindering hasty reconstruction. Rehabilitation is being prioritized; however, **healing takes time**, and the initially targeted schedule (six-year plan) must be seen as an indicator which needs to be adjusted according to circumstances.

A **detailed review and analysis of the present status** has been prepared, which will be further detailed out over the following months, looking into individual issues. A **detailed schedule of activities** that will take place over the following six months has been attached and progress will be reported to the World Heritage Centre to convey to the World Heritage Committee for their 44th Session in Fuzhou, China.

**With the renewed commitment expressed by the Honourable Prime Minister of Nepal Mr K.P. Sharma Oli, the State Party does not consider it presently necessary for Kathmandu Valley to be inscribed on the List of World Heritage in Danger.**
2. **Response to the Decision of the World Heritage Committee**

The State Party has taken definite steps to address all the points included in the World Heritage Committee’s 43rd Session Decisions.

**HERITAGE COMMITTEE 43 SESSION (BAKU 2019)**

The World Heritage Committee,

1. Having examined Document WHC/19/43.COM/7B,
2. Recalling Decisions 39 COM 7B.69, 40 COM 7B.41, 41 COM 7B.95 and 42 COM 7B.12, adopted at its 39th (Bonn, 2015), 40th (Istanbul/UNESCO, 2016), 41st (Krakow, 2017) and 42nd (Manama, 2018) sessions respectively.

The State Party has reviewed the previous decisions of the World Heritage Committee since the 2019 Gorkha Earthquake, as well as the reports of the Reactive Monitoring Missions of 2015 and 2017. The State Party has not yet received the report of the Reactive Monitoring Mission of 2019 till date.

3. Acknowledges the ongoing commitment of the State Party and of national and international organizations towards the recovery of the property, through the implementation of the Recovery Master Plan (RMP), as well as through repair and conservation works already undertaken;

A lot of work has been carried out since the 2015 Gorkha Earthquake. An assessment commissioned by the State Party to the Institution of Engineering and experts from ICOMOS Nepal has been annexed to this report (Refer ANNEX 8). This will be the basis for further work on reviewing and updated Rehabilitation Master Plans (RMP) and Integrated Management Framework document (IMF).

4. Reiterates its requests that the State Party integrate the RMP within an overall socio-economic revitalization programme for urban communities, encourage residents and local business to engage in the recovery process, and ensure that it delivers wide-ranging social and economic benefits;

The socio-economic recovery of the World Heritage Monument Zones has largely already taken place. Assessments will be carried out to ensure any further requirements that might be required for the economic revitalization of the urban communities. A report on this will be submitted by end of May 2020, for the World Heritage Committee to review. Furthermore, the required long-term management mechanism for sustainable socio-economy for the urban communities will be addressed by the amended Integrated Management Framework document.

5. Notes again the scale and scope of the 2015 earthquake disaster, as described in the reports of the 2015 and 2017 joint World Heritage Centre/ICOMOS/ICCROM Reactive Monitoring missions to the property, and expresses concern at the serious deterioration of the property's architectural and town-planning coherence;

The architectural and town-planning coherence within the World Heritage property is being carefully monitored. An initial assessment has also been carried out, within the framework of assessing the overall post-earthquake rehabilitation. This has been included in the Institution of Engineering and ICOMOS Nepal Report attached as an annex (Refer ANNEX 8). Furthermore, the required long-term management mechanism for architectural and town-
planning coherence will be addressed by the amended Integrated Management Framework document.

6. **Considers** that the recovery process needs to be further improved and hastened, and **requests** the State Party to:

   (6)1 Initiate with technical support from, and in on-going dialogue with, the World Heritage Centre and the Advisory Bodies, an International Scientific Steering Coordination Mechanism tasked with assisting with the development of structures and resources to guide the recovery of the property and its OUV.

An **International Scientific Committee** is being established to institutionalize and help coordinate the assistance that the State Party is already receiving from various international organizations and experts. The ISC will also facilitate closer collaboration with the advisory bodies and the World Heritage Centre.

(6)2 Invite a joint World Heritage Centre/ICOMOS/ICCROM Reactive Monitoring mission to assess the state of conservation of the property, to review progress with the implementation of the recommendations of the October 2015 and March 2017 missions, to assist with the development of a strategy for the implementation of the six-year RMP, and to provide guidance on its review.

A joint ICOMOS/ICCROM Reactive Monitoring Mission (RMM) took place from 16 to 21 October 2019 represented by Ms Catherine Forbes and Dr Gamini Wijesuriya respectively. Site visits to the seven monument zones were carried out as well as discussion with the site managers. The outcome of the discussions was noted, however, the RMM report has not yet been received by the State Party.

(6)3 Seek further technical support from the World Heritage Centre and Advisory Bodies in order to coordinate and guide the recovery of the property, based on documentation, research, analysis and use of appropriate traditional methods and materials, and

The State Party **requests the international community to assist** in carrying out a series of workshops, particularly focused on technical issues such as structural assessments of traditional load-bearing structures. This should also be linked to research, particularly focusing on traditional materials, technology along with history and dating.

(6)4 Ensure all recommendations and outcomes of the above are fully integrated within the 6-year RMP;

The State Party has initiated the process of **reviewing and amending the Integrated Management Framework document** which was adopted by the State Party in 2007. The review and amendment process were going on when the Gorkha Earthquake struck in 2015. The core system of coordination through the Coordinative Working Committee, representing the seven monument zones still continues, proving to be resilient. However, certain mechanisms will need to be amended and updated to address the changing circumstances, particularly integrating the lesson learned by experiencing a major catastrophe. The IMF will address the architectural and town-planning coherence within the World Heritage property. Furthermore, the socio-economic recovery of the World Heritage Monument Zones, which has largely already taken place, will continue to be monitored and, where necessary, further economic revitalization of the urban communities will be initiated.
The State Party has carried out a detailed review of the rehabilitation process which will be realigned to the changing circumstances through an updated Rehabilitation Master Plan (based on the Recovery Master Plan RMP). Focus must be set on ensuring appropriate rehabilitation procedures are followed, while hindering hasty reconstruction. Rehabilitation is being prioritized; however, healing takes time, and the initially targeted schedule (six-year plan) must be seen as an indicator which needs to be adjusted according to circumstances.

A detailed review and analysis of the present status has been prepared, which will be further detailed out over the following months, looking into individual issues. A detailed schedule of activities that will take place over the following six months has been attached and progress will be reported to the World Heritage Centre to convey to the World Heritage Committee for their 44th Session in Fuzhou, China.

7. **Also requests the State Party to implement fully the recommendations of the ICOMOS Technical Review of the Patan Durbar Square Monument Zone sewer project;**

The State Party has noted this request and ensures that the recommendations of the ICOMOS Technical Review of the Patan Durbar Square monument Zone sewer project will be implemented. A short report has been attached under ANNEX 4.

8. **Further requests the State Party implement fully its already declared six-year plan and complete all rehabilitation works by the end of 2021 and report to the World Heritage Committee;**

The rehabilitation process must be carried out in a systematic manner. Focus must be set on ensuring appropriate rehabilitation procedures are followed, while hindering hasty reconstruction. The rehabilitation process will be prioritized and progress ensured, however, consideration must be made to the fact that healing takes time and cannot be hastened. Accordingly, the proposed time schedules (six-year plan) must be seen as targets which need to be adjusted according to the circumstances. This will be presented in the updated Rehabilitation Master Plan (RMP), while ensuring that long-term sustainable management is addressed through the updated Integrated Management Framework (IMF) document, both which will be submitted for review by end of May 2020. The State Party will keep the World Heritage Committee informed on progress on planning and implementation, as well as the successful completion of rehabilitation.

9. **Calls upon the international community to continue supporting the State Party’s recovery work through financial, technical or expert assistance, including support for local communities and their housing and social needs;**

The State Party is committed to collaborate with the World Heritage Centre and the Advisory Bodies and, where necessary, request for international assistance particularly for research and to build capacity. The State Party requests the international community, coordinated by the International Scientific Committee (ISC) to assist in carrying out a series of workshops, particularly focused on technical issues such as structural assessments of traditional load-bearing structures. This should also be linked to research, particularly focusing on traditional materials, technology along with history and dating. The State Party, within the broader scope of post-disaster recovery has been addressing the housing and social needs of the local communities, and this will be further assessed within the World Heritage property. These activities will also be integrated into the Recovery Master Plan (RMP).
10. Requests furthermore the State Party to submit to the World Heritage Centre, by 1 February 2020, an updated report on the state of conservation of the property and the implementation of the above, for examination by the World Heritage Committee at its 44th session in 2020, with a view to considering in the absence of significant progress in the implementation of the above recommendations to address the ascertained danger to the Outstanding Universal Value of the property, the inscription of the property on the List of World Heritage in Danger;

As requested by the World Heritage Committee, this report is being submitted to the World Heritage Centre by 1 February 2020. A detailed review and analysis of the present status has been prepared, which will be further detailed out over the following months, looking into individual issues. A detailed schedule of activities that will take place over the following six months has been attached and progress will be reported to the World Heritage Centre to convey to the World Heritage Committee for their 44th Session in Fuzhou, China.

11. Underlines that the State Party’s cooperation in conducting the requested and overdue mission will be a key consideration for the Committee at its 44th session;

A joint ICOMOS/ICCROM Reactive Monitoring Mission (RMM) took place from 16 to 21 October 2019 represented by Ms Catherine Forbes and Dr Gamini Wijesuriya respectively. Site visits to the seven monument zones were carried out as well as discussion with the site managers. The outcome of the discussions was noted, however, the RMM report has not yet been received by the State Party. The review and assessment process of the Kathmandu Valley World Heritage property has been initiated with an initial report attached as an annex (Refer ANNEX 8). This can be used as the basis to carry out any further recommendations that might be included in the RMM report.

Finally reiterates, consistent with Decision 40 COM 7, that the inscription of a property on the List of World Heritage in Danger, should not be viewed negatively by the State Party; its purpose is to marshal international support to help the State Party effectively address the challenges faced by the property by engaging with the Advisory Bodies to develop a programme of corrective measures to achieve the desired state of conservation for the property as provided for under Paragraph 183 of the Operational Guidelines.

The State Party is committed to collaborate with the World Heritage Centre and the Advisory Bodies continue improving on the measures required to achieve the desired state of conservation of the property. Steps are being taken to ensure that the review and update of the Rehabilitation Master Plan as well as the Integrated Management Framework is finalized, adopted and submitted by end of May, while ensuring that site management and activities are carried out accordingly.

With the renewed commitment expressed by the Honourable Prime Minister of Nepal Mr K.P. Sharma Oli, the State Party does not consider it presently necessary for Kathmandu Valley to be inscribed on the List of World Heritage in Danger.
3. **Other Conservation Related Issues**

The World Heritage Committee decisions are quite comprehensive, particularly when linked to the previous World Heritage Committee decisions since 2015 and the Reactive Monitoring Mission reports. The outcome of the detailed assessment of the present situation will provide the basis for establishing the Rehabilitation Master Plan as well as the updated Integrated Management Framework document. This will address all ongoing conservation issues related to the Kathmandu Valley World Heritage property.

There are several related issues that have been raised numerous times during the post-earthquake rehabilitation process will be reviewed in detail. These also relate to the lack of implementation of the Post Disaster Recovery Framework PDRF for Culture Sector, a document that was prepared with assistance from ICOMOS Nepal and published by the National Reconstruction Authority (NRA) in April 2016 (Refer ANNEX 6).

To ensure improvement to heritage management, while ensuring sustainable and resilient urban communities, and cultural continuity of the Kathmandu Valley World Heritage property, the State Party has committed to reviewing and amending the following:

1. To provide full assistance to traditional artisans to allow for them to pass on their skills and knowledge to the next generation, to provide traditional artisans certification to ensure the work and livelihood, to develop a programme to honour master-crafts-persons as ‘national treasures’, and ensure that the government provides resources to ensure continuity of traditional crafts.
2. To carry out documentation and research on traditional building technology and knowledge, while disseminating this information through various means including publications and museum exhibitions.
3. Ensure that the heritage management of the monument zones comes under a single coordinated authority, which ensures the protection of the attributes conveying OUV, and all authorities follow a single Master Plan, agreed upon and adopted by the Department of Archaeology. This includes authorities such as the Pashupati Area Development Trust (PADT), the municipal authorities of Kathmandu, Lalitpur, Bhaktapur and Changu Narayan, and the various committees and federations that are responsible for the management of specific monument zones.
4. The capacity and organization of the Department of Archaeology will be reviewed, particularly in respect to protocols and responsibilities in managing World Heritage. The activities of the Engineering and Survey Section under the Divisional Engineer will be reviewed and the process of converting this into a Conservation Division headed by a Conservation Architect will be initiated immediately.
5. Community involvement will be promoted, particularly in respect to site monitoring, maintenance, as well as safeguarding intangible heritage within the World Heritage property monument zones.
6. Establishment of standardized and official Heritage Impact Assessment (HIA) procedures and format (Refer ANNEX 7).
7. The construction process defined by the Public Procurement Act will be reviewed for conservation projects and provisions will be adopted to ensure required expertise in traditional construction methods using traditional artisans to improve work quality.

These activities will be endorsed and initiated together with adopting the updated Integrated Management Framework document and the Rehabilitation Master Plan by the State Party at highest level.
4. **Potential Major Restorations, Alterations, New Construction**

The destruction caused by the 2015 Gorkha Earthquake has brought about the requirement for major restoration and reconstruction of monuments. This has been the case for monuments as well as historic urban fabric, within the monument zones of the property, as well as in the buffer zones.

A detailed assessment of the present circumstances is being undertaken, particularly to understand the impact of what has happened over the past five years since the earthquake and to plan how further work needs to be guided. The initial report prepared by a team from Tribhuvan University, Department of Architecture, with assistance from ICOMOS Nepal, has been attached as ANNEX 8. A more detailed assessment will be carried out over the next six months along with the updating of previous recovery plans to establish comprehensive Rehabilitation Master Plans for each of the seven World Heritage monument zones.

The overall impact of the 2015 Gorkha Earthquake, including the response and rehabilitation activities, should not be considered to have significantly affected the Outstanding Universal Value of the property, including authenticity and integrity, though this does need more detailed investigation. With the commitment of the Honourable Prime Minister of Nepal Mr K.P. Sharma Oli, assessments and detailed planning will continue, to ensure that required rectification will be carried out to the system and approach, which will be institutionalized through an updated and amended Integrated Management Plan (IMP), along with the Rehabilitation Master Plans (RMP).

5. **Public access to the state of conservation report**

*The State Party accepts open access to the full report*

6. **Signature of the Authority**

[Signature]

Name: Damodar Gautam

Designation: Director General

Date: 29 January 2020

Department of Archaeology, Ramshahpath, Kathmandu, Nepal.
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ANNEX 1: Comments on Rehabilitation Master Plan (RMP)
(also referred to as Recovery Master Plans)

The initial Recovery Master Plan was a basic list of damaged monuments prepared based on the Post Disaster Needs Assessment (PDNA) of 2015. This has been regularly updated and implementation has been taking place based on the Post-Earthquake Rehabilitation Guidelines of 2016. Due to the different circumstances in the seven monument zones, particularly in respect to the degree of damage, as well as the system of local governance, approaches have varied. This can be considered to be positive, however needs to be carefully monitored.

The Recovery Master Plan is being reviewed and updated (as a Rehabilitation Master Plan RMP) based on the recent assessment carried out. Initially the progress of rehabilitation is going to be a general overall assessment, however, information on each project will be compiled and assessed over time to get a better idea of the various restoration and reconstruction projects that have been carried out. In the process of post-earthquake reconstruction, we have appropriate and inappropriate examples, nevertheless, with detailed documentation of the interventions, future monitoring and possible rectifications can be carried out if found to be absolutely necessary.

The RMP will be updated and reviewed based on the RMM Reports of 2015, 2017 as well as the 2019 when received. In the 2015 RMM Report we have the recommendations for the RMM on page 6 and an outline on pages 41-42. The 2017 RMM Report states that an RMP has not been submitted by the State Party and underlines the importance of establishing this plan to ensure a coordinated and effective recovery process, points that are mentioned in various parts of the report with a summary on page 43. This will surely again be included in the report for the 2019 RMM. These recommendations will be used as a basis to review, amend and augment the RMP, while ensuring that these points are reflected in the overall Integrated Management System, which will be the basis for long-term management of the property.

The site assessment as summarized in ANNEX 8, also looks into the urban fabric within the World Heritage boundaries, as well as the Buffer Zone. Development controls with the World Heritage boundary will be reviewed and seriously discussed within the context of reviewing the Integrated Management System, particularly the Integrated Management Framework document (refer section 3 of this report). Rehabilitation Master Plans (RMP) will be finalized and adopted for each of the seven monument zones of Kathmandu Valley World Heritage property.

<table>
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<th>The Rehabilitation Master Plan will be prepared within the following six month (by mid-July 2020), in close consultation with the local authorities and community representative, aligned to the recommendations of the 2019 RMM (once the report has been received by the State Party) with a draft being provided for review before the 44th World Heritage Committee Session.</th>
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<td>A more detailed Plan of Actions will be established for each of the monument zones based on the recent assessments of the monument zones, particularly focusing on remaining reconstruction / restoration works and general recovery considering the livelihood and sentiments of the local communities.</td>
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ANNEX 2: Comments on review of Integrated Management Framework (IMF) document

The Integrated Management Framework (IMF) document was prepared as part of the Management System that was set up for Kathmandu Valley World Heritage property between 2005 and 2007. On establishment of the Integrated Management Plan (IMP) and the adoption of the Integrated Management Framework (IMF) document by the cabinet of the Government of Nepal in 2007, Kathmandu Valley was then taken off the List of World Heritage in Danger. The IMP that was established was highly praised by the WHC/ICOMOS Mission Report that took place in June 2006 led by Prof Herb Stovel: "In brief, the establishment of the IMP of the Kathmandu Valley could be seen as a MODEL PROCESS for all World Heritage Management Plans. It is not a study document to describe the site or to provide ideals for the site-management, but has gone through a thorough process of site-based information gathering and commitment by the concerned site-management authorities, and the draft has incorporated the viewpoints and realistic possibilities of the complex management structure."

The management system ensured coordination between the seven monument zones through a Coordinative Working Committee (CWC) with the Department of Archaeology (DOA) running the secretariat. During the period between 2012 and 2015 various community-based interaction programmes were organized to review the IMP system. This led to the preparation of a draft amendment to the IMF document which was finalized as the Gorkha Earthquake struck. The draft document was circulated by email for final review just minutes before the earthquake on 25 April 2015.

Emergency response required a more targeted set of guidelines which were prepared with assistance from ICOMOS Nepal: The Post-Earthquake Rehabilitation Guidelines 2016 (The full title as translated from Nepali: Basic Guidelines for the Conservation and Reconstruction of Earthquake-Damaged Heritage 2072 – provided in ANNEX 5). Furthermore, earthquake response was also based on the Post Disaster Needs Assessment (PDNA) prepared within two months of the earthquake in June 2015. This was updated to the Post Disaster Recovery Framework (PDRF) in April 2016 (PDRF Culture Sector provided in ANNEX 6). These documents will all need to be reviewed in respect to their impact as well as how they can be integrated into the IMP system, particularly to be reflected in the amended IMF document.

The CWC is still functioning and a certain level of coordination was achieved even during the post-earthquake response phase. Based on regular CWC activities, the IMP can continue to be implemented. However, amendments to the original IMF as well as the 2015 draft IMF need to be reviewed and finalized, to be adopted by the Government of Nepal.

The process of reviewing the Integrated Management Framework (IMF) document has begun. A revised and updated draft IMF will be prepared before mid-July 2020. The 2020 IMF document will be based on the 2007 IMF document, the 2015 draft IMF document as well as the post-earthquake response and rehabilitation guidelines and strategies such as the 2016 Culture Sector Post Disaster Recovery Framework (PDRF) and the 2016 Post-Earthquake Rehabilitation Guidelines. A more detailed Plan of Actions will be established for each of the monument zones based on the recent assessments of the monument zones, linked to the Rehabilitation Master Plans.
ANNEX 3: Activity Schedule mid-January to mid-July 2020*
(*second half fiscal year 2076/2077 Nepali year)

Tasks

1. Preparation of updated and detailed RMP document in close consultation with the local authorities and community representatives. This will focus on assessing the work that has taken place since the 2015 Gorkha Earthquake and planning the remaining reconstruction and restoration works. This will have to lead into a long-term management as defined by the IMF.

2. Review of IMF document and preparation of 2020 IMF Draft Amendment Document. This will focus on the immediate management needs but also provide the framework for long-term management of the overall World Heritage property as well as individual monument zones.

3. Preparation of Integrated Plan of Action for each of the Monument Zones based on site assessments, the RMP and the IMP. These actions would include the reconstruction / restoration of monuments, the overall rehabilitation of the monument zones and regular monitoring and maintenance.

4. In the process of planning, issues will discussed at fortnightly events with stakeholders such as site managers, local authorities, community leaders, activist, experts as well as the authorities that have worked on rehabilitation over since the earthquake.

Planned Activities (to support and augment preparation of RMP and IMF documents)

1. On establishment of International Scientific Committee (ISC) and research
2. Review of approaches to structural assessment of historic buildings
3. On implementation procedures and responsibilities (Guidelines / PDRF / Checklist)
4. Discussions on material reuse, availability and replacement
5. On traditional knowledge and craftsmanship
6. Discussions on lessons learned during the first 5 years (commemoration)
7. Urban context, the HUL approach, and appropriate rehabilitation
8. Community trauma and rehabilitation
9. Review of draft RMP and IMF documents as well as Plan of Action
10. Intangible heritage and World Heritage
11. On establishment of Heritage Impact Assessment
12. Governance of cultural heritage and the new constitution
ANNEX 4:
Status of the Patan Durbar Square Monument Zone Sewer Project

The concerned sewer management project: "NEP: Kathmandu Valley Waste Water Management Project L-3000" is the project initiated by Lalitpur Metropolitan City. It is highly significant project on waste water management in the core city area including Patan Durbar Square. Patan Durbar Area has been experiencing intense inundation each year during the monsoon season. The poor and insufficient existing sewerage network has been discovered as one of the various causes of that seasonal flood. When the existing pipes are clogged with solid stuff the water overwhels and causes flash floods. Every year this recurring problem creates a major trouble to local residents and tourists as roads and walk way remains completely blocked. The flood in the Durbar area is also one of the major causes of decay of the heritage structures. The water-logging has been causing foundation damage to heritage structures, as mentioned in the HIA report.

Taking these very unhygienic situations with health risks to the community, municipality sought the support of ADB to solve this chronic problem in the core heritage site.

In request application by Lalitpur Metropolitan City as a Local Government, Department of Archaeology granted principal approval for launching the project with necessary requirement. Though the project proposes to replace existing sewer pipes with new larger diameter sewer pipes in the network to avoid the flooding in main core heritage site and entire core city of Patan, the more area of the development project covers buffer zone. A Heritage Impact Assessment (HIA) was carried out and Geophysical Survey of the area have been undertaken to trace out the probability of archaeological remains underneath. The major portion of the project area where larger new hume-pipe is proposed to be laid is already disturbed area by previous interventions, shown in the Geophysical Survey report. However, HIA has given various measures of mitigation to be applied for less impact on heritage.

It is mandatory that excavation work should be conducted manually and minutely by either consultant archaeologist in presence of the responsible official from Department of Archaeology or by the archaeologists from DoA and also should be recorded scientifically on each findings and the process of earth work/excavation. Though there is not traced any such significant huge archaeological remains underneath, if, in case, such remains would be found during the excavation, preservation of archaeological remains would be in the first priority. HIA also suggested to conduct a heritage/archaeological awareness training as a necessary requirement before commencement of the project.

The point must be taken into account is the sensitivity of Asian Development Bank towards the protection of cultural heritage, which is the development partner of this project. This project is only a small portion of the whole package under Kathmandu Valley Wastewater Management Project (L-3000), ADB.
ANNEX 5:

Post-Earthquake Rehabilitation Guidelines 2016

These guidelines were prepared by the Department of Archaeology with assistance from ICOMOS Nepal to provide a clear framework for post-earthquake rehabilitation. A comprehensive assessment of projects is being undertaken based on the provisions defined in these guidelines.
ANNEX 5

BASIC GUIDELINES FOR THE CONSERVATION AND RECONSTRUCTION OF EARTHQUAKE-DAMAGED HERITAGE 2072

PREAMBLE

A 7.6 magnitude earthquake that struck Nepal on 25 April 2015 followed by several hundred aftershocks brought a huge loss of life and property in Mid Nepal. Around 8900 have died and 22000 more so have been wounded. Similarly, millions of private and public buildings have been completely damaged and millions of others are damaged partially.

This earthquake has also damaged a lot of our historic and cultural heritages. The assessment done by the Department of Archaeology reports damage to more than thousand monuments in Kathmandu, Lalitpur, Bhaktapur, Nuwakot and Gorkha. The most affected are those listed in Kathmandu Valley World Heritage List. Among 90% of damaged monuments in Hanuman Dhoka Durbar Area, some are partially or completely collapsed, while some other are left with huge cracks. Around 140 important monuments including Kasthamandap and Dharahara are completely collapsed. This has not only inflicted an irreparable damage to several monuments that were symbol of Nepal's pride but has also deeply affected the tourism sector which has been the backbone of country's economy. Thus, the restoration and reconstruction of these monuments in their original form, shape and size has been critical.

Reconstruction and restoration work of historic monuments is different from modern construction works. The restoration and reconstruction of such monument should be carried out as per the established national and international theory, values and philosophy related to historic monument conservation. Since most of the damaged monuments and sites are listed in the Cultural World Heritage List, provisions of World Heritage Convention and Operational Guideline also cannot be overlooked. The restoration and reconstruction work cannot disregard the attributes of the monuments and monument zones that define their outstanding universal value, authenticity etc. But we should also remember that Nepal lies in an earthquake prone zone and that most of our monuments are living heritages. Regular puja is performed in our temples while devotees pay their homage and thousands gather during festivities. Several government offices and museums are housed in historic structures.

Prime concern for the safety of human life has been raised with the experience of this earthquake. Earthquake doesn't kill but weak structures do. There is a general outcry from public, experts and policy makers that the structure constructed, reconstructed or repaired henceforth need to be earthquake resistant or with ability for earthquake risk mitigation. The work 'earthquake resistant' has been highlighted in government policy and program. After such a tragedy, it is but natural to discourse on earthquake resistant construction or earthquake risk mitigation measures and this has also entered the arena of monument restoration and reconstruction lately.

Monuments are important not only because of their art and architecture but also because of their construction technology. Art of traditional construction technology is in itself a part of intangible heritage which is why it cannot be disregarded in the name of earthquake resistant restoration or reconstruction. The continuation of traditional construction technology is one of the prime objectives of heritage conservation. In this context we need special provision for the restoration and reconstruction of earthquake-damaged monuments.
Having felt that ‘Ancient Monument Preservation Methodology 2064’ is inadequate to address all post-earthquake issues, the Department of Archaeology, Ministry of Culture, Tourism and Civil Aviation, Government of Nepal, has adopted ‘Basic Guidelines for the Conservation and Reconstruction of Earthquake-Damaged Heritage 2072’ which was prepared with suggestions from experts and professionals.

1. Name and date of effect
   a. This guideline shall be addressed as ‘Basic Guidelines for the Conservation and Reconstruction of Earthquake-Damaged Heritage 2072’.
   b. This guideline shall be effective from the date of adoption by the Department of Archaeology of the Ministry of Culture, Tourism and Civil Aviation, Government of Nepal.

2. Definition

   - **Graded Monuments** are the monuments that are classified in A, B and C category according to their value and ownership and as per the provision of Ancient Monument Preservation Act.
   - **Non-Graded Monuments** are the monuments that have not been classified as per the provision of Ancient Monument Preservation Act.
   - **Rehabilitation** is the overall process of rendering original physical-cultural importance and livingness to the monument following all conservation processes and procedures.
   - **Renovation** is the process of partial or full repair, construction etc of the monuments damaged by natural disasters or deteriorated by age subsequently giving them their original or new adaptive functions on the basis of available evidence.
   - **Retrofitting** is the means of maintaining or adding to the strength of any structure when it is proved from engineering perspective that the strength of that structure is supposed to have been compromised.
   - **Strengthening** is the process of maintaining or improving the strength of any structure by additional means.
   - **Stabilization** is the temporary or permanent means of preventing the further damage or collapse of the structure.
   - **Reconstruction** is the process of constructing a completely damaged or fully collapsed monument on the basis of available evidence, normally atop its existing foundation, in its original form, shape, size & construct and using traditional material and technology.
   - **Restoration** is the process of constructing or repairing a damaged or dilapidated monument on the basis of available evidence in its original form, shape, size & construct. It may also imply partial reconstruction.
   - **Rescue Archaeology** is the immediate archaeological activity carried out on sites where the reconstruction of the monument has been proposed. This is generally carried out quickly in short span of time.
   - **Cyclical Renewal** is the process of periodic restoration or maintenance work carried out on a monument using traditional material and technology when it is necessitated by established system of regular monitoring of the condition of its structural members.
   - **Reversible Technology** is the non-traditional material and technology introduced in the course of restoration or reconstruction of a monument where it is felt that traditional material and technology is inadequate to conserve a monument in its original form, provided this newer introduction can be rectified or replaced in the future if it is so required.
   - **Intervention** is any conservation activity carried out by concerned authority where the situation necessitates the protection of a monument from further damage or degradation.
   - **Authenticity** is the historically, socially and scientifically accepted original and inherent value, idea, nature or characteristic of any object or structure.
- **Structural Integrity** is the ability of a structure to support a designed load without breaking, tearing apart, or collapsing.
- **Introduction of non-traditional material & technology in lighter fashion** implies the way they are used as not to compromise the original construct, form and structural integrity of the monument.

3. **Classification of heritages**
   a. For the purpose of this guideline all tangible cultural heritage is categorized in three levels (a) Heritage Sites, (b) Monuments and (c) Objects.
   b. This guideline will address the monuments graded as per Ancient Monument Preservation Act and other non-graded monuments as well.

4. **Scope**
   This guideline mainly deals with tangible immovable cultural heritage; however, it also generally includes related movable tangible and intangible cultural heritage where relevant.

**SECTION 1: GENERAL PROVISIONS**

5. **Authority and responsibility**
   All classified heritage shall come under the direct purview of the Department of Archaeology as defined in the Ancient Monument Preservation Act 1956. The Department of Archaeology may delegate tasks to other national authorities as well as international and national specialized organizations and persons; however, work shall only be carried out adhering to the applicable regulations, following the procedures outlined in this guideline and under the supervision of the Department of Archaeology.

6. **Resource management**
   All resources including funding and technical support and contributions for renovation, conservation or reconstruction of heritages shall be received and managed by the Government of Nepal as per prevailing law. The Department of Archaeology shall carry out proper audit and documentation of the resources employed for each site, monument and object.

7. **Damage Assessment**
   During the restoration and reconstruction of earthquake-damaged monument, assessment of the damage inflicted on monuments, heritage sites & objects, their importance, art and architecture as well as the nature of damage has to be done. Impact on living heritage of religious cultural heritage should also be assessed.

8. **Prioritization**
   During the restoration and reconstruction of earthquake-damaged monument, priority should be given to the restoration of severely damaged monuments.

9. **Documentation**
   Detail documentation of the heritage objects being restored or reconstructed shall be prepared with their clear identification. Documentation of damaged monuments, certain parts of monuments or objects shall be carried out in written form, photographically, visually, with sketches, drawings and clarifying their shape and size.
10. Response based on evidence
Renovation and reconstruction of earthquake-damaged monuments shall be carried out based on available evidence. No renovation or reconstruction based on conjecture will be allowed.

11. Conservation plan
All conservation approach to the site, monument and object shall be determined on the basis of detailed research and assessment of past conservation works throughout its history.

12. Preserving the traditional material and technology
a. For all restoration and reconstruction works of monuments, generally traditional materials, technology and norms shall be followed. If inappropriate or non-traditional material, technology or norms were found to be adopted in the past restoration or reconstruction works, they shall be rectified based on available evidence while carrying out present restoration or reconstruction works.
b. Use of non-traditional materials and technology: While restoring or reconstructing any monument, if it is felt that earthquake risk cannot be technically mitigated only by using traditional material and technology, especially for the reconstruction of totally collapsed monuments, non-traditional materials and technology can be invisibly introduced in lighter fashion only with prior approval of the Department of Archaeology. Department of Archaeology reserved the right to approve or disapprove such intervention considering the nature, condition, form, construct and importance of the monument under consideration. Except in special circumstances, such material or technology needs to be reversible in nature. A reliable technical report should be prepared clarifying the need for such non-traditional intervention and attached to the project file of the restoration or reconstruction of related monument.

13. Involvement of local community
As the local people are the true guardians of the monuments, their involvement shall be ensured at various stages of restoration or reconstruction works of monuments.

14. Clarification of ownership
The ownership of the historic structure shall be clarified in respect to legal, historical and cultural ownership and all owners and stakeholders shall be involved in the implementation process.

15. Maintenance and cyclical renewal
a. The historic buildings will need to persist over time which will require the considerations of renewal and maintenance. All interventions shall take into account how they contribute to the performance of the structure over time.
b. Provisions for periodic inspection of physical condition of historic buildings and monuments will be made.
c. Responsibility of regular monitoring and periodic maintenance in format laid out by the Department of Archaeology will be given to specific stakeholders, owner or site manager. Provisions shall also be made for the cyclical renewal of classified heritage based on the regular monitoring under the coordination of the Department of Archaeology.
d. In line with traditional Guthi system, required trust will be set up for repair and maintenance.

16. Disaster Management
Adequate care shall be exercised for every site, monument and object in terms of disaster management against hazards such as earthquakes, flooding, landslides, fires, lightening and possible hazards based on visitors and other factors.

17. Heritage Impact Assessment
Before initiating any development activities within any heritage site or archaeological site, assessment of the direct or indirect impacts those activities can have upon the heritage value, form etc. of any heritage site, monument or cultural object in should be done in format laid out by the Department of Archaeology. Assessment of the impacts on the living heritage of any monument or monument zone shall also be carried out.

18. Conservation and continuation of living heritage
a. Monuments and historic buildings are living heritage. The living heritage associated with the monuments contributes to the significance of the monument, while the monument allows for the performance of or is an expression of the living heritage. The restoration of the historic buildings and monuments shall be carried with provisions of implementation and continuation of related intangible heritage including traditions, customs or beliefs.

b. The destruction of especially the religious structures has a deep impact on the belief of the community. Traditionally specific procedures and rituals were established to deal with such situations, such as the chhema puja or the asking for forgiveness. As these procedures and rituals contribute to the idea of living heritage culturally or religiously, it shall be ensured that traditional procedures and rituals are performed while carrying out the restoration and reconstruction work and coordination shall be done for the same.

19. Original function and new function
a. Generally, reinstating the traditional function of the monument being restored or reconstructed shall be encouraged. For monuments that have lost their original function, a new function might be assigned with consent from related stakeholders however without compromising the form, shape, size, construct and external architecture of the monument.

b. The structures that already have communities involved in using and maintain them, these activities shall be safeguarded and supported.

c. To ensure income, the buildings that have lost their original function might be assigned a new and appropriate function that is not incompatible to its original use.

20. Introduction of modern installations and services
a. The historic buildings that are still being used or are given new functions might require modern installations and services such as electrical and plumbing including installations and equipment dealing with security against theft and fire hazards.

b. Modern installations and services in the various types of historic buildings shall be introduced in prescribed standard considering the vulnerability as well as functions of such buildings and without jeopardizing their authenticity or originality, and their outlook and location.
21. Material availability and specification
   a. The availability and quality of traditional / non-traditional material required for
   the reconstruction and restoration of damaged monuments shall be accounted
   for.
   b. The Department of Archaeology will facilitate for the procurement of essential
   building materials.
   c. Quality of timber - Timber should be without cracks, fully matured and
   seasoned, hard, with compact grains, with low moisture content and with low
   flexibility. Timber with knots (aankhla) and palans should not be used. All
   timbers used for load bearing purpose, for carving, those used in external areas
   where it can get in contact of water should be of salwood variety. In areas where
   there is less chance of water contact, other good species timber can be used.
   All timber should be of Nepalese variety.

22. Crafts-persons availability and training
   a. High priority shall be paid for giving high recognition to the master crafts-
   persons with the required traditional crafts and to the training of new
   craftsperson.
   b. It shall be ensured that work is carried out by skilled, qualified and experienced
   craftsperson or under the guidance of such craftsperson.

23. Supervision and quality control
   a. All conservation, restoration and reconstruction work that is carried out shall
   comply with the guidelines, and adherence to right specification of materials as
   well as quality.
   b. The standards and parameters for supervision of the restoration, reconstruction
   and conservation work shall be established.

24. Research
   During the reconstruction and restoration of damaged monuments, it is essential
   to carry out appropriate scientific research on the surrounding site, the foundations
   and the various components of the structure, structural systems of various styles
   of monuments, load bearing and load transfer technology etc. Similarly, the
   scientific and technical research on the earthquake risk mitigation provisions in
   traditional technology shall also be carried out.

SECTION 2: GUIDELINES FOR HERITAGE SITES

25. Defining the heritage at site level
   Heritage sites are defined as sites that are legally proclaimed as “Protected
   Monument Zones”, “Archaeological Sites” and “World Heritage Site”. It also
   includes other tentative or potential monument zones, heritage sites and
   archaeological sites.

26. Conserving and managing historic settlements
   Special provisions will be made for the conservation and management of historic
   settlements damaged by earthquake.
27. Assessing the damage to the site
   a. Assessments of Protected Monument Zones shall include the overall impact on
categorized monuments and heritage objects. This can include open spaces, natural
landscapes and historic settlement fabric.
   b. Archaeological Sites are composed of excavated and potential areas. The
assessment shall consider the impact on the defined area as well as the
surrounding context.
   c. Assessments of historic settlements shall be carried out taking into account the
impact on settlement structure, spaces, monuments and fabric.

28. Site level interventions
   a. For the 'Protected Monument Zones' and historic settlements that have been
impacted beyond individual monuments, a Rehabilitation Master Plan based on
the assessments taking into account physical and socio-cultural aspects shall
be prepared.
   b. The implementation of specific interventions defined within the Rehabilitation
Master Plan shall be facilitated.
   c. Archaeological Sites shall be protected from encroachment and required
interventions shall be planned for immediate and long-term implementation.
Required activities for rescue archaeology shall be carried out when and as
necessary.

SECTION 3: GUIDELINES FOR MONUMENTS

29. Defining the heritage at Monument Level
Heritage at monument level shall be defined as per the Ancient Monument Preservation
Act, specifically categorized monuments which would include all graded monuments as
defined by the Department of Archaeology as well as all monuments that would fall under
the grading criteria.

30. Nature of damage to the monuments
The damage to the monuments shall be categorized under three categories which
are (1) totally collapse, (2) critically damaged and (3) non-critically affected.

31. Interventions for totally collapsed monument
   a. Totally collapsed monuments shall be reconstructed as per previously prepared
detailed documentation and research.
   b. In sites where monuments are totally collapsed, preventive archaeological
interventions or rescue archaeology shall be carried out to perform historic or
archaeological research and to establish construction phases and cultural
sequences of the monument or the site concerned. This should be carried out
in strict approval and guidance of the Department of Archaeology.
   c. The monument shall be reconstructed in its original construct, form, shape and
size. Traditional silhouette, structure, construct and technology shall
be safeguarded as far as possible. Salvaged materials with sound physical
condition shall be reused invariably.
   d. In cases where there is no adequate evidence, no reconstruction shall be
allowed on pure conjecture. In places where the evidence of ornamentation or
images is lacking due to loss or damage, the detailing and ornamentation shall
remain plain and no conjectural artwork shall be allowed.
e. Only if sufficient documentation is available and later alterations are considered inconsistent to the structure's integrity shall a historic building be restored or reconstructed back to an earlier style.

f. When certain parts or elements of the monument need to be replaced, these will be done by using materials that are as similar to the original as possible in quality, chemical and physical composition and workmanship.

g. The monument shall retain its original structural system, which shall only be improved if there is valid justification. Should any foreign materials be introduced, these shall not be intrusive and shall be reversible.

h. The foundations shall be retained as far as possible and improvisation can be thought of if there is valid justification.

32. Interventions for critically damaged monument
a. Critically damaged monuments shall be those that have major impact on their structural integrity and require major interventions.

b. Critically damaged monuments shall be assessed to determine whether the monument or parts of the monument can be retained. The decision on whether it can be retained or not shall be done based on detailed scientific investigations of the structure and materials.

c. The parts of the critically damaged monuments that need to be demolished shall be documented in detail beforehand which might include photographs of the parts to be demolished, drawings, texts, notes, remarks etc.

d. Damaged structures shall be restored retaining as much of the original as possible while stabilizing with appropriate methods and materials. The use of "foreign" materials shall be provided special consideration when certain interventions are found to be critical and their application is reversible.

e. When a structure has dilapidated beyond conservation efforts, it can be reconstructed anew. In such case a detail technical report with reliable justification for the demolition shall be prepared and submitted to the Department of Archaeology. The approval for demolition shall be invariably sought from the Department of Archaeology.

f. In extreme cases when it is proved by scientific and technical investigation that a critically damaged monument cannot be renovated or rebuilt in its original footprint, adequate justification with reliable evidence for the relocation shall be submitted to the Department of Archaeology. If the Department of Archaeology approves and with common consent of local community and related stakeholder, such monument can be rebuilt in appropriate location nearby in original form and style and as per this guideline.

33. Interventions for non-critically affected monument
a. Non-critically affected monuments shall be those that have not lost their structural integrity and only require minimum non-critical interventions.

b. Monuments that have been assessed as being non-critically affected shall be repaired using materials of original quality, chemical and physical composition and workmanship.
SECTION 4: GUIDELINES FOR OBJECTS

34. Defining the heritage at object level
Objects are independent, movable, plain or artful elements that are linked to specific sites or monuments. Such objects can be important parts of the monuments or lone standing artefacts within a site. The link to the object’s original location must be maintained.

35. Assessing the damage to the object
Movable objects that have been damaged by earthquake shall be assessed for their physical state, relation with their place of origin, function etc. The assessment shall include the link of the objects to the function of the site, monument or to the living heritage.

36. Object level interventions
a. Appropriate and reliable provisions for the conservation, protection and storage of the important movable objects of the monuments shall be made.

b. Objects that have been displaced shall be returned to its original position. If this is not possible due justifiable reasons such as the lack of protection or loss of function, the displaced artefact may be exhibited in a different secure location however keeping clear reference to its origin.

c. Objects that have lost their critical functional role whether physical or intangible shall only be replaced if no other possibilities are found. These objects shall continue to be protected and exhibited in an appropriate place with clear indications to its place of origin.

SECTION 5: NON-GRADED MONUMENTS

37. a. Restoration and reconstruction of Non-Graded Monuments shall be carried out as per provisions indicated in ‘Section 1: General Provisions’ and provisions for Graded Monuments. However, all provisions indicated therein may not apply.

b. Issues related to the restoration and reconstruction of Non-Graded Monuments will be dealt in coordination with stakeholders and with the decision of the Department of Archaeology.

SECTION 6: MISCELLANEOUS

38. Implementation
All works related to the conservation, restoration and reconstruction of the monuments carried out either directly by the Department of Archaeology or by other agencies with approval and in coordination & collaboration with the Department of Archaeology shall be carried out as per the provisions of this guideline and associated manual.

39. Amendment
This guideline might be amended in due time on the basis of experience gained in the course of restoration and reconstruction of damaged monuments however without compromising its original spirit.

40. Formulation of methodology
For implementing and for detailing out the provisions of this guideline, the Department of Archaeology can formulate methodologies and implementation processes within this guideline.
41. **Manual for conservation, restoration and reconstruction**
   For effective implementation and clarification of technical issues in the provisions of this guideline, 'Basic Guideline for the Conservation and Reconstruction of Earthquake-Damaged Monuments 2072' has been prepared and attached herewith.

42. **Issues not covered**
   Issues that are not covered or addressed within this guideline will be dealt as per the decision of the Department of Archaeology.

43. **Conflict resolution**
   The provisions in this guideline shall overrule where they are in conflict with other standards or methodologies. In such cases the Department of Archaeology can also take special decision.

44. **Expert committee**
   This guideline may not be in a position to fully address all problems and complexities that may arise in the course of restoration and reconstruction of damaged monuments. Each monument may have its own specific problem and complexity. The Department of Archaeology can set up an expert committee to impart expert opinion to the Department of Archaeology and other agencies in such cases.
ANNEX 6:

Post Disaster Recovery Framework 2016 – Culture Sector

This is a section of the Post Disaster Recovery Framework that was prepared by the National Reconstruction Authority (NRA) and adopted in April 2016. As such, in the post-earthquake recovery works, the government has been guided by this document. In the process of reviewing and amending the Integrated Management Framework document, the PDRF will also be considered.
Section 1. Situation Analysis

The 25 April 2015 earthquake and the subsequent aftershocks have had a major impact on cultural heritage. Hundreds of monuments collapsed and many were badly damaged including palaces, temples, monasteries, chaityas, bahals, sattals and patis. Entire historical settlements were destroyed, cultural artefacts and elements from monuments and historic houses displaced. The destruction had also repercussions on the intangible heritage, which includes festivals, daily rituals as well as the traditional way of living that characterizes Nepal. Now, not only the classified heritage must be taken care of, but also traditional settlements along with local customs and lifestyle needs to be restored throughout the affected districts.

The potential long-term impact of the destruction of the earthquake would be the loss of vulnerable tangible and intangible heritage which is not identified and safeguarded. The displacement of communities and the reconstruction of dwellings could lead to the loss of identity of traditional and historic settlements. The threat exists of loss of minor monuments and rituals.

The impact of the earthquake is however also an opportunity to test the resilience of the traditional communities and of the cultural heritage. The long-term impact would be a rejuvenated community with renewed involvement in the care and maintenance of their traditions and heritage. The reconstruction will also lead to the renewal and in some cases revival of traditional skills. The tourism industry can also be further developed by promoting the rehabilitation and restoration process as a tourism product. The opportunity must however be taken seriously and integrated into the rehabilitation process.

Section 2. Strategic Recovery Vision for the sector

Based on the PDNA findings and recommendations, a 6-year recovery period was identified for the complete recovery of approximately 2,000 damaged or collapsed monuments, monasteries and temples in 16 districts. The targets for the initial 6-year recovery period will however be reviewed giving equal priority to the rehabilitation of communities and their traditions.

Over the next five years the vision for the culture sector is to restore and rebuild damaged built heritage and to safeguard the cultural continuity of the affected communities. This will require a comprehensive approach to ensure the rehabilitation of both classified monuments and traditional living environments. This approach will also take into account the intangible dimensions of living heritage including festivals and rituals, and traditional cultural expressions. The rehabilitation of the culture sector must ensure that communities have the motivation and means to rise from the emotional and physical pain. Such dimension will be closely linked to safeguarding the knowledge and promoting the skills required to ensure cultural continuity.

The rehabilitation of the heritage sites, historic settlements, monuments and traditional houses must ensure cultural continuity by maintaining the original design, materials, building technology and traditional craftsmanship. In most cases the process involves re-assembling traditional structures. Due to a limited number of artisans, specialized skilled laborers and quality materials, the work must be done phase-wise. Capacity
building is a critical part of this process. The projects will be prioritized primarily based on the need to stabilize damaged buildings, before beginning with the reassembling of totally collapsed structures. In addition to the World Heritage list, attention will be given to the smaller and significant monuments. Conservation of artefacts and safeguarding of museum collections will start as soon as possible, preferably under the guidance of specialists in the field of metal, wood, ivory and painting restoration.

The Department of Archaeology as the main custodian and implementing government agency will retain its authority in planning, managing and supervising the rebuilding and restoration process. This will include carrying out necessary investigations, research, defining guidelines and procedures including ensuring appropriate quality control mechanisms. The implementation of the rehabilitation process will include, to a large extent, local stakeholders ensuring local community participation in the rebuilding of the heritage sites and monuments. Rehabilitation is not solely about reconstruction; it’s a gradual healing process.

Section 3. Current status of ongoing recovery efforts in the sector

Considering the importance of ensuring acceptable approaches to the restoration of heritage sites, monument and objects, supporting legal framework has been discussed and finalized. While the "National Reconstruction and Rehabilitation Policy" sets the foundation for the reconstruction and rehabilitation, the Department of Archaeology has adopted the "Post Disaster Conservation Guidelines 2072" and the "Post Disaster Rehabilitation Procedures 2072" to provide specific guidance on restoration of cultural heritage sites and monuments.

The Earthquake Response Coordination Office (ERCO) was established at the Department of Archaeology with financial from UNESCO and technical support from ICOMOS Nepal. An overall rehabilitation strategy for the culture sector has been prepared which is comprised of five main categories of approaches (1) legal, (2) research (3) planning (4) project preparation and (5) data management.

Detailed assessments are still being carried out on all the historic sites, monuments and displaced cultural objects. Protecting and covering vulnerable monuments out from the monsoon and providing necessary shoring, propping and temporary stabilization were carried out.

Research includes archaeological investigations, material testing, structural assessments as well as for particular sites geological investigations. The salvaged materials have been identified, inventoried and stored or exhibited in a secure manner for example in Hanuman Dhoka and Patan Durbar Square. Various artefacts have been moved to museums and therefore the museums will need to be supported for improved conservation activities and storage. The identification, assessment and conservation strategy for murals has been implemented along with training. This is continuing particularly for the Shantipur murals being carried out at the national museum.

Planning at site level has mainly focused on the seven monument zones of the Kathmandu Valley World Heritage property and the sites on the World Heritage Tentative List. The coordination of the monument zone of the Kathmandu Valley World Heritage property has been established through the Integrated Management Plan (IMP) along with the Coordinative Working Committee (CWC). Each monument zone has its own local management structure which would be the basis for rehabilitation. In most cases the local site managers will be able
to deal with the rehabilitation or with special support from NGOs or directly through the Department of Archaeology.

Rehabilitation coordination plans are being prepared for World Heritage Tentative List sites that were greatly affected such as "Vajrayogini and early settlement of Sankhu", "Khokana, the vernacular village and its mustard-oil seed industrial heritage", "Nuwakot Palace Complex" and "The medieval palace complex of Gorkha". Some impact has been identified on the two sites of "Medieval Earthen Walled City of Lo Manthang" and "Cave architecture of Muktinath Valley of Mustang".

Initial discussions and international workshop have been carried out to establish a database. The database is to help manage data on heritage sites, historic settlements, monuments, traditional houses and cultural objects and make it accessible for use in the rehabilitation planning process.

Despite many hardships inflicted on the people, amidst traditions that are being reinstated and links that are being re-forged are the three defining festivals in Kathmandu (Indra Jatra), Patan (Rato Machhendranath Jatra) and Bhaktapur (Bisket Jatra) as they are part of the identity of the inhabitants and their faith. All the year-round festivals have been celebrated. The past months after the earthquake saw local people very concerned and they were fully involved in keeping their cultures alive.

Section 4. Expected sector results and indicators

Detailed restoration projects have been listed in the attached chart with estimated costing indicating year of implementation. The results and indicators for each of these projects would be the completed restoration or reconstruction of the monuments.

Each of these projects must follow the prescribed procedures. They will require progress reports and justification of compliance to each step of the defined stages. The stages and steps of the "Rehabilitation Procedures 2072" document will be considered as a mandatory checklist for all projects. The procedures also are aligned with the Rehabilitation Strategy prepared by ERCO with support of ICOMOS Nepal. The procedures also aligned with the "Reconstruction Guidelines 2072" which has been adopted by the Department of Archaeology.

Assessing progress and achievements of rehabilitation and safeguarding of intangible heritage require a different set of indicators which appraises continuity. The vulnerable intangible cultural heritage impacted by the earthquake needs to be identified. Indicators for intangible heritage are the continued practice, performance and implementation of cultural activities.

Section 5. Priority Recovery programmes

Criteria for prioritization

The activities for rehabilitation restoration work for heritage sites, historic settlements, monuments and displaced cultural objects would need to be prioritized and follow standardized rehabilitation procedures. The procedures define three stages with the mandatory steps of (1) documentation / assessment / research, (2) design / planning and (3) appropriate implementation and monitoring. All activities would be prioritized based on these procedures.
Prioritization has been given to salvaging and safeguarding the cultural heritage that is still threatened and could further deteriorate or get lost. This means that the focus would be on repair and maintenance of damaged structures before the reconstruction of collapsed monuments. Prioritization has also been given to the salvaging of important elements of collapsed structures.

The prioritization of projects has considered the holistic approach to rehabilitation. This means that not only the tangible but also the intangible heritage must be safeguarded. The balance between the rehabilitation of classified and non-classified as well as cultural heritage within the Kathmandu Valley and outside the valley are considered.

**Prioritized Programmes**

The planned programmes are based on the overall rehabilitation strategy and assessments that were initially provided in the PDNA and further elaborated. The elaboration of the funding and time schedule is provided in the attached charts.

The rehabilitation strategy defines that implementation will require a clear institutional, legal and economic frameworks and procedures to ensure a systematic and phase wise rehabilitation of the tangible and intangible heritage. To ensure smooth implementation such bottlenecks as overlapping decision-making, lack of artisans and materials and differences in the understanding of accepted norms for the reconstruction of cultural heritage must be removed.

**Legal basis for Rehabilitation of Cultural Heritage:** To ensure that there is a clear understanding of how the government authorities are going to proceed in the rehabilitation of the heritage sites, historic settlements, monuments and displaced cultural objects, a specific set of legal provisions need to be agreed upon. This would consist of a policy statement, general guidelines and standard procedures that all government authorities would need to follow. These would be the basis for decision making and providing permission to national and international involvement within the cultural heritage sites. The legal provisions would need to be specific to the post-disaster circumstances and would therefore need to be time bound for a given rehabilitation period. The legal provisions for the rehabilitation period would need to be reviewed at the end of the given period and either extended or dissolved.

Develop a Master Plan: The DoA, with support of the UNESCO and international experts will develop a master plan and schedule for the repair, restoration and reconstruction of collapsed and damaged monuments and sites. The master plan will be based on the comprehensive documentation of all the earthquake affected historic structures with detailed information regarding the type and degree of damage. The master plan will state a clear sequence of and rationale for implementation. Restoration activities will be distributed between all districts, cities, and sites as evenly as possible. Priority will be given to repair and restore damaged structures before tackling ground-up reconstructions.

**Post Disaster Research:** This is the opportunity to ensure that we learn as much as possible about the impact of the earthquake on the cultural heritage and traditional forms of construction. This would also go hand in hand with observing and documenting the various impacts not only on the tangible but also on the intangible components of cultural heritage. Research would need to be carried out in such as
way so as to ensure that the outcome can be used for practical proposes in planning rehabilitation. This means that focus of the research must be on gaining better knowledge of issues that are key in rehabilitation. The research format would also need to ensure the relevant outcome and reporting so as to be able to use this in the planning process. The research would also need to provide the scientific justifications for conservation procedures.

**Rehabilitation Coordination Frameworks:** The objective of the RCF is to ensure a planned and appropriate phase-wise rehabilitation of complex heritage sites which have been extensively damaged and where a coordinated effort will be required. The preparation of the RCF shall be carried out through the ERCO by appropriate consultants or experts in close collaboration with the site managers and stakeholders. The preparation of the RMP for each of the earmarked sites shall be supported by funds through the DOA or UNESCO. The implementation of the RCF shall be carried out by a designated site manager under the supervision of ERCO.

**Implementation Requirements:** To carry out the restoration and reconstruction works over the next years, several key issues would need to be dealt with in a manner ensuring that they don’t become bottlenecks. This would ensure appropriate quality and that work doesn’t get stuck due to lack of resources, expertise, skilled workers and necessary materials. The capacity for restoration and rehabilitation activities needs to be drastically improved to be able to address the post-earthquake needs. The approaches to rehabilitation of historic settlements and dwellings must be defined and adopted.

**Data Management:** Considering the amount of information that was being collected after the earthquake, it was quickly found necessary to develop a functioning data management system for cultural heritage. After discussions with numerous experts it was decided to use ARCHES as the platform for managing the data. The security of information has been a major issue. Access would need to be controlled at various levels depending on the type of data. Once the system is set up, the various inventories and data collection can be compiled into the single database. The formatting of existing information will be required to fit the system and make it possible to easily access and search.

The comprehensive mapping of the intangible heritage elements is still to be carried out with participation of community concerned. The in-depth assessment about the effect and degree of the effect on not only various manifestations of traditional cultures is required but also on the individual creators or practitioners - the "human treasures" who carry legacy of the centuries long traditions, since this loss could even lead to the total halt to some practicing cultures. This is particularly linked with people’s identity and hence should be given high consideration during assessment. Special program is required to safeguard intangible culture of those towns or villages that need to be resettled after the earthquake.

**Section 6. Implementation strategy and risk analysis**

**Potential implementing partners**

**Government:**
- Ministry of Culture, Tourism and Civil Aviation - MoCTCA
- Department of Archaeology - DOA
• Pashupati Area Development Trust - PADT
• Baudha Area Development Committee - BADC
• Ministry of Federal Affairs and Local Development - MoFALD
• District Development Committees, Municipalities and Village Development Committees
• Ministry of Urban Development
• Department of Urban Development and Building Construction

NGOs:
• International Council on Monuments and Sites - ICOMOS Nepal
• Federation of Swayambhu Management and Conservation - FSMC
• Kathmandu Valley Heritage Trust - KVHT (NGO branch of KVPT)
• Heritage and Environmental Conservation Foundation Nepal – HECFN
• Nepal Heritage Society
• Archaeological Society of Nepal
• Society of Nepalese Architects

Educational institutions:
Close collaboration should be maintained with technical colleges such as the Institute of Engineering (TU), Kantipur Engineering College (TU) and Khwopa Engineering College (PU).

Private sector and community groups:
The private sector must be encouraged to support heritage restoration through the formation of "user-committees" who have direct involvement in the reconstruction. This ensures communities’ ownership and long-term sustainability. Existing Community Based Organizations will be engaged in the preservation and restoration efforts.

International community:
International partners (governmental and private) have provided major support either by directly signing MoUs or by providing support through UNESCO or local NGOs. The following international institutions involved in research were coordinated and funded through UNESCO in close cooperation with the national authority, DoA: Universities such as Durham University (UK), “Sapienza” University of Rome (Italy), IUAV, University of Venice (Italy). Additional research activity by the National Research Institute for Cultural Properties, Tokyo (NRICPT) together with University of Tokyo (Japan), and series of capacity building activities by international organizations such as ICOMOS, ICOM and ICCROM together with Institute of Disaster Mitigation of Urban Cultural Heritage at Ritsumeikan University (Japan) were co-organized by DoA in close cooperation with UNESCO.

Key Issues and recommendations

A common plan and vision are to be developed with clearly defined responsibilities and a logical chain of command between NRA, NPC, MoCTCA, DoA, and also SWC (which is responsible for managing INGO and NGO inputs). Coordination between main authorities must be ensured through regular meetings to review progress and clarify implementation procedures. The coordination needs to include UNESCO to ensure that international conservation standards are applied. Rehabilitation of cultural heritage needs to be carefully planned and sequenced over the next five years.
Pressure to rebuild quickly without consideration of due processes and involvement of the community and stakeholders must be opposed. Preservation of original fabric should be prioritized over rebuilding.

The "National Reconstruction and Rehabilitation Policy", adopted by the National Reconstruction Authority has not accommodated various requirements of the culture sector. Therefore, necessary amendments must be incorporated in the policy.

The CL-PIU should be established soon possible which will help with overall planning, monitoring and coordination with districts/field levels, assisted by a team of specialists with experience in both tangible and intangible heritage areas. The drafting of the envisioned reconstruction, recovery and rehabilitation plan for the cultural sector needs to be carried out in an inclusive manner including all major stakeholders. This should also address specific needs to recover the Intangible Cultural Heritage (ICH) impacted.

DoA requires the necessary support to hire external engineers and architects to continue and complete necessary research, damage assessments and restoration planning. The Department of Archaeology will engage independent researchers to learn as much as possible about the impact of the earthquake on the cultural heritage and traditional forms of construction. This means that the focus of the research must be on gaining better knowledge of issues that are key in the rehabilitation process. Given the numerous tasks involved to recover the culture sector, a wide variety of outsourced experts and specialists of national and international recognition will be required such as: conservationists, art historian, iconographic experts, museum experts/curators, programming and database experts, structural and seismic engineers, geologists and geotechnical experts, architects, restorers, artisans, sociologists, cultural anthropologists, ritual specialists, linguists, ethno-musicologists etc.

Direct international funding extended to specific government organizations, NGOs, cultural institutions and organizations should be encouraged and the permission process for carrying out rehabilitation work simplified with the involvement of international actors, NGOs and community groups.

Detailed damage and recovery assessments are still to be carried out on numerous historic sites, monuments and displaced cultural objects. Research must include archaeological investigations, material testing, and structural assessments as well as - for particular sites - geological investigations. Each site needs a salvage action plan including monitoring and safeguarding by key people from DoA dedicated and accountable for maintaining salvage areas. Salvaged materials must be identified, inventoried and stored or exhibited in a secure environment. Various artefacts have already been moved to museums and therefore, such spaces need to be supported to improve conservation activities and storage conditions. The identification, assessment and conservation strategy for murals has been implemented alongside training - notably for the Shantipur murals now at the National Museum.

Serious efforts are necessary to protect vulnerable monuments from the monsoon and providing necessary shoring, propping up and temporary stabilization. There is further need for improved protection of many significant monuments and historic
buildings from the impeding monsoons. So far, the main focus has been on the seven monument zones of the Kathmandu Valley World Heritage Property.

Importance must be given to the **documentation, assessment and research of damaged heritage sites, monuments, and objects**. Rehabilitation interventions must be justified based on assessments and research, which will also allow improvement of knowledge on the significance and history of the heritage site, monument and object.

The reconstruction within the culture sector must be understood to be different from the reconstruction of contemporary structures and infrastructures. Regarding appropriate implementation, construction must be carried out by those who have the expertise and can ensure quality. Standard tendering procedures are not appropriate since specialized crafts-persons, materials, and procedures are required. **Pre-qualification of contractors**, identification of specialized artisans, and implementation through user-committees must be assured. A basic criterion to be considered for hiring contractors could be devised for the DoA (e.g. they must provide employment to local people and qualified artisans, etc.).

Specialized **master crafts-persons and artisans** must be provided special recognition by the State as carriers of the skills and knowledge required for the rehabilitation of cultural heritage. The master crafts-persons and artisans need to be reimbursed for their skills accordingly. The inclusion of artisans must be ensured. This requires specific arrangements for the identification, promotion and training of artisans. In some countries there is a required minimum percentage of construction budgets reserved for artisans.

**Appropriate production methods and procurement procedures for materials** needed for traditional construction methods must be facilitated by the government. This requires quality control and subsidies for materials such as wood and traditional bricks and tiles. If Nepal’s resources are insufficient (e.g. for hard wood timber), permission for imports needs to be arranged. Strategies for the procurement and production of traditional construction materials must be developed. For example, the Nepal Timber Cooperation should make provisions to provide adequate amounts of quality hard wood and pine timber. If Nepal’s market cannot meet the demand, which is likely, provisions must be made to allow the import from abroad.

The coordination within complex heritage sites and traditional settlements must be ensured through the preparation of **Rehabilitation Coordination Frameworks** which will be prepared in coordination and thereafter followed by all authorities and stakeholders. This is especially relevant for Hanuman Dhoka Durbar Square, Swayambhu, Changu Narayan, Sankhu, Kokhana, Nuwakot and Gorkha.

Special consideration shall be given to the rehabilitation of the monument zones of the Kathmandu Valley World Heritage Property, ensuring close cooperation with UNESCO, ICOMOS and the World Heritage Committee. For the sites on the Tentative List for World Heritage, reassessments shall be carried out to address the possible future nomination for World Heritage inscription in close collaboration with the community and local government. For each of these properties detailed rehabilitation coordination plans shall be prepared by the Department of Archaeology and external
consultants, in close cooperation with the concerned local management unit or local authorities in charge.

Considering the large amount of information that has been collected before and after the earthquake, a functioning data management system for cultural heritage needs to be established. ARCHES is one such system that is being considered. Once the system is set up, the various inventories and data collections can be compiled into a single heritage management system.

The mapping of the Intangible Cultural Heritage (ICH) is still to be implemented with the participation of the communities concerned. This should be expanded phase-wise to cover the whole country’s rich and diverse ICH. An ICH department needs to be set up and coordinated through MoCTCA with support from UNESCO. Accordingly, capacity building activities as well as community support programs are of great concern to support the ability of communities to continue or recreate traditions within their changed environments and retain their cultural identities. This also implies the need of financing the additional professional staff to MOTCA and its concerned department/division responsible for ICH.

The in-depth assessment on threatened traditions often practiced by just a few individuals - the "human treasures"- should be given priority. Preserving ICH of resettled peoples: a special program is required to safeguard the intangible culture of those towns or villages that need to be resettled. Intangible culture is recognized as part of people’s cultural heritage, transmitted from generation to generation. As a consequence, communities whose cultural practices are at risk (e.g. only one master creator survives or community has to resettle into new location after the earthquake) will be given priority.

Strengthen Guthi associations by supporting smaller and regional festivals that have seen a decline due to peoples’ preoccupation in coping with the effects of the disaster and a general lack of financial means. Consequently, it is of utmost importance to provide adequate financial and technical support to ensure the continuity of all cultural and religious traditions.

Cross-cutting issues

The rehabilitation of traditional settlements in sync with the restoration of monuments needs to be closely coordinated between NRA, UN-Habitat, and the Department of Archaeology. There are 52 identified traditional settlements within the Kathmandu Valley and many more throughout the affected districts that require support to retain their unique identities. This also concerns the two sites on the World Heritage Tentative List that were greatly affected: the "Vajrayogini and early Settlement of Sankhu" and "Khokana, the vernacular village and its mustard-oil seed industrial heritage".

The rehabilitation of traditional settlements shall ensure that historical private houses are conserved, consolidated and reconstructed in their original location. The traditional methods, materials and style as well as the layout and ancient amenities such as traditional hitis (stone water spouts) pond must be preserved to retain the original social and cultural fabric of the cities. Focus should not be on recreating but preserving and improving of what remains of the rich history of these settlements and
facilitate the communities in the continuity of their culture. The process of appropriate rehabilitation to improve standards of living whilst ensuring the long-term sustainability and proper construction of houses must be ensured.

Considering that tourism is one of Nepal’s prime sources of livelihood, the development of the tourism sector needs to be closely linked to the cultural rehabilitation process, more so because culture and tourism come under the same ministry. The rehabilitation of the tourism and culture sector must include the participation of community members, the business community and other stakeholders.

Community resilience

The resilience in respect to the culture sector lies with the communities and their ability and will to ensure that the rehabilitation of the cultural heritage is ensured, be it tangible or intangible. The restoration and reassembling of the historic settlements and monuments must take into account a long-term vision for maintenance and restoration. Decisions of employing engineering solutions that only consider short term solutions of strengthening which then cannot be reversed or elements replaced must be hindered. In the culture sector "build back better" means ensuring that traditional technologies and materials are used to their best performance and ensuring quality.

Gender

The cultural activities developed around religion play an important role in providing support mechanisms for women and men individually and at the community level. The loss of livelihood assets centered around such activities could have a serious impact on the preservation of traditional skills in textile products such as the traditional Dhaka cloth weaving, which is predominantly practiced by women, and metal work done by men. Recovery process will promote preservation of such traditional skills.

Section 7. Financial requirements and planning

The total financial requirement for a full recovery estimated in the PDNA document was approximately USD 205 million. The PDNA included damage to the physical asset and infrastructure (a total of 691 buildings of historic value in 16 districts, temples in remote area and the monasteries in 16 districts) impact in livelihood estimated at 10% of damage, losses from the tourist ticket sales, professional support to the Department of Archaeology, Capacity building trainings and workshops, external technical support and 20% for the cost of recovery and reconstruction.

The PDNA document did not include all the required components mentioned in this PDRF document as per the real requirement which is now prioritized as immediate response, the short-term response and the long-term response. This document includes estimate of restoration and rebuilding of approximately 2200 monuments as per the information collected from the Ministry of Culture, Tourism and Civil aviation, Department of Archaeology, Guthi Sansthan, some municipalities within the Kathmandu valley and Gumba management committee. Other important components of the rehabilitation process for the next 5 years including the immediate protection and consolidation, legal documents preparation, assessments, research and documentation, resource development, expert consultation, traditional materials procurement and artisan integration related projects as well as long term conservation
planning of the sites, monuments and objects has been included in this document. For the support of intangible cultural heritage, no detailed assessment has been conducted yet.

As per the data collected from various sources stated above till date, a total financial requirement of approximately USD 352 million is estimated.

- Committed resources as of April 2016 amount to only NPR 2,903 million (or approximately USD 29 million).
- Additional financial requirements over the next 5 years are projected at NPR 32,328 million (or approximately USD 323 million).

The immediate response indicates the activities that need to be carried out in the first year as a preparation for long-term recovery. Among the USD 0.4 million for this immediate priority, 17% of the estimated cost is committed through the government and other development partners. The short-term response indicates the activities that need to be carried out mostly in first year and continue for the next 5 years. Among the USD .6 million estimated only 6% fund is committed. The long-term response indicates the activities of physical reconstruction and restoration that need to be carried out in the next 5 years. Among the USD 327 million estimated only 8% fund is committed.

<table>
<thead>
<tr>
<th>Budget</th>
<th>Five Years Budget (in Million NRs)</th>
<th>Total Budget for five years (in Million NRs)</th>
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<tbody>
<tr>
<td></td>
<td>FY 16-17</td>
<td>FY 17-18</td>
</tr>
<tr>
<td>Recovery and Reconstruction</td>
<td>8302.13</td>
<td>8518.16</td>
</tr>
<tr>
<td>Budget Needed</td>
<td></td>
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</tbody>
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Projected financial disbursements by year indicated in the table above shows that the projected work target is consistent and feasible over the five years.
ANNEX 7:

Establishment of Heritage Impact Assessment

Various HIAs have been carried out and a system is being set, however to ensure that HIA is not misused and utilized in an inappropriate manner, the process of implementing HIA in Nepal needs to be institutionalize and standardize. The initial framework of procedures and formats have been prepared for further discussion and adoption.
1. Introduction and summary

Proposal for the establishment of an official Heritage Impact Assessment procedure in Nepal

Heritage Impact Assessment (HIA) can be a strategic means of ensuring that development and conservation activities in and around heritage properties do not cause an unacceptable degree of negatively impact. For HIA to be an effective tool, it must have legal justification and be integrated in official procedures. This proposal provides an overview of the how HIA can be established as an official procedure in Nepal. This would additionally require the formats and procedures for carrying out HIA.

Justification
There are no standard procedures for assessing the impact of development and conservation works on cultural heritage. Till present, this task has been dealt with by a component of an Environmental Impact Assessment (EIA). This has not been satisfactory particularly since the EIA procedure is not linked to the governance system of heritage. To address this disparity HIA has been promoted particularly by the World Heritage Committee and the advisory bodies ICOMOS and ICCROM. The HIA procedure once established would of course not only cater to World Heritage, but can be used as standard procedure for all identified cultural heritage sites.

Legislative basis
HIA needs to be embedded in the legislation of the Department of Archaeology. This means that in the sixth amendment of the Ancient Monument Preservation Act (AMPA 1956), the provision for HIA needs to be included. The Act would only mention the establishment of HIA, leaving the details to be formulated separately. This would give the Department of Archaeology the authority to demand HIA wherever found necessary and defined by respective regulations.

Regulations for HIA
The HIA procedure needs to be clearly defined within a set of regulations adopted by the Department of Archaeology. The regulations would identify under what circumstances HIA would be applied, as well as clarifying the format and process of implementation.

This proposal intends on providing recommendations for the detailed regulations for HIA to be established in Nepal.
Process of implementation

Once the need for HIA has been identified, a clear process needs to be followed which is integrated into the system of governance and justified by legislation.

The “Actors” is notified of the need for HIA and is requested to submit detailed project reports along with a request for HIA.

“DOA” assesses the size and complexity of the project based on given indicators and the indicated fee is paid by the “Actors”.

“DOA” selects a “Consultant” from a roster to carry out the HIA fulfilling specific selection procedures and providing a TOR / HIA category.

The chosen “Consultant” prepares the HIA as per the TOR / HIA category and based on defined HIA formats and submits it to “DOA”.

“DOA” sends the HIA to an “Advisory Body” that reviews the HIA and approves or provides comments / recommendations.

Based on the HIA Report and the comments / recommendations, “DOA” prepares the final decision and sends official letter to the “Actors”.

Recourse process if necessary, for “Actors” against the decision of “DOA”.

“Actors” implements as per decision with reporting to “DOA” as indicated in the official letter while allowing for necessary monitoring by “DOA”.

Process of legal action if necessary, against non-compliance to decisions of “DOA” by “Actors”.

On completion of project/action by “Actors” a final review is carried out by “DOA” with the “Consultant” and “Advisory Body” to provide a certification of compliance.
Involved parties:

Actor: the person or legal body that carries out actions that could impact heritage

DOA: Department of Archaeology (Focal Authority) under the Ministry responsible for Culture

Consultant: professional with adequate experience and training to carry out HIA to be listed in a roster prepared by DOA

Advisory Body: a body of experts to advise the authorities on HIA which could be represented by ICOMOS Nepal

Separation must be guaranteed between those intending to carry out a certain action which might impact heritage and those assessing the possible impact. The coordination would be done by the Department of Archaeology as the official focal point and authority for the process.

Objective of the Heritage Impact Assessment (HIA)

The HIA procedure is being established with the following objectives to safeguard heritage in the broad categories of heritage sites, monuments, historic buildings and cultural objects:

1. To provide a permit system to control impact of proposed projects and activities on heritage.
2. To mitigate the impact of past or ongoing projects or activities through assessments and recommendations for rectification.
3. To plan measures to control risk of future projects or activities that could potentially impact heritage.
2. Formats

For the establishment of a Heritage Impact Assessment in Nepal the following formats will be required. Draft formats are being provided in this report. These would still need to be discussed with experts and site managers. Only after several trial runs on practical Heritage Impact Assessments can these be finalized and adopted as standard formats.

**Required Formats**
- Detailed Project Report and Request Letter (*Actor*)
- Project Indicators (DOA)
- Consultant Roster (DOA)
- TOR for HIA preparation (DOA)
- HIA categories / format (Consultant)
- Format for comments / recommendations (Advisory Body)
- Official Letter (DOA)
- Certification of compliance (DOA)
2.1 Detailed Project Report and Request Letter (Actor)

The actor, whether a private person, institution, government agency or international organization, planning on carrying out any activity that would possibly impact heritage shall be required to submit a detailed project report and request letter.

**Detailed Project Report (DPR)**

The report shall include all relevant information required to assess the impact of the project on the heritage. This would mean include the following considerations:

(i) **The report shall have detailed explanations of all project components and activities** to allow for heritage to be safeguarded as per the three objectives of the HIA procedure. The detailed report shall provide all legal justification such as land ownership papers and other permissions.

(ii) **Activities linked to direct impact:** All project activities and project components need to be identified and documented, especially those that have direct impact on heritage. These could have physical impact, but could also have social, economic, chemical or other categories of impact on heritage.

(iii) **Activities linked to indirect impact:** All project activities and project components that could lead to indirect impact on heritage need to be identified and documented. These could be linked to activities that are indirectly generated out of the primary activities that would have impact later on.

(iv) **Activities linked to impact over time:** All project activities and project components shall be documented that would take place during preparation, implementation or during future operations.

(v) **Activities linked to impact over location:** All activities and project components would need to be provided with reference to their exact location relevant to the heritage.

**Request Letter**

The actor shall submit with the Detailed Project Report a request letter addressed to the Department of Archaeology. The letter shall follow the format with the contents as defined below.

(i) Addressed to Director General, Department of Archaeology

(ii) Subject of the letter shall be “Request for Heritage Impact Assessment for (Project / Activity Title)”.

(iii) Short description of and reason for project / activity

(iv) Request statement for HIA

(v) Agreement to pay standard expenses for getting HIA done

(vi) Agreement to follow standard procedures for HIA

(vii) Signature of authorized person with certification
2.2 Project Indicators (DOA)

The project / activity report that is submitted by the Actor will need to be first assessed first for its legitimacy. Once that is ascertained, then the project / activity will be assessed for its scale and complexity in respect to preparing the HIA.

The project indicators are the required considerations for assessing scale and complexity of the project / activity to determine the timeframe and cost for the preparation of the HIA:

A. The HIA would generally have three components: (cost based on scope)
   (i) Assessment of proposed project / activity and recommendations for providing permit or for modifications
   (ii) Assessment of past projects and interventions and recommendation for rectification
   (iii) Assessment of future threats and recommendation for planning mechanisms

B. Complexity (cost based on required expertise and team members)
   (i) Simple project / activity in a simple context requiring straightforward assessment without any specialized experience or expertise.
   (ii) Requiring higher level of expertise but in standard fields of cultural heritage such as architecture, archaeology.
   (iii) Requirement in additional specialized fields which could be in technical or social fields.

C. Scale (cost based on size of the project and required time for assessment)
   (i) Individual activity – activities other than major construction which could include temporary structures
   (ii) Small project – individual buildings or interventions
   (iii) Large project – larger complexes, roads, etc.
   (iv) Special circumstances

D. Location (rough calculations done as per cost to reach site including time)
   (i) Kathmandu Valley
   (ii) Accessible by flight
   (iii) Accessible by road plus up to half day walk
   (iv) Accessible by walking (max 7 days)
   (v) Very remote accessible by helicopter or walking more than a week

The calculations for time and cost shall be done based on the considerations as stated above. Standards shall be developed for each of these points to ensure that they correspond to the actual costs. These calculations shall be shown to the Actor when requesting payment for implementing the HIA.
2.3 Consultant Roster (DOA)

Once the project indicators have been defined and the Actor has paid the cost for the implementation of the HIA, the Department of Archaeology will choose the Consultant who will carry out the HIA. This requires a consultant roster of appropriate consultants who are capable of carrying out the HIA as per the project indicators (especially in respect to the complexity and the required expertise).

The Consultant Roster and choice of contractor shall be done considering:

A. Eligibility
   Individuals or companies that have experience in working on heritage conservation are eligible to register. The registration shall however be reviewed by the relevant office in the Department of Archaeology.

B. Registration Form
   Candidates shall register by filling out a registration form with a detailed curriculum vitae / company profile attached with information relevant to heritage conservation and the preparation of HIAs. Legal registrations along with PAN and/or VAT registrations shall be submitted.

   The registration form shall be prepared to include names, photos, contact details, short explanation on expertise and experience.

C. Categorization based on expertise and capacity
   The consultant (expert individuals or companies) once registered shall be categorized based on type of expertise, capacity and experience.

D. Choice of consultant for specific
   When choosing the consultant for any specific HIA, the requirements in respect to expertise, capacity and experience shall be considered. Should any specific expertise be required, this will be negotiated with the consultant before finalizing the TOR and signing the contract. The consultant shall not have any conflict of interest when carry out the HIA.

E. Required training
   All consultants shall attend at least one training course every year to be allowed to renew their registration. Training courses on HIA shall be provided twice a year by the Department of Archaeology. Such training course would need to be closely linked to the gathered experience in implementing HIA in Nepal and taking into account international trends in HIA.

F. Removal of consultant from roster
   Consultants shall be removed from the roster should they not perform as per the TOR and contract, not join the required training, carry out a HIA despite conflict of interest or be involved in any inappropriate activity for personal gain.
2.4 TOR for HIA preparation (DOA)

As per the Project Indicators and with the choice of consultant, a contract shall be signed between the Department of Archaeology and the consultant to carry out the Heritage Impact Assessment. The consultant TOR shall contain at least the following points. (The TOR can be standardized with parts that would need to be filled as per the specific conditions of the project / activity)

A. Short description of project
   What type of project / activity with short description as per Detailed Project Report and Request Letter from the Actor.

B. Scope of work
   The TOR shall indicate the scope of the assignment in respect to the three possible components responding to the objectives of the HIA process. These would be whether the HIA would need to assess
   - proposed project / activity and recommend permit or modification;
   - assess past projects and recommend interventions for rectification;
   - assess future threats and recommend planning mechanisms

C. Complexity of project / activity
   The TOR shall indicate the complexity of the project based on the requirement of experts and the organization of the team members. The categorization will be based on the following categories used to calculate the remuneration.
   - Simple project / activity in a simple context without specialized expertise.
   - Requiring higher level of expertise but in standard fields of cultural heritage
   - Requirement in additional specialized fields such as technical or social fields

D. Scale of project / activity
   The TOR shall indicate the scale of the project which can be categorized depending on the size but also the extent of the intervention.
   - Individual activity – activities other than major construction
   - Small project – individual buildings or interventions
   - Large project – larger complexes, roads, etc.
   - Special circumstances requiring detailed investigation.

E. Location
   Categorization based an ease of access to the location
   - Kathmandu Valley
   - Accessible by flight
   - Accessible by road plus up to half day walk
   - Accessible by walking (max 7 days)
   - Very remote accessible by helicopter or walking more than a week

F. Standard Conditions of Contract
   - Time frame
   - Remuneration and mode of payment
   - Standard contract requirements
2.5 HIA categories / format (Consultant)

The HIA categories are based on the three objectives of the HIA procedure. These would be:

1. **proposed project / activity and recommend permit or modification**

   The project / activity that the actor is proposing to carry out near a heritage site, monument, historic building or cultural object must be assessed in respect to its possible impact. According to the assessment a recommendation is formulated by the consultant for action to be taken by the Department of Archaeology.

   The assessment outcome should either provide a recommendation to allow for the project / action to be carried out (with justification) or if not, detailed recommendations for modifications to the project / activity need to be provided. The Department of Archaeology will need to be able to either allow the project / activity to move ahead as proposed or then should provide specific recommendations to be adopted by the Actor to be allowed to continue.

2. **assess past projects and recommend interventions for rectification**

   Should there be previous projects / activities that have been carried out in the same area impacting the same heritage site, monument, historic building or cultural object, the Consultant shall assess the impact of these. These might be directly linked to the proposed project or might only be linked by location, but all that which is impacting the specific heritage must be assessed.

   Should there be any impact caused by these previous projects / activities, recommendations need to be provided by the Consultant to the Department of Archaeology on what kind of interventions would be required for the rectification. These rectifications might not have anything to do with the Actor which would then require a different approach and means of rectification.

3. **assess future threats and recommend planning mechanisms**

   The assessment of a proposed project / activity in a given heritage site, monument, historic building or cultural object would be the right opportunity to assess future threats and begin putting in planning mechanisms.

   If existing plans or management systems have been established, these can be assessed in respect to their effectiveness. If there are no plans in place, proposed interim measures need to be provided. These would include at least basic buffer zones and control mechanisms for threats that could be implemented by local authorities.

   Any assessment can consist of any one, two or all the components depending on the circumstances.
2.6 Format for comments / recommendations (Advisory Body)

The HIA report that is submitted by the Consultant shall be reviewed by the Advisory Body. The advisory body shall ensure that the basic requirements of the TOR have been fulfilled while reviewing the overall assessment in respect to the three components.

The Advisory Body shall carry out a desk review and only if there are major conflicting issues will someone be sent to assess the site.

The main points that the Advisory Body will check:

1. Overall process and content

   The Advisory Body shall check the process of preparing the HIA report by the Consultant which would also include legal and ethical issues. The Advisory Body shall check the content of the HIA report prepared by the Consultant based on the TOR and discussions.

2. The assessment and recommendations for each HIA category

   The Advisory Body shall check the assessments carried out by the Consultant, especially whether they are correct and acceptable within the prevalent understanding of conservation practice. Closely linked to this is also the checking of the relevance of the recommendations made by the Consultant.

   The Advisory Body shall provide a note and recommendation which will include the outcome of their review of the Consultant Report. The points that would make up the Advisory Body note and recommendation:

   1. Note on process and content

      The Advisory Body shall provide notes to the Department of Archaeology on the process and content of the Consultants preparation of the HIA. This would include the assessment of legal and ethical issues.

   2. Note on assessment and recommendations

      The Advisory Body shall provide notes to the Department of Archaeology on the assessments done by the Consultants and particularly comment on the recommendations. This would especially focus on whether the assessments and recommendations are based on the prevalent understanding of conservation.

   3. Recommendation on Consultants report

      The Advisory Body may recommend the adoption of the Consultant report, the adoption with amendments, the return of the report to the Consultant for further clarifications and detailing or the total rejection of the Consultant report.
2.7 Official Letter (DOA)

The Department of Archaeology will determine the outcome of the HIA based on the Consultant’s report and the Advisory Bodies recommendations. Once this process has been finalized the Department of Archaeology will formulate and send to the Actor a letter with the final decision. This letter would be a legal document that would be legally binding.

The Official Letter that is sent by the Department of Archaeology to the Actor shall contain at least the following points:

1. **Final Decision**

   The Department of Archaeology shall formulate the final decision as a response to the application for a HIA submitted by the Actor. The final decision can be in short any of the following three options:
   (i) acceptance of proposal as submitted
   (ii) acceptance of proposal but with amendments
   (iii) rejection of proposal

2. **Justification**

   The Department of Archaeology shall provide a justification to the decisions that has been taken. This would need to be linked to appropriate legal provisions as well as the assessment carried out by the consultant and review by the advisory body.

3. **If applicable required amendments to the project**

   If applicable, the Department of Archaeology shall provide detailed information on the required amendments to the project which shall be binding if the Actor would want to continue with the project / activity.

4. **Notes on related decisions on rectifications and planning**

   The Department of Archaeology shall provide information related to the assessment and rectification of past projects and activities as well as planning recommendations to safeguard the site from potential threats. This information will become part of the overall guiding principles for the implementation of the proposed project.

5. **Validity of decision**

   The Department of Archaeology shall provide exact dates for the validity of the decision, which means the project / activity would need to be completed and be ready for final assessment by a given date of expiry of permission.
2.8 Certification of compliance (DOA)

On completion of the project / activity or latest by the final date of expiry of the permission the Department of Archaeology shall assess the project. This assessment shall be carried out in consultation with the Consultant and the Advisory Body in the presence of the Actor.

The requirements that need to be fulfilled for issuance of the Certificate of Compliance are as follows:

1. Final Decision

   Compliance to final decision as stated in the Official Letter sent by DOA which could be either (i) acceptance of proposal as submitted; (ii) acceptance of proposal but with amendments or (iii) rejection of proposal.

2. If applicable required amendments to the project

   Compliance to required amendments to the project where relevant as stated in the Official Letter sent by DOA

3. Notes on related decisions on rectifications and planning

   Compliance to related rectifications and planning provisions defined in the Official Letter sent by DOA

4. Validity of decision

   Compliance to timeframe as defined in the Official Letter sent by DOA

Should the assessment of the project / activity show that there was no or not sufficient compliance, legal steps would need to be taken to rectify the situation. In the meantime, if any cultural heritage is irreversibly affected, more severe consequence must be ascertained.
3. Processes

For the establishment of a Heritage Impact Assessment in Nepal the following processes will be required. Draft processes are being provided in this report. These would still need to be discussed with experts and site managers. Only after several trial runs on practical Heritage Impact Assessments can these be finalized and adopted as standard formats.

**Required processes:**
- Process for Selection of Consultant by DOA
- Process of preparation of HIA by Consultant
- Recourse process for Actors
- Reporting by Actor
- Monitoring by DOA
- Process of legal action by DOA
- Process of final review by DOA / Consultant / Advisory Body
3.1 Process for Selection of Consultant by DOA

As per the overall process the Actor submits detailed project reports and the Department of Archaeology assesses the project / activity based on indicators. The Actors then need to pay the indicated fees for carrying out the HIA. This then becomes the basis for selection of Consultants by DOA.

The “Actor” is notified of the need for HIA and is requested to submit detailed project reports along with a request for HIA.

“DOA” assesses the size and complexity of the project based on given indicators and the indicated fee is paid by the “Actor”.

“DOA” selects a “Consultant” from a roster to carry out the HIA fulfilling specific selection procedures and providing a TOR / HIA category

For the Department of Archaeology to choose the Consultant who will carry out the HIA, a consultant is chosen from a roster while ensuring capability to carry out the HIA as per the project indicators (especially in respect to the complexity and the required expertise).

Establishment of Consultant Roster

The Consultant Roster shall be prepared based on the parameters indicated in the Consultant Roster format (Report Part One 2.3) which includes eligibility, information provided in the registration form (curriculum vitae / company profile attached with information relevant to heritage conservation and the preparation of HIAs. Legal registrations along with PAN and/or VAT registrations shall be submitted). The Consultants are then categorized based on expertise, capacity and experience.

Choice of Consultant

When choosing the consultant for any specific HIA, the requirements in respect to expertise, capacity and experience shall be considered. Should any specific expertise be required, this will be negotiated with the consultant before finalizing the TOR and signing the contract. The consultant shall not have any conflict of interest when carry out the HIA.

The choice of the consultant shall be in rotational basis with the next appropriate Consultant on the Roster List being approached to carry out the HIA. This might mean skipping Consultants at the top of the list who might not be appropriate for the given task. The chosen Consultant may decline the task if an acceptable justification is provided. The consultant who has carried out an HIA then joins the list at the bottom again.
3.2 Process of preparation of HIA by Consultant

As per the overall process the Consultant is selected and a TOR is prepared as per the required HIA for the proposed project / activity. The Consultant would then need to carry out the HIA based on standard formats. These would then be reviewed by the Advisory Body.

"DOA" selects a "Consultant" from a roster to carry out the HIA fulfilling specific selection procedures and providing a TOR / HIA category.

The chosen "Consultant" prepares the HIA as per the TOR / HIA category and based on defined HIA formats and submits it to "DOA".

"DOA" sends the HIA to an "Advisory Body" that reviews the HIA and approves or provides comments / recommendations.

The TOR would define the overall requirement as per the Project Indicators (Report Part One 2.2). The project indicators are the required considerations for assessing scale and complexity of the project / activity to determine the timeframe and cost for the preparation of the HIA. These include Complexity (Simple project, requiring higher level of expertise but in standard fields of cultural heritage or requiring additional specialized fields), Scale (individual activity, small project, large project or special circumstances and Location (Kathmandu Valley, accessible by flight, accessible by road plus up to half day walk, accessible by walking [max 7 days], very remote accessible by helicopter or walking more than a week).

The consultant will be required to:

- **Visit the site** and study the circumstances as they are on location
- **Define its values** and determine the most important attributes and elements of the heritage site, monument, historic building and/or cultural objects
- **Determine the impact and threats** to the attributes and elements that express the value of the heritage

The HIA would any one, two or all three components: (for each of these components detailed content formats would need to be prepared.

(i) **Assessment of proposed project / activity** and recommendations for providing permit or for modifications
(ii) **Assessment of past projects** and interventions and recommendation for rectification
(iii) **Assessment of future threats** and recommendation for planning mechanisms
3.3 Recourse process for Actors

As per the overall process an official letter is sent by the Department of Archaeology to the Actor with the final decision in respect to the HIA. Should the Actor not be agreeable to the decision, recourse is possible.

The Official Letter that is sent by the Department of Archaeology to the Actor contains at least the following points:

1. **Final Decision:** (i) acceptance of proposal as submitted, (ii) acceptance of proposal but with amendments or (iii) rejection of proposal
2. **Justification:** justification to the decisions that has been taken linked to appropriate legal provisions as well as the assessment.
3. **If applicable required amendments to the project:** detailed information on the required amendments to the project.
4. **Notes on related decisions on rectifications and planning:** information related to the assessment and rectification of past projects and activities as well as planning recommendations to safeguard the site from potential threats.
5. **Validity of decision:** exact dates for the validity of the decision, which means the project / activity would need to be completed.

For any of these points, recourse can be taken with a clear justification for the Department of Archaeology to reconsider. The recourse would be submitted as a written document with the necessary references and justification (reasoning and legal provisions) to back up the recourse claim.

This would then be discussed with the Consultant and the Advisory Body taking into account the justification provided by the actor. A revised Official Letter will then be sent to the Actor with the response to the recourse. Recourse can be taken repeatedly, however no work may begin without the dispute being finalized.
3.4 Reporting by Actor

As per the overall process when the Actor receives the official letter and all disputes are clarified and agreed upon and if permission is given, the Actor will start the project/activity. During the entire process the Actor shall provide the Department of Archaeology with detailed reports as defined in the Official Letter.

Based on the HIA Report and the comments/recommendations, “DOA” prepares the final decision and sends official letter to the “Actor”

Recourse process if necessary, for “Actor” against the decision of “DOA”

“Actor” implements as per decision with reporting to “DOA” as indicated in the official letter while allowing for necessary monitoring by “DOA”

The reporting by the Actor to the Department of Archaeology shall be done based on the conditions defined in the Official Letter. The reporting shall include progress as well as any changes or new insights into the circumstances. Any new information on the heritage site would be passed on to the Department of Archaeology.

3.5 Monitoring by DOA

As per the overall process, if found necessary, the Department of Archaeology may carry out monitoring of the project/activity at any time.

“Actor” implements as per decision with reporting to “DOA” as indicated in the official letter while allowing for necessary monitoring by “DOA”

Process of legal action if necessary, against non-compliance to decisions of “DOA” by “Actors”

On completion of project/action by “Actor” a final review is carried out by “DOA” with the “Consultant” and “Advisory Body” to provide a certification of compliance

Should the reporting by the Actor not seem sufficient, the Department of Archaeology can establish its own monitoring of the project/activity. This means that any supervisor can be deputed to oversee activities. This can be full time or at specific intervals as found necessary.
3.6 Process of legal action by DOA

As per the overall process, should there be any part of the project implementation that does not comply with the Official Letter, the Department of Archaeology may stop work and take legal action against the Actor.

During the course of the Project / Activity if there is any concern about the on-going process, the Department of Archaeology may stop the work, request rectification or if necessary, take legal action. This would then revert to the courts; however, a stay order must be issued to ensure that the project / activity halts.

3.7 Process of final review by DOA / Consultant / Advisory Body

As per the overall process once the project / activity is completed, a final review shall be carried out by the Department of Archaeology in consultation with the Consultant and the Advisory Body in the presence of the Actor.

Should compliance be found with all points mentioned in the Official Letter, a certificate of compliance shall be awarded to the Actor which allows for full legal recognition of the Project / Activity.
ANNEX 8:
Assessment of Post-Disaster Rehabilitation of Kathmandu Valley World Heritage
HANUMAN DHOKA DURBAR SQUARE MONUMENT ZONE

1. Introduction:

Kathmandu Durbar Square ("UNESCO World Heritage Site") also known as Hanuman Dhoka square is one of the major attractions in Kathmandu Valley. Most of the cultural centres of Nepal are concentrated around the Kathmandu valley; among those cultural sites, the important one is the Hanuman Dhoka Durbar Square. The name Hanuman Dhoka Durbar came from the statue of Hanuman established by the King Pratap Malla at the entrance of the royal palace in 1672 A.D. storied residence built by King Prithvi Narayan shah in 1770, is called Basantapur Durbar (palace). The whole complex is also known as Kathmandu Durbar Square.

Located at the heart of ancient city in Kathmandu it is surrounding both Hindu and Buddhist temple. Most of them are built in the pagoda style embellished with intricately carved exteriors as well as Most of the buildings we see here date from 15th to 18th century. The Durbar Square, with its old temples, palaces, epitomizes the religious and cultural life of the people. The major Interesting things to see here are "Kumari (The Living Goddess) Gar" "Kasthamandap" Maru Ganesh, Mahadev Temple, Shiva Parvati Temple, Bhagwati Temple, Old palace, Saraswoti temple, Krishna Octangular Temple, Big drums, KalBhairav, Jagannath Temple, and Taleju Temple etc.

![Figure 1 Kathmandu Durbar Square (Hanuman Dhoka Square)](image)

The Durbar Square area is actually made up of two sub-areas. The outer complex is renowned for numerous interesting temples as KumariGhar, Kasthamandap, Shiv-Parbati Temple, Jagannath Temple, Big Bell etc, while the inner complex comprises the old palace area, Hanuman Dhoka and its courtyards as Nasal Chowk, Mulp Chowk, Sundari Chowk, Basantapur Durbar and other. Besides the magnificent temples and shrines, it has other interesting aspects are various festivals, cultural activities and traditions people are following from centuries, which are presented in the Durbar Square. The major festivals include Indrajatra, Dashain, Gaaijatra, Machhendranath Nath jatra etc. These are the occasion when
the people from all over the city gather here to mark their centuries old traditions. All the carving and architecture in this area are exceptionally fine which make the architecture in this Hanuman Dhoka Durbar square among the most important sights for travellers to see a statue of Hanuman, the monkey devotee of Lord Ram, at the entrance of the palace.

Figure 2  Hanuman Dhoka Durbar Square (UNESCO)

The proposed Core zone area is 5.09 ha and the proposed boundary area is 6.77 whereas the proposed buffer zone area is 6.47 ha.

2. **Overall Impact of the Gorkha earthquake**  
The earthquakes of April 25 2015 and May 12 2015 have caused heavy damages to the various monuments of Kathmandu Durbar square. As reported in various report,

There were 140 monuments damaged completely and partially. Among 140 monuments damaged within Kathmandu Valley World Heritage 39 monuments were in Hanuman Dhoka Durbar Square. Among those 39 damaged monuments many are already restored some are under restoration.

Figure 3  *Damage heritages of Kathmandu Durbar Square after Gorkha Earthquake*
3. Plan for on-going rehabilitation of monuments and rehabilitation of remaining damaged monuments

A. Gaddi Baithak (Partially damaged monument)
Located North of Kumari Chhen, Gaddi Baithak is a neo classical building from which Nepal’s King’s ruled and settled the affairs of the country – hence its name, which means Royal Seat. The structure was built in 1908 AD by Rana Prime Minister Chandra Shumsher, followed by the European architectural design. It was also the place where important foreign guests like ambassadors were welcomed by the king. Most of the citizens and tourists gather around this place as the best hub in Kathmandu. On the other hand, Gaddi Baithak highlights its important structure of mythical, historical and cultural significance of heritage sites.

Damage after 2015 Earthquake

Gaddi Baithak suffered heavy damage during the 2015 Earthquakes. The damage followed a similar pattern to the 1934 Earthquake. There were numerous total and partial collapses of various building walls and parapets. Additionally, Pillars tilted or collapsed, semi-circular columns, embedded in the main halls were severely cracked and walls separation occurred in isolated areas. The retrofitting work was carried out by Miyamoto Global Relief which was funded by US Ambassador’s Fund. Initially damage assessment was done including targeted structural interventions to improve the building’s seismic performance without compromising or affecting its architectural heritage or integrity.

Present Status of Gaddi Baithak

![Gaddi Baithak after reconstruction](image)
The retrofitting work has been completed. During restoration and strengthening, traditional and original materials were used with methods aimed to retain as much of the original fabric as possible. Targeted structural interventions improved building’s seismic performance, but these elements were limited, unobtrusive and where possible reversible. A three-dimensional structural analysis model was built to study Gaddi Baithak in its original configuration.

The reconstruction effort sought to preserve the existing brick masonry in mud mortar and only replace where required with new masonry wall that matched the original materials as closely as possible. During the rebuilding of the masonry wall horizontal wooden ties are integrated to enhance its performance during seismic movements. South parapet wall was strengthened with A-frame bracing. The original parapet was 2.5 meters tall, unbraced and unreinforced. A parapet, architecturally identical to the original one, with an internal wooden frame was introduced. A new diaphragm at the roof level of the Southern balcony was introduced to tie the freestanding columns with the Southern wall of the main Hall. To enhance the force generated from the roof onto the wall in case of seismic movements, an interior floor diaphragm around the perimeter of the hall at the cornice level just below the vaulted ceiling was incorporated. Additional bracing was installed between the existing roof trusses which will enhance the performance of the wooden truss. To confine the interior semi-circular wall on to the main structural wall metal rods was used. Further to avoid the fissure as seen in 2015 earthquake, wire mesh has been used before plastering the partially rebuilt columns. Steel tie rods were installed in all four corners of the building to brace them against each other.

The reconstruction returned the building to its previous condition both architecturally and structurally. Materials, methods, and elements were replaced to adhere to the original construction where possible. The original architectural elements were safeguarded as much possible while integrating the interventions and reinstalled. However, the damaged elements were replicated using the Local materials and techniques.

The damage that was caused to the monument was well documented by Miyamoto Global Relief and DOA. Collection, sorting and documentation of the salvaged materials were also done. Proper documentation before Earthquake was missing. The drawings for reconstruction were also done only after Earthquake by Technical teams of Miyamoto Global Relief. The process of construction was forwarded by Tender.

The Project is supported by US Ambassadors Fund, Miyamoto Global Relief. There was not much participation from Local community in reconstruction process. However Local
community participated in response activities right after the Earthquake. There was regular supervision from Local authorities (Ward Head, Mayor and officials from DOA).

B. Structures of Lohan Chowk
On the south side of the Nasal Chowk is the Lohan Chowk, which was the residential wing of the Malla Kings. The entrance of the chowk is surmounted by two images of Lord Ganesh on either side, who is believed to protect the palace. All four corners of the courtyard support the four different types of towers named Lalitpur Tower, Bhaktapur tower, Kirtipur tower and the Basantapur tower.

**Basantapur tower**
Basantapur tower is on the south side of the Nasal Chowk and on South-West side of LohanChowk. This tower is based on a rectangular plan. It has nine stories, a four-tiered roof and a copper pinnacle at the top. This thirty-meter-high tower was built to create a pleasant pavilion and was named Basantapur Tower, meaning pleasant pavilion. Also known as Nautale Durbar it was built after the Shahs conquered Kathmandu in 1769. This tower used to dominate the palace complex. (The longest way home, 2019)

**Lalitpur tower**
Lalitpur tower is on the South-East side of Nasal chowk and Lohanchowk.

**Kirtipur tower**
Kirtipur tower is on the Northern side of Lohanchowk and Eastern side of Nasal chowk.

**Bhaktapur tower**
Bhaktapur tower is on the North-East side of Lohanchowk and Eastern side of Nasal chowk.

**Damage after the 2015 Earthquake**

The upper three floors of the Basantapur Tower were damaged during the 2015 earthquake. Other floors suffered less damage in comparison to the upper two floors. In overall, except upper three floors, Basantapur tower was partially damaged. Some 80 percent of the walls suffered varying degrees of deformation and cracking due to the tremors, and numerous wooden components were damaged and scattered. After damage assessment, the reconstruction work was started by CACH (Chinese Academy of Cultural Heritage). (Xinhuanet, 2019)

Kirtipur tower was partially damaged during the 2015 Earthquake. The major damages occurred in the walls where walls were inclined from the original position. Wooden supports were damaged and also, strut and

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Figure 7  View from Basantapur tower
window’s elements were collapsed. Roof of Kirtipur tower was damaged too which was later replaced by Copper sheets maintaining the original fabric of the tower.

Bhaktapur tower also suffered partial damage during the 2015 Earthquake. Here also, the major damages occurred in the walls and wooden support. Wooden beams faced crack which was replaced by a new wooden support. Also, there was damage seen in the walls, which was re-erected by collapsing the damaged area. Use of similar characteristics material was done.

Lalitpur tower was partially damaged during the 2015 Earthquake. The major damages occurred in the walls and roof. Roofing was completely rebuilt and damaged walls were re-erected.

**Present Status**

The reconstruction of Basantapur tower is an ongoing project at present. Initially, it had taken almost half a year to eliminate potential risk in the crippled complex. Then the collection of wooden structures and sculptures in the debris was done. The challenge that existed at the beginning was that some of fallen structures were taken away by Locals and some had been wrongly collected. The damaged and rotten wooden members were replaced with new timber members and copper plates were introduced between the joint of the wooden pillar and the brick wall. The Basantapur tower is being reconstructed in its original form with no alterations done in construction. Some of the materials which were lost or damaged were replaced with its replicas and the materials used are as per specification by DOA. The new material used replicated the original design and displays the traditional techniques and the workmanship. Materials such as Nepali salwood, dachi-apa, ma-apa, yellow mud mortar and jhingati are used for the reconstruction and are supplied by different vendors.

Skilled craftsmen from Bungamati, Kirtipur and Bhaktapur have been brought to craft the wooden details. Almost all the craftsmen have a history of their ancestors being linked with the Durbar. At present there are almost 30 skilled manpower workings.

The damage that was caused to the temples after the earthquake is well documented by CACH. Collection, sorting and documentation of the salvaged materials were also done. There wasn’t proper documentation of the monument before the earthquake and had to be collected after the earthquake only. The drawings for the restoration were also prepared only after the earthquake by CACH.
Lalitpur tower, Kirtipur tower and Bhaktapur tower all have been completed in the F/Y 74/75.

The project is supported by the funding of Chinese Government, Chinese Academy of Cultural Heritage. The local community participated in the response activities after the earthquake. However, there is no participation of local community in reconstruction work as the Chinese Agency doesn’t allow visit of any unauthorized person within the heritage site.

C. Kageshwor Mahadev Temple (partially damaged)

Kageshwor Mahadev temple is situated at Hanuman Dhoka Durbar Square, North of Gopinath temple. Built in 1711 by Queen BhuvanLaxmi in memory of the Late King BhupendraMalla, the temple was originally a pagoda style structure in the distinctive local Newari style.

Kageshwor, a Hindu deity in the form of a cross is an incarnation of Shiva. The temple is unusual because its pagoda style ground floor is surmounted by a Shikhari style dome. (Kisannagar, 2012)
**Damage after the 2015 Earthquake**

The 2015 Earthquake caused major damages in the temple structure. The Shikhara style roof was completely collapsed and the brick walls had cracked and some were collapsed too. KVPT previously too had done the reconstruction of Kageshwor temple. Rohit Ranjitkar says that this was probably added after the temple was damaged in an earthquake in the early 19th century. Poor restoration work after the 1934 earthquake led to further degradation of the temple. The timber roof and walls had to be renovated. The main reason of damage to the temple was found to be weak capacity to bear strength and lack of maintenance.

**Present status of Kageshwor temple**

The reconstruction work has been completed in the F/Y 74/75. The stone steps with the side wall were completed using traditional bricks (Daci-Apa). There has been use of header brick (ma apa) to ensure better connection of the veneer with the inner masonry core. Care has been taken to use such bricks at regular intervals to avoid dislodging of the veneer bricks as during the 2015 earthquake. Masons also did check line, level and plumb at regular interval during masonry wall construction. Bituminous paint and copper cladding were applied for moisture protection on timber columns. Mud mortar was reconstructed to reduce vulnerability to future earthquake and further structural strengthening was carried out. Inappropriate red wash was removed from the walls and the original wood carvings were restored. Other repair and maintenance work were further carried out. There was addition of metal ties in the walls to increase the strength and to bind the structure in case of seismic forces.

![Figure 12 Reconstruction Phase](image-url)
Craftsman working with KVPT from 1991 and experienced in traditional material were selected for the reconstruction work. Around 10-15 workers were working in the site. The temple structure being not so big and fluency in work lead to the timely reconstruction of the temple.

The damage that was caused to the temples after the earthquake is well documented by KVPT. Collection, sorting and documentation of the salvaged materials were also done. Previously too, KVPT had done the work of Kageshwor temple. So, there was documentation available of their own work which also reduced the time for measure drawings. The reconstruction work of all the monuments was documented on a daily basis through measured drawings, photographs and videos. Each and every part of the monument and every detail of the original or the replicas is documented.

The project was supported by various donors of KVPT and all the supervision and decision making were done by KVPT along with DOA. There wasn’t much participation of community in the reconstruction process.

**D. Laxmi Narayan temple**

Laxmi Narayan temple is situated just backside of Kal Bhairav.

**Damage after the 2015 Earthquake**

The temple suffered serious damage during the 2015 Earthquake. All the ground floor brick masonry failed during the Earthquake.

**Present status of Laxmi Narayan temple**

The partial restoration work has been completed in the F/Y 72/73. Outer timber column was installed to hold the brick masonry and door frame together, tied with timber cornice and base stone. Installation of outer timber column resting on the 8” x 8” x 6” thick stone base (ilobhan) and securely pinned to the cornice above with 10 mm dia, 25 cm long stainless-steel dowel and tied to the existing inner timber post. New timber corner column doweled to the cornice beam and tying the timber carved door frames and inner timber frames with horizontal bracing. New timber columns were added on the all four outer corners and a 12 mm stainless steel dowel was used to secure the timber columns with the horizontal member above. The new outer timber post at the Northwest corner was secured with steel dowels (12 mm dia0 at the top and to the base (ilobhan) below. (KVPT, 2018)

Craftsman working with KVPT from 1991 and experienced in traditional material were selected for the reconstruction work. The job was of partial restoration and the restoration work completed on time.

The damage that was caused to the temples after the earthquake is well documented by KVPT. Collection, sorting and documentation of the salvaged materials were also done. The reconstruction work of all the monuments was documented on a daily basis through measured drawings, photographs and videos. Each and every part of the monument and every detail of the original or the replicas is documented. Adding few necessary woods, all the wooden members from the temple was reused in the conservation.
The project was supported by various donors of KVPT and all the supervision and decision making were done by KVPT along with DOA. There wasn’t much participation of community in the reconstruction process.

E. Tairini Devi temple
The Tairini Devi temple conservation work is completed. The temple of Tairinidevi, also known as Tarini Bahal, in Hanuman Dhoka protected monument zone, is located outside the palace premises. The temple was targeted to conserve before the earthquake and was more damaged by the earthquake. The temple is conserved in initiative of local community with the mutual fund of municipality and community under the close inspection of the Department of Archaeology.

F. Kasthamandap
Kasthamandap also known as Maru Sattal; literally "Wooden Shelter" is a three-storied public resting shelter that enshrined Gorakshanath, situated in Hanumandhoka Protected monument Zone in the Southwestern corner of Durbar Square. It was completely collapsed by the 2015 earthquake. Several myths and stories about the date of the construction of the structure of the Kasthamandap have been resolved with the recent
archaeological findings. The newly discovered objects during the rescue excavation in the aftermath of the earthquake have suggested that the Kasthamandap may have been built in the 7th century during the Lichhavi era. Before this, it was assumed that the Kasthamandap was built in around the 12th century. A team of national and international experts from the Department of Archaeology (DoA), Government of Nepal and Durham University with the financial support of UNESCO, had conducted a research excavation in the area.

**Damage after the 2015 Earthquake**

The 2015 earthquake caused complete damage of the superstructure of Kasthamandap but the foundations were intact. There was no any significant earthquake-related damage to the foundation of Kasthamandap, despite the complete and total collapse of the above-ground structure. The only damage detected to the foundation surface was due to the callous use of excavators and bulldozers to clear the rubble immediately after the earthquake.

**Present status of Kasthamandap**

At present, nearly 50% of the work is complete. The project is an ongoing project which is being done by Kasthamandap Reconstruction committee, a joint venture of Local Community, Guthi Sansthan and a team of technical experts. The drawings by wolf gang were used as primary source of documentation however the drawings were not enough. The other documentation was retrieved by the old photographs, historical evidence and carving details from the rubbles. The documentation of the rubble was done in two phases. At first, measurement of rubbles was taken and hand drafted and then subsequently digitalized. There has always been lack of proper documentation for reconstruction process in our context so various source has been mobilized to prepare the documents. Keeping this in mind, at the present scenario all the documentations has been effectively done. Every detail has been digitalized as far as possible. Moreover, workings details have also been recorded for the future references.

There are no changes in form and design as proper references were taken community was directly involved from the initial phase. The work of concrete has been completely eliminated and the structure is made authentic in terms of form and design. Materials have been wisely reselected mobilizing from different parts and agencies. The selection was based on tests, observations and analysis. For e.g.: mud mortar from dharaharas’s

**Figure 17  Reconstruction of Kasthamandap**
foundation closely resembled the mud of Kasthamandap and hence it was used. Similarly, paangomaato from tahachal was used for mud fill. Moreover, strength test of selected material is being done before its use.

The authority believes after reconstruction the value of the heritage will be retained in certain time. The community will consume certain time to resonate their sentiments to the newly constructed Kasthamandap. However, the authority is sure about the continuation of old uses and functions from the community. Traditional materials were exclusively used for the reconstruction however modern structural analysis was done to give the structural strength. New additional technologies and structural elements have been added. This ensured the stability of the structure in the modern context whilst using traditional structures. This could be an epitome for the common misconception that “Traditional technologies are seemingly insufficient for the modern structural stability requirement.”

Craftsman from Bhaktapur have been brought to prepare the wooden posts and structures. There has been no weak spot left in recreating the exact details of wooden craft.

Initially, verification and structural analysis was done. For documentation, daily photograph is taken and also daily log is prepared by technical team. Documentation was prepared when site analysis was done. Different parts of detail drawings were prepared. Weekly and monthly report is prepared.

G. Bamsa Gopal temple (Chyasin Dega) Restoration
Located South of Nagaraghar, ChyasinDega is dedicated to Lord Krishna. It is an octagonal shaped temple. This temple of Vansagopal (Krishna playing the flute) was built in the seventeenth century by King PratapMalla in memory of his two dead queens – Rupamati and Rajamati hoping to meet them again in the next life. The three figures are believed to have the features of the King and his wives. It has architectural inconsistency with most other temples of the square with its octagonal construction plan and round appearance from a distance. The temple enshrines Lord Krishna with his two wives Rukmini and Satyabhama and the cowherd ladies (Gopinis) that were modelled on Pratap Malla and his two queens. The temple was renovated in 1967.
Damage after 2015 Earthquake

The temple was collapsed completely during the 2015 Earthquake. The large plinth was intact but the remaining structures had fallen. After the collapse, DOA started the work of reconstruction of the temple. Engineers and Architects were used to do a detail damage assessment. Because of the structural collapse, measure drawing couldn’t be done. There were references of renovation in 1967 and the main basis of reconstruction was images and previous data and records.

Present status of Chyasin Dega

The reconstruction work of ChyasinDega has been completed in F/Y 74/75. DOA was the authorized body for reconstruction. As usual, the process of reconstruction followed a Tender. There used to be regular supervision of DOA Engineers to ensure that no alterations or additions have been carried out. As the temple was built by the massive use of traditional brick, wood and terracotta tiles, full consideration is paid to restore the temple with the use of traditional technique and materials reusing the old wooden and other elements as much as possible. Since the ‘Surkhi mortar’, the mixture of lime, sand and brick powder, is accepted as a traditional construction material, Surkhi mortar is used in restoration of the temple instead of mud mortar. Craftsmen from Bhaktapur and Kirtipur were used to prepare the wooden artefacts of the temple. Other workers were skilled labours who had good experience in working with Traditional structural system. DOA has kept documentation of the process. Measure drawings have been prepared and there has been record of major events in the form of photograph or sketch or drawings. There was no participation of community in the reconstruction process.

H. Jagannath Temple and Gopinath Temple

Jagannath temple, noted for the erotic carvings on its roof struts, is the oldest structure in this part of Durbar Sq. Pratap Malla claimed to have constructed the temple during his reign, but it may actually date back to 1563, during the rule of Mahendra Malla. The temple has a three-tiered platform and two storeys. There are three doors on each side of the
temple, but only the centre door opens. Before earthquake only there were worrying cracks in the upper-storey brickwork.

**Gopinath temple**, situated north of Jagannath temple, is a three-storied temple. It is one of the oldest temples of Kathmandu Durbar square. There are doors on two sides of the temple i.e. East and West. The pagoda structures in the Jagannath and Gopinath Temples were constructed using brick walls and timber frames.

![Jagannath Temple](image1)
![Gopinath Temple](image2)

**Figure 21**  *Jagannath Temple*  
**Figure 22**  *Gopinath Temple*

### Damage after the 2015 Earthquake

Both Jagannath and Gopinath suffered partial damage during the 2015 earthquake.

**Jagannath Temple**

Damage to the Jagannath Temple following the Gorkha Earthquake was concentrated in the third (top) floor of the building. The shear failure of the brick walls appeared at the cut-out for the roof beam. The shear failure was concentrated in the joint between bricks; failure of the brick itself was not observed. (Tobunken, 2016)

![Damage](image3)

**Figure 23**  *Damage after the Gorkha earthquake*
Gopinath Temple

Prior to the Gorkha Earthquake, the Gopinath Temple was reinforced with a temporary column and knee brace as an emergency measure against the earthquake damage. The knee brace provided additional support at the east and south sides of the structure; residual deformation to the east or southeast direction was likely. As shown in below figure, structural damage to the Gopinath Temple was concentrated in the first floor. Primary structural damage included collapsed brick wall joints, peeled inner wall plaster, and fallen timber beams at the periphery. Conversely, wall damage in the second and third floor was not observed. (Tobunken, 2016)

Figure 24  Damage after the Gorkha earthquake

Present status of Jagannath temple and Gopinath temple

Both Jagannath temple and Gopinath temple are under assessment phase at present. The construction work is yet to be started, but various studies and analysis have been done in both the temples. A detailed survey was conducted for the pagoda features of the Jagannath and Gopinath Temples. Both experienced representative damage during the Gorkha Earthquake.

Jagannath temple

For the Jagannath Temple, structural drawings that included each floor’s framing plan and elevation, an X-Y cross section, brick details, and more were created from the detailed survey. The basic dimensions of the building and section were also recorded. Brickwork formed the exterior and interior periphery walls of the first floor. As shown in figure below, the brick measured 250 mm in width, 160 mm in depth, and 60 mm in height (glazed) in the outside wall, and 225 mm in width, 110 mm in depth, and 60 mm in height (unglazed) in the inside wall. (Tobunken, 2016)
For the Gopinath Temple, as in the Jagannath Temple, structural drawings that included each floor’s framing plan and elevation, an X-Y cross section, brick detail, and more were created from the detail survey. The basic dimensions of the building and section were also recorded. Similar to the Jagannath Temple, brickwork formed the exterior and interior periphery walls of the Gopinath Temple’s first floor. As shown in Figure below, the brick measured 210 mm in width, 115 mm in depth, and 55 mm in height (glazed and wedge-shaped) in the outside wall, and 225 mm in width, 110 mm in depth, and 60 mm in height (unglazed) in the inside wall. The roof truss on the top floor is a timber structure, and the roof beams span the brick walls. (Tobunken, 2016)
I. Trailokya Mohan temple

Trailokya Mohan Deval ("Mohan of the Three Worlds Temple") is a classic Newari pagoda. This was founded by Parthivendra Malla in memory of his elder brother in 1679, replacing an earlier structure on the site. Into the wooden struts supporting the three sloping tiled roofs were carved representations of the ten incarnations of Vishnu and other Vaishnav deities. On the ground to the west of the temple there knelt an eight-foot Garuda, the man-bird vehicle of Vishnu, created in 1689 from a single piece of stone.

The temple was dedicated to Narayan/Vishnu and featured Vaishnavite images on the carved roof struts and window screens with decoratively carved medallions. Dances depicting the 10 incarnations of Vishnu are performed on the platforms to the east of the temple during the Indra Jatra festival. (The Conversation, 2015)
**Damage after 2015 Earthquake**

The super structure of the three-tiered multi roof temple was completely destroyed by the earthquake. Except foundation, everything was demolished. The major fault was seen in the wooden support that caused the structure to demolish completely. Lack of maintenance has also been one of the reasons for the temple to get demolished.

**Present Status of Trailokya Mohan temple**

At present, the reconstruction work of Trailokya Mohan is ongoing. DOA has been doing the reconstruction work of Trailokya Mohan. At present, Ground floor work has been finished and the work of upper floor is being continued. Metal sorin is done to provide temporary support for the structure. 30% salvage materials have been used whereas other have been either stored or lost. Traditional brick DaciApa and Ma Apa have been used in the exterior and interior part of the temple. Sal woods have been used to provide horizontal and vertical structural support. After the detail investigation with emergency archaeological excavation, the restoration work was already started with the concept of utilizing almost wooden artistic and other remaining material of the same temple replacing the damaged by new one. The already separated and inventoried wooden elements are being reassembled and conserved for reuse. Other necessary new wooden elements also are being prepared as well.

Since the ‘Surkhi mortar’, the mixture of lime, sand and brick powder, is accepted as a traditional construction material, Surkhi mortar is used in restoration of the temple instead of mud mortar. Craftsmen from Bhaktapur and Kirtipur were used to prepare the wooden artefacts of the temple. Other workers were skilled labours who had good experience in working with Traditional structural system. DOA has kept documentation of the process. Measure drawings have been prepared and there has been record of major events in the form of photograph or sketch or drawings. There was no participation of community in the reconstruction process.

**J. Pratap Stambha (The stone Pillar with statue of King Pratap Malla)**

The Stone Pillar with the metal statue of King Pratap Malla in front of Degu Taleju temple in Hanuman dhoka was partially collapsed by the earthquake. The metal statue was fallen with its stone capital part. The statue of King Pratap Malla with his two queens and four sons were badly damaged.

The restoration work of Pratap Stambha was done by DOA. It had taken considerable time of skilled artists for the conservation of the damaged metal statue. The huge stone capital of the pillar was lifted using traditional knowledge and technique to set the statue over it. Now the Pratap Stone Pillar is well restored in its original condition. (UNESCO, 2019)
K. Nateshwor (Partially Damaged Monument)
Nateshwor temple is a small temple located in the Masan Chowk. It is standing in the middle of the chowk followed by couple of wells.

Damage after 2015 earthquake
After 2015 earthquake, east and south side interior walls and exterior claddings in the ground floor were damaged due to which the entire temple was totally dismantled and restored by Hanuman dhoka Durbar Museum Development Committee. Documentation and measurements were taken and the drawings were prepared by Ar. Bhaktalaxmi. Structural analysis was not done. However wooden ties and metal locks are used for structural strengthening as per group discussion.

Present Status of the Temple
Nateshwar is restored in its original form and design from its foundation, using most of the salvaged materials that were recovered from the earthquake. Some of the materials which were lost or damaged were replaced with its replicas and the materials used are as per specification by DOA. The new material used replicated the original design and displays the traditional techniques and the workmanship. Materials such as Nepali salwood, dachi-apa, ma-apa, lime mortar and jhingati are used for the reconstruction and are supplied by different vendors.

Craftsman from Bungamati and Bhaktapur working with HDMDC and experienced in traditional material were selected for the reconstruction work. The damage that was caused to the temple after the earthquake is well documented by DOA. Collection, sorting and documentation of the salvaged materials were also done. Final report of the project is not done.
The project was funded by DOA. Local community was not involved in the response and the restoration of the monument. The project has been completely restored in the year 2073-2074.

L. Panchamukhi Hanuman and South Wing of Mohan Kali Chowk (Partially Damaged Monument)
Stunning, circular, five-tiered Panchmukhi Hanuman temple, built by the Mallas in circa 1655 AD lies in the northeast corner of the Nasal chowk. The Panchamukhi Hanuman as the name explains has five heads and ten arms. The first head is the central and normal face of Hanuman. The Second is that of the Vishnu’s ‘vahana’ the Garud. The third is that of the Narsimha (one of Vishnu’s avatar, half man- half lion). The fourth is of Hayagriva and is a human face. The last one is that of Baraha (boar). (Mishra, 2014)

Figure 31  Before Earthquake

In 2014, the authorities decided to renovate the ageing Panchamukhi Hanuman temple in Kathmandu to mitigate possible damage from future earthquakes. Only designated priests were allowed to enter the sanctum room where the Hanuman figure is kept. The god was allowed to be worshipped only by the royal family and their priest, and it had been at least a couple of decades since the last known priest entered the sanctum for ritual worship. The practice had been inexplicably discontinued. The restoration of the 25 m high temple built in the 17th century was stopped because no engineer could enter the sanctum to assess its structural condition. It was impossible for architects to take measurements of the inside of the temple. The wise and the elderly quickly came up with a solution: perform a Kshyama Puja, the ritual ceremony asking for forgiveness from the deity on an auspicious date by qualified tantric priests from the Taleju Temple. This allowed the relocation of the Hanuman figure to a secure site until the renovations were completed. A team of seasoned engineers and architects immediately went to work to determine the best way to strengthen the temple and its adjoining wing to increase earthquake resistivity. Sophisticated computer-generated modelling helped the team decide on the strengthening measures to be taken.
Simultaneously, funding was channelized from the Ministry of Culture, supplemented with a grant from the US Embassy. A public discussion was held to gather opinion from experts about the proposed conservation work and approvals were obtained from the Department of Archaeology. All administration procedures were set in place to start the conservation work. Then the earthquake struck on 25 April 2015. (Tuladhar, 2016)

**Damage after 2015 earthquake**

The temple standing atop four floors of a rectangular building with its unique five circular, tiered roofs had already suffered damage from the smaller earthquakes of 2012 and earlier and needed renovation. But last year’s quake was a higher magnitude and severely damaged the temple. However, within two months of the earthquake, the project team went back to the drawing board to make a fresh conservation plan.

**Present Status of the Temple**

Panchmukhi Hanuman temple has just seen a successful restoration that was helmed by the Hanuman dhoka Durbar Museum Development Committee, which works under the Department of Archaeology with a third of the total funds provided by the US Ambassador's Fund for Cultural Preservation, the remaining two-thirds was provided by the Department of Archaeology for a total budget of $226,494.44. (Pande, 2016)

The work on fortifying and restoring the Panchmukhi Hanuman temple began in earnest in September, 2015. Allocation of the contract was done to the lowest bidder (according to government rules).

The entire process has been fully pictorially documented by Impact Productions, a private entity that does cultural heritage documentation that worked hand in hand with the Project Implementation Committee which consists of Rajni Shrestha and Alok Tuladhar from Impact Productions who worked as Project Coordinator and Assistant Project Coordinator respectively; Bishnu Raj Karki as Project Director (and former Director General of the Department of Archaeology), and Saraswati Singh as Associate Project Director. The committee also includes architectural conservationist Dr. Sudarshan Raj Tiwari, structural engineer Dr. Premnath Maskey, engineer Gopal Jha, archaeologist and art historian Dr. Mukunda Aryal, and a senior chemist Griha Man Shrestha.

The Panchmukhi Hanuman was restored by carefully taking apart the top three tiers so that they could be rebuilt with proper fortification. The base and the subsequent floors were also reinforced with wooden posts that bear the weight of the entire structure. As layers were
stripped away or removed all together, every aspect was carefully noted and pictorially documented.

In addition to the fortification of the building, the Panchmukhi Hanuman temple’s south façade was restored to its original form by removing an addition made in the late 18th Century where a portico was added to the south side (facing the Nasal chowk) of the temple so that the upper floors of the temple where the idol is housed could be accessed by the priest from the outside without going through the previous ground floor entrance of the building in which Rana Bahadur Shah had been imprisoned at the time.

The removal of this outer portico access point revealed the original carved window of the south face. In order to continue the natural progression of the roof from the east side onto the south, the Project Implementation Committee then had to replicate the five layered cornice. The designing and carving of the four struts that needed to be placed to support the extension of the roof as the original struts from before had been long lost, was challenging. In the case of the Panchmukhi Hanuman temple, DrKarki and his colleagues had deep discussions before deciding upon the Hanubhairab, the Panchmuki Hanuman, and the Chandra, and Surya for each of the four struts that now adorn the south façade; these struts were then carved by master carvers from Bungamati. (Pande, 2016)
When the actual renovation started in late 2015, there were more surprises in store. An entire hidden floor less than a meter high, was discovered. As layers of weakened brickwork were peeled off, previously unseen wooden frames that tied the walls in place were revealed.

To conform to national as well as UNESCO archaeological norms, all retrofitting work was carried out with traditional building materials – brick, wood and lime mortar. Cement and steel were not used, as that would have compromised the authenticity of the building.

Interventions were kept to a minimum, without compromising on the added strength and the original ambience of the building. Utmost care was taken to salvage and reuse existing bricks, mud mortar and wooden elements. All unusable wooden artefacts, such as windows, cornices and struts, were replaced with exact reproductions, carved meticulously by talented craftsmen from different parts of Kathmandu Valley. Authorized chemical treatment was applied to increase the longevity of wooden and metal parts. Today, the Panchamukhi Temple is one of the first monuments to be restored post-earthquake in the year 2072-2073, even though the preparations were underway before 25 April, 2015. (Tuladhar, 2016)

Its conscientious documentation, due process, following of procedure, consultation with the public and absolute transparency in terms of the both finances and the decision-making procedures make for a heartening example of what is possible in Nepal.

**M. Taleju Temple (Partially Damaged Monument)**

The Taleju Temple is located in Kathmandu Durbar Square in TrishulChowk, which is attached to the Hanuman Dhoka Palace. Kathmandu’s Taleju Temple was constructed in 1564 by King MahendraMalla. Kathmandu Durbar Squares largest and most important temple sits behind a large walled enclosure in the northern section. The three-storey temple sits on top of twelfth brick plinths or platforms which towers over the area. The temple itself is behind a locked gate which is only opened up for one day every year during the dashain festival (ninth day). All visitors in between can only gaze from outside the walls.(Ways, 2019)

There is much lore and mysticism surrounding the beginnings of Kathmandu city’s Taleju Temple. It is said that the temple was built in the shape of a yantra, a mystical diagram said to have magical powers, due to a suggestion that came straight from the mouth of Goddess Taleju herself. According to the South Asian Association for Regional Cooperation, Taleju Bhawani made a special appearance at the temple’s dedication ceremony. Legend has it that Goddess Taleju Bhawani showed up undercover, disguised as a bee.(Olson, 2010)
ANNEX 8

Figure 38  Before Earthquake

Figure 39  During Reconstruction

Damage after 2015 earthquake

The temple was affected by the 2015 earthquake; especially in lower and middle roof due to leakage and all the small 12 temples on the plinth as well.

Present Status of the Temple

The conservation of Taleju temple is completed and was helmed by Department of Archaeology and Hanuman dhoka Durbar Museum Development Committee. Taleju Temple is the biggest monument and landmark of Kathmandu Durbar Square. Taleju is a tutelary deity of Malla Kings. The temple was affected by the earthquake; especially in top and second roof and all the small 12 temples on the plinth as well. The conservation work of main temple is completed where the middle roof was tendered to repair by DOA and the lower roof by HDMDC in the fiscal period of 2073-2074 and the small temple structures (Kachhadega – 12 in numbers) built on the plinth of the temple as well as a terracotta toran with four doors and artistic Jaldroi around Taleju Temple has also completed recently by HDMDC in the fiscal period, 2074-2075. Adharpeti work at Taleju Temple Parisar has been reconstructed by HDMDC in the year 2075-2076. Since the temple is one of the oldest and the most important ones, major alterations have not been done. A very minor structural addition was done. Planking and plates were removed, checked and new were added; Copper plates added for support; wall cracks in the middle tier were repaired, deteriorated rafters were checked and restored; Flooring around the temple was repaired and restored.

Skilled workers from Bungamati and Bhaktapur working with HDMDC and experienced in traditional material were selected for the restoration work. Previous documentations were not available however; the damage that was caused to the temple after the earthquake is well documented by DOA and HDMDC. Collection, sorting and documentation of the salvaged materials were also done. Final report of the project is not done. The project was funded by DOA. Local community was not involved in the response and the restoration of the monument. The project has been completely restored in the year 2073-2074.

N. Mahadev Mandir-1 (totally collapsed) and Mahadev Mandir-2 (structural damages)

Situated in front of the gate of the Taleju temple, Mahadev temple-1 and Mahadev temple-2 are 2-tiered small temples.
Damage after the 2015 Earthquake

One of two Mahadev Temples in front of Taleju gate was collapsed and the northern one was badly affected by the earthquake. The total responsibility of conserving the small but beautiful two roofed temple on the northern side which was not collapsed but badly affected was taken by Kathmandu Valley Preservation Trust while the one totally collapsed was reconstructed by the Local community under Kathmandu Metropolitan City’s funding and guidance.

In Mahadev temple -2, all Dachi Apa veneer brick layers had unglued from the main brick structure. Northeast inner columns were severely damaged by damp, even having raised up on a stone base. About 12’ of the lower section of the timber column (circled) from the Southwest corner was rotten.

![Figure 40](image-url)  *After Gorkha Earthquake*

Present Status of the Temple

The restoration work of Mahadev Mandir-2 has been completed in the F/Y 74/75. Temporary shoring was completed by Department of Archaeology within two weeks after the earthquake. Dead shoring was added to provide safe transfer of load from the upper structure to the ground of the temple before dismantling damaged walls on ground floor. The damaged sections at the base of all four inner columns were removed and new timber elements were attached via cruciform joints. On the plinth level, a waterproofing membrane was laid before building the per masonry wall. Columns were painted with bituminous paint and wrapped with copper setting to protect them from damp within masonry wall. New outer columns were added in all four corners. The masonry work was done with ma apa in mud mortar. (KVPT, 2018)

Craftsman working with KVPT from 1991 and experienced in traditional material were selected for the reconstruction work. The job was of

![Figure 41](image-url)  *Mahadev Mandir 1 and 2*
partial restoration and the restoration work completed on time.

The damage that was caused to the temples after the earthquake is well documented by KVPT. Collection, sorting and documentation of the salvaged materials were also done. The reconstruction work of all the monuments was documented on a daily basis through measured drawings, photographs and videos. Each and every part of the monument and every detail of the original or the replicas is documented.

Figure 42  *Damage in the temple due to the Earthquake*

The project was supported by various donors of KVPT and all the supervision and decision making were done by KVPT along with DOA. There wasn't much participation of community in the reconstruction process.

The reconstruction of Mahadev temple-1 was carried out by the Local community under Kathmandu Metropolitan City's funding and guidance in the F/Y, 74/75. Skilled workers working with KMC and experienced in traditional material were selected for the restoration work. Previous documentations were not available. Measured drawings were prepared taking reference from KVPT’s work on Mahadev Temple-2. It is a duplication of Mahadev Temple-2. Previous lattice windows and artefacts were used to maximum possible extent. Chimney bricks and dachiapa: are
used for walls. Ma apa: hasn’t been used except for some cases where original ma apa: is used in the foundation only. The reconstruction work of all the monuments was documented through measured drawings, photographs and videos.

O. Nagara Ghar (partially damaged)

The Nagara ghar, Big Drum house, is situated north of Chyasin Degain Hanuman dhoka Palace Square. A pair of huge drums on a raised platform was used to warn of trouble, as the Durbar Square Armory was close by. The traditional building of cultural importance was largely affected by the earthquake.

Damage after the 2015 Earthquake

Nagaraghar was damaged due to fall of Chyasin Dega on it. While the first floor completely collapsed; ground floor was intact. The state of conservation of Jhingati roof was almost fallen, the brick wall was cracked and the entire structure was tilted as well. To be restored with perfect traditional method and materials, under the direct inspection of DoA, Kathmandu Metropolitan City has invested for the entire restoration of the structure.

Present Status of Nagara Ghar

The Conservation work of this structure is completed within a year of earthquake, 2073-2074. Replacing the mud mortar by lime mortar the house is conserved with traditional method and material as it was built before. Kathmandu Metropolitan City had taken the total responsibility of the conservation under the close inspection of Department of Archaeology. The damage that was caused to the structure after the earthquake was analysed and documented before dismantling the entire structure and reconstructing. Old drawings were also available as a reference for newer ones. Collection, sorting and documentation of the salvaged materials were also done. Chimney bricks and dachi apa: are used for walls. The reconstruction work of all the monuments was documented on a daily basis through measured drawings, photographs and videos. Each and every part of the monument and
every detail of the original or the replicas is documented but no written report has been prepared. There has been no community participation.

P. Degutale temple (Partially Damaged Monument)

The *Degu Taleju* is located on the south side of the square in front of the Hanuman Dhoka and stands on a broad tower like base in place of the stepped platform belonging to the palace. The temple has been built on the second storey and is accessible only from inside the palace. The temple was used by the Malla royalty for personal daily worship of *Taleju*. Degutale Temple is dedicated to Goddess Mother Taleju built by Shiva Simha and rebuilt by King Pratap Malla. Degutale temple has a complete fill in the ground floor. It is accessible only in the first floor from DahkChowk.

**Damage after 2015 Earthquake**

The monument suffered severe damages in the north elevation.

**Present Status of the Temple**

The Conservation work of this structure is completed within a year of earthquake, 2072-2073. The north elevation of the temple saw significant damages due to which the entire north side was repaired. However, after restoration structural analysis was done according to which the entire structure is tilted by 8” in the east and 16” in the south. The repair of north elevation of Degutale was carried by HDMDC funded by DOA. Old drawings were also available as a reference for newer ones. Each and every part of the monument and every detail of the original or the replicas is documented and measured drawings were prepared. The use of salvage materials was done in the ratio of 70:30 (new:old). The mud was replaced by lime mortar and wooden posts, bracings and ties were for strengthening. Interventions were kept to a minimum, without compromising on the added strength and the original ambience of the building. Utmost care was taken to salvage and reuse existing bricks, mud mortar and wooden elements.

All unusable wooden artefacts, such as windows, cornices and struts, were replaced with exact reproductions, carved meticulously by talented craftsmen from different parts of Kathmandu Valley. There was no community participation.

Q. Swet Bhairab (Partially Damaged Monument)

*SwetBhairav*, literally meaning ‘the White Bhairav’ is the biggest idol of *Bhairav* in the world which depicts the most dangerous face of Lord *Shiva*. It is kept hidden inside a wooden curtain throughout the year, and taken out only during the festival of *Indra Jatra*. However, a Buddhist priest is said to perform puja everyday behind the curtain. It is located to the west of Degu Taleju.
**Present Status of Swet Bhairab**

Conservation of the Sweta Bhairav Temple attached to Degu taleju is already completed in the F/Y 73/74. The recently restored temple of Bhairav was partially affected by the earthquake and well shored just after the quake to protect from the further destruction. Hanuman dhoka Palace Museum Development Committee had taken total responsibility of the conservation under the close inspection of DoA.

Some of the materials which were lost or damaged were replaced with its replicas and the materials used are as per specification by DOA. The new material used replicated the original design and displays the traditional techniques and the workmanship. Materials such as Nepali salwood, dachi- apa, ma- apa, lime and mud mortar and jhingati are used for the reconstruction and are supplied by different vendors.

Craftsman from Bungamati and Bhaktapur working with HDMDC and experienced in traditional material were selected for the reconstruction work. The damage that was caused to the temple after the earthquake is well documented by DOA. Collection, sorting and documentation of the salvaged materials were also done. Final report of the project is not done. The project was funded by DOA. Local community was not involved in the response and the restoration of the monument.

**R. MajuDega (Fully Damaged Monument)**

It is located to the west of Trailokya Mohan. The wooden doorway, columns, windows and struts are all beautifully carved. Inside the temple, there is an enormous shivalinga, the emblem of Lord Shiva. A prominent royal member of the Malla Dynasty Riddhi Lakshmi, the Queen mother of Bhupetendra Malla, built the historic temple in 1692. Among the many notable features is the nine-step brick base that gives the temple an aesthetic look. During the Hippie era in the 1970s, the historic monument was called ‘Hippie Temple’ because many Hippies from Europe and the US socialized around the area, particularly on the top step of the temple because it gave a panoramic view of the salubrious surroundings. (Ojha, 2018)
Damage after 2015 Earthquake

After 2015 earthquake the entire three storied temple collapsed while the damages occurred in portions of the 9 stepped plinths.

Present Status

The reconstruction of MajuDega, the three-story temple at the heart of Kathmandu Durbar Square area, formally started, three and a half years after the devastating earthquake damaged the monument of Malla era.

The KMC has allocated a budget of Rs55.9 million for the reconstruction of the temple under Hanuman Dhoka Durbar Square Conservation Programme. Contractors SanuSuwal and Pawan J.V have agreed to rebuild the historic temple, with a targeted deadline of October 21, 2020, to complete the work.

The damage that was caused to the structure after the earthquake was analysed and documented before starting the reconstructing. Older drawings were available at DOA. However, new drawings were prepared taking reference from the Wolfgang Korn’s book and the work is in process. There is no community participation in the reconstruction process. However, skilled workmanship and traditional materials are being used.
S. Silyansattal (Fully Damaged Monument)

SinghaSattal, the 700-year-old pavilion, is believed to have been built along with the pavilion of Kasthamandap, in the 13th century. Originally built with wood left over from the Kasthamandap Temple, this squat building was called the SilenguSattal (silengu means ‘left over wood’ and a sattal is a pilgrim hostel) until the addition of the golden-winged singh (lions) that guard each corner of the upper floor. The building was a popular place for bhajan (devotional music) until it was damaged in the earthquake.

Damage after earthquake

SilyanSattal was not in a complete state when 2015 earthquake struck. The upper floor was rebuilt. However, since its reconstruction began before earthquake, it did not face major damages but minor wall cracks.

Present condition

The Restoration of SinghaSattal, popularly known as SilyanSattal (Traditional Rest House) is completed in F/Y, 2072-2073. The Sattal with a shrine of Natyeswar (god of dance) inside it was in dilapidated condition for a long time. Under the direct inspection of DoA, with detail documentation, it is conserved by KMC and Guthi Sansthan. Traditional types of bricks, Jhigati roof tile and timber are the major construction material as it was used before.

Since the construction of the structure is traditionally and mythically connected with Kasthamandap, it was believed to be built in the 12th century; since the recent archaeological investigation has proven the Kasthamandapa older than that period, while restoring this monument, the architect and archaeologist involved have paid very careful attention.
4. Plan for Rehabilitation of Urban Fabric

Gwache Muga Galli
This Galli is one of highly damaged area that falls in the Buffer zone of World Heritage site of Kathmandu Durbar square. This Galli is a very narrow galli of width 4 feet and residences surrounding both sides. The majority of the buildings are old, 70+ years old. Around 5-10 houses are in the red zone after Earthquake, thus no one resides in those buildings. Otherwise, people are still residing in the houses which have suffered partial damage during the 2015 Earthquake.

Table 1: Characteristics of the Buildings in Gwache Muga Galli

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi, Decorative Struts, Detailed art and crafts, exposed bricks</td>
<td>Bricks, Cement, Steel, Rod</td>
</tr>
<tr>
<td>Aesthetics and Architectural style</td>
<td>The ratio of following Traditional style is nearly 40-60. The new buildings which have followed have those detailing and decorations where as the buildings which haven't followed are plain.</td>
<td></td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>Color</td>
<td>Mostly uncolored or white creamy colors</td>
<td>Mix of colors could be seen (Brown, Red, Pink, Yellow etc)</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Flooring</td>
<td>Stone</td>
<td>Stone</td>
</tr>
<tr>
<td>Market place</td>
<td>Local newari food restaurants</td>
<td></td>
</tr>
</tbody>
</table>

There haven’t been much newer settlements in this Galli and the traditional fabric still could be felt. But the damaged buildings are still in the same condition which has been providing a serious threat for people living in that Galli. Old buildings haven’t been maintained properly and the cracks and the damages can be seen. The other main problem is the hanging of electric wires that in a way have blocked the ways at places.

**Jhochhen and Gangapath**

It is one of the most iconic streets of Kathmandu Durbar square which is also a social hub for Youths and foreigners. This Street has undergone a lot of change in the pattern of Traditional fabric. This street is a wide street of nearly 14 feet wide and residential cum commercial buildings surrounding both sides of the street. Because it is a tourist hub, there are a lot of commercial shops throughout the street. There was partial damage in some residences of Jhochhen which have already been repaired. There wasn’t much damage because most of the buildings were either already renovated or reconstructed.
Table 2: Characteristics of the Buildings in Freak Street and Gangapath

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi,</td>
<td>Bricks, Cement, Steel, Rod</td>
</tr>
<tr>
<td>Aesthetics and Architectural style</td>
<td>Decorative Struts, Detailed art and crafts, Traditional Newari style crafted windows, exposed brick. Mixture of Newari and Neo-classical style could be seen.</td>
<td>The ratio of Traditional style to modern style is nearly 60-40. Majority of the new buildings have followed the guidelines of DOA. The detailing in windows and decorations could be visibly seen. Exposed Brick façade and traditional Newari windows were seen. Mixture of Newari and Neo-classical style could be seen.</td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>Color</td>
<td>Mostly uncolored or white creamy colors</td>
<td>Mix of colors could be seen (Brown, Red, Pink, Yellow etc)</td>
</tr>
<tr>
<td>Flooring</td>
<td>Stone</td>
<td>Stone</td>
</tr>
<tr>
<td>Market place</td>
<td>Vegetable vendors, Local foods, Tea shops</td>
<td>Commercial restaurants, gift shops, Window shopping areas.</td>
</tr>
</tbody>
</table>

This is mostly a new settlement, with most of the buildings being constructed recently. The main idea among the locals here has been to attract the Foreign tourist. It’s an important economic area of Kathmandu Durbar Square. So, the urban fabric has been developing accordingly. Residential spaces in the upper floors and restaurants or shops in the ground floor. Not all, but majority of the buildings have tried to retain that traditional fabric and it can be observed in the skyline of the fabric in the street. Here too, mis-management of electric lines and unmanaged parking has affected the value of the place.

**Shukra Path**

This street covers the range from Basantapur Shalikupto Indrachowk. This is highly commercial area with majority of wholesale market place targeting the general people and business person. This street is a 2-lane street with footpath being there on both sides of the street. Here also, there is a mixture of traditional as well as modern buildings with modern buildings dominating the main street and traditional buildings beside the arterial streets. There was seen partial damage in the main street side whereas serious damages were in the traditional buildings.
Table 3: Characteristics of the Buildings in Shukra Path

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi, Decorative Struts, Detailed art and crafts, Traditional Newari style crafted windows, exposed brick. Mixture of Newari and Neo-classical style could be seen.</td>
<td>Bricks, Cement, Steel, Rod The ratio of Traditional style to modern style is nearly 70-30. Majority of the new buildings have followed the guidelines of DOA. The detailing in windows and decorations could be visibly seen. The nice part is that here, the main street façade has a uniformity with all the buildings having white color in the façade. The fabric has the character of traditional buildings, but the maintenance is not proper.</td>
</tr>
<tr>
<td>Aesthetics and Architectural style</td>
<td></td>
<td>The ratio of Traditional style to modern style is nearly 70-30. Majority of the new buildings have followed the guidelines of DOA. The detailing in windows and decorations could be visibly seen. The nice part is that here, the main street façade has a uniformity with all the buildings having white color in the façade. The fabric has the character of traditional buildings, but the maintenance is not proper.</td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>Color</td>
<td>Mostly uncolored or white creamy colors</td>
<td>White color in the main street Exposed brick and mixture of colors inside the core Galli’s Pitched Jewellery shops, restaurants, Wholesale shops</td>
</tr>
<tr>
<td>Flooring</td>
<td>Stone</td>
<td>Wholesale shop of clothes and utensils</td>
</tr>
<tr>
<td>Market place</td>
<td>Wholesale shop of clothes and utensils</td>
<td>Jewellery shops, restaurants, Wholesale shops</td>
</tr>
</tbody>
</table>

This area is a complete commercial area with no or very few residential settlements because of the market place. The economic activity is at a very high rate with the region being an economic hub of Kathmandu. The traditional and urban fabric is blending with the new buildings trying to retain the traditional character. The road that leads from Basantapur to Indrachowk has uniformity in façade with all the facades having blend of Neo-classical style and Newari style. If properly maintained, the fabric of this area will bring a different character. Again, the major problem here too is the unmanaged electric wires and parking.

Makhan Galli
Makhantole covers the stretch from Indrachowk towards South upto the surrounding areas of Taleju temple. This area is a dense commercial area with wholesale market of clothes, Puja utensils, jewellery, covering the major part. There is a narrow pedestrian street with both sides of the streets occupied by commercial shops. Damage was seen in the old buildings which weren’t properly maintained but new buildings hadn’t had much of the
damage. There can be seen lack of maintenance in old buildings and electric wire here too has been a major problem with dense public circulation.

Figure 58  Building in Makhan Galli

Table 4: Characteristics of the Buildings in Makhan Galli

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi, Decorative Struts, Detailed art and crafts, Traditional Newari style crafted windows, exposed brick. Mixture of Newari and Neo-classical style could be seen.</td>
<td>Bricks, Cement, Steel, Rod The ratio of Traditional style to modern style is nearly 60-40. Majority of the new buildings have followed the guidelines of DOA. There are new buildings in the main street. A pattern of traditional style can be seen in the building façade whereas some buildings are contrasting. 9 feet Exposed brick in the façade, Use of glass for commercial value, Mixture of colors Pitched Jewellery shops, restaurants, Wholesale shops</td>
</tr>
<tr>
<td>Aesthetics and</td>
<td>Mostlly uncolored or white creamy colors</td>
<td></td>
</tr>
<tr>
<td>Architectural style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flooring</td>
<td>Stone</td>
<td></td>
</tr>
<tr>
<td>Market place</td>
<td>Wholesale shop of clothes and utensils</td>
<td></td>
</tr>
</tbody>
</table>
Yatkha Galli
Yatkha Galli covers the North-West region of Durbar square that is West of Indrachowk and North of Marutole. This area is comparatively less crowded than other surrounding regions. Mostly this region has residential settlement. Main commercial activity here is vegetable selling, local shops, arts and crafts shop with general people being the main target. There is a mixture of old and new buildings. Damage can be seen in most of the old buildings and structures like Pati, small temples in and around the area. The main reason of damage can be summed up as weak structures and lack of maintenance.

Table 5: Characteristics of the Buildings in Yatkha Galli

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi, Decorative Struts, Detailed art and crafts, Traditional Newari style crafted windows, exposed brick. Mixture of Newari and Neo-classical style could be seen.</td>
<td>Bricks, Cement, Steel, Rod, The ratio of Traditional style to modern style is nearly 40-60. Majority of the new buildings have followed the guidelines of DOA. The detailing in windows and decorations could be visibly seen. In most of the new buildings, there isn’t as much detailing as compared to an old building. Exposed brick can be seen and windows have been used of Newari style. 9 feet 9 feet</td>
</tr>
<tr>
<td>Aesthetics and Architectural style</td>
<td>7 feet Most uncolored or white creamy colors</td>
<td>Mixture of colors Exposed brick and mixture of colors inside the core Galli’s Pitched Vegetable vendors, Retail shops, Liquor shops</td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>Color</td>
<td>Mostly uncolored or white creamy colors</td>
<td>Mixture of colors Exposed brick and mixture of colors inside the core Galli’s</td>
</tr>
<tr>
<td>Flooring</td>
<td>Stone</td>
<td>Pitched</td>
</tr>
<tr>
<td>Market place</td>
<td>Art and craft shops, Traditional musical instrument shops</td>
<td>Vegetable vendors, Retail shops, Liquor shops</td>
</tr>
</tbody>
</table>
PyaphalTole and Marutole

PyaphalTole is the region that lies in the western part of the Durbar square. These regions are the closest to the Monument zone. There is a mixture of residential and commercial market. For commercial, the main areas include Traditional Puja shops, Local Food restaurants and vegetable shops. Here too, for commercial activities Ground Floor is used.
whereas Upper floors are used for Residential purpose. Damage can be seen in old structures and buildings whereas new buildings haven’t faced much damage. There is less new structures in this area compared to other areas.

**Table 6: Characteristics of the Buildings in Pyaphaltole and Marutole**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi, Decorative Struts, Detailed art and crafts, Traditional Newari style crafted windows, exposed brick. Mixture of Newari and Neo-classical style could be seen.</td>
<td>Bricks, Cement, Steel, Rod The ratio of Traditional style to modern style is nearly 60-40. Majority of the new buildings have followed the guidelines of DOA. The detailing in windows and decorations could be visibly seen. In most of the new buildings, there isn’t as much detailing as compared to an old building. Exposed brick can be seen and windows have been used of Newari style.</td>
</tr>
<tr>
<td>Aesthetics and Architectural style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>Color</td>
<td>Mostly uncolored or white creamy colors</td>
<td>Mixture of colors Exposed brick and mixture of colors inside the core Galli’s Pitched Vegetable vendors, Retail shops, Liquor shops</td>
</tr>
<tr>
<td>Flooring</td>
<td>Stone</td>
<td></td>
</tr>
<tr>
<td>Market place</td>
<td>Art and craft shops, Traditional musical instrument shops</td>
<td></td>
</tr>
</tbody>
</table>
PariprakarGalli and AtkhoGalli
Pariprakargalli is the region that lies towards South-West part of Durbar square. AtkhoGalli too lies towards South-West part of Durbar square. This is also Residential cum commercial area. The street is not very wide but heavy vehicular flow causes congested circulation of people. The market place is set up targeting the foreigners as well as domestic tourist because Kasthamandap lies in the proximity of these areas. There is a mixture of both Traditional as well as new buildings in this region. Damage can be seen in the old buildings which have been reconstructed. There wasn’t much damage in the new buildings that were constructed recently. Heavy vehicular flow and unmanaged electric wires are the reasons for this place to lose its essence.
Table 7: Characteristics of the Buildings in Pariprakar Galli and Atkho Galli

<table>
<thead>
<tr>
<th>Categories</th>
<th>Old settlement</th>
<th>New settlement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Bricks, Timber, Lime/Surkhi, Decorative Struts, Detailed art and crafts, Traditional Newari style crafted windows, exposed brick. Mixture of Newari and Neo-classical style could be seen.</td>
<td>Bricks, Cement, Steel, Rod The ratio of Traditional style to modern style is nearly 60-40. Majority of the new buildings have followed the guidelines of DOA. The detailing in windows and decorations could be visibly seen. In most of the new buildings, there isn’t as much detailing as compared to an old building. Exposed brick can be seen and windows have been used of Newari style.</td>
</tr>
<tr>
<td>Aesthetics and Architectural style</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor height</td>
<td>7 feet</td>
<td>9 feet</td>
</tr>
<tr>
<td>Color</td>
<td>Mostly uncolored or white creamy colors</td>
<td>Mixture of colors</td>
</tr>
<tr>
<td>Flooring Market place</td>
<td>Stone Art and craft shops, Traditional musical instrument shops</td>
<td>Exposed brick and mixture of colors inside the core Galli’s Pitched Vegetable vendors, Retail shops, Liquor shops</td>
</tr>
</tbody>
</table>

Figure 61 Buildings in Pariprakar Galli and Atkho Galli
5. General Assessment of Rehabilitation of Physical Setting

Analyzing the open spaces in and around the Durbar square, it can be seen that the reconstruction work in a way has affected the setting of open spaces. It is mainly because the boundary hasn’t been created properly of the monument that is to be reconstructed. The materials are dispersed all over the surrounding open spaces causing difficulty for people to circulate and causing pollution around the site.

At present the major threat that the site faces is heavy vehicular flow in the buffer area of Durbar square. The number of vehicles that flow is beyond the capacity of the street. That causes a mess during peak hours. That has also in a way affected spirit of the Heritage zone. The other threat that the site faces is the mismanaged electric wires that are hanging here and there all over the Buffer zones. Being a religious site, there are people lighting Diyos at places, if anything wrong happens in the process that can lead to a huge fire in the Heritage zone. These are the results after the Earthquake because of lack of management and carelessness from the concerned Authority.

6. Overall Conclusions and Recommendation

To conclude, it has been a great opportunity for us to take a deeper look into the process of reconstruction of heritage that has been taking place after the 2015 earthquake. We specifically have studied about the status of Kathmandu Durbar square. Kathmandu Durbar square being one of the most important places, historically and culturally suffered serious damage during the 2015 earthquake. Reconstruction and restoration works have been taking place at present. There are various stakeholders that have the responsibility and analyzing the overall situation, all the stakeholders have been doing the work of reconstruction properly. Though there is room for improvement. Because of different stakeholders, the working pattern is different. There are still monuments which haven’t even been assessed after the damage. There are monuments which have been assessed but the work hasn’t been started. Only the important monuments are being given the priority and
smaller monuments are being avoided. This situation shouldn’t arise at a World Heritage site. Again, these things can be improved. Overall, the works are being done properly trying to maintain the traditional system and retain the authentic value of a heritage building.

For recommendation, the first recommendation will be to clear the debris and materials that are spread around the space of the reconstruction site. There should be a uniform system of reconstruction. Though there are different stakeholders, the working pattern should be uniform that will make easier to work and also to analyse the work. DOA the National governing body should be more serious towards reconstruction of smaller heritage monuments too. There should be proper supervision from DOA officials in every reconstruction site. The worst part of our reconstruction process is we don’t document properly. This is one of the serious problems. This should be improved. Every work should be documented form start to completion. Also, there mustn’t be any political interference in these projects. These heritage building shouldn’t be used by Political parties as a key to make a positive impact among people. Awareness programs should be done more regarding heritage conservation and protection especially among Youths.

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KVPT. (2018).


Olson, L. (2010, september). TALEJU TEMPLE: A FITTING TRIBUTE TO GODDESS TALEJU BHAWANI.


UNESCO. (2019).


1. General description to the Monument Zone

1.1. World Heritage attributes, boundary and buffer

Pashupati Area refers to area around Shree Pashupatinath Temple along the bank of Bagmati river. Pashupatinath Temple is considered to be one of the most sacred places in Hinduism. Home to the famous Pashupatinath Temple, the area has numerous significant religious structures such as Guheshwori, Jayabageshwori, Bhuwaneshwori, Bankali, Bishwarupa and Gorakhnath among others. Pashuptikestra is located in the bank of holy Bagmati river in the ancient Deupatan town of present-day Kathmandu.

The main temple of Shree Pashupatinath, dedicated to Lord Shiva, is a two-tiered pagoda styled temple that resides on square platform. Four main doors leading to the temple are covered in silver sheets. The golden pinnacle is at height of 23.7m from the base over the Garbagriha of the temple. Pashupati Area is home to 492 monuments of various sizes. Along with temples, the area is also home to forests, kundas and ghats.

Boundary of Pashupati Conserved Monument Zone has been demarcated as follows:

**East:** West of Tribhuvan International Airport including Shivapuri Baba Aashram

**West:** Road beyond outer wall of Bhandarkhal - Sifal ground - West sattal of Jaybageshwori - Ring road - Mitrapark chowk

**North:** Road from Mitrapark to Gaurighat - Gaurighat balmasan - 20m north of Bagmati riverbank - North Bahini above Guheshwori Temple

**South:** Gaushala Ratopul road till way to Panikotol - Gaushala Chowk – Ring road till Tilganga barracks
1.2. **Short historic description**

There are various legends surrounding the origin of Shree Pashupatinath Temple. Most credit Gopal dynasty for the origin of the main temple. It is said that wish fulfilling cow: *Kamadhenu* poured milk on a spot-on top of soil and Shivalinga was discovered beneath it. Temple was then erected on the present location of Shree Pashupatinath. The significance of the area continued to grow during *Licchavi* and *Malla* period as settlement grew around the area and temple attracted pilgrims from surrounding countries. The main temple is believed to be erected by *Licchavi* King Prachanda Dev after the previous building was consumed by termites. The temple has history that can be traced back to at least 469 B.C. Earliest inscriptions dating back to 5th Century AD have been recorded.

Various archaeological evidences suggest that Pashupati Area had been a popular holy pilgrim since the *Licchavi* Era. The Pashupati area continued carry significant religious importance through various historical periods. *Deopatan* town of Ancient Kathmandu is believed to have been in existence from the *Licchavi* period and continued to grow. Under *Licchavi, Malla* and *Shah* rule, several monuments were added in the area and reconstructions and reconstructions of various era have helped Pashupati Area reach its current stage.

1.3. **Rehabilitation history**

There is recorded history of rehabilitation of Pashupati Area in modern times from damages sustained over time.

a. *'Upatyakanchal Tatkalim Sudharsamiti'* (2014-2016 B.S.)

   It was established by King Mahendra and did following works on Pashuapti Area:
   - Height of west door was increased
   - Mahendrasahara dharmashala was established
   - Plasters were added on temples
   - Muktimandap, Basiuki and Kolilingeshwor Temples were renovated
   - Guheshwori complex was developed

b. Masterplan for the Conservation of Cultural Heritage in the Kathmandu Valley, 1977 AD

   This effort was led by UNESCO and recommended following works:
   - Rehabilitation of sattals and monuments of Deupatan Area
   - Management of settlement with reclamation of land
   - Comprehensive masterplan of the area

c. Conceptual Masterplan, 2056 BS

   Conceptual Masterplan of Pashupati Area was prepared in 2052 B.S. and brought into effect in 2056/57 B.S. The time period allocated for its implementation was 10 years. This masterplan divided 264 Hectares of land as Pashupati Area into 3 zones: Core zone, Consonant zone and Continuum zone. Phase wise implementation of periodic action plans was proposed for proper conservation of the core area.

2. **Overall impact of the Gorkha Earthquake**

2.1. **Response and rehabilitation planning**

The earthquake of 2015 had a magnitude of 7.6 on the rector scale, was a major earthquake after 82 years. (DoA, 2017). The World Heritage Sites on Kathmandu Valley were among the most affected locations. The main temple of Shree Pashupatinath stood
strong during the earthquake, however, several other monuments in Pashupati Area were affected by the earthquake. DoA reports that within the protected monument zone, out of forty-four classified monuments, six monuments had collapsed and twenty-one monuments were partially damaged (DoA, 2017). Since the earthquake, various stakeholders including Pashupati Area Development Trust (PADT), Nepal Reconstruction Authority (NRA) and Department of Archaeology (DoA) have been active in rehabilitation of the damaged monuments. Documentation and damage assessments have been done at various levels and PADT has already completed reconstruction of several damaged monuments under fund from Government of Nepal.

The preliminary report published by DoA showed following effect of earthquake on monuments:

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Monuments</th>
<th>Condition</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jayabageshwori Temple</td>
<td>Partially Damaged</td>
<td>Jayabageshwori</td>
</tr>
<tr>
<td>2</td>
<td>Mahamritunjay Temple</td>
<td>Partially Damaged</td>
<td>Pashupati Area</td>
</tr>
<tr>
<td>3</td>
<td>Narisimha Temple</td>
<td>Partially Damaged</td>
<td>Pashupati Area</td>
</tr>
<tr>
<td>4</td>
<td>Agni Matha</td>
<td>Partially Damaged</td>
<td>Pashupati Area</td>
</tr>
<tr>
<td>5</td>
<td>Tamreshwor Mahadev Temple</td>
<td>Partially Damaged</td>
<td>Pashupati Area</td>
</tr>
<tr>
<td>6</td>
<td>Chandra Binayak</td>
<td>Partially Damaged</td>
<td>Pashupati Area</td>
</tr>
<tr>
<td>7</td>
<td>Satyanarayan</td>
<td>Partially Damaged</td>
<td>Hadigaon</td>
</tr>
<tr>
<td>8</td>
<td>Sattal of Bhatbhateni</td>
<td>Partially Damaged</td>
<td>Hadigaon</td>
</tr>
<tr>
<td>9</td>
<td>Guheswari Temple</td>
<td>Partially Damaged</td>
<td>Guheswori</td>
</tr>
<tr>
<td>10</td>
<td>Sattal of western side of Guheswari temple</td>
<td>Partially Damaged</td>
<td>Guheswori</td>
</tr>
<tr>
<td>11</td>
<td>Sattal of eastern side of Guheswari temple</td>
<td>Partially Damaged</td>
<td>Guheswori</td>
</tr>
<tr>
<td>12</td>
<td>Sattal of north side of Guheswari temple</td>
<td>Partially Damaged</td>
<td>Guheswori</td>
</tr>
<tr>
<td>13</td>
<td>Five Shiva temple inside the White sattal of Guheswari</td>
<td>Partially Damaged</td>
<td>Guheswori</td>
</tr>
<tr>
<td>14</td>
<td>Vishwarup Temple</td>
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<td>Radhakrishna temple</td>
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<td>16</td>
<td>Eight Shiva temple of Mirkasthali- Among them two are completely collapsed</td>
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<td>17</td>
<td>Ram Sita and Laxman temple</td>
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<td>18</td>
<td>Nine Shiva temples in the front of the Vishwarupa temple</td>
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<td>Gorakhnath Temple</td>
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<td>Shivaparvati temple in the front of Gorathnath temple</td>
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<td>Bhandarghar, Gorakhnath temple complex</td>
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<td>Ram temple</td>
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<td>Ram kuti</td>
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<td>Laxmannarayan temple</td>
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<td>Ram temple</td>
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<td>Two Shiva temple close to nanak sattal west of Bagmati river</td>
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<td>32</td>
<td>Nanak sattal</td>
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<td>House in the backside of the shiva temple</td>
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<td>36</td>
<td>Brishasarma around Panchadeval</td>
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<td>Three shiva temple of Bhasmeswor chowk</td>
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<td>Guruju sattal</td>
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<td>Shiva temple in the north of Pashupati complex</td>
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<td>Surya temple, close to Lal Ganesh</td>
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<td>Jitjungaparkaseswor sattal and temple</td>
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<td>Sattal of Kiratishwor temple</td>
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<td>Kiratishwor Sangeet ashram</td>
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<td>Kiratishwor Yangasala</td>
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<td>63</td>
<td>Four Shiva temple of Gaurighat</td>
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<td>64</td>
<td>Shiva temple of Guheswori</td>
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<td>Shiva deval (4)</td>
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<td>Shiva deval (5)</td>
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<td>Shiva deval (11)</td>
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<td>Shivalinga deval (37,38, 39, 40)</td>
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<td>Sattal within the complex of Visworup</td>
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<td>Shiva devals (3)</td>
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<td>Taraprakasesworo temple and sattal within complex</td>
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<td>Shivalaya devals and sattal</td>
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<td>Sri Shankaracharya Math and Deval</td>
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<td>Sattal</td>
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<td>Shiva deval (3)</td>
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<td>Shiva deval (8)</td>
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<td>Shiva deval (9)</td>
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<td>Shiva deval (14)</td>
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<td>Shivalaya deval (14)</td>
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<td>Shivalaya deval (18, 19)</td>
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<td>Shivalaya deval (20)</td>
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<td>Shivalaya deval (21)</td>
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<td>Shivalinga deval (41)</td>
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<td>Shiva deval (24)</td>
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<tr>
<td>140</td>
<td>Shivalinga deval (29)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>141</td>
<td>Shivalinga deval (30)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>142</td>
<td>Shivalinga deval (31)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>143</td>
<td>Shivalinga deval (32)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>144</td>
<td>Sribadri Bhakteshwori temple</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>145</td>
<td>Sattal</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>146</td>
<td>Sribhairav Vishnu temple</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>147</td>
<td>Shivalinga deval (36)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>148</td>
<td>Shiva deval (On the wall of across Pashupati temple)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>149</td>
<td>Shivalinga deval. Across Pashupati temple</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>150</td>
<td>Shivalinga deval</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>151</td>
<td>Shivalinga deval (Ram Mandir complex)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>152</td>
<td>Shivalinga deval (Ram Mandir complex)</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>153</td>
<td>Sribatsaleswor</td>
<td>Partially Damaged</td>
<td>KMC 8, Aryaghat, Kathmandu</td>
</tr>
<tr>
<td>154</td>
<td>Sripanchadeval</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>155</td>
<td>Sri Anantanarayan</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>156</td>
<td>Shivalinga deval</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>157</td>
<td>Sri Kameswor Mahadev</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>158</td>
<td>Sattal</td>
<td>Partially Damaged</td>
<td>KMC 8, Mrigasthali, Kathmandu</td>
</tr>
<tr>
<td>159</td>
<td>Saraswati temple and Sattal</td>
<td>Partially Damaged</td>
<td>KMC 8, Bhasmeswor Ghat, Kathmandu</td>
</tr>
<tr>
<td>160</td>
<td>Bhairav in front of Sri Batsaleswor</td>
<td>Partially Damaged</td>
<td>KMC 8, Bhasmeswor Ghat, Kathmandu</td>
</tr>
<tr>
<td>161</td>
<td>Sri Mangalagauri temple and Sri Gorakhnath temple</td>
<td>Partially Damaged</td>
<td>KMC 8, Bankali, Kathmandu</td>
</tr>
<tr>
<td>162</td>
<td>Bhuwaneshwori temple and sattal</td>
<td>Partially Damaged</td>
<td>Bhuvaneswori Tole</td>
</tr>
<tr>
<td>163</td>
<td>Shiva deval</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>164</td>
<td>Dhandho Chaitya</td>
<td>Partially Damaged</td>
<td>KMC 7, Chabahil, Kathmandu</td>
</tr>
<tr>
<td>165</td>
<td>Charumati Bihar</td>
<td>Partially Damaged</td>
<td>KMC 7, Chabahil, Kathmandu</td>
</tr>
<tr>
<td>166</td>
<td>Baudha Chaitya</td>
<td>Partially Damaged</td>
<td>KMC 7, Chabahil, Kathmandu</td>
</tr>
<tr>
<td>167</td>
<td>Sri Tamreshwor Mahadev</td>
<td>Partially Damaged</td>
<td>KMC 8, Sifal, Kathmandu</td>
</tr>
</tbody>
</table>
ANNEX 8

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Monuments</th>
<th>Condition</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>168</td>
<td>Mahamritunjay Mahadev</td>
<td>Partially Damaged</td>
<td>KMC 8, Jayabageshwori, Kathmandu</td>
</tr>
<tr>
<td>169</td>
<td>Bhimsen temple</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>170</td>
<td>Bhimsen deval of outside of Pashupati temple entrance gate</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>171</td>
<td>Guruju Sattal</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>172</td>
<td>Shankar Narayan Sattal</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>173</td>
<td>Sri Kailash Badrinath Prabhuti Sadabarta private Guthi</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>174</td>
<td>Sattal outside of Pashupati temple complex (Saptasri)</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
<tr>
<td>175</td>
<td>Sri Bhuwareswor Mahadev and Jagatguru Sri Sri 1008, Sri Shankaracharya temple</td>
<td>Partially Damaged</td>
<td>KMC 8, Pashupati Temple Complex</td>
</tr>
</tbody>
</table>

2.2. Damage assessment of monuments
The monuments within the preserved monument zones were recorded to have undergone restoration process as mentioned below:

<table>
<thead>
<tr>
<th>Completed</th>
<th>To be completed soon</th>
<th>Ongoing</th>
<th>Yet to start</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Bhasmeswar Sattal</td>
<td>2. Guheswari Sattal-west</td>
<td></td>
<td>2. Vajra Ghar</td>
</tr>
<tr>
<td>5. Guheswari Sattal-Northeast</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Pode Pati</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7. Rammandir-Bagmati east</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Amar kanteswar</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>9. Sures Kanteswar</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. Shankaracharya Temple (Bhuteswar)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11. Kulananda Jha Sattal</td>
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<tr>
<td>12. Ghyampe Pati</td>
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</tr>
<tr>
<td>13. Taraprakaseswar Temple</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>14. Kotilingeswar Temple</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>15. Bagmati Riverbank Sattal, Guheswari</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Guheswari Temple</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Bhansar Tahabil Office building</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Rudra Gadeswar sattal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Guheswari Sattal North</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>20. Gorakhnath Pakshala</td>
<td></td>
<td></td>
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<tr>
<td>21. Yoginaraharinath Sattal</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>22. Shankarnarayan Sattal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Kirateswar Sattal</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>24. Shivalyayas of Mrigasthali (8 nos.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25. Dyochnen of Dathu tole.</td>
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</tbody>
</table>
2.2.1. BANKALI SATTAL

A. Introduction of Project (History of the Monument)
Bankali Sattal is located in the southern part of Pashupati Protected Monument Zone in the premises of Bankali Garden which has both religious and cultural importance. The Sattal, which literally means rest house, was built to facilitate the devotees in their religious and cultural activities.

During the 2015 earthquake, the sattal suffered partial damaged. The upper part of the western wall section was collapsed, and other masonry wall sustained several cracks.

B. Dismantling, Salvaging Process and Reason
The documentation of the Banakali Sattal was carried out by the Pashupati Area Development Trust (PADT) before the dismantling process. Existing Drawings were prepared by the PADT and those drawings were approved by the Department of Archaeology. The dismantling process were carried out manually by a team of skilled manpower hired by the contractors as per the agreement made complying the Government of Nepal, Public Procurement Act. All the reusable materials from the salvage were stored safely by the Pashupati Area Development Trust. Those structural and decorative materials were properly documented and numbered before use to make sure proper reuse of those materials at the correct place.

C. Description of Foundation
The existing foundation was discovered to be shallow and damaged during the structural assessment. Therefore, the foundation was excavated, and the reconstruction was done right from the foundation itself. The new foundation was laid over the old foundation and it was kept original to the old foundation in order to preserve the authenticity of the monument. However, the depth of the foundation was increased as required by the structural assessment to ensure the structural integrity of the sattal after reconstruction.

D. Reuse of Existing materials
The intact existing materials were properly stored and reused as far as practicable. Only the critically damaged structural and decorative elements were replaced with new materials with minimum altercations. However, the altercations were done by the skilled artisans under the supervision of site engineer from Pashupati Area Development Trust. However, the structural assessment indicated that the existing mud mortar would significantly impact the structural integrity of the reconstructed sattal, hence the reconstruction of the sattal was done using lime surkhi mortar.

E. Restoration Process
Once the proper documentation and existing drawings were made by Pashupati Area Development Trust and verified by Department of Archaeology, the contractors were hired by Pashupati Area Development Trust as per the rule of Government of Nepal based on closed envelop system. The contracts signed contained all provisions to ensure the proper and timely reconstruction process. The restoration works were done on site. The contractors hired and utilized skilled manpower for brickwork, carving works and traditional detailing under such supervision to obtain superior restoration output.
The ground floor of the sattal was occupied illegally and was partitioned for residential purposes. After the restoration, the sattal is now reopened for public use and cultural activities as it was originally built for returning life to the monument.

F. Budget Allocation/Resources
While the restoration process was funded by Government of Nepal, National Reconstruction Authority (NRA) financially, the Pashupati Area Development Trust and Department of Archaeology were responsible for the mobilization and supervision of the human resources and the restoration process.

G. Practical Lessons and Problems faced during Restoration

H. Supervision and Monitoring Process
The restoration process were carried out under the regular supervision of experts hired by the contractors, from Pashupati Area Development Trust and from Department of Archaeology independently in order to ensure proper restoration without compromising the integrity of the monument and to confirm the reconstruction works were completed on time.

I. Conclusion
The final bill and Work Completion Report has been prepared and Submitted to Pashupati Area Development Trust as the scheduled work has been completed as of now.

J. Photographs of each steps of restoration process.

2.2.2. BHASMESWAR SATTAL

A. Introduction of Project (History of the Monument)
Bhasmeshwar Sattal is located in the premises of the Bhasmeshwar Cremation Area. Bhasmeshwar Sattal has an architecture consisting courtyard system. The building is used as a rest house and the name Sattal itself suggests same meaning. It is believed to be built in the 1800 B.S. A way to bagmati river can be seen in the east side of the sattal. Similarly, a pati is on the south side, a road on west and temples are on the northern direction of the sattal. Corrugated Galvanised Iron (CGI) sheet is used as the roofing material of the sattal. The dimensions of the building are Length x Breadth = 25’3”x15’.

After the 2015 earthquake’s damages the sattal have been restored completely into its original style.

The documentation of Bhasmeshwar Sattal was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) obtained drawings from
consultants and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings only by the consultants. Bills of Quantity was prepared by PADT with reference to drawings according to the existing structure and approved by Department of Archaeology. The wall sections and wood detailing were similar to the existing structure.

K. Dismantling, Salvaging Process and Reason
The dismantling was carried out by contractors hired by Pashupati Area Development Trust according to regulations of Government of Nepal. The dismantling of the sattal was done manually. The salvaged materials were marked and stored by Pashupati Area Development Trust.

L. Description of Foundation
The foundation of the structure was damaged by the earthquake and thus was excavated. The sattal was found to have shallow foundation. The foundation was reconstructed using reusable bricks from the dismantled structure. The new foundations were reconstructed, similar to the earlier one.

M. Reuse of Existing materials
Brick obtained from dismantling the previous structure were reused in the foundation and plinth of the sattal. Other salvaged materials were not reusable and thus new materials were used during reconstruction of the sattal.

N. Restoration Process
The bodies responsible for the reconstruction of Bhasmeshwar Sattal were Pashupati Area Development Trust and Department of Archaeology. All the drawings and reconstruction were carried out through Pashupati Area Development Trust, with approval from Department of Archaeology. The contractors were selected through tender as per rules of Government of Nepal. The contractors were given sole responsibility of dismantling and reconstruction. Skilled manpower for wood carving works were hired from Bhaktapur. The masonry works were managed by the contractor. There was no community participation in the reconstruction of the sattal.

O. Budget Allocation/Resources
The project cost was Rs. 5,75,80,865.76 and was funded by Government of Nepal. Pashupati Area Development Trust was responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

P. Practical Lessons and Problems faced during Restoration
Q. Supervision and Monitoring Process
Supervision and monitoring were carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology was responsible for approval of drawings and reconstruction works.

R. Conclusion
The reconstruction of Bhasmeshwar Sattal was successfully carried out with coordination between Pashupati Area Development Trust and Department of Archaeology. New materials replaced the damaged ones during the reconstruction. The structural drawings
were not prepared. Work completion report and has been prepared. Financial audit of the reconstruction has been carried out.

S. Photographs of each steps of restoration process

2.2.3. PANDRA SHIVALAYA SATTAL

A. Introduction of Project (History of the Monument)
Pandra Sivalaya Sattal is considered to be built for the priest of the Pandra Shivalaya’s (fifteen temples dedicated to Shiva) as a residence. Being a residence for the priest the purpose of the building’s name being sattal is still in confusion. These temples of Siva are just in front the sattal.
The sattal’s roof did not suffer any major damages during 2015 earthquake because of previous timely conservation approaches to it. Other general damages that came during the earthquake have been restored to the original state. A proposal was presented by the Pashupati Area Development Trust for the conservation of this sattal and after the approval grant by the Department of Archaeology, the conservation work was initiated. At present, all the general damaged occurred have been restored.

B. Dismantling, Salvaging Process and Reason
C. Description of Foundation
D. Reuse of Existing materials
E. Restoration Process
F. Budget Allocation/Resources
G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
I. Conclusion
J. Photographs of each steps of restoration process.

2.2.4. CHAUTARIYA SHIVALAYA

A. Introduction of Project (History of the Monument)
Two Chautariya Shivalayas are located in the southern side of Pashupati Temple Complex, just outside the southern gate and to the western side of Bhasmeshwor. It was partially collapsed as a result of 2015 earthquake.
B. Dismantling, Salvaging Process and Reason
The damaged and vulnerable structure of both the Chautariya Shivalayas were dismantled with the help of a team of Nepal Army and Armed Police Force immediately after the earthquake. The dismantling process was initiated by the Pashupati Area Development Trust (PADT) under a close supervision of site engineers. The documentation of objects of archeological important and the structural members were carried out as an inventory by the representatives from Department of Archaeology, GoN.

C. Description of Foundation
The original stone masonry foundation was found to be intact and sound during structural assessment post-earthquake. Therefore, the restoration was carried out only above the plinth level without disturbing the foundation.

D. Reuse of Existing materials
Most of the original materials were reusable and were used at the maximum capacity. Partially damaged members were repaired by skilled craftsmen and only the totally damaged members were replaced with new but the same material.

E. Restoration Process
The restoration process was carried out by the contractor hired by the Pashupati Area Development Trust as per the provision of Government of Nepal. The contractors hired skilled craftsmen, artisans and traditional builders according to terms of the contract and restoration was carried out accordingly on the site itself. The skilled workmen carried out the works related to highly dressed stone masonry and stone cornices. During the restoration, regular quality checking was carried out to ensure the proper consideration of authenticity and integrity of the monument. Most of the monument was restored using the old salvaged materials with an exception to a few damaged elements which was replaced accordingly. This replacement has been well documented. Apart from these changes, wooden lintel bands and posts were added for extra structural integrity of the monument.

F. Budget Allocation/Resources
The fund for the reconstruction was provided by the Nepal Reconstruction Authority, GoN. The project mobilization and human resources including hiring of contractors were done by Pashupati Area Development Trust.

G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
The restoration work was periodically checked and verified by a team of site engineers and archeological experts from Pashupati Area Development Trust (PADT) and verified by the Department of Archaeology, GoN to warrant the proper reconstruction of both the Shivlaya temples.

I. Conclusion
Upon the completion of the project as per the schedule, the master bill, financial bill and the work completion report was submitted to the Pashupati Area Development Trust and is waiting for approval and audit from the Department of Archaeology, GoN.
J. Photographs of each steps of restoration process.

2.2.5. GUHESWARI SATTAL – NORTHEAST

A. Introduction of Project (History of the Monument)

B. Dismantling, Salvaging Process and Reason

The dismantling process was carried out non-mechanically by a team of skill workers hired by the contractors and no mechanical equipment were used. However, before this, drawings and documentation were prepared by the engineers of the Pashupati Area Development Trust and was verified by the Department of Archaeology. The dismantled
structural and decorative wooden elements and artistic windows were stored and were repaired for reuse by trained craftsmen.

C. Description of Foundation
The existing foundation of the sattal was made up of load bearing brick masonry with strap footing, which was found damaged during the 2015 earthquake. The structural assessment found it essential for this foundation to be replaced. Therefore, the existing foundation was excavated and replaced with similar new one with no major changes, however, using new materials.

D. Reuse of Existing materials
Although most of the existing structural members were found to be damaged and had to be replaced, the non-structural and decorative members such as carved windows were properly stored and repaired by skilled craftsmen for reuse. The replaced wooden members were crafted by local artisans hired by the contractor under the monitoring of archeologists from Department of Archeology, GoN.

E. Restoration Process
The restoration works of sattal at Northeastern side of Guheswari sattal was carried out by the contractor hired by Pashupati Area Development Trust (PADT) through a closed envelop system as per the provision of Government of Nepal. As per the terms of contract, the contractor hired a team of skilled workers, craftsmen, mason and artisans who carried out the overall construction project under the close monitoring of engineers and archeologist from PADT and DOA respectively.

As mentioned earlier, most of the wooden structural elements were damaged badly, hence had to be replaced by new similar materials. In addition, the non-structural wooden materials too had to be repaired before reuse. This replacement was carried out by the skilled craftsmen in accordance with the documentation done before the demolition and in consultation with archeological experts. The reconstruction was carried out right from the foundation up. All the constructions were done same as the existing monument, with minimum to no altercations done to architectural and structural details.

F. Budget Allocation/Resources
The financial resources for the reconstruction was provided by the National Reconstruction Authority which was mobilized and maintained by Pashupati Area Development Trust (PADT). The management of tendering process, contract administration and implementation were also carried out by PADT with occasional technical support by Department of Archeology, GoN.

G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
The reconstruction works of Guheswari Northeastern sattal was closely and periodically monitored by team of experts including site engineers from PADT and archeological experts from Department of Archeology in order to ensure the preserve the integrity and authenticity of the sattal as a monument.
I. Conclusion
The reconstruction works of the sattal has been completed as per the schedule with the preparation and submission of the financial and work completion reports to Pashupati Area Development Trust. The final financial and quality audit has been done and approved by the Department of Archeology, GoN.

J. Photographs of each steps of restoration process.

2.2.6. PODE PATI

A. Introduction of Project (History of the Monument)
Pati has a literal meaning of a rest house. Pode pati is also such small and beautiful rest house that for the public use and is located on the southwest side of main Pashupati temple complex and on the west side of Vajraghar.

During the 2015 earthquake, the pati suffered partial damages. Then the Pashupati Area Development Trust undertook the conservation of this pati and now it completely restored to its original state. The documentation of Pode Pati was carried out by Pashupati Area
Development Trust. Pashupati Area Development Trust (PADT) prepared the drawings before starting the restoration of Pode Pati.

**T. Dismantling, Salvaging Process and Reason**
The structure was damaged partially by the earthquake. The damaged portion included roof and a beam supporting the roof. The dismantling of damaged portion only was carried out by Pashupati Area Development Trust. The salvaged materials were stored in store of Pashupati Area Development Trust. The salvaged materials were marked before storing for reuse.

**U. Description of Foundation**
The foundation of the structure was not damaged by the earthquake and thus no dismantling and excavation was carried out.

**V. Reuse of Existing materials**
The portion of Pode Pati that remained in its original form was not dismantled. The dismantled portion were only reconstructed. Materials on the roof, that was damaged by the earthquake, was reused.

**W. Restoration Process**
The body responsible for the restoration of Pode Pati was Pashupati Area Development Trust. All the work of restoration process was carried out by the trust. As the structure sustained damage from earthquake only on the roof, other portion of the structure were not altered. One beam on the roof of the structure was replaced as it was no longer reusable. All other materials were reused as it existed earlier. Skilled manpower was hired for restoration of Pode Pati. There was no community participation in the restoration of Pode Pati.

**X. Budget Allocation/Resources**
The project cost was approximately Rs. 5,00,000 and was funded by Government of Nepal. Pashupati Area Development Trust was responsible for the mobilization of manpower, resources and funds.

**Y. Practical Lessons and Problems faced during Restoration**

**Z. Supervision and Monitoring Process**
Supervision and monitoring were carried out by Pashupati Area Development Trust.

**AA. Conclusion**
The restoration of Pode Pati was successfully carried out by Pashupati Area Development Trust. All the original materials, with exception of beam on roof, were used. Work completion report has been prepared.

**BB. Photographs of each steps of restoration process.**

2.2.7. RAMMANDIR - BAGMATI EAST

**A. Introduction of Project (History of the Monument)**
Ram Mandir is the temple dedicated to Lord Ram. This temple is situated on the east bank of bagmati opposite of Bhasmeshwar Crematorium. The temple is believed to be
constructed in the 19th century and had the same look that exists at present, but the image that is placed in the sanctum is from the ancient period.

The temple suffered less and general damages during the 2015 earthquake, which include the fallen upper part of the portico of the temple. Cracks were also observed in the arched front entrance of the temple and also on the northern wall.

Conservation of the Ram Mandir is completed at present on the approval by Department of Archaeology (DOA). DOA also provided the essential technical support for the conservation of the temple. The conservation was possible by the initiation done by Pashupati Area Development Trust (PADT), financial support of the donors for the conservation task and Guthi Sansthan was too involved in the conservation. The materials used for the restoration of the temple were the same as used in the initial form.

B. Dismantling, Salvaging Process and Reason
C. Description of Foundation
D. Reuse of Existing materials
E. Restoration Process
F. Budget Allocation/Resources
G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
I. Conclusion
J. Photographs of each steps of restoration process.

2.2.8. SURESH KANTESHWAR AND AMAR KANTESHWAR

A. Introduction of Project (History of the Monument)
The documentation of Sures Kanteshwar and Amar Kanteshwar temples was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) prepared drawings and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings only, with reference to the original structure of the temple. Bills of Quantity was prepared by PADT with reference to drawings according to the existing structure.

B. Dismantling, Salvaging Process and Reason
The dismantling was carried out by contractors hired by Pashupati Area Development Trust according to regulations of Government of Nepal. The dismantling of the temples was done manually by contractors under the supervision of Pashupati Area Development Trust. All of the materials were salvaged and marked as most of the materials were reused in the reconstruction.

C. Description of Foundation
The foundation of the structure was not damaged by the earthquake and thus was not excavated. The reconstruction of superstructure was only carried out.
D. **Reuse of Existing materials**
The bricks from the dismantled structure were reused in portion below the dome of the temples. The wooden structures and bricks on the dome of the temples could not be reused. The Gajur from the original structure was also reused in top of the domes. No alterations were done on superstructure of the temples.

E. **Restoration Process**
The bodies responsible for the reconstruction of Sures Kanteshwar and Amar Kanteshwar temples were Pashupati Area Development Trust and Department of Archaeology. All the drawings and reconstruction were carried out through Pashupati Area Development Trust, with approval from Department of Archaeology. The contractors were selected through tender as per rules of Government of Nepal. The contractors were given sole responsibility of dismantling and reconstruction. Skilled manpower for wood carving works and masonry works were managed by the contractor. New bricks were used in reconstruction of the dome. Similarly, woods on the temples were also new as old ones could not be reused. Rest of the structure had use of bricks from dismantled temples.

There was no community participation in the reconstruction of the temples.

F. **Budget Allocation/Resources**
The project cost was Rs. 66,22,820.79 and was funded by National Reconstruction Authority, Government of Nepal. Pashupati Area Development Trust was responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

G. **Practical Lessons and Problems faced during Restoration**

H. **Supervision and Monitoring Process**
Supervision and monitoring were carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology was responsible for approval of drawings and reconstruction works.

I. **Conclusion**
The reconstruction of Sures Kanteshwar and Amar Kanteshwar Temples was successfully carried out with coordination between Pashupati Area Development Trust and Department of Archaeology. The structural drawings were not prepared. Work completion report has been prepared. Quality and financial audit are remaining.

J. **Photographs of each steps of restoration process**

2.2.9. **SHANKARACHARYA TEMPLE (BHUTESHWAR)**

A. **Introduction of Project (History of the Monument)**
The documentation of Shankaracharya Temple was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) prepared drawings and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings only, with reference to the original structure of the temple. Bills of Quantity was prepared by PADT with reference to drawings according to the existing structure. Some designs of the roof and window were
change from the previous one and were approved by Department of Archaeology for
conformity with attributes of World Heritage Site before the project went for tendering.

B. Dismantling, Salvaging Process and Reason
The dismantling was carried out by contractors hired by Pashupati Area Development
Trust according to regulations of Government of Nepal. The dismantling of the temple was
done manually. Most of the salvaged materials were not in good condition. Carved tudals
members from the temple were marked and preserved. Gajur of the temple was stored for
reuse during reconstruction process.

C. Description of Foundation
The foundation of the structure was damaged by the earthquake and thus was excavated.
The temple was found to have shallow foundation. The foundation was reconstructed
using new materials as materials from previous structures were not reusable. The new
foundations were reconstructed, similar to the earlier. However, the depth of the foundation
was increased as required by the temple.

D. Reuse of Existing materials
The old materials obtained from dismantling the temple was not in good condition and thus
were not reused. The only materials reused was Gajur of the original structure. No
alterations were done on superstructure of the temple.

E. Restoration Process
The bodies responsible for the reconstruction of Shankaracharya Temple (Bhuteshwar)
were Pashupati Area Development Trust and Department of Archaeology. All the drawings
and reconstruction were carried out through Pashupati Area Development Trust, with
approval from Department of Archaeology. The contractors were selected through tender
as per rules of Government of Nepal. The contractors were given sole responsibility of
dismantling and reconstruction. Skilled manpower for wood carving works and masonry
works were managed by the contractor. There was no community participation in the
reconstruction of the temple.

F. Budget Allocation/Resources
The project cost was Rs. 74,41,833 and was funded by National Reconstruction Authority.
Pashupati Area Development Trust was responsible for the mobilization of resources and
funds, subjected to approval from Department of Archaeology.

G. Practical Lessons and Problems faced during Restoration
According to Pashupati Area Development Trust, the major problem faced during the
reconstruction of the temple was late decision from Department of Archaeology.

H. Supervision and Monitoring Process
Supervision and monitoring were carried out by Pashupati Area Development Trust and
Department of Archaeology. Department of Archaeology was responsible for approval of
drawings and reconstruction works.

I. Conclusion
The reconstruction of Shankaracharya Temple was successfully carried out with
coordination between Pashupati Area Development Trust and Department of Archaeology.
New materials replaced the damaged ones during the reconstruction. The structural
drawings were not prepared. Work completion report and final bill has been prepared. Quality and financial audit are remaining.

J. Photographs of each steps of restoration process.

2.2.10. KULANANDA JHA SATTAL

A. Introduction of Project (History of the Monument)
Kulananda Jha Sattal is situated towards the western side of Pashupatinath temple. The Sattal is situated in front of Sankaracharya (Bhuteswar) Temple. The Sattal did not collapse but was severely damaged by the earthquake of 2015. The upper Southern portion of the Sattal was collapsed. The front wall was bulged out and many cracks were observed all over the structure.

The Sattal was completely dismantled after detail documentation. The restoration work has been already completed. The Sattal is restored in its original state. However, except some artistic reusable elements, all the wooden elements are replaced by new one and mud mortar is replaced by Lime Surkhi mortar. Pashupati Area Development Trust (PADT) is directly involved in restoration of the Sattal with total responsibility of funding and Department of Archaeology (DOA) provided required technical support.

B. Dismantling, Salvaging Process and Reason
C. Description of Foundation
D. Reuse of Existing materials
E. Restoration Process
F. Budget Allocation/Resources
G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
I. Conclusion
J. Photographs of each steps of restoration process.

2.2.11. GHYAMPE PATI

A. Introduction of Project (History of the Monument)
B. Dismantling, Salvaging Process and Reason
The existing drawings were prepared by the Pashupati Area Development Trust which was then approved by the Department of Archaeology. After this, the dismantling works were carried out by a team of skilled workers hired by the contractors as per the agreement with PADT. The whole dismantling process were scrutinized by the site engineers and representatives from PADT and Department of Archaeology, GoN. The salvage materials were then number properly and stored securely in the storage facilities provided by the PADT.
C. Description of Foundation
Upon structural assessment, it was found that the existing Brick masonry was found to be damaged. Therefore, the existing foundation was excavated and was replaced by a new foundation of same section and details. This was done under a close inspection of experts from PADT and Department of Archaeology.

D. Reuse of Existing materials
All structural and decorative elements and materials that could be reused were stored properly and securely after documentation and, therefore, were reused at the practical extent. However, some materials that got badly damaged and couldn't be reused were replaced with new but same material by a team of artisans and craftsmen under the supervision of site engineer from PADT and the experts from Department of Archaeology, GoN.

E. Restoration Process
The restoration work was carried out by the skilled manpower hired by the contractor as specified in the terms of contract. The reconstruction work was carried out on the site itself to warrant the proper work progress and quality of work. Local craftsmen and artisans were hired to recreate the damaged materials and replace them.

F. Budget Allocation/Resources
The reconstruction budget was allocated from the National Reconstruction Authority (NRA). However, the mobilization of the allocated budget and human resources was carried out by the PADT, with verification from Department of Archaeology, GoN.

G. Practical Lessons and Problems faced during Restoration

H. Supervision and Monitoring Process
The reconstruction process was periodically checked, and the quality of the reconstruction was verified by archeologists and engineers from Department of Archaeology and Pashupati Area Development Trust individually. This was done to ensure the authenticity of restoration of the pati.

I. Conclusion
The project has been completed as per the schedule. Master Bill, Financial Bill and Work Completion Report has been completed and been submitted to the PADT who forwarded them to the Department of Archaeology, GoN. However, the final financial audit and quality audit hasn’t been carried out by the DOA.

J. Photographs of each steps of restoration process.

2.2.12. TARAPRAKASHEWSWAR TEMPLE

A. Introduction of Project (History of the Monument)
Taraprakaseswar temple is situated inside the Kriyaputri premises. The temple was not collapsed but was severely damaged by the 2015 earthquake. Since the damaged structure was more vulnerable in the very busy Kriyaputri area, the temple was dismantled immediately after the earthquake by PADT with the help of Nepal Army. All the drawings and detail documentation were prepared by PADT and approved by DOA for the
conservation of the temple. The restoration of Taraprakaseswar temple has been completed. All the stone and almost reusable bricks were reused in the restoration work but all the woods were replaced by new and the mud mortar replaced by Lime mortar.

The documentation of Taraprakaseswar Temple was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) prepared architectural drawings and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings only, with reference to the original structure of the temple.

B. Dismantling, Salvaging Process and Reason
The dismantling was carried out by Nepal Army under the supervision of Pashupati Area Development Trust and Department of Archaeology. The dismantling of the temple was done by use of dozer. The salvaged materials were stored on the store of Pashupati Area Development Trust. Most of the salvaged materials were not in good condition. Some of the stones, Shivalinga and Gajur were salvaged for reuse during the reconstruction.

C. Description of Foundation
The foundation of the structure was damaged only on inner side by the earthquake. The foundation towards the peti (outer side) of the temple was found to be in good condition. The temple was found to have shallow foundation. The foundation on the inner side was reconstructed using new materials as materials from previous structures were not reusable. The new foundations constructed without any alterations.

D. Reuse of Existing materials
The old materials obtained from dismantling the temple was not in good condition and thus were not reused. The only materials reused were stone frame of the door, Shivalinga and Gajur of the original structure. No alterations were done on superstructure of the temple.

E. Restoration Process
The bodies responsible for the reconstruction of the temple were Pashupati Area Development Trust and Department of Archaeology. All the drawings and reconstruction were carried out through Pashupati Area Development Trust, with approval from Department of Archaeology. The dismantling was carried out by Nepal Army immediately after the earthquake. The contractors were given responsibility of reconstruction. Skilled manpower for wood carving works and masonry works were managed by the contractor. There was no community participation in the reconstruction of the temple.

F. Budget Allocation/Resources
The project cost was Rs. 42,16,328.45 and was funded by National Reconstruction Authority. Pashupati Area Development Trust was responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

G. Practical Lessons and Problems faced during Restoration
According to Pashupati Area Development Trust, the major problem faced during the reconstruction of the temple was late decision from Department of Archaeology.
H. Supervision and Monitoring Process
Supervision and monitoring were carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology was responsible for approval of drawings and reconstruction works.

I. Conclusion
The reconstruction of Taraprakaseswar Temple was successfully carried out with coordination between Pashupati Area Development Trust and Department of Archaeology. New materials replaced the damaged ones during the reconstruction. The structural drawings were not prepared. Work completion report and final bill has been prepared. Quality and financial audit are remaining.

J. Photographs of each steps of restoration process.

2.2.13. KOTILINGESHWAR TEMPLE

A. Introduction of Project (History of the Monument)
The Kotilingeshwor Temple is located inside the Pashupati Temple Complex just outside the main courtyard towards the south of the Chausatti Shivalaya premises. It is one of the oldest and the most important monuments of Pashupati area built by King Pratap Malla in the second half of 17th century AD. It is one of the very few multi-roof temples of Pashuapti having circular plan with three circular metal roofs. During the earthquake of 2015, the temple sustained partial damaged and the upper part of the temple was collapsed.

B. Dismantling, Salvaging Process and Reason
After the approval from Department of Archaeology, GoN for its entire restoration, PADT carried complete drawing and documentaion preparation before dismantling. The dismantling process was carried out manually and safely by the contractor under the close inspection of site engineer from PADT and archeologist from DOA. While dismantling all the wooden elements of the temple were well documented and stored by the PADT. Other important elements like Gajurs and carvings were stored extra carefully. The materials were marked starting from the North and in the clockwise direction.

C. Description of Foundation
The Foundation was left untouched as no damaged was registered during structural assessment. No alteration of the foundation was done, and the restoration was carried out above the plinth level only.

D. Reuse of Existing materials
Most of the carvings of woodwork were reused if they were not deteriorated. The damaged elements were replaced by a similar new by skilled artisans and craftsmen. Some of the bricks were reused in the inner wall. Mainly the mud mortar was replaced by lime surkhi mortar for additional strength.

E. Restoration Process
The restoration process was carried out by the contractors hired by the PADT as per the provision of Department of Archaeology, GoN. Craftsmen from Bungamati were hired by
the contractor as stated in the terms of contract to carry out the intricate and detailed construction works.

F. Budget Allocation/Resources
The budget for restoration works was allocated from the National Reconstruction Authority and the fund was managed by the Pashupati Area Development Trust. In addition, all the experts and human resources were managed and supervised by the PADT and DOA.

G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
The reconstruction works were carried out by a team of skilled workers hired by the contractors on the site itself. The damaged wooden members were replaced during the reconstruction process and were verified by archeologist from Department of Archaeology. The reconstruction process was periodically monitored and documented by the site engineers from the Pashupati Area Development Trust (PADT).

I. Conclusion
The final audit has been carried out and all the completion reports were prepared and submitted to the Pashupati Area Development Trust and were verified by the Department of Archaeology, GoN.

J. Photographs of each steps of restoration process.

2.2.14. BAGMATHI RIVERBANK SATTAL, GUHESWARI
A. Introduction of Project (History of the Monument)
The Sattal is located at the riverbank of Bagmati river north of Guheswari Temple. Although this sattal didn’t collapse or was severely damaged, lots of cracks were observed during the 2015 earthquake and, hence, proposed to be restored. Most of the materials were intact, so, these materials were used as it is in the same place as existing.

B. Dismantling, Salvaging Process and Reason
The drawing and documentation were prepared by a team of engineers from Pashupati Area Development Trust (PADT) and got it approved by the Department of Archaeology. The demolition and dismantling process was then carried out manually by the skilled manpower hired by the contractors as per the agreement with Pashupati Area Development Trust. The elements were properly numbered and documented before storing them in the store provided by PADT. All the dismantling and storage works were monitored by the representatives from PADT and DOA.

C. Description of Foundation
The excavation of the foundation was carried out as the foundation had sustained significant damage during earthquake of 2015. The foundation was found to be load bearing brick masonry with strap footing. The existing foundation was replaced by a new foundation of a similar detailing and technology. No major altercations were made during the construction.
D. Reuse of Existing materials
The existing wooden elements that were stored were used at maximum capacity and only very few wooden members that sustained major damaged were replaced by similar materials. Minor repairs were made on the existing decorative and structural wooden members such as beams, posts, struts, joists, etc.

E. Restoration Process
The restoration works were carried out by the contractor hired by the Pashupati Area Development Trust (PADT) under the provision of Government of Nepal. Several provisions were made on the contract that ensure proper and quality construction of the monuments. The construction works were carried out on the site itself. Construction works were done by a team of skilled workers and craftsmen hired by the contractors as stated in the terms of contract and were supervised by engineers and archeologists representing Pashupati Area Development Trust on a regular basis. The restoration process used the similar details and technology as the original and no changes were made to the architectural and structural details. Skills workers were hired by the contractor to recreate the carving works and the detailing to ensure authenticity in the restoration works.

F. Budget Allocation/Resources
The budget of reconstruction was funded by the National Reconstruction Authority and the financial resources was mobilized by the Pashupati Area Development Trust. PADT and Department of Archaeology were responsible for the reconstruction and all the technical supports.

G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
The restoration of Riverbank sattal at Guheswari was closely monitored and documented by coordination between representatives from both the Pashupati Area Development Trust and Department of Archaeology. The site engineers from PADT and archeologist from DOA were responsible for the supervision of the restoration process and to assist the team of contractor as well.

I. Conclusion
The restoration works of Bagmati Riverbank Sattal at Guheswari has been fully restored as per the schedule and completion reports and financial documents were submitted. The financial and quality audit were carried out by the Department of Archaeology as per the norms of Government of Nepal.

J. Photographs of each steps of restoration process.

2.2.15. GUHESWARI SATTAL – NORTH

A. Introduction of Project (History of the Monument)
B. Dismantling, Salvaging Process and Reason
The drawings and documentation were prepared by a team of engineers from Pashupati Area Development Trust and were approved by the Department of Archaeology before the Monument was dismantled. It was demolished by a team of skilled workers hired by contractors manually under a close monitoring of experts from PADT and DOA. The
demolition was carried out safely and all the important carvings, windows and crafts were securely numbered and documented and stored by the PADT.

**C. Description of Foundation**
The foundation was discovered to be damaged during structural assessment and, hence, was excavated for reconstruction. The load bearing strap footing was replaced by a new foundation over the existing one. No alterations or changes were made regarding the details and construction of the foundation.

**D. Reuse of Existing materials**
Most of the wooden elements of superstructure were damaged and couldn’t be reused. Therefore, more than 60% of the structural wooden members were replaced by similar materials. The rest 40% of the members were repaired by skilled craftsmen hired by the contractor and were supervised by the archeological experts from Department of Archaeology. However, almost all of the artistic windows and decorative elements were retrieved from the demolition were reused after repairs. All the replaced materials were similar to the existing materials. No alterations were made in the detailing of the structure.

**E. Restoration Process**
Pashupati Area Development Trust (PADT) hired contractors based on the closed envelop system under the provision made by the Government of Nepal. As per the contract, contractors were required to hire skilled workers, craftsmen and artisans for reconstruction works. Therefore, all the restoration works were carried out by a team of skilled manpower on the site itself in the presence and supervision of site engineers assigned by PADT and archeologist representing Department of Archaeology, GoN.

**F. Budget Allocation/Resources**
The budget for the reconstruction of Northern sattal of Guheswari Temple was received from National Reconstruction Authority and the financial mobilization responsibility was undertaken by Pashupati Area Development Trust. Almost all the logistics and technical support were carried out by PADT with occasional support and verification from the Department of Archaeology.

**G. Practical Lessons and Problems faced during Restoration**

**H. Supervision and Monitoring Process**
The construction process was regularly and periodically supervised by a team of experts including representative site engineer from Pashupati Area Development Trust and archeologist from Department of Archaeology to ensure the quality of the restoration. Through proper documentation and monitoring it was ensured that the restoration works were authentic to the original monument.

**I. Conclusion**
The restoration works of the northern sattal of Guheswari Temple Complex has been successfully completed and all the financial bill and work completion report has been prepared and submitted to the Pashupati Area Development Trust. The quality and financial audit was carried out and approved by the Department of Archaeology, GoN.

**J. Photographs of each steps of restoration process.**
2.2.16. GORAKHNATH PAKSHALA AND YOGINARAHARINATH SATTAL

A. Introduction of Project (History of the Monument)

Gorakhnath Bhansaghar is situated west of Gorakhnath temple and has been used as kitchen of Gorakhnath Yogies. The state of building was not good even before the earthquake and the 2015 earthquake further damaged the structure. The Yogi Naraharinath Ashram is situated in the Gorakhnath area and was once resided by great historian of Nepal, Yogi Naraharinath. The Ashram has been named after Yogi Naraharinath. The building was built in late 20th century and was damaged by the earthquake of 2015. The entire old structure was dismantled. All the wooden elements have been replaced by new wood and mud mortar has been replaced by Lime mortar in present restoration work. It is planned to use the building as library of Yoginaraharinath collection.

The documentation of Gorakhnath Pakshala and Yoginarharinath Sattal was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) obtained drawings from consultants and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings only by the consultants. Bills of Quantity was prepared by PADT with reference to drawings according to the existing structure and approved by Department of Archaeology. The wall sections and wood detailing were similar to the existing structure.

B. Dismantling, Salvaging Process and Reason

The dismantling was carried out by contractors hired by Pashupati Area Development Trust according to regulations of Government of Nepal. The dismantling of the structure was done manually. The salvaged materials were marked and stored by Pashupati Area Development Trust. Photographs of salvaged materials were taken for reference.

C. Description of Foundation

The foundation of the structure was damaged by the earthquake and thus was excavated. The structure was found to have shallow foundation. The foundation was reconstructed using reusable bricks from the dismantled structure. The new foundations were reconstructed, similar to the earlier one.

D. Reuse of Existing materials

Brick obtained from dismantling the previous structure were reused in the foundation of the structure. Five windows were reused in first floor of the structure as before. Other salvaged materials were not reusable and thus new bricks and wooden members were used during reconstruction of the sattal.

E. Restoration Process

The bodies responsible for the reconstruction of Gorakhnath Pakshala and Yoginarharinath Sattal were Pashupati Area Development Trust and Department of Archaeology. All the drawings and reconstruction were carried out through Pashupati Area Development Trust, with approval from Department of Archaeology. The contractors were selected through tender as per rules of Government of Nepal. The contractors were given sole responsibility of dismantling and reconstruction. The masonry and carving works were managed by the contractor. There was no community participation in the reconstruction of the temple.
F. Budget Allocation/Resources
   The project cost was Rs. 4,35,96,102.06 and was funded by Government of Nepal, National Reconstruction Authority. Pashupati Area Development Trust was responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

G. Practical Lessons and Problems faced during Restoration

H. Supervision and Monitoring Process
   Supervision and monitoring were carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology was responsible for approval of drawings and reconstruction works.

I. Conclusion
   The reconstruction of Gorakhnath Pakshala and Yoginarharinath Sattal was successfully carried out with coordination between Pashupati Area Development Trust and Department of Archaeology. New materials replaced the damaged ones during the reconstruction. The structural drawings were not prepared. Work completion report and has been prepared.

J. Photographs of each steps of restoration process.

2.2.17. SHANKARNARAYAN SATTAL

A. Introduction of Project (History of the Monument)
   The Sankarnarayan Sattal is situated towards the western side of Pashupatinath temple. The Sattal is joined with Mahasnanghar in its east side and the Gurju Sattal is situated just in front of Mahasnanghar. The state of Sankaracharya Sattal was not good even before the earthquake, as it was assessed by ASI team from India in 2014. The 2015 earthquake further damaged the structure. The Sattal was completely dismantled after detail documentation. All the reusable wooden elements are secured well and being reused in present restoration work. As in the Kulananda Jha Sattal mud mortar is replaced by Lime mortar in Sankarnarayan Sattal too. Pashupati Area Development Trust (PADT) is directly involved in restoration of the Sattal with total responsibility of funding and Department of Archaeology (DOA) provided required technical support.

   The documentation of Shankarnarayan Sattal was carried out by Pashupati Area Development Trust. Before the structure was dismantled, Pashupati Area Development Trust (PADT) had prepared drawings and sent to Department of Archaeology for approval. Prior preparation involved preparation of architectural drawings only, with reference to the original structure of the Sattal. Bills of Quantity was prepared by PADT with reference to existing structure, which was approved by Department of Archaeology.

B. Dismantling, Salvaging Process and Reason
   The structure was manually dismantled by Nepal Army under the supervision Of Pashupati Area Development Trust and Department of Archaeology. Majority of materials were not in good condition and thus could not be salvaged. Carved woods, which were in good condition were marked and stored appropriately for further use. Ma-appa bricks on the foundation were also salvaged.
C. Description of Foundation
The foundation of the Sattal was excavated. Sattal had sallow foundation only on three sides. Foundations were discovered during excavation on the East, North and South sides. The Sattal on the West side was not found during the excavation and was added by Pashupati Area Development Trust during the reconstruction process. The existing foundation on the East, North and South sides were excavated and reconstructed without any alteration from the original one.

D. Reuse of Existing materials
Reusable materials of the existing structure were salvaged and stored for further use. Ma-appa bricks, that was salvaged from the foundation were reused in reconstruction of the foundation. Most of the materials used in superstructure were new as old materials were not reusable. With exception of some carved woods, new materials were widely used for the reconstruction of superstructure.

E. Restoration Process
Pashupati Area Development Trust and Department of Archaeology were responsible for the reconstruction of Shankarnarayan Sattal. The reconstruction work was carried out by Pashupati Area Development Trust seeking approval from Department of Archaeology. The reconstruction was entirely managed by Pashupati Area Development Trust. The selection of contractor was done by tendering process as per the rules of Government of Nepal. Contractors were used for skilled carving and carpentry works along with production of Dachhi and Ma-appa bricks.

There was no community participation in reconstruction process. No damage and rehabilitation of site surrounding were recorded.

F. Budget Allocation/Resources
The project cost was Rs. 1,99,07,684.47 and was funded by National Reconstruction Authority. Pashupati Area Development Trust was responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

G. Practical Lessons and Problems faced during Restoration
The major problem faced, according to Pashupati Area Development Trust, during restoration process was late decision from Department of Archaeology.

H. Supervision and Monitoring Process
Supervision and monitoring were carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology was responsible for approval of drawings and reconstruction works.

I. Conclusion
The reconstruction was successfully carried out with coordination between Pashupati Area Development Trust and Department of Archaeology. Many new materials were used as much of salvaged materials were not reusable. The structural drawings were not prepared. Work completion report and final bill has been prepared. Quality and financial audit are remaining.

J. Photographs of each steps of restoration process.
2.2.18. KIRATESHWAR SATTAL

A. Introduction of Project (History of the Monument)
The documentation of Kirateshwar Sattal was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) prepared architectural drawings and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings and detailed estimate by PADT, with reference to the original structure of the temple.

B. Dismantling, Salvaging Process and Reason
The dismantling was carried out by contractors hired by Pashupati Area Development Trust as per rules of Government of Nepal. The dismantling of the temple was done manually. The salvaged materials were stored under the supervision of Pashupati Area Development Trust. Most of the salvaged materials were not in good condition. Bricks were salvaged for reuse in the foundation of the building.

C. Description of Foundation
The foundation of the structure was damaged by the earthquake and thus was excavated. The sattal was found to have shallow foundation.

D. Reuse of Existing materials
The old materials obtained from dismantling the temple was not in good condition and thus were not reused. The only materials reused were stone frame of the door, Shivalinga and Gajur of the original structure. No alterations were done on superstructure of the temple.

E. Restoration Process
The bodies responsible for the reconstruction of the temple were Pashupati Area Development Trust and Department of Archaeology. All the drawings and reconstruction were carried out through Pashupati Area Development Trust, with approval from Department of Archaeology. The dismantling was carried out by Nepal Army immediately after the earthquake. The contractors have been given responsibility of reconstruction. Skilled manpower for wood carving works and masonry works were managed by the contractor. The project is nearing completion. There was no community participation in the reconstruction of the temple.

F. Budget Allocation/Resources
The project cost is projected to be Rs. 4,26,74,624.92 and is being funded by National Reconstruction Authority. Pashupati Area Development Trust is responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

G. Practical Lessons and Problems faced during Restoration
According to Pashupati Area Development Trust, the major problem faced during the reconstruction of the temple was late decision from Department of Archaeology.

H. Supervision and Monitoring Process
Supervision and monitoring is being carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology was responsible for approval of drawings and reconstruction works.
I. Conclusion
The reconstruction of Kiratesshar Sattal is almost complete with coordination between Pashupati Area Development Trust and Department of Archaeology. The structural drawings were not prepared. Work completion report and final bill has not been prepared. Quality and financial audit are remaining.

J. Photographs of each steps of restoration process

2.2.19. SHIVALAYAS OF MRIGASTHALI

A. Introduction of Project (History of the Monument)

B. Dismantling, Salvaging Process and Reason
The existing drawings and proper documentation were prepared by the Pashupati Area Development Trust and these were approved by the Department of Archaeology before the dismantling work was carried out. The dismantling was carried out in parts manually by a group of skilled manpower and by a team from Nepal Army in the presence of representative from the PADT and DOA. The structural and decorative members were then numbered and documented properly before storing safely and securely in the store provided by the Pashupati Area Development Trust.

C. Description of Foundation
The existing foundation is constructed out of dressed stone masonry on lime mortar. Structural assessment was carried out to verify that the foundation was intact enough, hence, the foundation was not excavated. The reconstruction works were carried out from just the plinth leaving the existing foundation untouched.

D. Reuse of Existing materials
Structurally intact salvage materials were reused at most practical manner and only the members deemed sully damaged were replaced with similar new materials. However, no alterations were made in the overall structure except addition of wooden bands and vertical posts to further stabilize the structural strength of the monument.

E. Restoration Process
The reconstruction works were carried out by contractors who were hired through closed envelop system as per the provision set by the Public Procurement Act of Nepal. The Pashupati Area Development Trust undertook the responsibility of the reconstruction while representatives from Department of Archaeology closely inspected the process. The reconstruction including the dressing of masonry and cornice was carried out on site by skilled manpower and artisans hired by the contractors as per the terms of contract signed between contractors and the PADT.

F. Budget Allocation/Resources
National Reconstruction Authority was responsible for the financial support of the reconstruction process providing the fund. Meanwhile, the overall documentation, tendering, supervision and verification works were overseen by Pashupati Area Development Trust with an additional approval carried out by the Department of Archaeology, GoN.
G. Practical Lessons and Problems faced during Restoration

H. Supervision and Monitoring Process
Although the reconstruction process was carried out by skilled manpower, still, the process was supervised and checked by site engineer and experts from Pashupati Area Development Trust and Department of Archaeology independently on a regular basis. The reconstruction works have been well documented taking a set of photographic images of each step to ensure authenticity and integrity of the monument.

I. Conclusion
The reconstruction work has been completed as well as the Bill and Work Completion Report have been prepared and submitted to Pashupati Area Development Trust for verification. However, the financial audit is yet to be carried out.

J. Photographs of each steps of restoration process

2.2.20. DYOCCHEN OF DATHU TOLE

A. Introduction of Project (History of the Monument)
B. Dismantling, Salvaging Process and Reason
C. Description of Foundation
D. Reuse of Existing materials
E. Restoration Process
F. Budget Allocation/Resources
G. Practical Lessons and Problems faced during Restoration
H. Supervision and Monitoring Process
I. Conclusion
J. Photographs of each steps of restoration process

2.2.21. GUHESWARI SATTAL – WEST

A. Introduction of Project (History of the Monument)
B. Dismantling, Salvaging Process and Reason
The sattal west of Guheswari was safely dismantled by workers in the presence of officials, site engineers from PADT and archeologists from DoA. However, before dismantling, proper drawings and documentation were prepared by the Pashupati Area Development Trust. All the wooden structural and decorative elements such as posts, tundals, carved windows, etc. were inventoried in detail by the PADT and well stored for maximum reuse.

C. Description of Foundation
The foundation was found to be badly damaged during structural assessment and, upon excavation, the strap footing of brick masonry was decided to be reconstructed as the original. No altercations to the details were done during this reconstruction.

D. Reuse of Existing materials
Existing materials were properly documented, stored and checked if they can be reused. Most of the wooden elements could be reused with an exception of few elements which
were either repaired or replaced by similar material by skilled craftsmen. In addition to this, wooden lintel bands and posts were added to the existing structure for additional strength.

**E. Restoration Process**

The restoration process was carried out by the contractor hired by the Pashupati Area Development Trust under detailed terms of contract. All the works done were based on this agreement, including hiring of skilled craftsmen and artisans as required. The restoration process was supervised and documented time to time by the representatives and site engineers from PADT and archeologist from DOA independently. The detailing works were kept true to the original as no major structural and architectural changes were made. Each change was got approved by the Department of Archaeology.

**F. Budget Allocation/Resources**

The fund for reconstruction was provided by the National Reconstruction Authority and was mobilized by the Pashupati Area Development Trust. The technical assistance to the reconstruction was provided by the Department of Archaeology, GoN.

**G. Practical Lessons and Problems faced during Restoration**

**H. Supervision and Monitoring Process**

The reconstruction process of the sattal was closely monitored and regularly evaluated by site engineers from Pashupati Area Development trust and archeological experts from Department of Archaeology, GoN in addition to the experts hired by the contractor-side. The process was documented for future references.

**I. Conclusion**

The reconstruction work has been completed as per the schedule and the financial bill and Work completion report was prepared and submitted to the Pashupati Area Development Trust. The financial audit as well as quality audit has been done by the Department of Archaeology.

**J. Photographs of each steps of restoration process**

**2.3. Damage assessment of urban fabric**

Some of the residential buildings within the Pashupati Monument Zone and surrounding buffer zone were affected by earthquake with varying degree of damage although no concrete data of the damage was available. During reconstruction of monuments, the surroundings were not rehabilitated.

**3. Plan for on-going rehabilitation of monuments**

The rehabilitation of damaged monuments has been going on with efforts from Pashupati Area Development Trust.

Similarly, following monuments have been undergoing rehabilitation:
<table>
<thead>
<tr>
<th>SN</th>
<th>Name</th>
<th>Numbers</th>
<th>Funding</th>
<th>Cost Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Guheswari Chaughera Sattal (West)</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 101,763,000</td>
</tr>
<tr>
<td>2</td>
<td>Dhyoche Guthighar</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 28,000,000</td>
</tr>
<tr>
<td>3</td>
<td>Kirateeshwor Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 45,431,000</td>
</tr>
<tr>
<td>4</td>
<td>Saptami Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 44,248,000</td>
</tr>
<tr>
<td>5</td>
<td>Chandrabinayak Temple</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 28,181,000</td>
</tr>
<tr>
<td>6</td>
<td>Debris Management from Bishworup Vicinity</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 7,746,000</td>
</tr>
<tr>
<td>7</td>
<td>Narasimha Temple</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 4,669,000</td>
</tr>
<tr>
<td>8</td>
<td>Jayabageshwori Temple</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 32,500,000</td>
</tr>
<tr>
<td>9</td>
<td>Mahasnan Ghar</td>
<td>1</td>
<td>NIBL</td>
<td>Rs. 40,000,000</td>
</tr>
<tr>
<td>10</td>
<td>Jitjang Prakaseshwor Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 50,000,000</td>
</tr>
</tbody>
</table>

3.1. JITJUNG PRAKASHEWAR TEMPLE AND SATTAL

A. Introduction of Project (History of the Monument)
The documentation of Jitjug Prakaseswar Temple and Sattal was carried out by Pashupati Area Development Trust. Pashupati Area Development Trust (PADT) obtained drawings from consultants and sent to Department of Archaeology for approval before the structure was dismantled. Prior preparation involved preparation of architectural drawings only by the consultants. Bills of Quantity was prepared by PADT with reference to drawings according to the existing structure and approved by Department of Archaeology. The wall sections and wood detailing were similar to the existing structure.

B. Dismantling, Salvaging Process and Reason
The dismantling was carried out by contractors hired by Pashupati Area Development Trust according to regulations of Government of Nepal. The dismantling of the structure was done manually. The salvaged materials were marked and stored under the supervision of Pashupati Area Development Trust.

C. Description of Foundation
The foundation of the structure was not damaged by the earthquake and thus were not excavated. The structure was reconstructed only from above the foundation.

D. Reuse of Existing materials
Brick obtained from dismantling the previous structure were reused till the plinth level of the structures. Salvaged doors and windows were used in their original position after general maintenance. Other salvaged materials were not reusable and thus new materials were used during reconstruction of the Jitjug Prakaseswar Temple and Sattal.
E. Restoration Process
The bodies responsible for the reconstruction of Jitjug Prakaseswar Temple and Sattal are Pashupati Area Development Trust and Department of Archaeology. All the drawings and reconstruction are carried out through Pashupati Area Development Trust, with approval from Department of Archaeology. The contractors were selected through tender as per rules of Government of Nepal. The contractors have been given sole responsibility of dismantling and reconstruction. The masonry and carving works are being managed by the contractor. Contractors have hired skilled manpower for carving works on wood and plaster. There has been no community participation in the reconstruction of the temple and sattal.

F. Budget Allocation/Resources
The estimated project cost is Rs. 4,46,71,073.37 and is being funded by Government of Nepal. Pashupati Area Development Trust is responsible for the mobilization of resources and funds, subjected to approval from Department of Archaeology.

G. Practical Lessons and Problems faced during Restoration

H. Supervision and Monitoring Process
Supervision and monitoring are being carried out by Pashupati Area Development Trust and Department of Archaeology. Department of Archaeology is responsible for approval of drawings and reconstruction works.

I. Conclusion
The reconstruction of Jitjug Prakaseswar Temple and Sattal is being carried out through coordination between Pashupati Area Development Trust and Department of Archaeology. New materials have been used to replace the damaged ones during the reconstruction. The structural drawings were not prepared. The work is currently ongoing.

J. Photographs of each steps of restoration process

4. Plan for rehabilitation of remaining damaged monuments
The following monuments are awaiting rehabilitation:

<table>
<thead>
<tr>
<th>SN</th>
<th>Name</th>
<th>Nos.</th>
<th>Funding</th>
<th>Cost Projection</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shivalayas at Mrigasthali Area</td>
<td>20</td>
<td>Government of Nepal</td>
<td>Rs. 99,550,000</td>
<td>9 out of 20 Completed</td>
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<tr>
<td>2</td>
<td>Bajraghar Reconstruction</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 70,000,000</td>
<td>Remaining</td>
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<tr>
<td>3</td>
<td>Bishworupa Temple and Sattal</td>
<td>6</td>
<td>Government of Nepal</td>
<td>Rs. 500,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>4</td>
<td>Laxmi Narayan Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 22,126,000</td>
<td>Waiting for drg DoA approval</td>
</tr>
<tr>
<td>5</td>
<td>Dugdhari Pati</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 68,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>6</td>
<td>Gaurighar Chaughera Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 50,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>7</td>
<td>Shivalayas at Panchadeval</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 19,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>SN</td>
<td>Name</td>
<td>Nos.</td>
<td>Funding</td>
<td>Cost Projection</td>
<td>Status</td>
</tr>
<tr>
<td>----</td>
<td>-----------------------------------------------</td>
<td>------</td>
<td>----------------------------------------------</td>
<td>-------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>8</td>
<td>Bajreshwori Sattal</td>
<td>1</td>
<td>Respective Guthiyars</td>
<td>Rs. 5,000,000</td>
<td>Remaining</td>
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<td>9</td>
<td>5 Shivalayas inside Guheswori Seto Sattal</td>
<td>5</td>
<td><strong>Bagmati Savyata Eikikrit Bikas Samiti</strong></td>
<td>Rs. 20,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>10</td>
<td>Ramkuti Bagmati Riverbank</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 5,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>11</td>
<td>4 Shivalayas at Gaurighat</td>
<td>4</td>
<td>Government of Nepal</td>
<td>Rs. 20,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>12</td>
<td>Seto Sattal at Guheswori</td>
<td>1</td>
<td><strong>Bagmati Savyata Eikikrit Bikas Samiti</strong></td>
<td>Rs. 100,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>13</td>
<td>Ram, Sila and Lakshman Temple</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 10,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>14</td>
<td>2 Sattals at Panchadeval</td>
<td>2</td>
<td>Government of Nepal</td>
<td>Rs. 300,000,000</td>
<td>Remaining</td>
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<tr>
<td>15</td>
<td>Suryaghat Pati</td>
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<td>Government of Nepal</td>
<td>Rs. 20,000,000</td>
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<tr>
<td>16</td>
<td>RadhaKrishna Pati at Mrigasthali</td>
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<td>17</td>
<td>Malamighar at Aryaghar</td>
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<td>18</td>
<td>Nirwaneshwor Sattal and Temple</td>
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<td>Waiting for drg DoA Approval</td>
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<tr>
<td>19</td>
<td>Bhuwaneshwor Temple</td>
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<td>Government of Nepal</td>
<td>Rs. 25,000,000</td>
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</tr>
<tr>
<td>20</td>
<td>JitJang Prakasheshor Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 100,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>21</td>
<td>Ghatewa Pasal Sattal, Opposite Aryaghat</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 15,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>22</td>
<td>Gopalji Sattal at Mrigasthali</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 15,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>23</td>
<td>Birbhadreshwor Temple</td>
<td>1</td>
<td>Government of Nepal</td>
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<td>Remaining</td>
</tr>
<tr>
<td>24</td>
<td>Ekadash Rudra Shivalaya Temple</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 10,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>25</td>
<td>Sankaracharya Seto Temple</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 7,500,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>26</td>
<td>Shivalayas at Chausatti Chhetras</td>
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<td>Government of Nepal</td>
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<td>Remaining</td>
</tr>
<tr>
<td>27</td>
<td>Shivalayas inside Bhasmeshwor Sattal</td>
<td>4</td>
<td>Government of Nepal</td>
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<td>Remaining</td>
</tr>
<tr>
<td>28</td>
<td>Bhasmeshwor Sattal</td>
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<td>Government of Nepal</td>
<td>Rs. 120,000,000</td>
<td>Remaining</td>
</tr>
<tr>
<td>29</td>
<td>Gurujyu Sattal</td>
<td>1</td>
<td>Government of Nepal</td>
<td>Rs. 15,000,000</td>
<td>Remaining</td>
</tr>
</tbody>
</table>
5. **Plan for rehabilitation of urban fabric**

The detail plan for rehabilitation of urban fabric is not available. However, there are plans in relocate displaced residents from current parking area of Pashupati area to elsewhere. The rehabilitation of private built structure within the Monument Zone and in buffer zone is carried out through approval from DoA and local ward level.

Pashupati Area Development Area Trust has been preparing a master plan for management and rehabilitation of the urban fabric and monuments in the Pashupati Area.

6. **General assessment of rehabilitation of physical setting**

Most of the physical settings has no been damaged by the earthquake. Pashupati Area Development Trust has developed area leading from parking to the South Gate of Pashupatinath Temple as Pradakshina Path The open space of Mrigasthali within the monument zone are being used as burial site by Christian community.

The close proximity of airport is a big concern as loud vibration might damage monuments and some of its area falls under PADT. Dhurbasthali area is already under control of the army.

7. **Overall conclusions and recommendations**

Most of the listed monuments within the Monument Zone of Pashupatinath Area has been reconstructed or nearing completion. Data for some of the monuments were not available. While PADT has been effectively leading rehabilitation of monuments, there is lack of proper archive and coordination between relevant bodies regarding documentation and rehabilitation of monuments.
Introduction:

The great Majestic Boudha Stupa stands approximately 6-7 km North East from center of the Kathmandu valley. The splendid dome of Boudha Stupa is approximately 120 ft in diameter, 1 hector in width and 43.25m in height. The area of the stupa is approximately 6,756 square meters. The site is on flat land, surrounded for a short distance by gradually ascending terraces. The giant solid dome, with its gilded brass chhatra, gajura, andchandura, is based on a series of widely out branching terraces enhanced by a roughly circular wall with 147 niches with 4 or 5 prayer-wheels in each. In the uppermost terrace or pedestal 108 sculptures are set. The mandala-shaped floor plan is oriented east-west by north-south. The stupa is surrounded by two and three-storey houses which accommodate a large number of northern and hill people, both transients and permanent residents.

It is believed that this great stupa was built during the Kashyapa Buddha’s end period and the beginning period of Shakyamuni Buddha. Buddhist people believe that the relics of Kashyapa Buddha, the third Buddha of Bhadrakalpa were enshrined in the dome of this stupa. This great stupa is known as the mind nature of Buddha’s of three times, past, present and the future. This Great Stupa is also called the Stupa of enlightenment or Bodhi Stupa. This Stupa is also one of the largest and most significant Buddhist monuments in the
world. This great stupa was enlisted on world heritage site by UNESCO in 1979 and has become the common monument of the people all over the world. Today it is a major destination of pilgrims from the Himalayas, Tibet and south-East and Eastern Asia.

History of Bauddhanath:
There are many stories and legends concerning the origin and history of the great stupa. According to “Hidden Treasure of the Guru Padmasambhava” a widow named Ma Jhyazima aspired to make a great offering of the Boudha, using her hard earned saving as a poultry keeper, she approached the local king for permission and it was granted, on condition that she used an area of the land measuring the size of a single ox skin. However, Jhyazima cut the skin into thin strips and claimed the land enclosed from the strips lay end to end. This mere woman’s ambition to build such a magnificent monument offering to the Boudha caused much jealousy between the rich and powerful at the time. The jealous lord petitioned the king to stop the construction, but the king who had allowed this happen, replied – “Since permission to build has been given, it shall not be rescinded.” Thus the meaning of the stupa named JhyarungKhashyor. The remaining work of the construction of Boudha stupa was completed by the four sons (TrisongDeuchen, ShantaRakshita, Guru Padmasambhava, BamiThiser), of Jhyazima. This legend is very much popular in Himalayan Buddhist society.

The earliest historical references to the Boudha Stupa are found in the Chronicles of the Newars. Firstly, Boudha is mentioned as one of the four stupas found by the Licchavi king Vrisadeva (ca.AD 400) or Vikramjit. Secondly, the Newars legend of the stupa’s origin attributes it to king Dharmadeva’s son, Manadeva as atonement for his un writing parricide. Manadeva was the great Licchavi king, military conqueror and the patron of the arts who reigned ca.AD 464-505. Manadeva is also linked with the SwayambhuChaitya of Gum Bahal. Thirdly, another great Licchavi king Shivadeva (AD 590-604) is associated with Boudha by an inscription; he may have restored the Stupa. Finally in the archeological report of the 16th century Tibetan restorer, Sakyazangpo, there is an assertion that he discovered the Lichhavi king Amsuvarma’s relics in the Stupa. There are no Lichhavi stone remains in the vicinity of Boudha, although in the eastern enclave of the Stupa there are several updatable but undoubtedly ancient stones inscribed with mantra, and in the south there are small Chaityas in the Lichhavi style, which could perhaps be dated as early as the 13th century. In conclusion, although there is no epigraphically or reliable archeological or literary evidence of the Stupa’s Lichhavi origins, its early history being based entirely upon legend.

Clues to the Stupa’s origin and history can be derived from the etymology of the Newari name of the Stupas Khas or KhastiChaitya, “The Dewdrop Stupa”. Some believe the name derives from Kasyapa, the Manusi Buddha of the Dwapara-yuga, whose relics are said to be enshrined within it. According to Newari etymology it is derived from the Newari word for dew, for the chronicles mention that when the Stupa was in process of construction a drought struck and the workmen were forced to lay out white cotton cloth to collect the morning dew, which was then wrung out to facilitate the day’s construction. Some say Khasa was the name of a Tibetan Lama whose relics were interred here, or that the Stupa’s origin was in some way associated with the town Khasa on the present border of Nepal and China.
According to Gopal Raj Chronicles during the reign of the Licchavi king Dharmadeva (ca.AD 4th century), it is said that the king installed “Narayanhiti” tap but the water did not come. So, the king consulted his astrologers and was told that for water, the sacrifice of the most virtuous man in the kingdom was required. After disappointing results, the king decided that it was only himself and his son who qualified as victims. The old king decided it was to be himself to die, and instructed his son to decapitate with one stroke a shrouded form he would find lying near the palace that night.

The son prince Manadeva obeyed his father’s command and was horrified to see the head of his father fly from the corpse. It landed at the temple of Vajra Yogini in Sankhu and he was told by the goddess that the only way he could undo his sins was to let a cock fly, and wherever the cock landed, build a Stupa for his father’s remains. The cock alighted at Boudha, and king Manadeva built magnificent Stupa there. [Source: http://bnadc.org.np/history/]

### Some of the Major Reconstruction work

<table>
<thead>
<tr>
<th>Date (B.S.)</th>
<th>Description of Conservation Works carried out</th>
</tr>
</thead>
<tbody>
<tr>
<td>2073</td>
<td>Completion of reconstruction work</td>
</tr>
<tr>
<td>2072</td>
<td>Massive Earthquake hit Boudhanath</td>
</tr>
<tr>
<td></td>
<td>Damages above hermika, cracks in dome, mani wall and RanrikRepa</td>
</tr>
<tr>
<td></td>
<td>Stupa collapsed</td>
</tr>
<tr>
<td>2071</td>
<td>Placing of new stone paving around circumambulatory path</td>
</tr>
<tr>
<td>2070</td>
<td>Works done in dome, plastering and painting of mane wall</td>
</tr>
<tr>
<td>2067</td>
<td>Paving around Stupa Area with Chinese bricks</td>
</tr>
<tr>
<td>2062-63</td>
<td>Renovation of Vedica of Bodha Stupa and also maintenance of wall art</td>
</tr>
<tr>
<td>2026</td>
<td>Reconstruction of Chhatravali (Umbrella) which was burnt due to lightening in 2024</td>
</tr>
<tr>
<td>2024</td>
<td>Lightening in Boudha Stupa</td>
</tr>
<tr>
<td></td>
<td>Damage in Chhatravali (Umbrella)</td>
</tr>
<tr>
<td>1918-19</td>
<td>Maintenance of Stupa from finial to hermika and gold plating done</td>
</tr>
<tr>
<td></td>
<td>Replacement of wooden mane of mane wall woth copper mane</td>
</tr>
<tr>
<td>1821</td>
<td>Gold plating done in gajur</td>
</tr>
<tr>
<td></td>
<td>Use of lime and saffron in dome</td>
</tr>
<tr>
<td>1681-82</td>
<td>Renovation of Chhatravali (Umbrella) and finial</td>
</tr>
</tbody>
</table>

### 2. Overall Impacts of Gorkha Earthquake:

After earthquake of 2072 BS, the damage in the brickwork of trayodasabhuvan and its cubic base was extensive of boudha stupa. The earthquake has dismantled the structure to the bottom of hermika and top of hemisphere.
Also, the small stupa situated in the east side of the boudhha stupa called Rangrikrepsmriti stupa was collapsed from above the garbagriha (hemisphere). Due the debris fallen from above the hermika, the dome shaped hemisphere was partially affected with the formation of cracks. Also, some parts of the mane wall which lies around the stupa was damaged.
3. Plan for on-going rehabilitation of monuments

Emergency response after 2072 earthquake:
After second earthquake in baisakh 29, 2072 B.S, the stupa was in severe damaged state. The upper structure of the boudhanath stupa was supported with the help of bamboo scaffolds and plan for further rehabilitation was done for both boudhanath stupa and ranrikrepsmriti stupa.

Present Status:
Reconstruction of all the monuments is completed till date. No urban Fabric has been affected by earthquake

Responsible authorities:
The main managing bodies involved in the rehabilitation of the monument are:
- DOA
- Boudhanath Area Development committee

Documentation:
The damage after the earthquake was documented by DOA and Boudhanath area development committee. Dismantling and Sorting of the materials was done on the basis of numbering, pictures, under the supervision of engineers and DOA. Various methods involved during reconstruction and documentation involves measured drawings, detailed photographs, Detailed Logue-out Sheets, etc. The decision-making process is also documented through minutes of every meeting by DOA.

Storage and use of salvaged materials:
The salvage materials was stored around the open spaces of stupa and the valuable assets were stored in the gurulakhang monastery located at the north side of the boudha stupa. No new storage areas have been assigned at present.

Overall 19% of salvage bricks were used in reconstruction. New bricks and timber used in rest of the restoration because most of the salvaged materials were expired was not in a good phase to reuse. Broken bricks were also not used as they were not considered to be strong and donated to gumbas and math mandirs.

Materials Used:
Nepali salwood, ma- apa, BajraSurkhi mortar (instead of mud mortar as previous as bajrasurkhi mortar is high in strength compared to mud mortar), gold-plated copper plates, concrete base in hermika(which was the result of previous 1968 restoration whose dimesion is unknown because it was found in damaged state due to EQ) was extended and made upto 28’8” square and 2’ thick for the better stability of the soksing which was supervised and specified by DOA. Materials supplied by different vendors as per availability.
Monitoring mechanism:
The reconstruction was continuously monitored by Boudhanath area development committee (Main body) and also from the community group under the supervision and guidance of DOA. A clear monitoring mechanism, criteria for monitoring, evaluation mechanism and reporting format has not been developed to check if the restoration work is following the guidelines and the international norms and values for which it was listed in the world heritage list.

Community participation:
Community has participated in reconstruction of the Monumental zone by continuously supervising the works of the craftsman and labours. However, they are not involved in any decision making process.

Artisans availability:
Craftsman with working experience in traditional materials was selected. The craftsman were brought from Lalitpur, Bhaktapur, Kirtipur and the experienced workers from around the site. Inventory of the skilled manpower was prepared. No training was given to new artisans. The artisans were self-trained i.e. the knowledge was handed over from previous generations.

Alteration:
Soksing is the also called earth tree which is believed to be raised from the base of garbagriha to rise through the hermikaupto the gajur. During the dismantaling process after earthquake soksing was found only on the three steps from the top of trayodasabhuwan (11th, 12th and 13th steps) and the rest below was the hollow space exactly same as the dimension of soksing believed to be continued downwards till the base of hermica where
concrete base was discovered in the course. Concrete base is now extended and made 28’8” square base.

Also the addition of timber cross braces in the trayodasabhavan to make the structure stronger. Earthing was done to prohibit effect of lighting and its consequences like 2036 BS by the use copper plate from gajur to the land.

The cracks of the dome created by the falling of debris from the top of stupa were treated by epoxy grouting. According to boudhnath area development committee, it was used because they had no idea of treating the cracks by traditional techniques and also it was done in swayambhunath to repair the cracks in dome under the supervision of DOA.

![Figure 67  Reconstruction of Soksing of Bouddhanath stupa](image)

Left: Hole of Soksing  
Right: Soksing

**Project Cost:**
The Boudhanath Area Development Committee spent the sum of Rs. 6,29,39,413 on labour charge, lime, surkhi, ma-appa brick, wood, scaffolding, trolley, epoxy grouting, machinery, etc for the renovation and reconstruction of Boudhanath Stupa. From the remaining amount (Rs. 9,59,92,589.79), a Dharmashala was bought and certain amount was spent on the development of culture, society, tradition and other developmental works.
Expenses Detail

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Expenses</th>
<th>Amount (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reconstruction work (Committee)</td>
<td>62,939,412.00</td>
</tr>
<tr>
<td>2</td>
<td>Tai Situ Rinpoche's Organization</td>
<td>9,369,737.00</td>
</tr>
<tr>
<td>3</td>
<td>Wood</td>
<td>7,585,500.00</td>
</tr>
<tr>
<td>4</td>
<td>Ma-appa Brick (2,29,000)</td>
<td>5,038,000.00</td>
</tr>
<tr>
<td>5</td>
<td>Gold 31 kg (2657.32/tola)</td>
<td>146,152,600.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total amount spent</strong></td>
<td><strong>231,085,249.00</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total amount collected</strong></td>
<td><strong>158,932,002.790</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Saved amount</strong></td>
<td><strong>95,992,590.790</strong></td>
</tr>
</tbody>
</table>

Funding
The total fund was collected from different donors. All the financial supports were done by different donors whereas the government only helped by providing technical support. The following table shows the list of donors.

List of Donors for reconstruction of Boudhanath Stupa

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Organization's Name</th>
<th>Donated Amount (in Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HNA Group and Co./Hinan Province Ciang Foundation</td>
<td>46,594,000.00</td>
</tr>
<tr>
<td>2</td>
<td>Chinese Buddhist Association, China</td>
<td>31,027,000.00</td>
</tr>
<tr>
<td>3</td>
<td>Student and Professor of Macau</td>
<td>21,634,155.00</td>
</tr>
<tr>
<td>4</td>
<td>Tergar Foundation Nepal (by Tai Situ Rinpoche), Sitapaila</td>
<td>10,000,000.00</td>
</tr>
<tr>
<td>5</td>
<td>Chinese Embassy, Nepal</td>
<td>6,550,000.00</td>
</tr>
<tr>
<td>6</td>
<td>Chinese Gumba, Lumbini</td>
<td>5,000,000.00</td>
</tr>
<tr>
<td>7</td>
<td>Bodhibastu, from America</td>
<td>2,059,503.00</td>
</tr>
<tr>
<td>8</td>
<td>Others</td>
<td>36,067,344.79</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>158,932,002.790</strong></td>
</tr>
</tbody>
</table>
Executive Summary and Recommendations

1. General description to the Monument Zone

Swayambhunath is among the oldest religious sites in Nepal. According to the Gopālarājavamsāvalli, it was founded by the great-grandfather of King Mānadeva (464-505 CE), King Vṛsadeva, about the beginning of the 5th century CE. This seems to be confirmed by a damaged stone inscription found at the site, which indicates that King Vrsadeva ordered work done in 640 CE. (Shaha & Rishikesh, 1992) However, Emperor Ashoka is said to have visited the site in the third century BCE and built a temple on the hill which was later destroyed. Although the site is considered Buddhist, the place is revered by both Buddhists and Hindus. Numerous Hindu monarch followers are known to have paid their homage to the temple, including Pratap Malla, the powerful king of Kathmandu, who is responsible for the construction of the eastern stairway in the 17th century.

The holy site of Swayambhu, consisting of two hillocks to the west of Kathmandu, has a series of shrines, both Buddhist and Hindu, all of which are important sites for worship and pilgrimage. On the eastern hillock is the renowned Swayambhu Stupa, perhaps the most famous religious shrine in Nepal and known throughout the world. As well as the Stupa, which legend says was one of the first structures to be built in the Kathmandu Valley, there are a pair of Shikharas flanking the top of the flight of steps leading up to the Stupa from the east, which were built in the 17th Century. To the west is the temple of Ajima, built in the traditional Newari style, as well as a host of small Chaitya and religious statues commemorating important members of the religious community. (Master Plan for the Conservation of the Cultural Heritage In the Kathmandu Valley, 1981)
The boundary encompasses the entire hillock which is an integral part of the identity of the Swayambhnu stupa, and contributes to the outstanding universal value of the property. (Area 32.63 ha approx.) The Buffer Zone encompasses a strip around the foot of the hillock and corresponds to the area gazetted in 1994. (Area 25.18 ha approx.) (Kathmandu World heritage Site Integrated Management Framework, 2007)

It has long history of being renovated and conserved during different periods throughout the history. The participation of then neighboring countries like Tibet, Bhutan etc. shows its importance as Buddhist pilgrim around the world. The stupa was completely renovated in May 2010, its first major renovation since 1920. The dome was re-gilded using 20 kg of gold. The renovation was funded by the Tibetan Nyingma Meditation Center of California, and began in June 2008. (Shrestha, 2013) The Swayambunath complex suffered damage in the April 2015 Nepal earthquake followed by reconstruction. The brief conservation history of the Swayambhunath complex is tabulated in the timeline below:

Table 8 History of Conservation Works of Swayambhunath Mahachayita

<table>
<thead>
<tr>
<th>Date (A.D)</th>
<th>Description of Conservation Works Carried Out</th>
</tr>
</thead>
</table>
| 4th century C.E | • Renovated by Licchavi King Brischadev  
| | (Shakya, 1098) |
| 1129 | • First renovation  
| | • In scripted in inscription near stupa (Gutschow And Hagmuller, 1989) |
| 1200 | • Renovated by Shakya Monk Maitrichandra (Shakya, 1098)  
| | • Yasthi changed according to Bajrayani Tradition |
| 1362 | • Complete renovation  
| | • 12 years after Muslim attack  
| | • By Mahapatra RaharsiVaalok with permission from King Arjun Dev and Prince JayasthitiMalla  
| | • Present day style adopted  
| | • Addition of amenities (Shakya, 1098; Gutschow and Hagmuller, 1989) |
| 1412 | • Renovated by JyotsirMalla (Shakya, 1098)  
| | • Yasthi changed |
| 1565 | • Mahapatras of Patan Nara, Uddhav and Purander Singha replaced the parts of gajur. (Shakya, 1098) |
| 1604 | • Shiva Singha Malla changed the Yasthi  
| | • Renovated (Shakya, 1098) |
| 1621 | • Traveller from Tibet Shyampar Lama renovated  
| | • Changed the Yasthi  
| | • Added the shrines of Gods and Goddesses (Shakya, 1098) |
| 1637 | • Yasthi damaged  
| | • Renovated by the team led by Shakya Monk Manjudev (Shakya, 1098) |
| 1680 | • Hermika damaged  
| | • Renovated by Pratap Malla (Gutschow And Hagmuller, 1989) |
| 1681 | • Renovated by King ParthibendaMalla (Shakya, 1098) |
| 1709-1713 | • Renovated by help from King Bhaskar Malla (Shakya, 1098) |
| 1751 | • Reconstructed during the reign of Jaya Prakash Malla |
1757  |  - Tibetan Lama Bajra Ayurishmani and Jaya Prakash Malla funded the renovation with Yasthi sent by Prithivi Narayan Shah (Shakya, 1098; Gutschow and Hagmuller, 1989)
1808  |  - Renovated (Gutschow And Hagmuller, 1989)
1825/26  |  - Renovation of the Dome, Triyodashi Bhuwan, Yasthi damaged due to strong winds (Gutschow And Hagmuller, 1989)
1815  |  - King Girvan Yuddha Bikram and Rajendra Bikram Shah Dev started renovation, in direction and leadership of Kathog Rimpoch
1817  |  - Subarna Kalash and gajur damaged due to storm
      |  - The damage repaired within 10 months (Shakya, 1098)
1866  |  - Businessman Dhan Singh Tamrakar in leadership and direction of Samantaharsha Bajracharya (Pramukh Acharya of Surashri Mahavihar) carried out the renovation works (Shakya, 1098)
1917  |  - Bhutanese buddhist guru Awatari Lama Sherab Dorje as commanded by Bhutanese King carried out the conservation work
      |  - Three brothers of Kathmandu; Harsha Sundar, Pushpa Sundar & Ram Sundar carried out repair and renovation works of 9 small temples (Gawache) (Shakya, 1098)
1916-1920  |  - Yasthi changed during reign of King Rajendra Bir Bikram Shah was in good condition according to the main carpenter Jogbir Tuladhar so not changed during this period of renovation works
      |  - Upper part of the Stupa renovated except the Yasthi (Shakya, 1098)
2008-2010  |  - Renovation and repair work carried out by FSMC (Federation Of Swayambhunath Management & Conservation) funded by Tibetan Nyingma Meditation Centre, California, USA under Ancient Monument Conservation Act 2013
      |  - Repair of damaged copper plates, gold plating
      |  - Replacement of the unrepairable and lost parts
      |  - Repair and conservation work of damaged timber and other parts of the monument
      |  - Documentation of the works carried out (Shrestha, 2013)
2015-  |  - Reconstruction and renovation work carried out after Earthquake of 2015

2. Overall impact of the Gorkha Earthquake

The monuments in the Swayambhunath monument zone were severely damaged during the earthquake of 2015. The earthquakes of April 25 and May 12, 2015 have caused extensive damage in Nepal. The oldest buildings were especially affected, along with all the sites enlisted as World Heritage by UNESCO. Most of the dwelling built with traditional technology were dealt with heavy damage as many of the traditional dwelling collapsed. The dwellings with concrete technology were dealt with partial damages.
Legends
1. Swayambhu Mahachaitya,
2. Museum
3. Dev Dharma Mahabihar
4. Harati Mata Temple
5. Karmaraj Mahabihar
6. Shantipur
7. AgamChhen
8. Ananatpur
9. Pratappur
10. World Peace Fountain
11. Hoyachenga Thukje Choyaling Gumba
12. Manjushree temple
13. Manjushree Sattal

Figure 2  Map showing the location of the monuments
### Summary Data Table of Post-Damage Assessment in Swayambhunath World Heritage Site

#### 1) Swayambhunath-Zone I (Refer map)

<table>
<thead>
<tr>
<th></th>
<th>Religious Places</th>
<th>Dwelling Places</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shirines/ Chaityas/ Gates/ Stone posts...</td>
<td>Important Heritages (Temples, Stupas, Bihar.....)</td>
</tr>
<tr>
<td>Totally Collapsed</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Threated</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Slight/Extensive Damaged</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>No Visible Damages</td>
<td>148</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>165</td>
<td>21</td>
</tr>
</tbody>
</table>

#### 2) Swayambhunath-Zone II (Refer map)

<table>
<thead>
<tr>
<th></th>
<th>Religious Places</th>
<th>Dwelling Places</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shirines/ Chaityas/ Gates/ Stone posts...</td>
<td>Important Heritages (Temples, Stupas, Bihar.....)</td>
</tr>
<tr>
<td>Totally Collapsed</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Threated</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Slight/Extensive Damaged</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>No Visible Damages</td>
<td>42</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>47</td>
<td>24</td>
</tr>
</tbody>
</table>

#### 3) Swayambhunath (Refer map)

<table>
<thead>
<tr>
<th></th>
<th>Religious Places</th>
<th>Dwelling Places</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shirines/ Chaityas/ Gates/ Stone posts...</td>
<td>Important Heritages (Temples, Stupas, Bihar.....)</td>
</tr>
<tr>
<td>Total</td>
<td>212</td>
<td>45</td>
</tr>
<tr>
<td>% Totally Collapsed</td>
<td>1.42</td>
<td>4.44</td>
</tr>
<tr>
<td>% Threated</td>
<td>2.36</td>
<td>28.89</td>
</tr>
<tr>
<td>% Slight/Extensive Damaged</td>
<td>6.64</td>
<td>24.44</td>
</tr>
<tr>
<td>% No Visible Damages</td>
<td>89.62</td>
<td>42.22</td>
</tr>
</tbody>
</table>

*Figure 3 Post Damage Assessment summary table (UNESCO)*
<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Monuments</th>
<th>Damage in EQ (collapse/ Partial/ none)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SwayambhuMahachaitya</td>
<td>Vertical and horizontal cracks on dome</td>
</tr>
<tr>
<td>2</td>
<td>Shantipur</td>
<td>W and E wall with diagonal and horizontal cracks N wall with major diagonal cracks and gable wall collapsed</td>
</tr>
<tr>
<td>3</td>
<td>Pratappur</td>
<td>Basement heavily damaged ; stone pillars at the entrance collapsed</td>
</tr>
<tr>
<td>4</td>
<td>Anantapur</td>
<td>Upper part collapsed,Pillars and door are tilted</td>
</tr>
<tr>
<td>5</td>
<td>AaganChye</td>
<td>W wall with stepped cracks</td>
</tr>
<tr>
<td>6</td>
<td>Dev Dharma Mahavihar</td>
<td>Heavily damaged walls</td>
</tr>
<tr>
<td>7</td>
<td>BahuMangalDwar Chaitya</td>
<td>Totally collapsed</td>
</tr>
<tr>
<td>8</td>
<td>Gyanmala Bhajan Sattal</td>
<td>Weak wood structure parts ,Brick falling,Basement cracks</td>
</tr>
<tr>
<td>9</td>
<td>AnandakutiVihar</td>
<td>Partially damaged</td>
</tr>
<tr>
<td>10</td>
<td>KarmarajMahavihar</td>
<td>N-W and N-E corner half collapsed, Over weight due to over elevation,S-E corner with diagonal cracks</td>
</tr>
<tr>
<td>11</td>
<td>Basundhara temple</td>
<td>Western roof was partly damaged by falling parts of temple</td>
</tr>
<tr>
<td>12</td>
<td>Pati;East side of Shantipur</td>
<td>N-E corners with major cracks and falling off N wall with half of wall collapsed,E wall with major diagonal crack</td>
</tr>
<tr>
<td>13</td>
<td>Old Swayambhu</td>
<td>Pinnacle collapsed,West entry wall partially damaged</td>
</tr>
<tr>
<td>14</td>
<td>Bayupur</td>
<td>Horizontal cracks on all four sides</td>
</tr>
<tr>
<td>15</td>
<td>Agnipur</td>
<td>No visible damage</td>
</tr>
<tr>
<td>16</td>
<td>Peacock and stone column</td>
<td>Totally collapsed</td>
</tr>
<tr>
<td>17</td>
<td>Bell and stone column</td>
<td>Stone support frame collapsed,Bell not damaged</td>
</tr>
<tr>
<td>18</td>
<td>Harat Mata temple</td>
<td>No apparent damage</td>
</tr>
<tr>
<td>19</td>
<td>Bajrasawata and stone column</td>
<td>Totally collapsed</td>
</tr>
<tr>
<td>20</td>
<td>MahaManjuShree Chaitya</td>
<td>Vertical cracks extending from below to top in all the corners and mainly in front face</td>
</tr>
<tr>
<td>21</td>
<td>Manjushree sattal</td>
<td>Major vertical cracks at front face corners Outer part of front left corner wall partly collapsed Plaster are mostly off from wall inside the sattal,Left and right face walls bulging and tilted by small amount</td>
</tr>
<tr>
<td>22</td>
<td>Basubandha Chaitya</td>
<td>Vertical and diagonal stepped cracks at the upper part, vertical cracks at dome</td>
</tr>
<tr>
<td>23</td>
<td>HoyachengaThukjeChhoyalinggumba</td>
<td>Partially collapsed</td>
</tr>
<tr>
<td>24</td>
<td>Vajratwesworhi</td>
<td>partially collapsed</td>
</tr>
<tr>
<td>25</td>
<td>DharmaChakramahavihar</td>
<td>partially collapsed</td>
</tr>
<tr>
<td>26</td>
<td>Parbasthan chaitya</td>
<td>partially collapsed</td>
</tr>
<tr>
<td>28</td>
<td>Dhyankutibihar</td>
<td>partially collapsed</td>
</tr>
</tbody>
</table>
Figure 3  Map showing the damage of monument after 2015 earthquake

Figure 4  Damage Assessment Map Zone I (UNESCO)

Source DoA
The earthquake of 2015 also caused landslides in multiple places in the both hills consisting of the main stupa and the Manjushree hill. Altogether, six areas in the monument zone were assessed to be affected by varying degrees of landslide as shown in the figure 6 and figure 7.

source: UNESCO
3. Plan for on-going rehabilitation of monuments

Emergency response after 2015 earthquake:
After the earthquake of 25th April, 2015, the entrance was restricted in core monument zone of Swayambhū from 26th April, 2015 and Nepal police was actively recruited for the collecting and the transportation of the valuables. It was later safely stored in the National Museum of Nepal, Chhauni. Meetings were held between the DOA, UNESCO and Federation and discussions for the next steps in the reconstruction was planned.

Present Status:
Reconstruction of all the monuments is completed till date. Only the private houses are remaining. Reconstruction of Shantipur temple is completed but plaster work is left as monkeys tend to scrap mud mortar for insects.

Responsible authorities:
The main managing bodies involved in the rehabilitation of different monuments are:
- Federation for Swayambhu Management and conservation (Main body)
- Department Of Archaeology (DOA)
- UNESCO
- GTZ

Individual description of management bodies are listed in matrix

Documentation:
The damage after the earthquake was documented by DOA and Federation of Swayambhu Management & Conservation. Sorting of the materials was done on the basis of old references, pictures, carpenters and metal workers were also involved. Various methods involved during reconstruction and documentation involves measured drawings, detailed photographs, Archaeological Conservation Notes, Detailed Log-out Sheets, etc. The decision-making process is also documented through minutes of every meeting by DOA.

Community participation:
Community is well aware about the importance of heritage and is providing their deepest interest and efforts to support the conservation and reconstruction of the Monumental zone. However, they are not involved in any decision making process.

Artisans availability:
Craftsmen with working experience in traditional materials was selected. The craftsmen were brought from Lalitpur, Bhaktapur, Kirtipur and the experienced workers from around the site.

Inventory of the skilled manpower was prepared. No training was given to new artisans. The artisans were self-trained i.e the knowledge was handed over from previous generations.

Funding:
Most of the monuments’ rehabilitation is funded by FSMC. Besides that, the major funding was done by DOA, UNESCO, Bhutanese Aid, Sri Lankan aid e.tc. (See Matrix)

Storage and use of salvaged materials:
There is a lack of storage space for any salvage materials in case of disasters. No new storage areas have been assigned at present.
Overall 15% of salvage bricks were used in overall reconstruction. New bricks and timber used in rest of the restoration. (See Matrix)

**Materials:**
Traditional materials used as per specification by DOA; nepali salwood, dachi - apa, ma-apa, Bajra Surkhi mortar, iron and gold-plated copper plates. Materials supplied by different vendors as per availability.

**Monitoring mechanism:**
The reconstruction was monitored timely by Federation of Swayambhunath Management & Conservation (Main body) and also from the community group under the supervision and guidance of DOA. A clear monitoring mechanism, criteria for monitoring, evaluation mechanism and reporting format has not been developed to check if the restoration work is following the guidelines and the international norms and values for which it was listed in the world heritage list.

**Analysis of individual monument**

**A. Swayambhu Mahachaitya:**

Swayambhunath is among the oldest religious sites in Nepal. According to the Gopālarājavamśāvali, it was founded by the great-grandfather of King Mānadeva (464-505 CE), King Vṛṣadeva, about the beginning of the 5th century CE.

The stupa consists of a dome at the base, above which is a cubical structure painted with eyes of Buddha looking in all four directions. There are pentagonal toran present above each of the four sides with statues engraved in them. Behind and above the torana there are thirteen tiers. Above all the tiers there is a small space above which the Gajur is present. The stupa has many artefacts inside it. The dome at the base represents the entire world. When a person awakes (represented by eyes of wisdom and compassion) from the bonds of the world, the person reaches the state of enlightenment. The thirteen pinnacles on the top symbolize that sentient beings have to go through the thirteen stages of spiritual realizations to reach enlightenment or Buddhahood.

Vertical and horizontal cracks on dome was seen as the aftermath of earthquake of 26 April 2015.

There were photographic references for documentation. Now the cracks have been filled using traditional methods. Federation of Swayambhunath Management and Conservation was responsible for funding and management of the mending work.

**B. Shantipur:**

Shantipur is located about 300m north of Swayambhumahachaitya. This temple is said to be built as a meditation center for Shantikacharya. The nondescript, sloped roof, white plaster and stucco Shantipur is a three-storey temple. The Buddhacharya priests and the Thakalis of the temple can only enter mysterious Shantipur.

In the 2015 earthquake, the little known but powerful tantric Shantipur temple was badly damaged. West and East wall was with diagonal and horizontal cracks, North wall with major diagonal cracks and gable wall was collapsed too.
Along with the immense blow to the structure, there was an added layer of devastation—the temple’s inside walls were painted with a narrative mural describing the ancient Swayambhupurana. This vast work is the longest known narrative Buddhist painting in existence and tells the tale of the journey of the various iterations of the Buddha who came to Kathmandu (the Nepal Valley as it was known then) in search of the self-originating holy site (Swayambhu) that appeared in the middle of the thousand petal lotus after the lake that was the Valley was drained.

The temple was thought to be damaged only externally but later through inspection, it was seen that it required to be constructed from foundation. Due to the entrance restrictions, there was a lack of skilled artisans. However, later FSMC went through a number of interviews to select the skilled work force to reconstruct the holy temple. Wooden horizontal and vertical ties was added for structural consolidation. The walls of foundation was 48” thick and above the foundation was 42” thick. Due to lack of traditional bricks, the temple was reconstructed using 60% of salvaged materials. The total cost of the project was approximately Rs.2, 81, 24,431. The reconstruction was funded and managed by FSMC under supervision of DOA. Photographic references was taken as the base for reconstruction. Architectural and structural drawings are available which was prepared for the reconstruction process in the DOA and FSMC.

C. Pratappur and Anantapur:

The Shikhara style Pratappur and Anantapur temple are located in the North-East and South-East side of the main dome respectively.

After the earthquake of 25th April 2015, the basement of Pratappur temple was heavily damaged; stone pillars at the entrance was also collapsed. The drawings were prepared as per photographic references and was reconstructed from foundation. This is the third time the Pratappur Temple was reconstructed. Earlier, the temple was damaged due to a fire and another lightning incident. Most salvaged materials used for the reconstruction and the construction cost of the project was approximately 1, 38, 00,000.

As for Anantapur, upper part was collapsed and pillars and door was tilted. The drawings were prepared as per photographic references and was reconstructed from foundation. Salvaged materials were not used as they were not in a good condition to be reused. The construction cost of the project was approximately 1,70,00,000.

The reconstruction was funded and supervised by the Department of Archaeology (DOA).

D. AagamChyen:

AagamChyen is a two storey priest house located in front of the Ratnasambhav. It is north oriented brick masonry house which can only be entered by the Budhhacharyas and the entry is restricted for the local public.

After the earthquake of 25th April 2015, West walls was seen with stepped cracks. Structural consolidation was done by tying the building all around using steel tie beams. Remaining parts were conserved using the photographic references. The reconstruction was funded and managed by Federation of Swayambhru Management and Conservation (FSMC) under supervision of Department of Archaeology (DOA).
E. DevdharmaMahabihar:

DevdharmaMahabihar is located west of Swayambhumahachaitya in front of the statue of Amitabha Buddha DevdharmaMahabihar was heavily damaged after the 2015 earthquake. The drawings were prepared as per photographic references and was reconstructed from foundation. The monastery was shifted 4 ft. backwards after earthquake for easy passage toward Haratimata temple. The reconstruction was funded by the Bhutan Government and managed by Federation of Swayambhu Management and Conservation (FSMC) under supervision of Department of Archaeology (DOA).

F. KarmaRajaMahabihar:

KarmaRajaMahabihar is also called new monastery as giant scaled doors of a single story characterize it. It was constructed in 2010 B.S. The monastery was heavily damaged after the 2015 earthquake. N-W and N-E corner was half collapsed and was overweight due to over elevation. S-E corner with diagonal cracks was seen. Presently concrete structure is being built using photographic references. The reconstruction is funded and managed by the Karma raj Mahabiharguthi under supervision of Department of Archaeology (DOA). The consultant approved for the reconstruction is (Vastukala Para Marsha).

G. BahuMangalDwar Chaitya:

BahuMangalDwar Chaitya is located southeast of SwayambhuMahachaitya. It is called a chaitya with numeral doors and is also known as Tibetan Gompa. It was totally collapsed after 2015 earthquake. Therefore, for reconstruction, the drawings were prepared as per photographic references and available salvaged materials. Therefore, it was reconstructed from foundation. The reconstruction was funded by UNESCO and managed by Federation of Swayambhu Management and Conservation (FSMC) under supervision of Department of Archaeology (DOA).

H. GyanMala Bhajan Sattal:

GyanMala Bhajan Sattal is popular as a strong organization in the modern history of Nepal. It was officially established in 1884 B.S. It was heavily damaged in 2015 earthquake. The wood structure parts were very weak, bricks were falling of the wall and heavy basement cracks were seen. Therefore, the drawings were prepared as per photographic references and was reconstructed from foundation. The reconstruction was funded and managed Department of Archaeology (DOA).
4. **Plan for rehabilitation of urban fabric**

Almost all of the traditional buildings inside the monument zone were heavily damaged during the earthquake. The priest houses and others inflicted with heavy damage are still under construction and are being built with concrete with intentions of facadism. The construction of the houses is being funded by the private organization which is also funding the under construction Karmaraj Mahabihar.

The Swayambhu parikrama road along with the other roads linked to it in the buffer zone are black topped. The staircases leading to the main stupa, open spaces and pedestrian paths are paved with stones which are indicated in the figure below. No such alteration in material usage before and after earthquake.
The urban fabric was accessed through rapid visual assessment. Strategic points on the map were marked to gather photographs to assess existing urban fabric around the buffer zones as well as the monument zone.
5. **General assessment of rehabilitation of physical setting**

![Diagram showing Devdharma recessed and Harati Mata Temple](image)

No encroachment of such were found within the monument zone but Devdharma Mahabihar was reconstructed with recessed footprint by four feet as it created visual hinderance to the Harati Temple and also to open up the circumambulation path as suggested by the FSMC.

Similarly, no additional structures were created for storage area after the earthquake.

**References**


1. Introduction:

The Patan Durbar Square is situated in the center of Lalitpur District which lies 6 kilometers south of the capital. Patan Durbar Square is one of the seven groups of monuments and buildings which were listed in the world heritage list in 1979 under one single entity as Kathmandu Valley World Heritage Site. The Core Zone boundary encompasses the Durbar Square and covers an area of 15.89 ha while the buffer zone covers an area of 86.48 ha. The amalgamation between the Hindu and Buddhist religion led to a powerful artistic and architectural fusion beginning at least from the 5th century AD. These monuments defined by the outstanding cultural traditions of the Newar, manifest in their unique urban settlements, buildings and structures with intricate ornamentation displaying outstanding craftsmanship in brick, stone, timber and bronze that are some of the most highly developed ones in the world.

![Figure 1 Patan Durbar Square Monument Zone Boundary](image)

2. Impact of the 2015 Earthquake

On April 25, 2015, a 7.8 magnitude earthquake struck central Nepal, leaving widespread destruction in its wake, killing 185 people and damaging 29,056 houses alone in Lalitpur District (GON, 2018). Its impact on the Kathmandu Valley was devastating and also on the heritage, where, around 130 cultural heritages in Lalitpur were destroyed among which 13 were collapsed, 20 were partially collapsed and 87 were partly damaged (Archaeology). In the April 25, 2015 earthquake, the Harishankar Mandir, Char Narayan Mandir and The Gold-Plated statue of Malla King Yonarendra Malla were destroyed in the disaster, while Degu Taleju Mandir, Krishna Mandir, ChyasiDega Mandir, Bhimsen Mandir, the palace of
Bahadur Shah, Narayan Mandir and Bhishwanath Mandir sustained varied degree of damage.

Many of these monuments lies in the durbar square which were listed in the World Heritage sites in 1979 for their archaeological, historic, cultural and religious importance. In order to protect the historic building elements from theft and weather, the Kathmandu Valley Preservation Trust moved rapidly to coordinate security and clean-up efforts in Patan in the days after the earthquake. Remnants of the fallen temples in Patan Durbar Square, - thousands of carved timber elements as well as bricks and roof tiles,- were secured with the help of hundreds of volunteers and the Nepal Army, Armed Police Force, and Police. All valuable historic building elements were securely stored in the Patan Museum and the walled garden of the Royal Palace complex and were gradually cleaned, documented, and inventoried in preparation for the restoration and rebuilding. The loss of the unique architectural heritage had disfigured and diminished Patan’s townscape and religious and social life, and left its deities unsheltered. (KVPT, 2017)

The earthquake of 2015 had a massive impact in the heritage of Patan Durbar Square. As per data collected from DOA, six monuments were totally collapsed, four monuments were partially damaged and 5 monuments were structurally weakened. The inner sanctum of the Visveshvara Temple remained intact and the exterior layer of veneer bricks collapsed. The tenons at the column base of the outer ambulatory were dislodged.
Another important monument Krishna Temple which is made entirely out of stone was partially damaged. The maximum damage was seen on the second floor. Due to the lateral movement the columns had moved out of the plumb, key stones were dislodged and some stone especially at the corners were severely damaged. The roof of the north and south Taleju was also damaged. The earthquake also caused a total collapse of the upper two storey of the east wing’s rear façade and the central portion of the first and second storey of the quadrangle’s façade.

3. Efforts in conservation and reconstruction

The KVPT set out a campaign that sought to restore the urban landscape and again shelter the deities for whom the temples were built. Pre-earthquake documentation of recent years provided a good basis for rebuilding and restoring the temples on the square. There was a lack of detailed documentation of the mandapas, but a good amount of forensic evidence survived in the plinths and other recovered building elements. Using the many salvaged fragments, the temples and mandapas were returned as closely as possible to their original configuration. The projects follow international norms in using a maximum of historical material and creating careful and extensive documentation that will enable future generations to track the design and construction processes. (KVPT, 2017)

The planning and building processes are based on local expertise, with designs for in situ repairs as well as rebuilding based on traditional technology and materials. One of the landmarks in this local collaboration process is the assembly of master carpenters (Newari Silpakār), wood carvers (Kijyami), and masons (Avaḥ) from Bhaktapur, as well as stone carvers (Lvhahahki) and metal workers from Patan. These craftsmen from the ethnic group of Newars bring to bear the experience and skills handed down through many generations.

There was an expert committee which gathered, and advised the DoA on post-earthquake guidelines for preservation and was able to enrich the discussion and devise the official approved draft (June 2016). One critical and useful point the new draft explains is that while traditional materials are desirable, each historic structure must be examined for its own conditions and characteristics and may require exceptional measures for its preservation. (NRA 2016 Guidelines, Section 12b: “Use of Non-traditional Construction Material and Technology: If in the course of restoration and rebuilding of a particular monument it is deemed that the use of traditional construction material and traditional technology cannot reduce seismic risk from a technical perspective, non-traditional construction materials and technology may be used, with prior approval from the Department of Archaeology, in order to rebuild a fully collapsed monument, in a manner that the non-traditional materials are not visible from outside.”)(KVPT, 2017)

4. Plan for rehabilitation of remaining damaged monuments

Most of the reconstruction and repair of heritage structures of the Patan Durbar Square were taken care of by the KVPT. The traditional architecture features have been carefully analyzed. Architectural preservation work in post-earthquake Nepal brings to the forefront the two themes of this publication, both of which are inherent in KVPT’s ongoing development of techniques and working philosophy since 1991. The first -- how one repairs, replaces, re-carves, or redesigns lost elements of this rich architectural/iconographic vocabulary -- engages questions of authenticity, and has been dealt with in earlier chapters. The second -
how one determines the level or type of seismic reinforcements, i.e. strengthening measures to help protect the building in a future earthquake, is the subject of this chapter. Almost all of the monuments and temples have been restored in the Durbar Square with only.

This has been the reconstruction procedures of all the monuments that KVPT has repaired. The same reconstruction measures have been applied to other heritage as well, in which KVPT provided technical assistance. However, in some of the temples like in the Suraschandra Mahavihar, the Indian Embassy has been involved in the reconstruction process and the process of assigning the construction process is unclear. Many of the other temples like the Radhakrishna temple in Swotha Square, which were supervised by the DoA, have gone through a process of tender in the reconstruction phase, which has seen quite a bit of poor workmanship and sheer neglect and ignorance in basic construction techniques.

5. The current context of urban fabric

The main Durbar Square area has more or less the same ambience. The paving is still bricks, and majority of the structures which were reconstructed there, used maximum salvaged materials, only with a few exceptions. The surrounding areas and buffer zones have rather seen a change. Some of the newly constructed houses either follow facadism or are constructed with R.C.C. Most of the buffer area has also seen black pitched roads. However the floor heights and the overall building heights around the area have not dominated the temple’s divine skyline. The use of stone paving was also seen in some of the areas, which complimented the heritage area more than the use of pitched roads. Along the roads, the native people are still seen practicing their traditional occupations like selling of brass utensils and artefacts, selling of cloths, and selling of puja items, which they have still
continued on along this generation. Adaptive reuse of some of the buildings were seen, where hotels and inns were constructed, but in Newari style, which conserved both our tradition and space, and also created a source of income.

Figure 4 Adaptive reuse of buildings at certain places

Figure 5 Society still practicing traditional occupation of local products
The picture below shows the urban fabric of different places of the Patan and the alphabetical numbering represent its location in the map right below.

Figure 6 urban fabric of different places of the Patan Durbar Square

[a] [b]
6. General assessment of rehabilitation of physical setting
The new construction of the damaged buildings, especially in the buffer zone of the world heritage site have seen brick construction, and display the traditional façade as can be seen while walking on the road. As we move towards the outer edge of the buffer area however, construction of reinforced cement concrete was also seen. Near the vicinity of the main durbar square, there were also seen many houses which have been made as hotels and inns, but nevertheless, retained the main traditional style of architecture of Patan. This has been appreciated hugely by the tourists and is quite popular.

The roads have mainly been reconstructed in asphalt however. This could be due to the fact that, the usage of bricks and stone as pavement requires skilled manpower, and poor construction may result in water logging and hence become dangerously slippery.

A. The South Manimandapa and North Manimandapa (Totally collapsed)
At the northern end of the square two arcade buildings, raised on a platform, flank the stairs leading down to the Manihiti step-well, the details of which demonstrate that it had been at this site since the 7th century. Till today the supply with water is ensured. Both buildings are halls with sixteen columns. They are therefore called “arcades with sixteen feet” (Sorakuttepati). The northern and wider hall was used for royal councilling and as the coronation site. At this site the hall stood as one of the nine Jewels of the square for over a thousand years. For 1701 documents tell us about a fundamental renewal, the roof was renewed for the last time in the early 1980s. (Gutschow, 2016)

Impact of the 2015 earthquake
The structures were completely destroyed in the earthquake. They collapsed into the step well, one week later all valuable fragments were salvaged. This was mainly attributed to the fact that the heavy roof was supported by a colonnade of wooden pillars, with no walls to support the load from above. This had caused the overall center of gravity to be high and hence led to its collapse. Drawings were made after the earthquake based on site measurements, pre-earthquake photographs and rescued wooden elements. (KVPT, 2017)All historical parts are preserved. The rebuilding of the Manimandapa needed a new roof, which was designed by engineering standards. The columns were connected with the threshold stones by stainless steel pins. (Gutschow, 2016)
In October 2015 the damage of the twelve columns was assessed. The copy of one totally destroyed column was ordered and the careful repair and restoration of the remaining eleven columns was achieved by four carpenters till early April. On 25 April the former Prime Minister Prachanda Dahal visited the Darbar Square in the company of a couple of ministers and on that occasion he laid the foundation stone for the rebuilding of the Mandapa. The cornice above the columns was also repaired in the meantime. For the time being the windows of the upper level were restored. The rafters after being prepared, roof tiles were acquired from demolished houses – till end of December the rebuilding was done. It was the first rebuilding of a collapsed monument in Nepal. (Gutschow, 2016)

After excavation of the existing plinth and foundations, it was discovered that there were base stones for the central core columns at a depth below the current grade level. These were likely the original column base levels in previous times, before the Square’s grade level was raised. A previous rebuild or restoration raised the column bases by approximately 90
cm, likely due to extensive wood rot found at deeper levels due to improper detailing. The proposed construction brings the post bases back down to a similar level and improves ventilation to resist wood rot.

The south Manimandapa was reconstructed with the financial aid provided by Ministry for Foreign Affairs, Federal Republic of Germany Himal Initiative Deutschland e.V., Bamberg (Germany) Mangal Tol Sudhar Sangha, The Embassy of Japan in Nepal Prince Claus Fund for Culture and Development (Netherlands) and South Asia Institute (SAI), Heidelberg (Germany)

The north Manimandapa was reconstructed with the aid provided by Ministry for Foreign Affairs, Federal Republic of Germany, and The Embassy of Japan in Nepal.

Excavation of the foundation was carried out up to 4 feet below the top brick layer at some places for inspection. The entire foundation was found to be filled with poor quality bricks. The paving of the foundation was done with brick in lime surkhi mortar. The northeast corner of the plinth which is also the south wall of the stone stair well leading to hiti is brought back to its original configuration on the basis of historic photographs.

**Present status of the Manimandapas**

The restoration works has been completed. The southern mandapa still has the intricately carved columns and some which could not be obtained were replicated by the KVPT. The Mandapas are being used as places of public gathering and do not show any signs of poor construction.

![Figure 8 North manimandapa's present (Jan 2020) condition, fully constructed (KVPT)](image)

![Figure 9 Base beams (lakasi) assembled at Bhanadrakhal Garden before on site transfer. Photo: Sep. 13, 2017 (KVPT)](image)
B. The Krishna Mandir (Partially damaged)

The Krishna Temple was designed with three-storey with 21 pinnacles. Narrative friezes wrap the structure. As per architectural historian Niels Gutschow, the Krishna Temple “redefined the scale and materials of the architecture of the Kathmandu Valley, for its impact was greater than any other single structure and its influence can be seen in 21 temples built over the subsequent 20 years. It takes the shaft of the North Indian shikhara tower and reinterprets it with the stepped quality of its own multi-tiered temples, culminating in a pyramidal top.” The structure raises on a modest plinth. Open and covered spaces alternate on the first and second floor levels where “the devotee moves through a virtual forest of 40 columns”. In order to provide stability to the structure, the central shrine dedicated to Bālagopāla, Kṛṣṇa’s form as the youthful cowherd, was raised to the first level. The temple was consecrated by King Siddhinarasimh Malla on 23rd February, 1637.

The Krishna temple is built in the shikhara style, inspired from India. Beneath its 21 golden pinnacles are three floors. The first floor enshrines Krishna, the second Shiva, and the third Lokeshwor. Scenes from the Ramayana narrated in Newari script decorate the interior of the temple. (orientalarchitecture.com, n.d.)

Damage after 2015 earthquake

After the earthquake. On two lower levels, there is not much externally visible damage, but the upper Shiva levels have many structural problems. Despite the fact that only the second floor — the Shiva temple level — was damaged by the earthquake in 2015, the whole Krishna Temple was closely inspected for damage.

The maximum damage seems to be at the second floor, the Shiva temple level. If one looks at the plans, the structure at this level is the most delicate and the heavy roof is supported on slender colonnades.

It is probably for this reason that the maximum damage was caused to this level. Due to the lateral movement during the earthquake, the columns have moved out of plumb, old repair shaves come out; the columns, brackets, and bases of the columns have been damaged; the window frames and key stones have been dislodged; and some stones, especially at the corners of the domed womb-chamber (garbhagriha) have been severely damaged.

The temple seems to have been repaired at some earlier date. All the stone joints have been repointed and stone plastic repairs done. This has been done with a grey cement-like material.
C. Harishankhara Temple (Collapsed)

Effect of the 2015 earthquake

The temple collapsed in total on 25 April 2015. The thresholds of the sanctum are still in place, albeit dam-aged. Hundreds of wooden fragments were salvaged, and first stored in the Keshav Narayan Chowk. In June 2015, a storage shack was constructed to store all the fragments which belong to the Harishankara temple. The pillars survived in full length; the tenons, however, are broken. The doorways are also intact. Seven of the 20 colonnettes and the tympana which they had been supporting are broken. Most of the 44 struts and 12 corner struts survived in full length. The same is true for the 20 symbolic windows of the first, second and third levels. Only minor damage occurred. The entire inner frames of the doorways and the secondary lintels of doors and windows cannot be retrieved from the large heap of fragments because they are not carved.

Present Status of the temple

The temple has been restored to its original configuration. The missing parts were reconstructed and the materials salvaged were put to best use. Structurally steel pins were used to bind the timber frame inside but this was made as to not be seen from the outside.
D. Vishveshvara Temple (Partially damaged)

Effect of the 2015 earthquake

The Vishveshvara Temple withstood the April 25, 2015, earthquake but suffered major damages at the ground floor level. At the inner core, the masonry panels between the wooden door frames and corner columns popped out or suffered severe damage. With the masonry out of place, the structure is currently mainly resting on its wooden frames and pillars and the outer timber arcade. These elements are also dislodged and out-of-plumb. Plum-bob spot checks of the sloping timber arcade unveiled horizontal dislodgements between 3 to 8 cm maximum (measured below capital and bottom of pillar). All timber joists and beams above the sanctum space are rotten and beyond repair. The upper levels appear to be in better condition, although access for a more detailed inspection is not possible at the moment.

Present Status of the temple

The temple has been carefully built without being dismantled and the overall aesthetic integrity has been preserved. Shoring was done so as not to dismantle the whole structure at once. The temple was meticulously repaired keeping in mind the following points.

- The outer core walls above the timber arcade removed to allow the careful realignment of the timber arcade and subsequent rebuilding of the walls
- Removal and reconstruction of the roof levels. The removal of the heavy roofs facilitated the realignment of the wooden elements of the inner core
- Insertion of a x-braced steel frame within the sanctum. This reversible strengthening measure will significantly upgrade the lateral resistance of the inner core, which has to transfer all lateral forces induced by an earthquake.
- The frame tied down into the foundation level of the structure and extend up to the first floor level.
- All below-grade steel galvanized, tar-coated and encased with 12cm of cement mortar
At the first floor level, a wooden diaphragm made of two layers of waterproof plywood panels installed to create a rigid floor plane at this level.

This coupled the outer masonry core to the inner one and prevented differential movement within the event of an earthquake. At the upper end of the outer masonry core, a wooden horizontal truss will be installed to tie the cores together at this elevation.

All roof structures reconstructed with one layer of plywood panels on top on one layer of traditional sal wood planking.

Connections between the wooden struts and the strut rails strengthened with steel straps on the rear side.

E. Char Narayan Temple (Completely collapsed)

Figure 11 Char Narayan Temple before earthquake. Source: KVPT, 2013

Figure 12 Char Narayan Temple after the earthquake. Source: KVPT, 2015.
Damage after the 2015 Earthquake

The 2015 earthquake reduced temple to a heap of rubble. Within a few days following the earthquake, most of the wooden elements, including simple structural wooden elements such as rafters, were salvaged, first stored indiscriminately in the courtyard of the neighboring palace, in May 2015 roughly organized and stored and in June 2016 professionally ordered and presented. It took a year of stock-taking to identify the constituent components of all portals, doorways, windows and cornices. The historic veneer bricks (daciapa) were also properly stored. (KVPT, 2017)

All large bricks and molded cornice bricks were damaged to such an extent that replicas, produced by the only active traditional brickmaker (Aval) of Bhaktapur, will replace the original ones. Salvaged veneer bricks (daciapa) were reused for the ground floor levels of the Char Narayana temple. Matching the size of the old bricks, new bricks were produced in November 2016.

Evidence of the details of all the portals, doorways (jambs, lintels, colonnettes, outer frames), columns, colonnettes of the the two-tiered Char Narayana temple were preserved.

Present Status of the temple

The temple is reconstructed as per the original configuration. Maximum use of salvaged materials was done and rest of the parts were successfully replicated. The major elements like doors, windows, toranas could be seen with newly attached parts. This contributes to the temple’s authenticity, because a major part of a temple being authentic is the distinction of the reconstruction of the temple during the various stages. This was achieved from the use of new complimented elements.

The temple has regained its place in the durbar square and the dabali and the temple plinths have once again become a place of gathering of anyone wishing to admire the traditional beauty of Patan.
F. Narsingha Temple (Not affected)

Narasimha Mandira is located to the west of Patan Darbar Square, in front of the Taleju Temple (LAL1270) and north of the Hariśaṅkara Temple (LAL1280). This is one of the few early śikhara towers in the Valley. It was built by PurandaraSimha, a mahāpātra of Lalitpur, in NS 710 (CE 1590) in memory of his elder brother Narasimha Deva. Although Śaiva mortuary temples are found in many places, this is said to be the first known case of a mortuary temple with a Vaiṣṇava image (Tiwari 2013, 113). Two stone lions guard the lower plinth, and two deities have been placed on either side of the top plinth. The left deity is a four-handed Garuḍa using two hands to pray and the others to hold a flower and a water vessel. The deity sitting on the right-hand side is holding a cakra (wheel), an kuśa (hook), gadā and pāśa (noose). Inside the sanctum, one can find an eight-handed stone image of Narasimha, the fourth incarnation of Viṣṇu, standing on a pedestal holding khaḍga, cakra, vajra and gadā with his right hands and śaṅkha, pāśa, padma and an kuśa with his left hands. Garuḍa sits to his left and Laksṇī is located to his right. Unlike other commonly found Narasimha images, this Narasimha is standing but is not pictured tearing apart Hiraṇyakaśipu’s abdomen. The temple itself is based on two lower plinths and an upper plinth with a porch that opens up in all four directions. The corner of the main sanctum wall is serrated and tapers upwards towards the śikhara. Located on the ground floor, the main sanctum can be accessed from the east side by a series of steps. Stone pillars rest on either side of the porch, though the columns attached to the walls of the sanctum are made of timber. The lintel beam is also made from timber and has layers of brick cornice above it. Four doorways can be found on each of the sanctum’s walls, but the main entrance is on the eastern side. Four porches have been built to form turrets above the sanctum, and are attached to the main śikhara tower. These turrets have small openings on three of their side walls, as well as terracotta toraṇa capped by decorative brick work and a stone finial. Their walls have been plastered with lime. The main brick tower is at the centre and contains seven bands known as saptaratha. The topmost crown of the śikhara is embellished with layers of floral-patterned cornices and an āmalaka plastered with lime. The pinnacle is made from stone. Recently, someone added the surrounding railings and a small garden adjacent to the shrine.

Figure 14 Narsimha Temple as of January 2020

Figure 15 The Northwestern part of the temple constructed in part.
Present status of the temple

The temple is now in the same state as after the earthquake. There has not been dismantled yet, but efforts are being done for the reconstruction. The north-west part of the temple has also been reconstructed in newly made but used old materials.

The temple however was not damaged in the earthquake, and continues to exist that way till this date. However the present condition of the temple is very damaged and needs immediate reconstruction. Wall cracks are very much apparent and the brick work signals readily erosion in the event of rainfall.

G. Bhaidegah (Not affected but dismantled later)

The Patan Darbar Square is a temple scape of Malla-era pagoda and shikhara style architecture. Most of these great monuments were brought to the ground by the Great Earthquake of 1934. The local community and the Rana regime of the day were able to rebuild the palace complex as well as the temples, except for the largest temple of all, standing at the southwest corner, Bhaidegah. Bhaidegah was built more than three centuries ago by the Patan kingdom's chautaria (prime minister) Bharo Bhagirath Bhaiya in 1678, and it seems to have been one of the most intricately carved temples of the 17th century. It was constructed as a three-tiered pagoda temple, consecrated to Vishveshvara (the lord of the world Shiva), to evoke the Kashi Vishvanath Temple in Benaras.

Unlike all the other temples of the palace square, Bhaidegah was built by a commoner who rose to become part of Patan city-state's nobility. Perhaps this was one reason that the temple was the last on the list for rebuilding, which in the end did not happen. Instead, a Moghul-style dome was put up on the temple plinth to protect the Shiva lingam which is the focus of devotion. The Bhaigedah temple, representing the finest example of Nepali pagoda architecture, for its carved woodwork, aesthetics and dimensions, deserves to be restored to its original shape, as a representative of Kathmandu Valley's living culture. The citizens came together in the year 2011 CE, nearly eight group decades after the Great Earthquake, to restore Bhaidegah. By involving the citizens of Kathmandu Valley in the restoration, the hope was to enhance the sense of ownership over the architectural heritage of the Valley, and reinforce the sense of wonder at what made the city-states of the Valley so accomplished in the arts and culture. The Bhaidegah Rebuilding Project hopes to engage in this effort all individuals and institutions who value the history and cultural heritage of Kathmandu Valley. (The Rebuilding of Bhaidegah Temple, 2011)
Present Status of the Temple

Bhaidegah was originally a tiered temple and in fact was the largest temple in the durbar square. The reconstruction in the original style is now being carried out with various photographs and drawings used as documentation. The extensive carvings that existed originally are now being replicated to the best possible extent.

However, since Bhaidegah previously existed as a dome shaped construction, all of the materials now had to be new and could not be salvaged. This has taken a lot of time for the reconstruction, and the further inadequacy of financial aid has halted the construction process for the time-being.

It is being taken care that the temple be reconstructed in its original setting, because it was the largest temple that existed in the durbar square, and its traditional presence contributes a lot to the traditional setting of the square.

The expertise of conservation architects, woodworkers and bricklayers will be availed for the job of Bhaidegah's rebuilding. What was lacking originally was the information required to carry out a professional rebuilding. Fortunately, investigation by many well-wishers in the community of conservation architects, historians and community activists has served up the required details. Firstly, some photographs of Bhaidegah taken in c. 1920 were located in the collection of Felix Brandt in Altottin, Germany. From a distance, or showing only partial facets, these pictures help provide a sense of the size of the temple under its spreading jhingati tile roof. The photographs also provide a window into the human activity on Darbar Square. Henry Ambrose Oldfield, the doctor at the British Residency who had made many landscape sketches during his Kathmandu tour of duty, made a detailed water colour circa 1853 of the woodwork of the first-floor struts, cornices and pillars of Bhaidegah. This discovery in the collection of the British Museum was a great boost to the rebuilding effort. Most significantly, the huge 14-foot carved wooden struts and subsidiary struts and pillars of the temple were discovered in the Patan Museum storeroom at Bhandarkhal. With the permission of the Department of Archaeology, it was possible to imagine using some of the original parts in the restored Bhaidegah temple. Further, the accuracy of Oldfield's sketch of the woodwork was confirmed when placed against the surviving woodwork, which provides a guide to the new woodwork that is required. The discovery of the Austrian photographs, the London watercolour and the Patan Museum struts have made it possible to plan with confidence for the rebuilding of Bhaidegah, remaining faithful to the original design of Bhagirath Bhaiya. The rebuilding will happen on the intact foundation and plinth, using some of the original struts as well as the original finial. The building techniques and material will replicate what the artisans of Patan did when they built Bhaidegah nearly three-and-half centuries ago.

H. Lion pillar of Bhimsen Temple (Collapsed)

The stone pillar in front of Bhimsen Temple was built in Nepal Sambat 827 (1708 CE) in the reign of King Shree Tin Indra Malla. This is a gilded lion statue on top of a stone pillar in front of Bhimsen Temple in Patan Darbar

Damage after 2015 earthquake

The pillar was destroyed in the devastating earthquake of April 25, 2015. The stone pillar was broken into three pieces, with the lower part of the pillar remaining standing.
The broken parts of the stone pillar were restored (joined together) by the experts of the University of Applied Arts, Vienna with stainless steel rods in August 2015. Newar stonemasons, metal craftsmen, and laborers restored the repaired stone and copper parts to their original positions on April 24, 2016. This project by the Kathmandu Valley Preservation Trust was the first monument restoration in Nepal after the devastating earthquake of April 25, 2015.

Although the KVPT was directly involved in the restoration, the local also participated by providing manual labour during the erection of the pillar.
I. Bhimsen Temple (Non-threatening damage)

Damage after 2015 earthquake

The temple sustained partial damage but did not undergo structural collapse. Reconstruction work had just completed a month before the earthquake of 2015, and hence the damage sustained was minimal. However, the structure was in a deteriorating condition and needed immediate repair.

Present Status of the Temple

The main problem of the temple was because of the foundation. The base of the foundation of the temple was uneven ranging from 5-7 feet. This led to uneven distribution of load and hence unequal settlement underneath. To solve this, the foundation was redug, and made an equal 7 feet under all places. The temple was not damaged but was dismantled at parts for the renovation works, in parts, and also because this would lessen the load on the structure making it lighter during renovation works. This part-part works, would further lessen the burden of transfer of materials which would omit the manual labour to some extent and make the process efficient.

This was done mainly because once dismantled roughly, the materials had minimal salvage value. The mud which would have been extracted would have been mixed with other materials and would be useless. The walls were hence dismantled in parts and reconstructed.

One major problem though was the repair and reconstruction of the Bhimsen temple which was completed just before the earthquake by the Department of Archaeology (DoA). This had been a multiyear planning for the reconstruction and it was processed through a tender. The construction that they did was full of mistakes and displayed ignorance. The new walls constructed inside the temple at the first floor was just for beautification and was not linked to the old existent walls, which had caused the whole section to disintegrate. The pillars
were out of plumb up to 5 inches horizontally which needed to be repaired. The timber beams at certain places were overloaded and it had not been properly addressed. The beam which needed to be replaced was just held on by a thin metal strip with nuts and bolts.

All of this is now being looked at by the Chamber of commerce of Lalitpur with the technical assistance and supervision of the KVPT. The temple is now being restored in its traditional way, and analysis of the structural load distribution is being taken care of, with all the issues like dampness and uneven load distribution addressed. The techniques of construction have not used any foreign materials, but use of metal has been done specially to coat the pillars, to prevent them from dampness.

J. Radha Krishna Mandir (Completely collapsed)

It was origionally built by a son of Siddhi Narasiṃha Malla. The Rādhākrṣṇa Temple is located on Svatha square, which lies on the way from Patan Durbar Square to Shankhamul. Before the 2015 earthquake, this tiered temple stood on four plinths. 13 steps led to the wood-carved main doorway flanked by two lions in a sitting position facing east. Next to the lions, there were two statues of guardian deities which were stolen in the 1990s. According to local informants, the original main deities in the sanctum were also stolen prior to 1967. During the 1967 renovations, new stone icons of RādhāKrṣṇa, Viṣṇu and Lakṣmī were installed and consecrated. However, a few years later these newly placed images were stolen yet again. The daily nityapūjā was performed by a Rājopādhyāya priest, but no particular seasonal or annual rituals are performed at the temple.

Effect of the 2015 earthquake

During the 2015 earthquake, the temple collapsed completely. Some salvaged materials such as temple struts were moved to the archaeological garden in Patan where they were stored in the open.

Present Status of the temple

The temple, as of January 2020 is undergoing reconstruction through a tender process appointed by the DoA., and has fences put around it for that. The main principle of conservation is to restore the monument is its original position maintaining its Value and Authenticity.

As this temple is totally collapsed remaining the plinth. Main sanctum/Garbha area is tried to be restored.

Hence conserving the main garbha area, circumulatory area/peti is excavated up to 5'-0" in order to study the condition of foundation as well as nature of soil. Excavation also showed the nature of foundation to see either intake or not. Preserving the central grabha area, surrounding peti and circumulatory area is excavated 5'-0" depth. Stone in lime, surkhi and sand mortar is used for foundation. The excavated width and depth of the circumulation is equal. Stone are placed in equal level and binded with lime surkhi and sand.

The foundation is totally made compacted with the stone, sand and surkhi mortar. Foundation is mat foundation with central grabhagriha is retain safely with any type of interventions.

After the proper foundation, peti are made with dachhiapa in outer face and inner ma apa are used. At the peti, each corner is made bounded and strong with the stone mirror stone. Three layes of peti is completed now. And now for the superstructure construction, as wooden thams, meths, nidal and decorated cornices are essential as according to the
existing design. Most of the wooden decorations are needed to be carved, hence carving works are going on Bhandarkhal garden.

Figure 20 RadhaKrishna temple after the earthquake of 2015

Figure 21 File photo of Radhakrishna Mandir, Swatha Square, Patan

Figure 22 Ongoing reconstruction of the Radhakrishna temple as of 2020

K. Golden Temple (No major effect of earthquake)

The Buddhist shrine of Kwabaha, popularly known as the Golden Temple, is one of Nepal’s most beautiful monasteries. It is situated north of Patan’s Durbar Square on the road leading to Kumbeshwor. Although it is more commonly known in Patan as Kwabaha: and its Sanskrit name is Hiranyavarna Mahavihar.

Kwabaha is one of the eighteen main Bahas of Patan and ranks on top in terms of its religious status. The formal name of the monastery is ‘Bhankaradevasaæskarita Hiræyavarea Mahavihar’, which suggests that it was founded or reconstructed in the reign of Bhaskaradeva (1045-48). The presence of the four metallic sculptures reminiscent of those of the Licchavi period confirms the antiquity of the site.

Figure 23 Golden temple (2019)
Effect of the 2015 Earthquake

The temple did not sustain any major damage, but had only a slight angular distortion in the structure of the main temple. This may be due to the fact that the main temple had just completed its retrofitting work just before the 2072 earthquake. Nuts and bolts along with timber frames were used during the work. The timber frames were double braced on each floor to add to the strength.

The 1934 earthquake tilted the main temple a few inches. The 2015 earthquake destroyed the roof of the complex and it is in reconstruction. The second floor is planning to be reconstructed soon. The internal of the main temple has been retrofitted while the external façade has not been tampered with. The Department of Archaelogy, has been requested with for the aid to make the roof and temple.

The zinc roof would now be replaced with copper plates, because it has been worn out with time. Biharsudhar samiti, is in charge of the main decision and management of the activities that take place there. Once a year the internal nuts and bolts are tightenend, along with the cleaning of the whole temple complex.

The foundation however has not been altered with, and only the superstructure had been modified.

Present status of the temple

The temple is now fully reconstructed and daily functions of the temple are performed without any hindrance. The daily rituals of the baphacha, ,the priests there have been continued throughout. Due to the significance of the temple it was the utmost priority not to alter the façade and hence no change in the façade of the temple can be seen. Due to the structural strengthening of the temple, people can without any hesitation visit the temple for their daily rituals.

L. Patuko Ganesh (Partial damage)

This is the one storey temple located at the lalitpur sub metropolitan city, Tadha chowk, patuko. This is the temple built in 801N.S. This temple is also renovated in different phases. Struts are renovated in 951. Roof and jhingaties are built by Dhirjaman and kajiman. There is a stone; local people believe it is the God Ganesh. In 2058 B.S the tympanum (Tudals) was stolen.

This temple is Daily worship by the local people. God Ganesh is the symbol of wealth and intelligence. It is very important temple in tangible and intangible culture of Nepal. This temple is open colonnade in three sides and fixed in only North direction.

Effect of the 2015 Earthquake

This temple was little bit crack during the earthquake of 2015. This temple is totally dismantled up to the plinth after earthquake. The main deity of temple is in lower level from the
original ground. Materials were separated. Columns and other decorated elements were placed safely and minimum maintenances were done. While bricks were also stored in order to used the usable ones. After dismantling the total temple detail drawing was prepared with total estimate. The main work undertaken by this temple is Department of Archaeology. In fiscal year 2073-74 DOA had separated 11 lakhs for the reconstruction of this temple. After estimate of this temple quotation was awarded and work was started according to the terms and conditions of DOA.

The renovation is completed up to the first-floor level with reuse of the Thams with certain maintenance and

According to the budget of this fiscal year, walls of North direction are finished and the columns of three directions is completed with Nidal. and tarfolin is covered to save from natural calamities.

In this fiscal year 2074-75, 15 lakhs is allocated to complete the work above the Nidal.

**Present status of the monument**

The monument has already completed construction. As the one storey of this temple was done the upper portion ie, the roof was completed. Maximuntudals are in good position so are fitted with the minor modifications, and carnices are too maximum re-used and the structural members are added with the new sal wood. then roofing was done with the references of the photographs of existing.

**M. Kumbeshwor Temple (Partial collapse)**

Kumbheshowr temple is the five tiered temple in Kumbheshowr (Bangalamukhi) area. One of the valley’s three five-storey temples. The temple dominates the surrounding streets and is said to date from 1392, making it the oldest temple in Patan. Roofs of the temple are of brass, coated with gold. Gajurs are of five numbers and in one line.

The temple is noted for its graceful proportions and fine woodcarvings. Carving of Tudals are taken as examples. In this area along with the kumbheshowr, Bangalamukhi temple, satals, pati and other small temples too exist.

![Figure 24 Kumbeshwor temple before the Earthquake](image-url)
Effect of the 2015 Earthquake

Due to the Earthquake of 25th April 2015, Kumbheshowr temple was badly affected. The top roof of the temple was totally collapsed. Copper sheets were damaged and wooden members were too damaged and decayed. Walls were cracked and 2 upper tiers roof got dislocated. Salvages after earthquake of this monument are preserved safely at Mulchowk of Patan Durbar Square. Gajur is also preserved at Mulchowk. As this monument is very rich architecturally so stored wooden carved members will be reused after proper study and maintenance of that but till now no tests are considered to know the strength of the materials.

Present status of the temple

This project of restoration was undertaken by DOA. Tender awarding work was finished and after evaluation work this restoration work was awarded for Darma/ Tulshi JV pvt. Construction. Department of Archaeology had given them work starting order (Karyadesh) after having agreements with Contractor. The restoration has almost been completed. Double Scaffolding work of this temple had completely finished. Tubular pipes are used for scaffolding purpose. Dismantling work has been done slowly and in progressisive manure. All the used material is taken with special cure and save properly for proper future use. All other materials are too saved carefully to segregate and study.
1. **Introduction:**

**World Heritage attributes, boundary and buffer**

Bhaktapur Durbar Square (‘Layaku’ in Newari language) is one of the two World Heritage monument zone located in Bhaktapur. It is a historical plaza in front of the royal palace of old Bhaktapur Kingdom and is one of the most visited tourist sites of the Kathmandu Valley. It is full of historical monuments such as the 55 Window Palace, National Art Gallery, Big Bell, Golden Gate, Statue of Bhupatindra Malla, Pashupatinath Temple and the Vatsala Devi Temple. (Khwapachhen, 2019)

The city is 15 km far from Kathmandu. Bhaktapur is also known as a museum of medieval art and architecture with many examples of sculpture, woodcarving and colossal pagoda temples consecrated to different gods and goddesses. It is a conglomeration of pagoda and shikhara-style temples grouped around a fifty-five-window palace of brick and wood. The square is one of the most charming architectural showpieces of the Valley as it highlights the ancient arts of Nepal. The golden effigies of kings perched on the top of stone monoliths, the guardian deities looking out from their sanctuaries, the wood carvings in every place-struts, lintels, uprights, tympanums, gateways and windows—all seem to form a well-orchestrated symphony. Pottery and weaving are its major traditional industries.

The boundary encompasses the Durbar Square and Taumadhi Square and the trade route up to Dattatraya Square. The boundary corresponds to the area gazette in 1996. (Area 14.60 ha approx.)
The Buffer Zone encompasses the whole historic city of Bhaktapur comprising of the municipal cultural heritage sub-zone and the buffer sub-zone. (Area 121.43 ha approx.) (Kathmandu Valley World Heritage Site Integrated Management Framework, 2007)

**Short historic description**

Bhaktapur, the city of devotees, was established in the 9th century. The city served as capital for Malla Kingdom from 9th century to 18th century until King Prithivi Narayan Shah conquered the city, unified Nepal and began to rule from Kathmandu. The first Malla palace in Bhaktapur is believed to be built around 1150 A.D. Yakshya Malla built Yakshyeshwor Mahadev temple in 15th century which is the oldest temple remaining in the Bhaktapur durbar square.

After Yakshya Malla, his sons established different independent kingdoms in Kathmandu (Kantipur), Bhaktapur (Bhadgaon) and Lalitpur (Patan). In time, the rivalry between these brotherhoods led to fragmentation and poor rule in the country as well as the greatest competitive buildings periods. (Cultural Portrait Handbook 3, 2006)

During this time, structures like 55 Windows palace, Vatsala Devi Temple, Nyatapola Temple, etc. were built.

**Rehabilitation history**

The monuments in Bhaktapur monuments zone have undergone restoration and renovation many times through different time periods. Bhaktapur Development Project can be taken as the major turning point in the field of conservation of monuments. During the 16 years period of the project, many monuments were conserved applying various concepts of conservation. Pujari Math, Chyasilin Mandap, Asamari Sattal, TilMadhav Narayan Temple, Swet Bhairab Temple at Nag Pokhari, Shiva Temple at Golmadhi, Lokeshwor Temple at Tapalchhe, etc. are some of the monuments that were conserved in the project.

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<th>Timeline</th>
<th>Description of conservation works carried out</th>
</tr>
</thead>
<tbody>
<tr>
<td>1613-1636 A.D.</td>
<td>Nag Pokhari was repaired by King Jitamitra Malla</td>
</tr>
<tr>
<td>1677 A.D.</td>
<td>Extensive renovation of Kumari chowk by Jitamitra Malla</td>
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<tr>
<td>1707 A.D.</td>
<td>Figures of Ugrachandi and Bhairab were installed on either side of entrance gate of Basantapur Durbar</td>
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<tr>
<td>1707 A.D.</td>
<td>Renovation of Malati chowk and added stone lions and idols of Hanuman and Narsimha guarding the entrance</td>
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<td>1717 A.D.</td>
<td>Bhairabnath temple was reconstructed to 3 tiered temple by King Bhupatindra Malla</td>
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<td>19th century</td>
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<td>1971 A.D.</td>
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<td>1974-1991 A.D.</td>
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<td>1987 A.D.</td>
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<td>1994/5 A.D.</td>
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<tr>
<td>2003 A.D.</td>
<td>Renovation of 55 windows palace began</td>
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</tbody>
</table>
2. Overall impact of the Gorkha earthquake

The 2015 Gorkha earthquake has taken life of thousands of people and has damaged millions worth of property. Bhaktapur was also severely affected by Gorkha earthquake 2015. Many of the monuments which carries historical, archeological, religious and cultural importance were damaged. Temple like Vatsala Devi temple collapsed to its plinth.

![Figure 2 Damage Assessment of Bhaktapur Monument Zone](image)

This figure shows that major destruction of the monuments occurred at Durbar Square, where monuments like Silu Mahadev Temple, Vatsala Devi Temple and Kedarnath Temple collapsed. And also the figure shows the settlements at Suryamadhi, Tachapal, Maheshwori, Golmadhi and Byasi were heavily affected by earthquake.

<table>
<thead>
<tr>
<th>S.N.</th>
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<th>Ward no.</th>
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<td>2</td>
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<td>3</td>
<td>South Sattal at Wakupati Narayan</td>
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<td>4</td>
<td>Macho Bhairab Pati 1</td>
<td>2</td>
<td>Macho Galli</td>
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<td>Pati in front of Samaj Sudhar</td>
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<td>92</td>
<td>Bhaktapur Municipality Building (old)</td>
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<td>Mudha Sakha Resided Building</td>
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<td>Durbar Prabesh Dwark</td>
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<td>95</td>
<td>Rameshwor Temple</td>
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<td>Gopinath Temple</td>
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<td>Kedarnath Temple</td>
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<td>Vatshala Devi Temple</td>
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<td>100</td>
<td>Shankar Narayan Temple (in front of 55 windows palace)</td>
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<td>101</td>
<td>Tribikram Narayan Temple</td>
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<td>Siddhi Laxmi Temple</td>
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<td>Nityanath Dyochchen</td>
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<td>Bishworoop Temple</td>
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<td>Nityanath Sattal</td>
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<td>Shiva Temple inside Shivalaya</td>
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<td>118</td>
<td>Walls around Siddha Pokhari</td>
<td>Dudhpati</td>
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3. Plan for on-going rehabilitation of monuments

Emergency Response after 2072 earthquake:
After the earthquake youths and other volunteers joined to clear the debris and other ruins. At the beginning public safety was prioritized. Then the ruins and salvage materials etc. were collected and stored in specific places. Inventory of the debris were done in major structures. Then a committee “Post Earthquake Excavation and Reconstruction Committee” under the leadership of public representative Prem Suwal was formed. In the meeting of the committee, it was decided who will undertake the reconstruction of the heritage. The division of work was done between Municipality and DOA respectively.

Authorities:
The major responsible authorities for rehabilitation of monuments are as follows:
- Department of Archaeology, Monument Conservation and Durbar Care Office
- Bhaktapur Municipality
- Ward Office
- Respective User Committee

Documentation:
DOA and Bhaktapur Municipality carried out the documentation of the heritages. In many cases, ancient photographs of the ancient times were helpful to ratify the authenticity form-wise. The photographs and the other documents were all accounted for and then plans and other construction drawings were prepared.

Community Participation:
Bhaktapur has led an example for the reconstruction encompassing the community participation. Almost all the projects that were carried out by the municipality were handed over to the community and community carried out the reconstruction process under supervision of the municipality. Ward office has been generally involved in the paving of the street with community involvement. The community was also involved in the decision-making process.

Artisan availability:
Bhaktapur is independent on the artisans. In almost all of the projects, skilled and semi-skilled manpower involved were locals who had been working with traditional materials. Even most of the reconstruction works on other places were carried out with the skilled manpower from Bhaktapur.

Funding:
Most of the funding in the reconstruction works of Bhaktapur was either from the Government of Nepal through DOA or the Bhaktapur Municipality itself. In some of the projects donation from the locals had also helped in managing fund. Bhaktapur hasn’t given reconstruction work solely to any foreign donor agencies. Also it has not taken any foreign aid for reconstruction.

Storage and use of salvaged materials:
There was no specific space designed for storage of the salvaged materials. Storage was done as per the availability of space near the monuments. Open squares and courtyards were used to pile the salvaged materials.

Salvaged materials were used in reconstruction as far as possible.
Materials:
Traditional materials like dachi apa, maa apa, salwood, etc. which are allowed by DOA guidelines had been used. In most of the projects, lime-surkhi mortar was used replacing the original mud mortar.

Monitoring mechanism:
Monument Conservation and Durbar Care Office and Bhaktapur Municipality were monitoring and supervising the reconstructions works. An effective mechanism for monitoring, supervision and reporting of the works were lacking.

Detail study of Monuments

A. Silu Mahadev Temple (Fasi Dega)
Silu Mahadev temple is situated in the eastern part of the Bhaktapur Durbar Square. The temple is dedicated to Lord Shiva. This is one of the tallest temples in Bhaktapur. The temple is standing on six steps of plinths with a pair of animal guardians (elephants, lions and bulls) on first three steps. King Jitamitra Mall built this temple in Shikhara style which was damaged in 1934 earthquake. And it was rebuilt in dome shape. Due to this dome shape, the temple is locally known as ‘Fasi Dega’.

The Gorkha earthquake again destroyed the temple to its plinth level.
As the structure was damaged badly leaving down only part standing, but in vulnerable condition, so it was assessed as a collapsed monument by DOA in its inventory prepared and published just after the earthquake. All the objects of archaeological importance were salvaged from the debris and damaged structure. There is detail photography of dismantling process and salvaged objects.

In the process of dismantling, all the required objects were collected and documented with photography. The salvaged objects and materials are stored in the temple premise and are being used as the reconstruction work is going on. The damaged temple structure was dismantled safely to top plinth level and stored all material of archaeological importance. Detail estimation and proposed drawings were prepared by Monument Conservation and Durbar Care Office in coordination with Bhaktapur Municipality. The temple will be restored in Shikhara style as it was before the 1934 earthquake. DOA has awarded tender to Tulsi and Sanu Suwal Joint Venture with contract amounting to Rs. 42,292,561.06 for reconstruction with multiyear procurement system.

The reconstruction work is going-on. Repair work of the plinths is complete. For the repair work, the outer shell of the mud mortar plinth, 2 feet width, were carefully removed and replaced by lime-surkhi brick wall, without disturbing the inner core. During excavation of upper fourth and fifth level plinth, it was observed that the upper sanctum was constructed separately from the plinth below. The whole of the upper two plinths were carefully removed separating the inner sanctum. Local skilled artisans are used for the reconstruction of the temple under supervision of Monument Conservation and Durbar Care Office, Bhaktapur.

**B. Siddhi Laxmi Temple**

The 17th century Shikhara style stone temple, dedicated to goddess Siddhi Laxmi, is located at south eastern corner of the 55 windows palace. It was built by King Jagat Prakash Malla. The temple stands on seven levels of plinth and is guarded by pair of each child and dog, horses, rhinos, man-lions, and camels from bottom to top plinths.

The 2015 earthquake damaged the building with some major cracks.

Considering the possibility of future collapse of the monument, measured detail drawings were prepared. To prevent further damage in the temple timber shoring was provided at first.
Then the temple was dismantled to the ground to begin reconstruction and each element of the temple was marked. There is detail photography of dismantling process and salvaged objects.

Demolition of the temple was done carefully, marking each stone of the monument and stored in temple premise. Most of the salvage stones were reused in the reconstruction later.

The tender for reconstruction of the temple was awarded to Drama S., Tulsi and Binayak Joint Venture with contract amounting to Rs. 22,214,387.17 incl. VAT. After demolition was complete, mat foundation was laid four feet below ground level. A gap was created between the temple and Peti 55 windows palace was created. Lime-sukhi mortar was used instead of mud mortar. For structure above plinth, detail structural analysis was done by an expert. The reconstruction was complete with total cost amounting to Rs. 17,349,000.00. The whole process was carried out under the supervision of Monument Conservation and Durbar Care Office, Bhaktapur.
C. National Art Gallery
The western end of the Bhaktapur palace was converted into National Art Gallery, established by Government of Nepal, Department of Archaeology in 1960 A.D., which contains numerous paintings, manuscripts and stone sculptures. Previously, this building was part of Malati chowk built by King Bhupatindra Malla in 1707 A.D. The eastern part of the palace was reshaped in 1855 A.D. by Dhir Shumsher to create a large hall known as Lal Baithak.

The National Art Gallery and Lal Baithak both were damaged by Gorkha earthquake.

Wooden shoring was provided to the monuments to prevent the further damage, which was funded by GIZ and DOA in cooperation with UNESCO. The north-west wing of the gallery is under construction during the first phase. This wing will be reconstructed in the original form with two tiered fucha crowning the structure. This reconstruction work is carried out by Tulsi and Sanu Suwal Joint Venture with contract amounting to Rs. 56,657,618.71. The salvage materials are stored in the premise of the northwest wing.

There was conflict for reconstruction of the south wing of the building. For this, Bhaktapur Municipality hosted a discussion programme with experts about architecture of the building. The conclusion of the discussion was to reconstruct the building in Malla style taking the reference from some old paintings. Drawings were prepared by expert team and now Bhaktapur Municipality is waiting for response of UNESCO for the reconstruction.

D. Tawa Sattal
Tawa Sattal, also known as Taha Pha, is located at western corner of Bhaktapur Durbar Square. It is believed to be built by King Jagat Prakash Malla and size of the sattal used to be double of the present size. After 1990 B.S., it was rebuilt to present form. The northeast wing of the sattal is currently being used as office for Monument Conservation and Durbar Care Office.

In 2015 earthquake, southwestern part of the sattal collapsed and the remaining part was damaged and numerous cracks were observed.

All the objects of archaeological importance were salvaged from the debris and damaged structure. There is detail photography of dismantling process and salvaged objects.

The damaged part of the sattal was dismantled carefully and salvaged elements and materials were stored in the premise. Some salvaged materials were reused in the reconstruction of the sattal.
Destruction of the Tawa Sattal resulted in the loss of a space to hangout for locals. Before reconstruction began, the remaining part of the sattal was supported by wooden shoring to avoid further damage. The damaged part was dismantled to the ground level. Detail Drawings and estimation was prepared by Monument Conservation and Durbar Care Office in coordination with Bhaktapur Municipality. DOA awarded the tender to Tulsi and Sanu Suwal Joint Venture with contract amounting to Rs. 31,291,389.00. Foundation was laid four feet below the ground level. Various salvaged materials like lakasi, tham, meth and unbroken bricks were reused. In the damaged eastern part, there was unnecessary dead load of gravels laid on first floor, which was then removed after consulting technical team. The reconstruction work of Tawa sattal was completed using local craftsmanship.

Figure 14 Shoring the remaining part of sattal (DOA)

**E. Dhatukala Museum**

Dhatukala Museum or metalworks museum is located opposite to the Wood Carving Museum, behind Dattatryaya temple at Dattatraya. The museum exhibits bronze and brass objects from medieval periods like rituals lamps, hanging lamps, ceremonial jars, water pots, oil pots, etc. The building was built in 18th century using traditional bricks like dachi apa and chikan apa.

The 2015 earthquake had partially damaged this building. The damaged of part the building was dismantled carefully and salvage was stored in the inner courtyard. Local craftsmanship were assigned to duplicate the missing parts and repair the damaged members of the building. Detailed drawings and estimation of the building was done by Monument Conservation and Durbar Care Office, Bhaktapur in coordination with Bhaktapur Municipality. The funding work was done by Department of Archeaology and construction was carried out by a contractor under supervision of Monument Conservation and Durbar Care Office. The renovation and reconstruction work included construction of boundry wall in northeast corner and construction of counter for the museum in traditional architectural outlook. The reconstruction work has already completed.
F. Rameshwor Temple

Rameshwor temple lies just right to entrance gate of Bhaktapur Durbar Square. This temple is one of the Char Dham of Bhaktapur. The open shrine, dedicated to lord Shiva, stands on four stone pillars and is topped by gumbaj. The name Rameshwor comes from that it was Ram as an incarnation of Vishnu who had the original temple of Mahadev built at Rameshwar Temple in South India.

The reconstruction of this temple was started before 2015 earthquake due to degrading condition. But the earthquake stopped the work for some time. Now the restoration of the temple is already completed. Some salvage elements like the four stone pillars and bricks were reused.

![Figure 15 Rameshwor Temple after restoration (DOA)](image)

G. Badri Narayan Temple

Badri Narayan temple is a Shikhara style temple located west of the Gopi Nath temple beside the Rameshwor temple. The Badri Narayan temple, also known as Badri Nath temple, is dedicated to lord Vishnu and is one of the Char Dham of Bhaktapur. The temple was reconstructed into Traditional Nepalese pitched roofed temple after it collapsed in 1990 B.S. earthquake.

Reconstruction of the temple started before 2015 earthquake but the work halted some months after earthquake. It was done through a contractor under supervision of Monument Conservation and Durbar Care Office, Bhaktapur. The salvaged elements like stone posts, stone lion guards, stone beams and some unbroken bricks were reused. Local craftsmen were assigned to make wooden door for the temple. Now the reconstruction of the temple is already completed.
H. Gopi Nath Temple

The two tiered traditional Nepalese style temple is situated at western corner of the Bhaktapur Durbar Square. The temple housed three deities, left to right, respectively: Satyabhama, Krishna and Radha. The temple is also known as Krishna temple or Dwarika Nath Temple. It is difficult to see the deities as the door remains mostly closed. The temple is regarded as one of the Char Dham of the Bhaktapur Durbar Square. The temple stands on two levels of plinths. On each plinth a pair of lions sits to guard. A garud sits in Namaskar position on a stone pillar in front of the temple.

During the 2015 earthquake, the inner walls of the sanctms were damaged. To avoid further damage, the temple was supported by wooden shoring inside and outside by using DOA emergency fund. Only damaged parts of the temple were repaired by a contractor under the supervision of Monument Conservation and Durbar Care Office, Bhaktapur.
I. Khauma Gate or Durbar Prabesh Dwar

Khauma gate is the western entrance of the Bhaktapur Durbar Square. The gate was built in late 19th century. The original gate was built up of brick masonry wall with no plaster. Later, during the visit of Queen Elizabeth II, the gate was plastered with lime-surkhi and different wooden images were added to the gate.

The middle portion of the southern leg of the gate was completely destroyed by 2015 earthquake. And cracks were observed at different places of the gate. The gate was later demolished carefully as it possessed threat of collapsing by itself.

Drawings of the gate were prepared with reference from old photographs. Reconstruction work was managed by user committee led by Mr. Laxmi Prasad Gora under supervision of Sampada Sakha and funds were provided by Bhaktapur Municipality. The design of the gate was restored to the original one without line-surkhi plaster and the wooden images were not installed as per suggestion of the local people. Reconstruction was done from the foundation and salvage materials were used to some extent. Lime-surkhi mortar was used to bind bricks instead of mud mortar due to lack of availability of good quality clay. The estimated budget for reconstruction of the Khauma gate was Rs. 3,412,318.00. But the project was completed within the budget of Rs. 3,019,066.00.

J. Kedarnath Temple

Kedarnath temple is terracotta made Shikhara style temple, located at western part Bhaktapur Durbar Square. The temple, dedicated to lord Shiva, was built by King Bhupatindra Malla. This temple is also regarded as one of the Char Dham of Bhaktapur Durbar Square. The temple was repaired after it was damaged in 1990 B.S. earthquake, but top part of the temple was not restored to original design.

In 2015 earthquake, top half portion of the Kedarnath temple was collapsed. But the temple was completely demolished to plinth level for reconstruction. Drawings were prepared taking
reference of photographs before 1934 A.D. Timber upright posts were added after structural analysis for strengthening. Five new pinnacles were designed as per the photographs before 1934 A.D. Lime-surkhi mortar was used instead of mud mortar. Local skilled artisans were assigned for the reconstruction project which was managed by a user committee led by Mr. Ram Krishna Twana. A single mason completed all of the brick masonry work of the temple. The Reconstruction work was funded Bhaktapur Municipality and supervised by its Sampada Sakha. The estimated budget of the project was Rs. 7,263,697.00 and it was completed with total cost of about 46 lakhs.

**K. Shankar Narayan Temple**

Shankar Narayan Temple is located in front of 55 windows palace and west of Siddhi Laxmi temple. The domical Shikhara temple is dedicated to lord Vishnu and was built by King Bhupatindra Malla. The temple was critically damaged by the 2015 earthquake. Wooden shoring was provided to support the temple until the reconstruction work started. The whole temple was dismantled carefully and the salvage materials were stored in the premise. Drawings and detailing of the temple were prepared from old photographs and the salvage materials. About 60% of the salvage materials were used in the reconstruction work. Lime-surkhi mortar was used instead of mud mortar to bind the brick masonry. The temple was not plastered. There were not any contractor or user committees involved for this temple. Bhaktapur Municipality, itself, took lead in funding, supervision and management of the reconstruction of the temple. Local skilled artisans were assigned for the works. The budget estimated for this project was Rs. 489,496.00 and total cost of construction after completion was Rs. 539,681.00.
L. Tribikram Narayan Temple

This Shikhara style temple is located to the south of the Yakeshwor Mahadev Temple in Bhaktapur Durbar Square. The temple, which is dedicated to lord Vishnu, was built by King Jitamitra Malla. The temple was coated with lime-surkhi plaster on the exterior.

The temple was critically damaged by the 2015 earthquake. Huge cracks and bulking were observed from top to bottom of the temple. To prevent further damage, the temple was supported by wooden shoring immediately afterwards. The whole temple was then dismantled carefully and the salvage materials were stored. Drawings and detailing of the temple were prepared from old photographs and the salvage materials. Upright wooden posts and wooden tie beams were kept in the temple as it was before. Lime-surkhi mortar was used instead of mud mortar to bind the brick masonry. The temple was not plastered. Except for broken bricks, almost 70% of salvage materials were used. There were not any contractor or user committees involved for this temple. Bhaktapur Municipality, itself, took lead in funding, supervision and management of the reconstruction of the temple. Local skilled artisans were assigned for the works. The budget estimated for this project was Rs. 1,761,603.00 and total cost of construction after completion was Rs. 1,468,503.00.
M. Harihar Narayan Temple
Harihar Narayan temple is located in the eastern part of the Bhaktapur Durbar Square east of Silu Mahadev Temple. This shikhara style temple was built in the 17th century and is dedicated to lord Vishnu.

The 2015 earthquake completely destroyed the temple. The temple was demolished up to foundation level and salvage was stored beside the temple. Detail drawings were prepared from the available evidences and salvage materials. The timbers of the temple were all rotten so no timbers were reused. Only bricks were reused in the reconstruction. The detailing of the pinnacle was done with reference from Tribikram Narayan temple. Lime-surkhi mortar was used instead of mud mortar to bind the brick masonry. The temple was not plastered. Local skilled artisans were assigned for the reconstruction work which was managed by a user committee led by Mr. Satya Ram Suwal. Funding was provided by Bhaktapur Municipality and supervision was done by its Sampada Sakha. The estimated budget for this project was Rs. 1,582,063.00 and total cost of construction after completion was Rs. 1,559,189.00. Some locals have also donated valuable goods for the construction work.
N. Vatsala Devi Temple
Beside the Big Bell, there stands a stone carved Shikhara temple, Vatshala Devi temple, on three levels of plinths. The temple is dedicated to Vatsala Devi, a form of goddess Durga. The architecture of this temple resembles with the Krishna Mandir of Patan Durbar Square. The temple was originally built by King Jitamitra Malla in 1696 A.D. and the present structure was reconstructed by King Bhupatindra Malla. Behind the temple is a traditional water spout, Dhungedhara.

The Vatsala Devi Temple was completely collapsed in the 2015 earthquake. Excavation works were done at the temple premise with the help from UNESCO in collaboration with Department of Archeology, Bhaktapur Municipality, National Art Museum, Durham University, British archeological experts and structural experts. A big building structure was found within the surface in front of the buff stone Vatshala Devi temple which was razed by the quake. The excavation team also surveyed other areas of Durbar Square by ‘Ground Penetrating Radar’ to carve out the map of the underground structure and materials for its safety. Lichchavi era manuscript, statue, remnants of the structures, materials used to cover the earthenware pots, ancient bricks, stones, coin dating back to 1968, bangles used by women, locket, old form of tiles and coal were uncovered. The team also collected samples of geo-archeological finds. The UNESCO has taken the materials found during the excavation for examination to find the absolute date and other information.

The elements of archeological and architectural importance were salvaged from debris of the temple and stored in the temple premise. Each salvaged elements were well documented with detail photography. Then drawings were prepared for reconstruction with the help of the salvaged materials, drawings by Wolfgang Korn and Niels Gutschow and old sketches. Structural analysis was done from which upright timber posts were introduced in the temple for strengthening. The plinths were repaired and reconstruction work started above that. About 60% of the salvaged materials were used most of which is stone and idols. Lime-surkhi plaster is being used to bind the blocks. The temple is now being constructed completely with stone. Local skilled artisans were assigned for the reconstruction work which
was managed by a user committee led by Mr. Ram Hari Gora. Funding was provided by Bhaktapur Municipality and supervision was done by its Sampada Sakha. The estimated budget for this project was Rs. 12,862,214.00. The temple is under construction and soon to be completed.

O. Bhairabnath Temple

Bhairabnath temple is a rectangular based traditional Nepalese temple located at Taumadhi square. This temple was first built as a one-storey pagoda but was later changed into a three storey temple in 1718 AD by King Bhupatindra Malla. This temple is dedicated to god Bhairabnath but also houses god Betal. The present temple of Bhairav was built only after 1934 AD. And again the temple was reconstructed in 2052 B.S.

In 2015 earthquake, the top tier was damaged partially. After structural analysis of the temple, the work of repair was started. The temple was demolished at those parts where repair was necessary. Timber posts were added in the middle portion to increase the strength of the structure. About 90% of the salvaged materials were used in the work. Local participation was high in this project. People involved in funding, volunteering work and also in decision making. Local experienced artisans were assigned in the work. Major funding was provided by Bhaktapur Municipality and supervision was done by Sampada Sakha. The construction work was managed by user committee led by Mr. Nuchhe Ram Bhele. The estimated budget of the project was Rs. 14,636,745.00 but the construction was completed with total cost of Rs. 5,661,288.00.
P. Nyatapola Temple

Nyatapola temple is located in the Taumadhi square. The temple is five tiered and is tallest temple in Nepal. The temple is dedicated to goddess Siddhi Laxmi, the manifestation of female force and creativity. The temple was built by King Bhupatindra Malla in 1702 A.D. Four temples of ganesh is located at the corners of the temple.

The top tier of the temple was twisted a little and there were some cracks observed after the 2015 earthquake. Bhaktapur Municipality is funding the conservation work of the temple and the work is managed by user committee. At present, scaffolding work has stared along with dismantling of roof tiles on the bottom roof. The estimated budget of the project is Rs. 5,744,242.00.

Q. Kwachhen Pati

This is a traditional Nepalese pati located at Kwachhen. The pati was partially damaged in 2015 earthquake. Drawings were prepared from the remaining parts of the temple. The pati was demolished completely for reconstruction. The salvage materials were stored in the premise. About 40% of salvage material were used. Surkhi-lime mortar was used instead of mud mortar. The reconstruction work was carried out by user committee led by Mr. Sundar Lal Mule. Funding was provided by Bhaktapur Municipality and supervision was done by Sampada Sakha. Local artisans were involved in the work. The estimated budget was Rs 1,685,635.00 and the construction was completed with total cost of Rs. 974,071.85.

R. Inacho Nasu Dyo

Inacho nasu Dyo, also known as Nirtyanath Mandir, is located in Inacho on the way to Dattatraya. It is a one storey temple with a fucha crowning on the top.

The temple was slightly damaged in the 2015 earthquake. But it was dismantled completely for the reconstruction. The temple was rebuilt from the plinth level. The reconstruction was managed by user committee led by Mr. Padma Sundar Shakya. Bhaktapur municipality provided with funding and Sampada Sakha Supervised the work. The estimated budget of the project was Rs. 340,016.00 and the project was completed with total cost of Rs. 339,891.00.
S. Bhimsen Mandir

The Bhimsen Mandir is located in Dattatraya Square. Structurally, it was made in traditionally rectangular with single tier four side jhingati roofs and single tier four side copper phucha roof with 7 metal pinnacles. There was highly carved window, door and struts which are artistic. There is sanctum in the center where Clay image of Bhimsen and Draupadi are placed. In front of the temple there is an open raised platform. The temple was renovated during Bhaktapur Development Project.

The temple was partially damaged by 2015 earthquake. The damaged temple structure is dismantled safely and stored all material of archaeological importance. Drawings were prepared with reference from old drawings. The damaged roof was repaired. Salvaged materials like timber elements and roof tiles were used to some extent. Local skilled artisans were involved in the work. The whole project was managed by a user committee led by Mr. Nati Bhai Hyamba. Funding was provided by Bhaktapur Municipality and supervision was done by Sampada Sakha. The estimated cost of the project was Rs. 1,891,440.00 and the project was completed with total cost of Rs. 992,702.00.
Laxmi Narayan Temple is a two tiered temple located at Dattatraya Square.

The temple had minor damages due to earthquake. But a corner of the temple was severely damaged by fire. The premise of the temple was used to store salvage of the nearby monuments. These caught fire then ultimately damaged the temple. Detailed drawing of the temple was prepared from the remaining parts of the temple. No demolition was done. The damaged part was dismantled from the temple and replaced with new one and the wall was repaired. Most of the salvaged materials were reused except the burnt bricks and timber elements. Local workers and artisans were involved in the work. The project was managed by a user committee led by Mr. Krishna Gopal Lachimashu. Funding was done by Bhaktapur Municipality and supervision was done by Sampada Sakha. The estimated budget of the project was Rs. 1,301,978.00 and the construction work was completed with total cost Rs. 589,319.00.

![Figure 34 Laxmi Narayan Temple after reconstruction (DOA)](image)

4. Plan for rehabilitation of remaining damaged monuments

These are the remaining damaged monuments in core zone to be rehabilitated:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Description of monuments</th>
<th>Address</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Betal Bhajan Ghar</td>
<td>Taumadhi</td>
<td>User committee is finalized. Will start soon.</td>
</tr>
<tr>
<td>2</td>
<td>Lal Baithak</td>
<td>Durbar Square</td>
<td>To be built as Malla style. Design was sent to UNESCO for approval.</td>
</tr>
<tr>
<td>3</td>
<td>Yakshyeshwor Mahadev Temple</td>
<td>Durbar Square</td>
<td></td>
</tr>
</tbody>
</table>

Table 12 : Rehabilitation of remaining damaged monuments in core zone
5. Plan for rehabilitation of urban fabric
Most of the traditional buildings in the monument zone were affected by the earthquake. The most affected part of the city was Byasi, Golmadhi, Maheshwori, Tachapal and Suryamadhi. This has affected the urban fabric of the whole city.

Reconstruction of buildings in the core area of the monument zone is done with RCC framed structures while keeping the façade traditional.

Stone Paving
Paving of stone is going on at different places of the Bhaktapur city. This work is also being carried out by different user committee. The brick pavements will be removed from the road and stone will be laid. The gaps between the blocks of stone will be filled with sand. This will make the road permeable.
Table 13: Description of stone paving

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Road Description</th>
<th>Funding</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kwachhen to Dattatraya</td>
<td>Bhaktapur Municipality</td>
<td>Will be done by tender procedure</td>
</tr>
<tr>
<td>2</td>
<td>Tachapal</td>
<td>Bhaktapur Municipality</td>
<td>Construction will be carried out by user committee</td>
</tr>
<tr>
<td>3</td>
<td>Taumadhi to Kwachhen</td>
<td>Bhaktapur Municipality</td>
<td>Construction will be carried out by user committee</td>
</tr>
<tr>
<td>4</td>
<td>Gahiti</td>
<td>Bhaktapur Municipality</td>
<td>Construction will be carried out by user committee</td>
</tr>
<tr>
<td>5</td>
<td>Taumadhi to Bharbacho</td>
<td>Bhaktapur Municipality</td>
<td>Will be done by tender procedure</td>
</tr>
<tr>
<td>6</td>
<td>Fasi dega to DSP office</td>
<td>Road Division</td>
<td>Construction will be carried out by user committee</td>
</tr>
<tr>
<td>7</td>
<td>Balakhu Ganesh to Yalachhen</td>
<td>Bhaktapur Municipality</td>
<td>Construction will be carried out by user committee</td>
</tr>
<tr>
<td>8</td>
<td>Peti construction from ward 02 office to CDO</td>
<td>Bhaktapur Municipality</td>
<td>Construction will be carried out by user committee</td>
</tr>
</tbody>
</table>

![Map showing roads where stone paving will be done](image)

6. References

1. World Heritage Site Integrated Management Framework (2007), Kathmandu; DOA
1. General description to the Monument Zone

**World Heritage attributes, boundary and buffer**

The temple of Changu Narayan is built on top of a high hill to the east of Kathmandu and north of Bhaktapur cities. This temple is the most celebrated Vaishnava shrine in the Kathmandu valley. Its origin dates back to the fourth century, but the earliest inscription on a stone pillar belongs to the ruler of Licchavi dynasty Manadev who ruled at the end of the fifth and early sixth century. The Central image in the sanctum is worshipped by Hindus as a god Garuda Narayan, and by Buddhists as a deity HariharaBahanLokeshwara. The temple has been restored during the late 1500-s and devastated by fire in 1702 but was then restored. Although the present temple is not one of the oldest in the Kathmandu valley, some of its decorative ornaments are extremely old. (The Rubin, 2015)

![Figure 1 Boundary and Buffer areas for Changunarayan](image_url)

The core boundary area of Changu Narayan monument comprises large area with more than 90 monuments and private residences. The core area also carries living traditions such as Jatras, Melas, Parvas etc. The major monuments are Changu Narayan temple, Kileswor Temple, Laxmi Narayan, Balambu Pati, Sarswati Temple, Bhimsen Pati etc. The areas including temple square, settlement and forest etc. all lie in the core areas. While on the other hand, the buffer area isn’t specifically marked. The areas outside the core areas that include forest areas largely can be considered as the buffer area for the monument.
History

The authentic history of this place, based on the reliable evidences, is yet to be ascribed and ascertained. So, we are not in a position to say anything definitely about the person responsible to erect this magnificent temple and in the same way, we also cannot say anything exactly about the period on which it might have been built. But even then the historians have tried to fix a tentative date to it by deducing some tangible and intangible evidences available at our disposals. For example, the references provided by the chronicles of the country, the prevailing traditions and myths, are some sources by which the historians have drawn some valuable information, which have been immensely helpful to make some inferences to determine its historicity. Among them, the oldest chronicle of the country, the “Gopal Raj Vamsavali”, which is believed to be compiled during 14th century AD, has credited a king named Hari Dutta Verma as its consecrator who built this temple along with three other temples at the four cardinal directions of the Kathmandu valley, dedicated to the Hindu God Narayan. The other Vaisnavait temples he had built were the temples of Shesa Narayan, Bishankhu Narayan and Ichangu Narayan respectively. A huge stone pillar erected on the north-western corner of the Changu Narayan temple, actually a commemorative, installed by the great king Mana Deva in 464 A.D, intending to immortalize the great victories made by him during his life time. The lower parts of this pillar, which is partially buried under ground, have very beautifully composed verses dealing with the references of his great victories and been inscribed in popular Lichhavi script. This is also taken as to be the most authentic historical evidence of the country.

Besides, it also has details of the charities he had made to the Brahmins at that occasion after performing a grand yagycic ceremony. On it, he also had given the names of his ancestors along with the names of his parents. But unfortunately, he did not mention anything about the person responsible to erect this temple. All these indicates that the temple must have been built somewhere before the time of the Mana Deva. Except these, the temple complex with its surrounding abounds with other evidences in the form of sculptures and some other inscriptions of the times representing the kings followed by Mana Deva and others. Such evidences are found here so profusely that this place also can be taken as an open-air Museum of Arts, Architecture Culture and History. Apart from the pillar inscription of Mana Deva, the stone slab inscription of Niripechha, SivaDeva - Amsuvarma, AbhayaMalla, Jaya Rudra Malla, JayasthitiMalla and others which have helped our historians to write the authentic history of those times. The kings from the Shah dynasty also did not lag in this respect. Even the Ranas left their presence here with their deeds.

It is considered to be the oldest temple of Nepal. It remains a milestone in Nepali temple architecture with rich embossed works. The two-storey roofed temple stands on a high plinth of stone. The temple is surrounded by sculptures and arts related to Lord Vishnu. Also we can find the temples of lord Shiva, AshtaMatrika, Chhinnamasta, Kileshwor and Krishna inside the courtyard of the main temple. There are four entrances to the temple and these gates are guarded by life-size pairs of animals such as lions, sarabhas, graffins and elephants on each side of the entrances. The ten incarnations of Lord Vishnu and the other idols are carved in the struts, which support the roof. The entrance door is gilded with carvings of Nāaga (snakes). On the main entrance gate (i.e. western entrance gate), we can find the Chakra, Sankha, Kamal and Khadga all at the top of a stone pillar. These stone pillars have an inscription in Sanskrit. This inscription is considered as the oldest inscription of Nepal and the stone inscription pillar was erected by Licchavi (kingdom) King Manadeva in 464 AD.
The main image in the sanctum is worshiped by Hindus as a Garuda Narayan, and by Buddhists as a Harihar VahanLokeshwara. Only the priest are allowed to see the image. Changu Narayan, one of the world heritage sites of Nepal listed in 1979 A.D. is about 6 km north of Bhaktapur. The temple dates back to 1702 A.D. when it was rebuilt after a fire, its origin goes right back to the 4th century. It is said to have been built by King Hari Datta Verma in 323 A.D. (Department of Archeology, 2016)

Rehabilitation History

Historically, the monument was highly respected and worshipped and because of that, it has undergone various restoration and conservation process during various parts of history. It is believed that Changu Narayan itself underwent destruction by fire during 1700s and it was restored afterwards, similarly the earthquake of B.S. 1990, damaged various parts of other monuments and it was believed JuddhaShumsher ordered the restoration of the heritages. The detail damage assessment of the 90s earthquake is still unknown but it is believed that, the Sattal, Laxmi Narayan, BhimsenPati, BalambuPati etc. were destroyed and was restored. Similarly, after the 2042 earthquake, DOA visited the site and ordered restoration for the monuments that were required. Inhawa area was massively restored by DOA during that period. InhawaSattal, Inwahapati etc. they were restored. Also, in 2052-53, DOA again ordered restoration of the various other monuments. Gamdhoka area was restored during that period. BhimsenPati, GamdhokaBhairavPati etc. were restored during the period and Do Che was reconstructed in 2061. These were the overall history of restoration that has been accounted for in this area.

The tentative history of reconstruction and the restoration works carried out in the Changu Narayan area is given in the table. The details of restoration are unknown in many restoration cases, and the only account of restoration is mentioned historically. Also, there are other mythologies that believe, Anshuverma also ordered huge restoration of the temple and so on. The table is listed chronologically below:

<table>
<thead>
<tr>
<th>Date (B.S.)</th>
<th>Name of the monument</th>
<th>Restoration works carried out</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th Century</td>
<td>Changu Narayan</td>
<td>Believed to be renovated by Licchavi King Anshuverma</td>
</tr>
<tr>
<td>1564</td>
<td>Changu Narayan</td>
<td>Minor renovation by Devaki Devi Gakurani</td>
</tr>
<tr>
<td>1642</td>
<td>Changu Narayan</td>
<td>Believed to be renovated by Queen Gangarani</td>
</tr>
<tr>
<td>1736</td>
<td>Chinnamasta</td>
<td>Restoration of wooden toran</td>
</tr>
<tr>
<td>1751</td>
<td>Changu Narayan</td>
<td>Destroyed by fire and restored by BhupitendraMalla</td>
</tr>
<tr>
<td>1986</td>
<td>Chinnamasta</td>
<td>Minor Restoration</td>
</tr>
<tr>
<td>1990</td>
<td>Changu Narayan, Western Sattal, Laxmi Narayan</td>
<td>Restoration carried out by JuddhaShumsher after the earthquake</td>
</tr>
<tr>
<td>2017</td>
<td>Changu Narayan</td>
<td>Minor Restoration</td>
</tr>
<tr>
<td>2030</td>
<td>Gamdhokalnar</td>
<td>Minor Restoration</td>
</tr>
<tr>
<td>2043</td>
<td>InwahaSattal, Dhungedhara, Ganesh,</td>
<td>Restoration carried out by DOA</td>
</tr>
</tbody>
</table>
2. Overall Impact of Gorkha Earthquake

Gorkha Earthquake of 2015 caused subsequent heavy damages to the monument areas. The temples such as Kileshwor, Laxmi Narayan and Sattals collapsed while other monuments such a main temple of Changu Narayan was critically damaged. The overall impact is discussed below:

Response and Rehabilitation Planning

The immediate response after the earthquake was rather chaotic. The monuments and sattals collapsed and the main temple were also heavily damaged.

Immediate Response:

After the earthquake, locals tried to look around the debris in search of any humans that might be trapped in. There were no major causalities inside the monument core area. Few hours later, locals and the police group were mobilized on searching the debris. One day later, representatives of DOA visited the site and the during the emergency period, DOA along with the locals and police group provided shoring on the monuments such as Western Sattals, Changu Narayan temple etc. The Changu Narayan temple was tilted on the eastern side and shoring were provided for structural stability. After a day or two, a 25 members group of police led by the inspector of the area, were mobilized for the storing of the debris. The inventory of the debris was kept according to the format given by the DOA.

<table>
<thead>
<tr>
<th>Year</th>
<th>Monuments</th>
<th>Restoration</th>
</tr>
</thead>
<tbody>
<tr>
<td>2053</td>
<td>BhimsenPati</td>
<td>Restoration</td>
</tr>
<tr>
<td>2055</td>
<td>Gamdhoka BhairavPati</td>
<td>Restoration from DOA</td>
</tr>
<tr>
<td>2055</td>
<td>Sarswati Mandir</td>
<td>Restoration</td>
</tr>
<tr>
<td>2058</td>
<td>BhairavPati</td>
<td>Restoration by Jusana</td>
</tr>
<tr>
<td>2061</td>
<td>Dho Che</td>
<td>Reconstruction of the Dho Che</td>
</tr>
</tbody>
</table>

Figure 2 Inventory Format provided by DOA
Monument conservation and Durbar care office, Bhaktapur under Department of Archaeology along with Bhaktapur municipality has been working for the reconstruction and conservation of damaged monuments inside Bhaktapur. Beside Monument conservation, the Durbar care office, Bhaktapur is also responsible to carry out protection, repair and reconstruction of monuments of inside the Bhaktapur district.

![Figure 3](Image)

**Figure 3  Flowchart for Major Reconstruction process**

After earthquake, immediately wooden shoring was done for monuments inside world heritage site to avoid the further damage which was funded by GIZ and DOA in corporation with UNESCO. Further study and analysis were done to figure out required intervention for each monument by the team of Monument conservation and Durbar care office, Bhaktapur under constant guidance of DoA.

**Damage Assessment of the monuments:**

The damage assessment of the monuments was done by DoA, Durbar Care office and other various NGOs and INGOs were also involved. The visual assessment and the overall damage assessment was carried out by analyzing the debris, present situation and the drawings of Changu Narayan from NSW Department of Technical and Further Education was accounted. The drawing was drafted on 1986 A.D and it had tentative plans and elevations was there. The graphical image based on the data and the drawings from the NSW foundation given by DoA is given below:
The damage assessment was done and the following data were obtained.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Monument</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Changu Narayan</td>
<td>Critically Damaged</td>
</tr>
<tr>
<td>2.</td>
<td>Sridhar Bishnu</td>
<td>Non-Critically Damaged</td>
</tr>
<tr>
<td>3.</td>
<td>Nateshwor</td>
<td>Not affected</td>
</tr>
<tr>
<td>4.</td>
<td>Madhav Narayan</td>
<td>Not affected</td>
</tr>
<tr>
<td>5.</td>
<td>Mahabishnu</td>
<td>Not affected</td>
</tr>
<tr>
<td>6.</td>
<td>Somlingeshwor Mahadev</td>
<td>Non-Critically Damaged</td>
</tr>
<tr>
<td>7.</td>
<td>Parijat</td>
<td>Main tree died (in 2019)</td>
</tr>
<tr>
<td>8.</td>
<td>Ganesh</td>
<td>Not affected</td>
</tr>
<tr>
<td>9.</td>
<td>Chinnamasta Bhagwati</td>
<td>Completely collapsed</td>
</tr>
<tr>
<td>10.</td>
<td>Shivalinga Mandir</td>
<td>Non-Critically Damaged</td>
</tr>
<tr>
<td>11.</td>
<td>Bishwarupa</td>
<td>Not affected</td>
</tr>
<tr>
<td>12.</td>
<td>Laxmi Narayan</td>
<td>Completely Collapsed</td>
</tr>
<tr>
<td>13.</td>
<td>Kantibhairav</td>
<td>Not affected</td>
</tr>
<tr>
<td></td>
<td>Monument</td>
<td>Status</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>14</td>
<td>Kileshwor Mahadev</td>
<td>Critically Damaged</td>
</tr>
<tr>
<td>15</td>
<td>Southern Sattal</td>
<td>Completely Collapsed</td>
</tr>
<tr>
<td>16</td>
<td>South East Sattal</td>
<td>Critically Damaged</td>
</tr>
<tr>
<td>17</td>
<td>South West Sattal</td>
<td>Completely Collapsed</td>
</tr>
<tr>
<td>18</td>
<td>North East Sattal</td>
<td>Critically Damaged</td>
</tr>
<tr>
<td>19</td>
<td>BhimsenPati</td>
<td>Critically Damaged</td>
</tr>
<tr>
<td>20</td>
<td>10+ residential building</td>
<td>Completely Damaged</td>
</tr>
</tbody>
</table>

*Figure 5  List of status of monument*

The damage assessment of the monuments inside the Changu Narayan temple area shows that the Sattals area are heavily damaged and even though some of them are critically damaged, they are just sight away from being completely collapsed. The smaller monuments inside the Changu Narayan Temple are not affected while there are other temples such as Samalingeshwor Mahadev, whose pinnacle was only broken. The notable area is also the Parijat tree situated on a mold, wasn't affected from the earthquake but the main tree died in 2019. The overall damage assessment inside the whole core area of the heritage is given below:
This figure shows the damage of the other smaller monuments within the core areas including more than 10 residential buildings. The other buildings and monuments inside the core area, that has been damaged hasn’t been officially accounted.

3. Plan for On-going rehabilitation of the monuments:
Among the various destroyed monuments, very few numbers of them are reconstructed, majority are on-going and there are few numbers of monuments whose reconstruction has yet to be started.

In the beginning, the Government of Nepal announced to international community for assistance in the reconstruction and the restoration of the monuments which was damaged by earthquake. Global Heritage fund came forward to DoA and discussed with the authorities for rehabilitation of monument in Changu Narayan monument zone along with training programmes for local manpower. Global Heritage submitted the proposal to DoA and it was forwarded to the ministry for the approval. It was rejected regarding various issues one of the principle reason was Global Heritage Fund not being reconized by the US government. Another proposal was submitted with the technical and financial support from Global Heritage fund to NGO from Nepal Government in the model of turnkey basis. The proposal was subsequently approved by Ministry and a MoU was done between DoA and the NGO, Heritage and Environment Conservation Foundation, Nepal (HECFN). The proposal was to carry out the reconstruction of the of Monuments of Changu Narayan World Heritage site which was damaged in the earthquake of 2015. Department of Archaeology completed Reconstruction / Conservation of Major monuments such as Saraswoti Temple, Changu Narayan, Chhinnamasta with monitoring by Monument conservation and Durbar care office, Bhaktapur. Heritage & Environment conservation Foundation, Nepal completed reconstruction / Conservation Kileswor temple, Amatya Sattal and submitted the proposal to Department of Archaeology for the reconstruction of the Laxmi Narayan Temple. HECFN
proposed for the reconstruction of the Laxmi Narayan temple as two-tiered temple, which was previously one tired. The evidence was gathered from the Tudal, plinth projection method and the other Laxmi Narayan temple around the valley. However, the Department of Archaeology didn’t forward the proposal. On the other hand, HECFN was short on the budget and the reconstruction didn’t carry out as planned.

Then, tender was announced by the government of Nepal on 2074 and the companies, Lumbini, SanuSuwal and Pawan J.V were selected for the reconstruction of ‘ChaugheraSattal’ on 2075- Magh 10. The total project is estimated to be completed on 2078, Ashad. DoA is the supervising body and local people are also being involved in the decision making from a committee led by the Ward Head Mr. BuddhilalMaharjan.

The ongoing and the completed projects that has been carried out as of 2020, January are listed below:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Name of the monument</th>
<th>Reconstructing Body:</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Changu Narayan</td>
<td>DoA, HECFN</td>
<td>Completed</td>
</tr>
<tr>
<td>2.</td>
<td>Kileshwor</td>
<td>DoA, HECFN</td>
<td>Completed</td>
</tr>
<tr>
<td>3.</td>
<td>Shankha Chakra Ganesh</td>
<td>DoA</td>
<td>Completed</td>
</tr>
<tr>
<td>4.</td>
<td>AmatyaSattal</td>
<td>HECFN, Living Traditions Museum, DoA</td>
<td>Completed</td>
</tr>
<tr>
<td>5.</td>
<td>Sarswati Temple</td>
<td>DoA</td>
<td>Completed</td>
</tr>
<tr>
<td>6.</td>
<td>Chinnamasta</td>
<td>DoA</td>
<td>Ongoing (80%)</td>
</tr>
<tr>
<td>7.</td>
<td>ChaugheraSattal</td>
<td>Lumbini Constructions, SonuSuwal Constructions and Pawan Constructions J.V.</td>
<td>Ongoing (20%)</td>
</tr>
<tr>
<td>8.</td>
<td>BhimsenPati</td>
<td>SonuSuwal Constructions</td>
<td>Ongoing (5%)</td>
</tr>
</tbody>
</table>

Description of the monuments:

1. **Changu Narayan Temple**

General description:

Changu Narayan is considered to be the oldest temple of Nepal. It remains a milestone in Nepali temple architecture with rich embossed works. The two-storey roofed temple stands on a high plinth of stone. The temple is surrounded by sculptures and arts related to Lord Vishnu. Also we can find the temples of lord Shiva, AshtaMatrika, Chhinnamasta, Kileshwor and Krishna inside the courtyard of the main temple. There are four entrances to the temple and these gates are guarded by life-size pairs of animals such as lions, sarabhas, graffins and elephants on each side of the entrances. The ten incarnations of Lord Vishnu and the other idols are carved in the struts, which support the roof. The entrance door is gilded with carvings of Nāaga (snakes). On the main entrance gate (i.e. western
entrance gate), we can find the Chakra, Sankha, Kamal and Khadga all at the top of a stone pillar. These stone pillars have an inscription in Sanskrit.

**History:**

The temple dates back to 1702 A.D. when it was rebuilt after a fire, its origin goes right back to the 4th century. It is said to have been built by King Hari Datta Verma in 323 A.D. Among the oldest chronicle of the country, the “Gopal Raj Vamsavali”, which is believed to be compiled during 14th century AD, has credited a king named Hari Dutta Verma as its consecrator who built this temple along with three other temples at the four cardinal directions of the Kathmandu valley, dedicated to the Hindu God Narayan. The other Vaisnavaït temples he had built were the temples of Shesa Narayan, Bishankhu Narayan and Ichangu Narayan respectively. A huge stone pillar erected on the north-western corner of the Changu Narayan temple, actually a commemorative, installed by the great king Mana Deva in 464 A.D, intending to immortalize the great victories made by him during his life time. The lower parts of this pillar, which is partially buried under ground, have very beautifully composed verses dealing with the references of his great victories and been inscribed in popular Lichhavi script. This is also taken as to be the most authentic historical evidence of the country.

Besides, it also has details of the charities he had made to the Brahmins at that occasion after performing a grand yagyc ceremony. On it, he also had given the names of his ancestors along with the names of his parents. But unfortunately, he did not mention anything about the person responsible to erect this temple. All these indicates that the temple must have been built somewhere before the time of the Mana Deva. Except these, the temple complex with its surrounding abounds with other evidences in the form of sculptures and some other inscriptions of the times representing the kings followed by Mana Deva and others. Such evidences are found here so profusely that this place also can be taken as an open-air Museum of Arts, Architecture Culture and History. Apart from the pillar inscription of Mana Deva, the stone slab inscription of Niripechha, SivaDeva - Amsuvarma, AbhayaMalla, Jaya Rudra Malla, JayasthitiMalla and others which have helped our historians to write the authentic history of those times. The kings from the Shah dynasty also did not lag in this respect. Even the Ranas left their presence here with their deeds.

**Rehabilitation History**

Changu Narayan temple has gone various rehabilitation in the past. Some of them are listed below:

<table>
<thead>
<tr>
<th>Date (B.S.)</th>
<th>Restoration works carried out</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th Century</td>
<td>Believed to be renovated by Licchavi King Anshuverma</td>
</tr>
<tr>
<td>1564</td>
<td>Minor renovation by Devaki Devi Gakurani</td>
</tr>
<tr>
<td>1642</td>
<td>Believed to be renovated by Queen Gangarani</td>
</tr>
<tr>
<td>1736</td>
<td>Restoration of wooden toran</td>
</tr>
<tr>
<td>1751</td>
<td>Destroyed by fire and restored by BhupitendraMalla</td>
</tr>
<tr>
<td>After 1990</td>
<td>Destructions caused by the earthquake and JuddhaShumsher ordered for the minor restorations</td>
</tr>
<tr>
<td>2017</td>
<td>Minor Restoration</td>
</tr>
<tr>
<td>2043</td>
<td>Minor Restoration by DoA</td>
</tr>
</tbody>
</table>
Status after Earthquake:

ChanguNarayan Temple was critically damaged after the earthquake of 2015. The walls were cracked, and the temple overall tilted towards the eastern side. The roofs were also bent. However, looking at the condition, the foundation was believed to be intact. The western wall at the upper floor of Changu Narayan had suffered major damage by the earthquake. On further analysis, it was found that the roofs had to be massively replaced.

Emergency Response:

Changu Narayan survived the complete collapse from the 2015 earthquake. After the damage of 2015 earthquake, a week later a team of DoA, Locals and the police force provided the shoring to the monuments. Shoring work and repair of four corners was done almost immediately after earthquake to prevent future damage using DOA emergency fund.

Responsible Authorities:

The general management of the Changu Narayan before the earthquake was done by the guthisasthan. But for the restoration works, even before DoA had been the leading body. After the earthquake, the responsible authorities were:

- Department of Archaeology
- Heritage and Environment Conservation Fund, Nepal (HECFN)

Documentation:

For the documentation of the Changu Narayan, there was a drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D. However, this drawing lacked detail dimensions and sizes. So, taking these drawings are reference, photographic evidences were also accounted for the documentation of the Changu Narayan. The photographs were general photographs that was available easily.

The process of reconstruction wasn’t documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:

The salvage materials were stored in the south wing area and the important precious parts were stored on the ground floor of the temple. The inventory format was prepared by the DoA office. The removal of Gajur and the gilded roof covering was completed, and they were carefully marked, inventory was done and carefully stored at ground floor of the temple itself.
on presence of Department of Archaeology, Armed police force, committee member and contractor. The overall percentage of salvage materials used were around 50-60%.

**Materials used**

The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state. The newer wooden carvings was prepared as like the old items by the use of similar nature of woods and carving patterns.

**Monitoring Mechanism:**

The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur. Heritage and Environment Conservation Fund, Nepal (HECFN) undertook the reconstruction process on the monitoring of the DoA.

**Community Participations**

The community was involved in the decision makings regarding the detailing in the toran and the other places. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals hasn't been involved in the direct reconstruction process.

**Artisans available**

The artisans were hired from the Bhaktapur area. They were the local artisans who were hired for specific carvings of Torans and doors. For the general reconstruction local skilled and semi-skilled labours were mobilized.

**Project Cost**

The estimated project cost was Nrs. 94, 65,848. 00. The project is believed to be completed within the cost limit frame.

### 2. Kileshwor Temple

**General Description**

It lies in the South West area of the temple area near Laxmi Narayan temple. It is a two tired temple devoted to Lord Shiva. It represents one of the most important examples of Newari Temple architecture in the Kathmandu Valley. Kileshwor is the only Shaivite shrine in the Changu Narayan temple complex. The temple is dedicated to Shiva as Lord Pashupati, and houses a Chaturmukha Lingam with human faces looking towards the four cardinal directions and one to the heavens. This temple has an outstanding collection carved wooden struts supporting its double roofs depicting incarnations of Shiva and some interesting erotic images. Each of the four doors is modeled on those of the main temple with the main entrance made in gilded metal and the other three are carved in wood.
History

The exact date and era of the Kileshwor temple is still unknown. However, historically, in the “sandhipatra” (agreement) between Tripurarajkul’s Jayaprakash Malla and Dev Prabhu Thakur in B.S. 1552, the temple and the god of Kileshwor was the witness for the contract. This is the first mentioning of the Kileshwor temple in the history.

Status

Kileshwor suffered partial collapse during the earthquake of 2015. The lowers walls were broken, and the temple was just short of a major part collapse. The major damages were on the wall side and the roof portion as well.

Emergency Response:

After the earthquake, the bricks and the other parts were kept around the temples north side. Shorings were not provided to Kileshwor.

Responsible Authorities:

The general management of the Kileshwor before the earthquake was done by the guthisaasthan pujari. The generations of Shiva Narayan Bhatta’s pujari were taking care of the Kileshwor Mahadev. But for the restoration works, in the past, DoA had been the leading body. After the earthquake, the responsible authorities were:

- Department of Archaeology
- Heritage and Environment Conservation Fund, Nepal (HECFN)

Documentation:

For the documentation of the Kileshwor, there was a drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D. However, this drawing lacked detail dimensions and sizes. So, taking these drawings are reference, photographic evidences were also accounted for the documentation of the Kileshwor. The photographs were general photographs that was available easily. (see annex)

The process of reconstruction wasn’t documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:

The salvage materials were stored in the north area and the important precious parts were stored on the ground floor of the temple. The inventory format was prepared by the DoA office. The security was provided by the armed police force. The overall percentage of salvage materials used were around 50-60%.

Materials used

The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state. The newer wooden carvings were prepared as like the old items by the use of similar nature of woods and carving patterns.

Monitoring Mechanism:
The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur. Heritage and Environment Conservation Fund, Nepal (HECFN) undertook the reconstruction process on the monitoring of the DoA.

**Community Participations**

The community was involved in the decision makings regarding the detailing in the toran and the other places. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals hasn’t been involved in the direct reconstruction process.

**Artisans available**

The artisans were hired from the Bhaktapur area. They were the local artisans who were hired for specific carvings of Torans and doors. For the general reconstruction local skilled and semi-skilled labours were mobilized.

**Project Cost**

Budget was allocated for renovation of the temple from HECFN with technical & financial support from John Sanday and associate in 2072.73 The work was completed with supervision by Monument Conservation and Durbar care office, Bhaktapur during 2074 B.S.

**3. Shankha Chakra Ganesh**

**General Description**

Shankha chakra genesh temple is important temple in Changu Narayan, It lies in few minute western down of the Changunarayan temple courtyard. It is Archaeologically, religiously and culturally important temple around change narayan. The temple is related to son of Mahadev Ganesh. Shankha chakra is a symbol of Hinduism. It was symbolic but artistic in stone which was same as a Shankha (cronch) & Chakra (powerful weapon of god shiva).

**History**

Nobody has known about of this temple regarding the exact date of when and who built it. But archaeological point of view originally it was built in late Malla period because there was an artistic stone Shankha and Chakra which was highly carved & placed in temple area. This temple was collapsed in 1934 AD earthquake or before. It wasn’t built again. The remaining brick wall was found & some images which were related to bisnu / narayan are situated. Also, some other artifact was available in site.

**Status**

This temple was already demolished by the earthquake of 1990 B.S and wasn’t rebuilt again. The temple was only built after the earthquake.
Responsible authorities

The responsible authorities were:

- Department of Archaeology
- Bhaktapur Monument Conservation and Care Office

Documentation:

For the documentation of the Shankha Chakra, there was no any images or documentation regarding the temple’s form. The temple was excavated, plinth was located from the foundation and the temples roof structure was taken out. The drawings were prepared by the DoA.

The process of reconstruction wasn’t documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Materials used

The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state temples of the past. The newer wooden carvings were prepared using old techniques and so on.

Monitoring Mechanism:

The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur.

Community Participations

The community was involved in the decision makings regarding the detailing in the toran and the other places. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals hasn’t been involved in the direct reconstruction process.

Artisans available

The artisans were hired from the Bhaktapur area. They were the local artisans who were hired for specific carvings of Torans and doors. For the general reconstruction local skilled and semi-skilled labours were mobilized.

Project Cost

DoA allocated 22 lakhs budget for reconstruction and Monument conservation and care office, Bhaktapur prepared drawing and estimate for reconstruction.
4. Amatya Sattal

General Description

The sattal enclosing the Changu Narayan courtyard consists of two principle units— the Chaughera Sattal and the Amatya Sattal, which were of simple design and basic construction. These structures were formerly living spaces for the officiating priests (pujari) and pilgrims attending them any festivals that take place at Changu Narayan. The Amatya Sattal, which occupies the southern side of the courtyard, prior to the earthquake, had been used by the Living Traditions Museum. Previously this sattal had been restored by the Department of Archaeology several years ago and the structure was upgraded by the LTM (Living Traditions Museum) to suit their purposes.

History

The Sattal is supposed to have been built during the Shah period for the security of the temple area. It was believed to have been completely collapsed during the earthquake of 1990. And was rebuilt afterwards by Juddha Shumsher.

Status

The sattal was completely collapsed by the earthquake of 2015. The monument collapsed immediately after the earthquake.

Emergency Response

Immediately after the earthquake, locals searched the debris for any casualties. There weren’t any. However, the tudals and the important artefacts from the museum was collected by the team of rescue police and was classified and the inventory was done and kept safely under the supervision of the police.

Responsible Authorities:

The general management of the Amatya Sattal before the earthquake was done by the Living Traditions Museum group. Even the minor restorations before were carried out by the Living Tradition Museum (LTM). After the earthquake, the responsible authorities were:

- Department of Archaeology
- Heritage and Environment Conservation Fund, Nepal (HECFN)
- Living Traditions Museum

Documentation:

For the documentation of the Amatya Sattal, there was a drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D.
However, this drawing lacked detail dimensions and sizes. So, taking these drawings are reference, photographic evidences were also accounted for the documentation of the AmatyaSattals. The photographs were general photographs that was available easily. (see annex)

The process of reconstruction wasn't documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:

The salvage materials were stored in the north area and the important precious parts were stored on the ground floor of the temple. The inventory format was prepared by the DoA office. The security was provided by the armed police force. The overall percentage of salvage materials used were around 20-30%

Materials used

The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state. The newer wooden carvings were prepared as like the old items using similar nature of woods and carving patterns.

Monitoring Mechanism:

The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur. Heritage and Environment Conservation Fund, Nepal (HECFN) undertook the reconstruction process on the monitoring of the DoA.

Community Participations

The community was involved in the decision makings regarding the detailing in and the overall forms. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals weren’t involved in the direct reconstruction process.

Artisans available

The artisans were hired from the Bhaktapur area. They were the local artisans who were hired for specific carvings and doors. For the general reconstruction local skilled and semi-skilled labours were mobilized.

Project Cost

Allocated budget for the restoration of the Sattal by Heritage & Environment Conservation Foundation Nepal (HECFN) and Living Tradition Museum base in 50/50 in conjunction with John Sanday Associates Pvt. Ltd. (JSA). Due to the lack of fund the work was stopped for few months. Then Changu Narayan municipality provided Rs.18 lakhs as fund. After that reconstruction of Structure was completed and internal finishing work was completed on 2075.
5. Sarswati Temple

General Description

Saraswoti Temple Located in Saraswotikhel, Changu Narayan Municipality is the temple of Hindu goddess of knowledge, music, arts, wisdom and learning, saraswotimata. Every year on Saraswoti Puja thousands of people come to visit this temple.

History

According to Brahma Vaivarta Purana, Lord Vishnu had three wives Lakshmi, Saraswati and Ganga. Due to their constant quarrel some nature among them. Once Ganga tried to be close with Vishnu, this rebuked Saraswati but Lakshmi tried to pacify them but faced a curse rather. As per the curse, Lakshmi to appear as Tulasi. Sarawati cursed Ganga to run as a river in the world and Saraswati was cursed to run as a river in the netherworld. After this, Lord Vishnu transformed and became Brahma and Shiva to pacify Saraswati and Ganga. The temple was believed to have been built during the Malla period.

Status

The temple was critically damaged after the earthquake and had to be dismantled safely for further reconstruction.

Responsible Authorities:

The general management of the Sarswati Temple before the earthquake was done by the locals. After the earthquake, the responsible authorities were:

- Department of Archaeology
- Heritage and Environment Conservation Fund, Nepal (HECFN)

Documentation:

For the documentation of the photographic evidences were accounted. The debris was measured and the drawings were prepared by the DoA.

The process of reconstruction wasn’t documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:

The salvage materials were not used highly. The temple had to be dismantled and only few percentages of salvage was used. 0-5%

Materials used

The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state.

Monitoring Mechanism:

The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur and the Changu Narayan municipality.

Community Participations
The locals were involved in the decision makings regarding the detailing in and the overall forms. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals weren’t involved in the direct reconstruction process.

**Artisans available**

The artisans were hired from the Bhaktapur area. For the general reconstruction local skilled and semi-skilled labours were mobilized.

### 6. Chinnamasta Temple

**General Description**

Chhinnamasta is associated with the concept of self-sacrifice as well as the awakening of the kundalini-spiritual energy. She is considered both as a symbol of self-control on sexual desire as well as an embodiment of sexual energy, depending upon interpretation. She symbolizes both aspects of Devi: a life-giver and a life taker. Her legends emphasize her sacrifice- sometimes with a maternal element, her sexual dominance and her self-destructive fury. Though she enjoys patronage as part of the Mahavidyas her individual temples-mostly found in Northern India and Nepal-and individual public worship is rare, due to her ferocious nature and her reputation of being dangerous to approach and worship. Her individual worship is restricted to heroic, Tantric worship by Tantric, Yogis and renounces.

**History**

The earliest of this temple is dated by Benrad to the late 17th century. Goddess Chhinnamasta is considered as the Hindu God of Courage and Judgment, and comes in the fifth position among the 10 Mahavidyas. Chhinnamasta is also known by the names Chhinnamastika and Prachanda Chandika. When compared to other Goddess she is believed to be in utmost furious form. Since she sacrificed herself by cutting the head she came to know by the name Chhinnamasta. She is supposed to be the other form of Vajrayogini who had sacrificed by removing her own head. Chhinnamasta also has cut-off her own head with a supreme sword and held the severed head in one of her hands. One of the three jets of blood that ejected out from her bleeding neck is directed to the mouth of her removed head whereas the other two blood ejections to the mouths of her associates, this signifies the spiritual success over desires by self-control with powers of mind. The temple is also mentioned in the SandhiPatra in 1555 B.S.

**Rehabilitation History**

The temple was believed to be rehabilitated in B.S 1736 where the wooden Toran was established into it by the Malla kings. It was believed there had been minor reconstruction prior to the 1990s earthquake in 1986 B.S. After the earthquake, JuddhaShumsher ordered for the minor restoration for the damages caused by the earthquake.
Status
The temple was critically damaged by the earthquake of 2015. The temple was just short of collapse due to the shock. There were cracks in the walls and the roof was also bent. The analysis showed that for the restoration, dismantling of the temple had to be done first.

At present the reconstruction of the walls and the plints area is completed and the roof area of the temple is being reconstructed.

Emergency Response:
After the damage, the major parts of the structure collapsed. It also caused the death of the then priest’s mother to be trapped and was killed in the collapse. Police and the locals removed the debris for the rescue of the women who was trapped inside. However, the tudals and the important artefacts from the temple was collected by the team of rescue police and was classified and the inventory was done and kept safely under the supervision of the police.

Responsible Authorities
The general management of the Chinnamasta Temple before the earthquake was done by the locals. After the earthquake, the responsible authorities were:

- Department of Archaeology

Documentation
For the documentation of the Chinnamasta, there was a drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D. However, this drawing lacked detail dimensions and sizes. So, taking these drawings as reference, photographic evidences were also accounted for the documentation of the Chinnamasta. The photographs were general photographs that was available easily. (see annex)

The process of reconstruction wasn’t documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:
The salvage materials were stored in the north area and the important precious parts were stored on the ground floor of the temple. The inventory format was prepared by the DoA office. The security was provided by the armed police force. The overall percentage of salvage materials used were around 20-30%

Materials used
The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state. The newer wooden carvings were prepared as like the old items using similar nature of woods and carving patterns.

Monitoring Mechanism:
The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur. Heritage and Environment Conservation Fund, Nepal (HECFN) undertook the reconstruction process on the monitoring of the DoA.
Community Participations

The community was involved in the decision makings regarding the detailing in and the overall forms. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals weren’t involved in the direct reconstruction process.

Artisans available

The artisans were hired from the Bhaktapur area. They were the local artisans who were hired for specific carvings and doors. For the general reconstruction local skilled and semi-skilled labours were mobilized.

Project Cost

The reconstruction was given by a direct contract process by the DoA. The estimate and the final drawings was prepared by the DoA and the project cost is said to have been within the estimations of the monument.

7. Chaughera Sattal

General Description

The sattal enclosing the Changu Narayan courtyard consists of two principle units— the ChaugheraSattal and the AmatyaSattal, which were of simple design and basic construction. These structures were formerly living spaces for the officiating priests (pujari) and pilgrims attending the many festivals that take place at ChanguNarayan. The ChaugheraSattal, occupying the east, north and west sections of the courtyard, was formerly a pilgrimage rest house and, prior to the 2015 earthquakes, was used by the local community for various activities, mostly on the lower level. Three priests (pujaris) responsible for daily worship were provided accommodation in these structures as well.

History

The Sattal is supposed to have been built during the Shah period for the security of the temple area. It was believed to have been completely collapsed during the earthquake of 1990. And was rebuilt afterwards by JuddhaShumsher.

Status

The Sattal area was collapsed and critically damaged by the earthquake. Most of the Sattal area is critically damaged and for the reconstruction of the Sattals, the whole Sattal had to be dismantled first.
Emergency Response

The damage of Sattals caused a lot of state of panic as they collapsed entirely. On the south west part, a lady shopkeeper was trapped inside the debris. Locals and the police group rescued her safely. However, the wooden windows and the important artefacts from the temple was collected by the team of rescue police and was classified and the inventory was done and kept safely under the supervision of the police.

Responsible authorities:

In the beginning the HECFN was responsible for the reconstruction of the Sattal area. However due to the lack of funding, HECFN pulled out of the project and then tender was announced. The tender went to Lumbini Construction, SonuSuwal Constructions and Pawan Construction Joint Venture. The drawings and estimate was provide by the DoA. The responsible authorities are:

- Lumbini, SonuSuwal and Pawan JV
- Department of Archeology

Documentations

For the documentation of the ChaugheraSattals, there were less amount of drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D. Due to the lacked detail drawings the debris were measured before dismantling. So, taking these informations are reference, photographic evidences were also accounted for the documentation of the ChaugheraSattals. The photographs were general photographs that was available easily. (see annex)

For the various decisions, Priest and the locals were also consulted while preparing the drawings. There has been subsequent changes in the doors sizes and the window sizes during the consultation of the locals.

The process of reconstruction wasn’t documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:

The salvage materials were stored in the north area and the important precious parts were stored on the ground floor of the temple. The inventory format was prepared by the DoA office. The security was provided by the armed police force. The overall percentage of salvage materials used were around 10-15%. For the plinth, the salvage materials were used heavily and the wooden members were classified and reused.

Materials used

The overall materials used were bricks with mud mortar. The reconstruction process was consistent to the guidelines provided by the DoA and was aimed to achieve the totality of the old state. The newer wooden carvings were prepared as like the old items using similar nature of woods and carving patterns.

Monitoring Mechanism:
The monitoring was done by the Monument conservation and Durbar Care office, Bhaktapur. The local committee led by Ward chief also facilitates as the monitoring and consulting body.

Community Participations

The community was involved in the decision makings regarding the detailing in and the overall forms. Community was consulted and was made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan, Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals weren't involved in the direct reconstruction process.

Artisans available

The artisans were hired from the Bhaktapur area. They were the local artisans who were hired for specific carvings and doors. For the general reconstruction local skilled and semi-skilled labours were mobilized.

Project Cost

The estimated tender cost is around 16 crore 76 lakhs, 29 thousand. The project is estimated to be completed in B.S. 2078. At first the reconstruction process retaining walls were built to stabilize the foundation and the further reconstruction is going on. As of this month only 10-15% of work has been completed.

Works was started from west wings of courtyard. The work of west wing's west south block A,B & D reconstruction of foundation was completed and North east corner foundation work was also completed. Supporting stone machinery retaining wall of north west corner was completed out of old wall where the land slide problem was accrued every year. Stone machinery work was new out of contract, so it was necessary to prepare the variation, so DoA prepared revised estimate to forward for approval. Some elevation problem of Kilesworsattal wings accrued so DOA tried to discuss with local related person and we finalized the outer part elevation and location of stair case, design of window and size of window. Then it finalized the drawing and ground floor wooden post of A & B block which is reusable. Some work of making wooden part was also started. Also dismantling work of east north corner has been completed.

8. BhimsemPati

General Description

BhimsemPati lies blow the temple square and is a small pati used by locals and priest. It is considered to be one of the important pati within the Changu Monument premise.

History

According to the locals the Bhimsenpati was originally built during the Malla period and is supposedly older than the rest of the ChaughheraSattals and pati. It was believed to have been slightly affected by the 1990 earthquake. The restoration of the BhimsenPati was done in 2053 by DoA.
Status

After the 2015 earthquake, the pati was partially damaged. However, for the reconstruction of the pati, the entire structure had to be dismantled. At present, dismantling work is going on.

Emergency Response:

After the earthquake, shoring was provided to the pati and its salvage materials were stored right next to the Pati and the locals and the police provided security for the salvage bricks.

Responsible Authorities

It is recommended that its rehabilitation programme and that all structural repairs and reconstruction are carried out under the supervision of the Bhaktapur Monument Conservation and Care office hold the collection of material and artefacts. The damaged Sattal structure will dismantle safely and store all material sattal premises. For the construction of the pati, SonuSuwal Constructions is the leading body. The bodies are:

- Sonu Suwal Construction
- Monument Conservation and Care office
- Department of Archaeology

Documentations

For the documentations. The debris was measured, and the photographic evidence was accounted for. The drawing was prepared by the Department of Archaeology. For the various decisions, Priest and the locals were also consulted while preparing the drawings.

The process of reconstruction wasn't documented daily. However, Monument conservation and Durbar care office, Bhaktapur constantly provided report to DoA on the reconstruction of the monument.

Storage and use of Salvage Materials:

The salvage materials were stored in the periphery of the pati premise. The inventory format was prepared by the DoA office. The security was provided by the armed police force. The overall percentage of salvage materials to be used is estimated to be 0-5%.

Materials used

The overall materials to be used are bricks with mud mortar. The reconstruction process shall be consistent to the guidelines provided by the DoA and will be aimed to achieve the totality of the old state. The newer wooden carvings are prepared as like the old items using similar nature of woods and carving patterns.

Monitoring Mechanism:

The monitoring will be done by the Monument conservation and Durbar Care office, Bhaktapur. The local committee led by Ward chief shall also facilitate as the monitoring and consulting body.

Community Participations

The community are involved in the decision makings regarding the detailing in and the overall forms. Community are consulted and are made aware regarding the reconstruction process. An advisory committee of 4 members including, Main Priest of Changu Narayan,
Member from DoA office, Bhaktapur and Ward members is formed led by the ward head, who investigate the matters of public and community participation and community involvement. However, community and the locals shall not be involved in the direct reconstruction process.

**Artisans available**

The artisans are hired from the Bhaktapur area. They are the local artisans who are hired for specific carvings. For the general reconstruction local skilled and semi-skilled labours shall be mobilized.

**Project Cost**

Nepal Government allocated 40 Lakhs budget from this fiscal year to start the reconstruction work with procurement system. The estimate, drawing & report were prepared and forward to Department of Archaeology for approval. Tender was awarded to contractor SonuSuwal Constructions and agreement was going on.

These are the ongoing project of reconstruction and restoration carried out by DoA and other bodies.

4. **Plan for rehabilitation of the remaining damaged monuments:**

The general plan for the rehabilitation of the remaining damaged monuments are tabulated below:

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Name of the monument</th>
<th>Reconstructing Body:</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Laxmi Narayan</td>
<td>DoA, (HECFN has showed its interest, not yet finalized)</td>
<td>Planning phase</td>
</tr>
<tr>
<td>2.</td>
<td>BalambuPati</td>
<td>DoA, SonuSuwal</td>
<td>To be started shortly</td>
</tr>
<tr>
<td>3.</td>
<td>Shiva Temple</td>
<td>DoA</td>
<td>To be started</td>
</tr>
<tr>
<td>4.</td>
<td>Badeshowr</td>
<td>DoA (for the moment, not fixed)</td>
<td>Planning phase</td>
</tr>
<tr>
<td>5.</td>
<td>Dakshin Narayan</td>
<td>DoA (for the moment, not fixed)</td>
<td>No substantial works</td>
</tr>
<tr>
<td>6.</td>
<td>KarmacharyaPati</td>
<td>Municipality has shown its interest (for the moment, not fixed)</td>
<td>No substantial works</td>
</tr>
</tbody>
</table>

Description based on the table above:

1. **Laxmi Narayan**

**General Description**

It is the another temple devoted to Laxmi-Narayan. There is a statue of the Laxmi Narayan inside the temple. It is also believed to have been built during the Kileshowr temple during the 1700s era by Malla kings.
History

The Laxmi Narayan Temple was built in 1770 at about the same time as the Kileshwor Temple and the quality of woodcarving in both temples, appears to be the same and of fine quality. Prior to the 1934 earthquake local villagers recall that the Laxmi Narayan Temple is known to have had a second upper roof. The temple suffered partial collapse in 1990 earthquake and as a result of this seismic action and during the time Juddha Shumsher only partially rebuilt it with a single roof.

Status

The recent earthquakes in 2015 completely flattened the temple to its plinth level. The monument suffered total shear failure and collapsed completely.

Emergency Response

After the earthquake, locals and police were mobilized for the management of the debris. Parts of its timber structure and several carved struts and columns have been rescued and stored for safekeeping. Following further searches other pieces of the temple have come to light. And it is likely that further pieces will be identified within the Changu Narayan Complex. All the timbers are said to have been collected and stored, but the brickwork has been treated as rubble and cleared away. There is evidence that the original brickwork used was the traditional slip glazed bricks (dachheappa).

However, the wooden windows and the important artefacts from the temple was collected by the team of rescue police and was classified and the inventory was done and kept safely under the supervision of the police.

Vandalism and theft

Due to the lack of effective management, the original shrine of Laxmi Narayan statue was stolen and also the Puja materials, such as Argha, Metal pots etc. were stolen.

Responsible authorities

In the beginning HECFN took over the reconstruction of the temple. HECFN proposed the reconstruction of the temple as two tiered temple which is believed to the original state of the temple before the earthquake. The plinth, tudal also show consistency in the claim of the temple being two-tiered temple in the past. Also, the fact that the other Laxmi Narayan temple of the valley are also two-tiered. However, due to the lack of strong photographic evidences and drawings DoA, rejected the proposal. HECFN had its funding pulled and the work has been stalled ever since. There are still discussions regarding on whether the temple should be built as two-tiered or single tired. The DoA is currently looking after this matter.

Documentations

For the documentation of the Laxmi Narayan, there are drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D. However, as mentioned above, there are still discussions regarding on whether the temple should be built as two-tiered or single tired. The DoA is currently looking after this matter. (see annex)
Storage and use of Salvage Materials:

The salvage materials are stored in the south wing area and the important precious parts has been stolen. The inventory format was prepared by the DoA office. The removal of Gajur and the gilded roof covering has been completed, and they were carefully marked, inventory was done and carefully stored at ground floor of the temple itself on presence of Department of Archaeology, Armed police force, committee member and contractor. The damaged temple structure is dismantled safely and stored all material of archaeological importance.

Present Situation

At present the current situation is rather complicated. HECFN has continued to show its interest and the further decisions has not been made regarding this matter formally by the DoA

2. BalambuPati

General Description and Status

The ChaugheraSattal, occupying the east, north and west sections of the courtyard, was formerly a pilgrimage rest house and, prior to the 2015 earthquakes, was used by the local community for various activities, mostly on the lower level. Three priests (pujaris) responsible for daily worship were provided accommodation in these structures as well.

Out of the Changu Narayan temple premises there are many small pati which some are major damaged some are minor damaged by earthquake 2015 April may. Among them Balambupati was also major damaged which was close/attached to private house. It was risk for people so local concern people complain for dismantle. DOA has managed some budget and dismantle top floor and kept it only ground floor.

Rehabilitation and Present Situation

The damaged Sattal structure is dismantled safely and stored all material of archaeological importance in Temple premises. Nepal Government’s DOA had done MoU to Heritage and Environment Conservation Foundation, Nepal for rehabilitation, reconstruction, conservation and renovation of all the monuments of Change Narayan World Heritage zone. But they have lack of fund and work wasn’t run therefore Nepal Government allocated some budget from last fiscal year to start the reconstruction work with procurement system. Detail estimation and propose drawing made from Monument Conservation and Durbar care office, Bhaktapur in last fiscal year. But some local problem the work is not done. This year also allocated some budget and Contract was given to Kiran construction with contracting amount 14,58,791.25 till 30 jestha 2076. Work was completed.

This fiscal year also allocated 35 lakh budgets for reconstruction of second balambupati. we prepared drawing, estimate and report for approval. Tender was to the SonuSuwal Constructions and agreement is going on.
It is recommended that its rehabilitation programme and that all structural repairs and reconstruction are carried out under the supervision of the Bhaktapur Monument Conservation and Care office hold the collection of material and artefacts.

3. Shiva Temple

Inside the Changu Narayan temple premises there are many small temples which some are major damaged some are minor damaged by earthquake 2015 April / May. Among them Shiva Temple close to west of ChhinnaMasta Temple was also completely collapsed. Historically, archaeologically and religiously it was important. Every pilgrimage visited this temple.

Present State of Monument Restoration/Reconstruction

It is recommended that Monument Conservation and Durbar care office, Bhaktapur assists its rehabilitation programme and that all structural repairs and reconstruction are carried out under the supervision of the Monument Conservation and Durbar care office, Bhaktapur hold the collection of loose sculptures and artefacts. There is an urgent need for the reconstruction of the monument and the further process are going on.

Documentation

For the documentation of the Laxmi Narayan, there are drafted drawing from the NSW Department of Technical and Further Education. This drawing was drafted on 1986 A.D. (see annex)

Further process and procedure are going on to decide where the reconstruction is given to SonuSuwal or direct contract process.

4. Other monuments

The other monuments such as Badesahwor, Dakshin Narayan and Karmacharyapati are also awaiting further decisions on the reconstructions. Among of the KarmacharyaPati was damaged during the 1990s earthquake and hasn’t been rebuilt ever since. The municipality has shown its interest to reconstruct the Karmacharyasattal. However, no concrete decisions have been made regarding this.
5. Plan for Rehabilitation of Urban Fabrics

For the rehabilitation of the urban fabrics that has been damaged during the earthquake of the 2015, reconstruction has been going on.

The owners of the residence have started the reconstruction massively. The municipality has been monitoring the façade and the materials used for the reconstruction.

![Figure 7: Affected zone in the urban fabrics.](image)

The ongoing plans are:

- Guidelines for the façade inside the core zones must be followed
- Municipality monitors the drawings, and construction materials
- 35% rebate is offered on the traditional wooden materials. Previously it was 60-75%. However, after the earthquake the percentage was reversed.

6. Overall conclusions and recommendations

The reconstruction in the Changu Narayan hasn’t been top notch to say the least. The drawings from NSW, lack detail dimensions and the positioning in details. It is also notable that the profile section is incorrect in the drawings. Due to the severe lack of drawings and the specific photographs, the reconstruction work has been pushed away. Similarly, lack of proper management from the police and concerned authorities has caused theft of Laxmi Narayan Temple shrine and other materials. Changu Narayan has been reopened to public for almost 3 years and there is a genuine threat of vandalism and halt in the construction process. Also, the change in the reconstructing body from HECFN, to the tender process was rather demotivating in regard to the reconstruction process. Also, public has shown the distress in the lack of direct involvement in the reconstruction process.

However, it is praiseworthy that the reconstruction process reflects the ethos of the conservation and is consistent to the old designs. The reconstruction process shall be focused to be completed in time as far as possible.
7. References


8. Annex: Drawings from NSW Foundation
Changu Narayan
SOUTH ELEVATION
V.M.Za. 1
Established in the 5th Century A.D.
Rebuilt in 1714.

Changu Narayan
SECTIOON A - A
V.M.Za. 1

Pilgrim Rest House
and Water Fountain
SOUTH ELEVATION
V.M.Zb. 65
Of unknown date.

Pilgrim Rest House
and Water Fountain
UPPER PLAN
V.M.Zb. 65

LOWER PLAN
V.M.Zb. 65
Of unknown date.
ANNEX 8

Bhairav
V.M.Z.9. 13
Of unknown date.

Reject Elephant
V.M.Z.9. 9
Established in the 5th Century A.D.

Vishwarupa
V.M.Z.9. 11
Carvings dating from the 6th century A.D.