Assessing and investigating Swayambhūnath after the "Gorkha Earthquake" of 2015

David Cornélius Andolfatto, Ludovic Dusuzeau, Pierre Gérard-Bendélé

Fig. 1. General view of Swayambhūnath in May 2015
© Pierre Gérard Bendele, Ludovic Dusuzeau/UNESCO Kathmandu

Assessing and investigating Svayambhū after the "Gorkha Earthquake" of 2015

David Andolfatto, Ludovic Dusuzeau & Pierre Gérard-Bendelé

David Andolfatto is a PhD student in archaeology of the Himalayas at the Université Paris 4 La Sorbonne. His studies focus on the relationship between architecture and images but also the archaeology of Western Nepal and the Kathmandu Valley. He has been a consultant for OCHSPA (reconstruction of Itum Bahal, Buddhist monastery, Kathmandu) and UNESCO Office in Kathmandu since the earthquakes of 2015.

Ludovic Dusuzeau is an architect. He graduated from the « Paris Belleville School of Architecture» (ENSA-PB), France and worked at ELEMENTAL architecture firm on the reconstruction project of Constitución (Chile) after the earthquake of 2010. From 2011 to 2015, under the leadership of architect P. L. Faloci, he was in charge of several projects including the urban planning and work supervision in Briançon (UNESCO World Heritage Site, France). In 2015, he worked as a consultant for OCHSPA and UNESCO Office in Kathmandu.

Pierre Gérard-Bendelé is an architect. He graduated from the « Paris Belleville School of Architecture » (ENSA-PB, France) and worked at Bernard Quirot + associés architecture firm during 2010. From 2012 to 2014, he worked under the leadership of architect P. L. Faloci, on several projects and was in charge of the conception of the «Musée archéologique de Mariana» (Corsica, France) and its museography. In 2015, he worked as a consultant for OCHSPA and UNESCO Office in Kathmandu.

In the aftermath of the Gorkha earthquake of 25 April 2015, archaeological and architectural work has been conducted at the holy site of Svayambhū (Monument Zone of Kathmandu Valley World Heritage Site). Being the focal point of a large number of devotees, a prompt and adequate emergency response was needed to secure and protect the cultural and architectural heritage of the temples, houses, shrines and artifacts. Two methods were practised: a post-disaster archaeological investigation and an architectural inventory and survey. The former resulted in an archaeological analysis of a stūpa, and the latter was conducted to produce an up-to-date map of all buildings in their current state and an inventory of each structure with relevant diagnosis, photographs and situation outlines.

INTRODUCTION

During the emergency meeting held at the UNESCO Kathmandu Office, the Federation of Swayambhū Management Committee and Conservation (FSMC) stressed the need for a quick on-site response at Svayambhū. Facing the extensive damages to this historical site, two of the most urgent concerns were thereafter to draw up a precise overview of the destructions and make sure that the memory of the site/property was safeguarded for future reconstructions. A previous inventory led in 1975 by Carl Pruscha mentioned Svayambhū, despite the fact that only nine monuments were referenced*. It was then decided to lead a damage assessment exercise together with a global inventory.

BACKGROUND AND SITE CONTEXT

After the earthquake, the hillock was partially evacuated but a number of inhabitants remained on site to maintain the ritual activities (Fig. 1). Moreover, the upcoming month of Guṃlā (circa August) announced a period of celebrations in the whole Valley. The possibility of massive crowds of pilgrims visiting the site further fuelled a fair load of safety hazards. The serious cracks observed on the upper platform, potentially caused by the general overload of the hillock had to be evaluated. The arrival of monsoon water infiltrations could also cause landslides.

* Pruscha 1975.

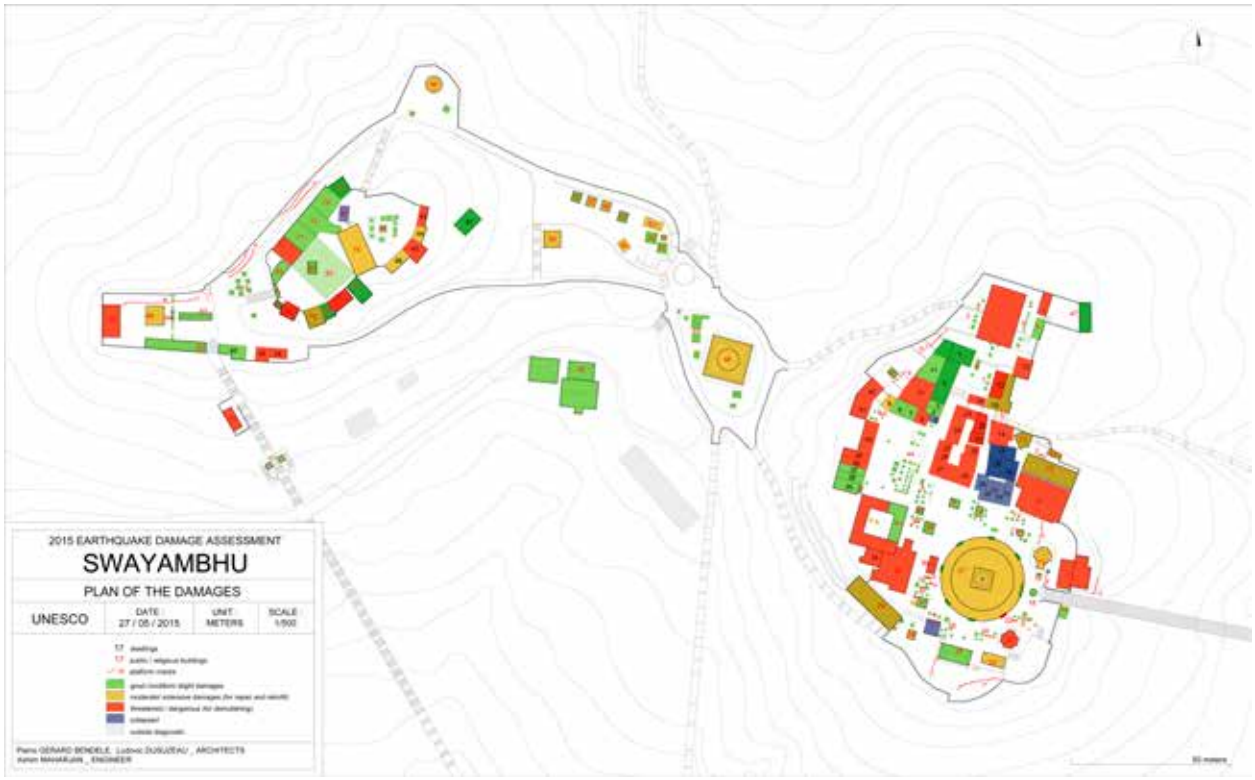

Fig. 2. Map of damages in Swayambhūnath. © Pierre Gérard Bendele, Ludovic Dusuzeau, A. Maharjan/UNESCO Kathmandu

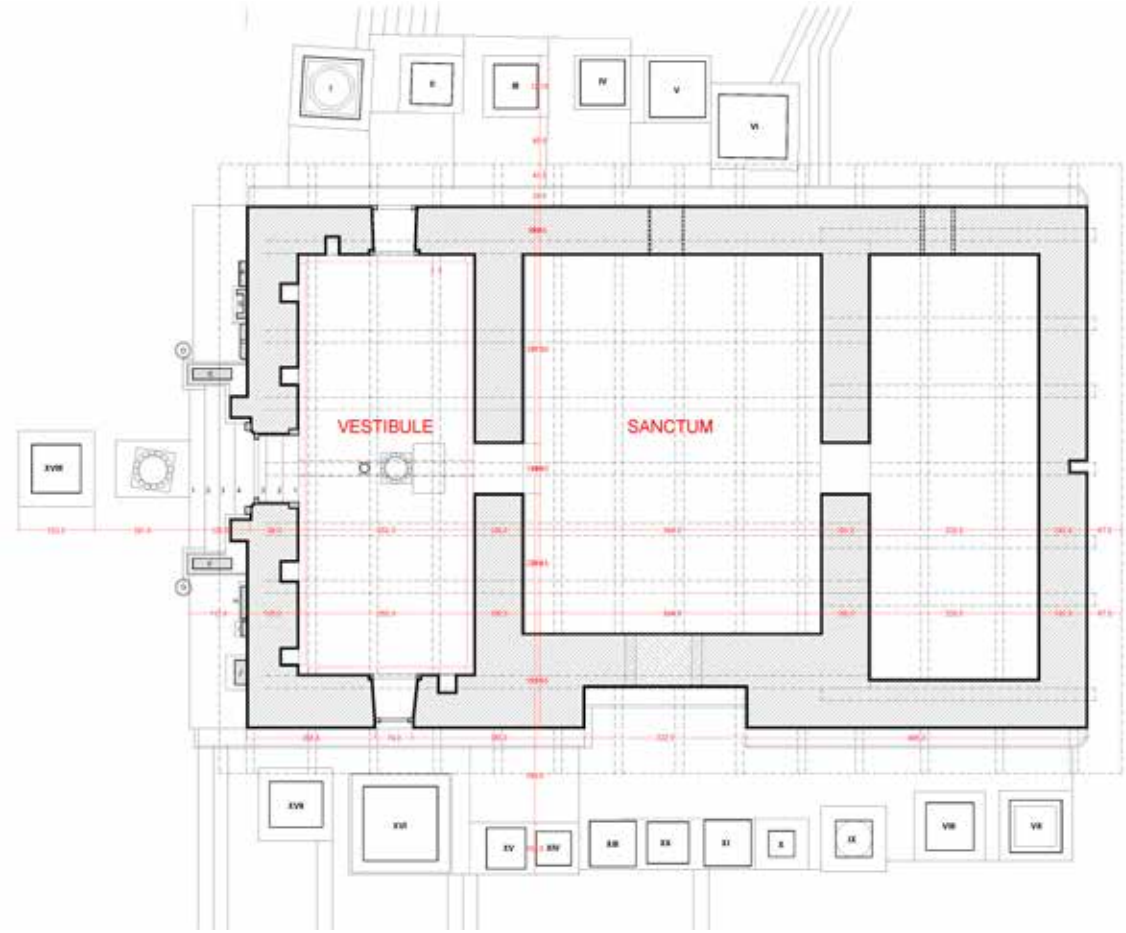

Fig. 3. Floor plan of Śāntipur Temple. © Pierre Gérard Bendele, Ludovic Dusuzeau/UNESCO Kathmandu

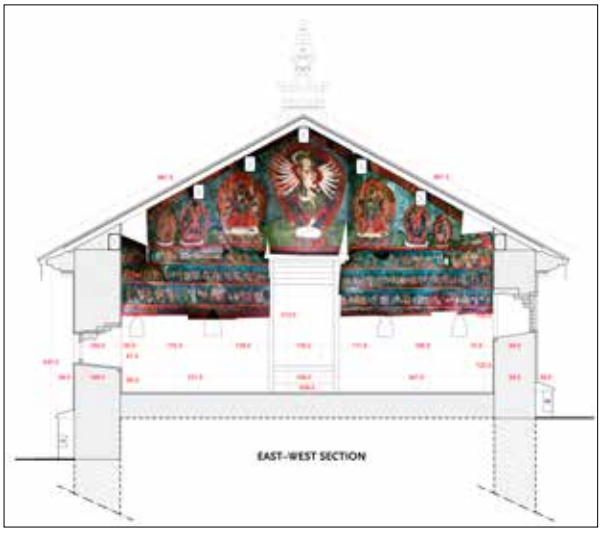

Fig. 4. East–West section of Śāntipur Temple vestibule's South wall before the earthquakes of 2015 © Pierre Gérard Bendele, Ludovic Dusuzeau/UNESCO Kathmandu, paintings images: courtesy of A. von Rospatt

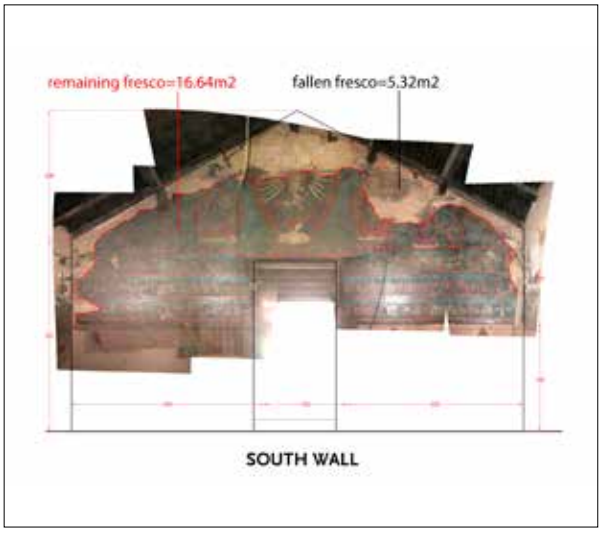

Fig. 5. South wall of Śāntipur Temple vestibule's showing the damaged mural paintings © Pierre Gérard Bendele, Ludovic Dusuzeau/UNESCO Kathmandu

The main stūpa of Svayambhū, the focal point of most devotees along with the Hāratī temple, suffered some extensive external damage. This mainly consists of cracks running both horizontally and vertically over the massive dome (*skt.aṇḍa*). Though narrow, these cracks could give way to infiltrations. The Śāntipur temple, about 60 meters away from the stūpa (to the northern side of the hillock), is a temple of major significance for the Buddhist Newars (Fig. 3). The entry is made from a vestibule, richly ornamented on its four walls by mural paintings depicting the *Swayambhūpurāṇa*, a text composed around the fifteenth century CE*. It tells the story of the *Swayambhūcaitya* (the main stūpa, or *mahācaitya*) and other important sacred places of the Kathmandu Valley. According to A. von Rospatt the initial paintings were executed under king PratāpaMalla (1624-74 CE) with various repaints and cleansings made over the course of time, with more or less success and dexterity**.

Only two ritual specialists may access the second room of Śāntipur, the proper sanctum. This room contains a cave were ŚāntipuraĀcārya (tantric master) is said to remain in a deep meditation***. Numerous legends and contemporary frightening stories surround this place, certainly to keep people away from the very secret and mysterious cave. The North wall of Śāntipur and the vestibule were severely damaged by the earthquakes, triggering complex issues. Approximately 60% out of the estimated 55,85m² of mural paintings collapsed.

METHODOLOGY

The twin-track approach involved the practice of "post-disaster archaeology" and architectural surveys and inventory. The archaeological team was composed of Debendra Bhattarai (Department of Archaeology [DoA] of Nepal) and David Andolfatto (Consultant, UNESCO Kathmandu Office, archaeologist and art historian), assisted by Dominique Baudais (Institut National de Recherches Archéologiques Préventives [French National Research Institute on Preventive Archaeology], archaeologist) and Amrit Man Buddhācārya (Buddhist priest from the local community). The architectural team was composed of Ashim Maharjan (Consultant, UNESCO Kathmandu Office, engineer), Pierre Gérard-Bendelé (Consultant, UNESCO Kathmandu Office, architect) and Ludovic Dusuzeau (Consultant, UNESCO Kathmandu Office, architect).

* Von Rospatt 2014, 46.
** *Ibid*, 54-58.
*** Von Rospatt 2014.

SALVAGE OF THE ART AND "POST-DISASTER ARCHAEOLOGY

"Post-disaster archaeology" defines the environment which is typical of a devastated zone where a quick and scientific destruction is requested. The main reasons commanding for promptness are the risks of looting, further destruction by aftershocks and human security.

The archaeology team had to provide an urgent but nevertheless scientific response to the situation by adapting the usual techniques of recording. Part of the team collected artifacts while another inventoried them. Salvaged objects were given an inventory number and roughly described. Most of them came from the Maṅgal Bahudvāra Caitya Stūpa, a structure further dealt with below. The original location of the artifacts is usually unknown (which side of the monument or even sometimes which monument), as it all came at once to the team in a highly stressful moment. An unoccupied room was later identified and used as a locked storage room. The content of the latter was registered and included in a legal document (Nep. *muchulka*) by a police officer. Following the emergency measures on Maṅgal Bahudvāra Caitya Stūpa, the structure was excavated in order to reach a stable level before the monsoon. Archaeological rubble was then sorted out by members of the local community and archaeology students from Tribhuvan University (Kathmandu). Thus both were trained by the joint team.

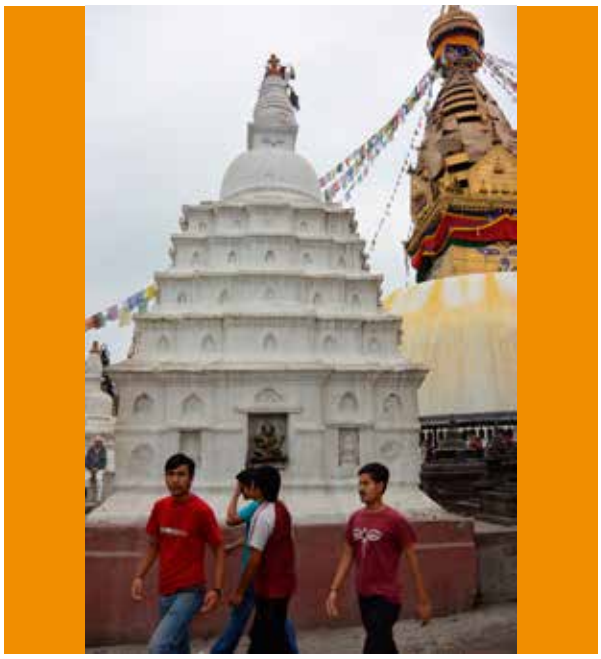

Fig 6. Tashi Gomang Stūpa. South side. October 2013. © D. Andolfatto

The first aim at the Śāntipur Temple was the salvage of mural paintings. These had to be sorted out from the rubble and stored properly, away from the sun and rain.

Various actions had to be taken in order to protect the different types of monuments or artifacts.

Proper storage and the safe transfer to the nearby National Museum of Chhauni was part of a somehow tumultuous operation. The buddhācārya local community, in charge of Svayambhū, had to be convinced of the need for such care. Indeed it is cultural and a local custom to actually either get totally rid of a broken artifact or to fully restore it. Considering the unsafe condition of the building it was however agreed that what could be taken outside had to be protected. This was made clear quite soon but the community had its own ways of removing artifacts, in accordance with the above-mentioned fact that ritual objects or ornaments are considered valueless once they are damaged. The South wall was only partially damaged and large portions of paint were still in place though in precarious condition. Still it has to be decided what will happen with the murals but it seems likely that the original paintings will be re-installed inside the temple and missing parts replaced by contemporary artists.

With respect to the reconstruction of Śāntipur, the specific use of the building as a partially restricted shrine complicates the task. The buddhācārya priests and the Federation of Swayambhū Management Committee (FSMC) have to define who among the community will be authorized to reconstruct the sanctum part.

One of the most damaged structures at Svayambhū is probably the Maṅgal Bahudvāra Caitya (also locally known as Tashi Gomang, Tib: the "many auspicious niches") (Fig. 6).

The core of Maṅgal Bahudvāra Caitya Stupa, as the excavation revealed, is a square tower of bricks punctuated at a certain level by nine hollow boxes

Fig 7. Tashi Gomang Stūpa shortly after its collapse. 1st May 2015. © D. Andolfatto/UNESCO Kathmandu

Fig 8. Top view of Tashi Gomang Stūpa after archaeological cleaning. Large stones were covering nine recesses. © D. Andolfatto/UNESCO Kathmandu

(Fig. 7 and 8)*. The central box is that of the Mount Meru or "axis mundi". It has a narrow cavity to the centre that goes 2.30 meters deep. Miniature clay images representing *stūpas* or deities, known as *tsha-tshas* in Tibetan, were found placed in small numbers in the nine depressions. Massive quantities of these votive objects where found in the masonry enclosing the brick core. Some of the tech-tshas represent Buddhist gods and goddesses (Fig. 9). Coins of different origins were also discovered: British Indian quarter annas of 1862 CE, silver rupees of early 18th century Mughal Emperors. This very unique stūpa must have been built (or rebuilt) during the 1860's or 1870's CE, as H. A. Oldfield, who describes Svayambhū between 1850 and 1863 CE does not mention it. A more in-depth study of the objects kept at the Maṅgal Bahudvāra Caitya Stūpa will provide more information regarding the multi-cultural environment of the 19th century CE Svayambhū.

ARCHITECTURAL SURVEYS

A preliminary and complete mapping of the Monument Zone was a pre-requisite, since no updated document existed yet. An aerial photographic survey, made by the drone company SkyCatch, provided precious work documents that were coupled with field surveys.

The inventory had to cover the public and religious buildings, dwellings and every shrines and votive

Fig 9. Some of the numerous votive clay objects (tsha-tshas) found in the debris of Maṅgal Bahudvāra Caitya Stūpa. © D. Andolfatto/UNESCO Kathmandu

* The 9, 17 or 25 square holes are often found in foundation stones of Sri Lankan stūpas (Snodgrass 2007, 129-131). Little information is available concerning foundation stones in Nepal. Contrary to Sri Lankan stūpas the Maṅgal Bahudvāra Caitya inner boxes do not contain any images of *dikpālas* or of the four cardinal animals (lion, bull, elephant and horse). These were found in the form of fine clay sculptures set between the brick core and the façade, *i.e.* in the masonry (Fig. 10). The only image that was excavated from the inner boxes is a fragmented painted clay sculpture of Vajrayoginī (Fig. 11).

Fig 10. One of the terracotta images that was found in the masonry of Tashi Gomang Stūpa. It probably represents Virūpakṣa, one of the four Mahārājas, acting as guardians of cardinal directions. © D. Andolfatto/ UNESCO Kathmandu

monuments. Two separate inventories were drawn in parallel, one for residential private buildings and one for all public or religious buildings.

A field-based expertise campaign was conducted and articulated as follows:

- An inventory number identified each building and independent significant built entity on a map. Each location was then colour-flagged following a status of dangerousness and degree of possible destruction. Ultimately, these colour-coded maps allow for a graphical understanding and were extended to other sites later assessed by the team (Changu Narayan, Sankhu and Bhaktapur).
- A systematic photographic survey of all the facades led to further allow restorations or reconstructions with respect to their original pattern.
- A description of all buildings with their names, structural systems, construction materials, relative positioning, number of floors, and in the case of religious buildings, typology and approximate height.
- Finally a rapid diagnosis with a description of the nature of observed damage, possible destructions, risks of immediate dangers and existence of specific elements to safeguard (especially carved wooden elements).

The team's findings show that in the whole area of Svayambhū, the earthquake caused the destruction or severely threatened 33% of the 45 main religious buildings, 83% of the 36 brick masonry dwellings and 14% of the 14 concrete houses. Smaller elements like shrines, *caityas*, stone posts, gates, etc., were less impacted with an approximated 4% destruction of the 212 entities. Over the main hill, 28 houses out of 43 had to be partially dismantled or were destroyed for safety reasons.

In addition architectural drawings were produced for the Śāntipur Temple, the Maṅgal Bahudvāra Caitya Stūpa and the Anantapura Tower (Fig. 12). These major monuments will eventually have to be dismantled before their reconstruction.

Fig 11. Painted clay image of Vajravārāhi found in one of the recesses from Tahsi Gomang Stūpa. © D. Andolfatto/ UNESCO Kathmandu

CONCLUSION

Apart from being one of the holiest sites of the Kathmandu Valley World Heritage property, Svayambhū is a place of many challenges. Its study, rehabilitation and monitoring depend upon intricate agendas, physical issues and ritual practices*.

Numerous recommendations can be formulated from *in-situ* observations. Among these suggestions are: the

* For instance, the buddhācārya priests expressed the necessity of having a *chhemāpūjā* ritual performed to ask forgiveness before any activities like archaeological investigations were carried on at Maṅgal Bahudvāra Caitya Stūpa.

retrofit of the site's upper platform in order to avoid landslides, the establishment of coherent para-seismic construction strategies for dwellings and public monuments and the organization of a master plan considering the probability of future earthquakes.

Regarding cultural heritage assessments, the need for a digital database has to be pointed out here. This type of tool could help avoid duplication of efforts in many sectors and allow for a better management of cultural properties (prevent art looting, monitoring of reconstructions projects, etc.). It would also provide a proper documentation for heritage specialists and scholars and preserve an updated record of monuments at different stages of their existence.

The proper implementation of the latter recommendations cannot be fully successful without general whereabouts resolutions at the national level. For instance, before the Gorkha earthquake the restorations of heritage monuments were already facing a problematic scarcity of timber, and the brick market is going to face a shortage in a nearby future as well as a price increase. Therefore the survival of traditional know-how depends on country-scale policies to frame and manage the traditional building materials production and supply. Besides, the establishment of new by-laws and master plans will not be successful without strengthening of the public law's enforcement.

BIBLIOGRAPHY

Oldfield, Henry Ambrose, 1880 [i.e. 1881]. *Sketches from Nepal, historical and descriptive, with anecdotes of the court life and wild sports of the country in the time of Maharaja Jang Bahadur*, G. C. B, volume 1 & 2 .

Pruscha, Carl. 1975. *Kathmandu Valley. The Preservation of Physical Environment and Cultural Heritage. A Protective Inventory.* Vol I & II. Anton Schroll& Co. Vienna.

Von Rospatt, Alexander. 2014. "The Mural Paintings of the *Swayambhūpurāṇa* at the Shrine of Śāntipur and Their Origins with PratāpaMalla". *Himalayan Passages. Tibetan and Newar Studies in Honour of Hubert Decleer*. Edited by Benjamin Bogin and Andrew Quintman, 45-68. Wisdom Publications. Boston.

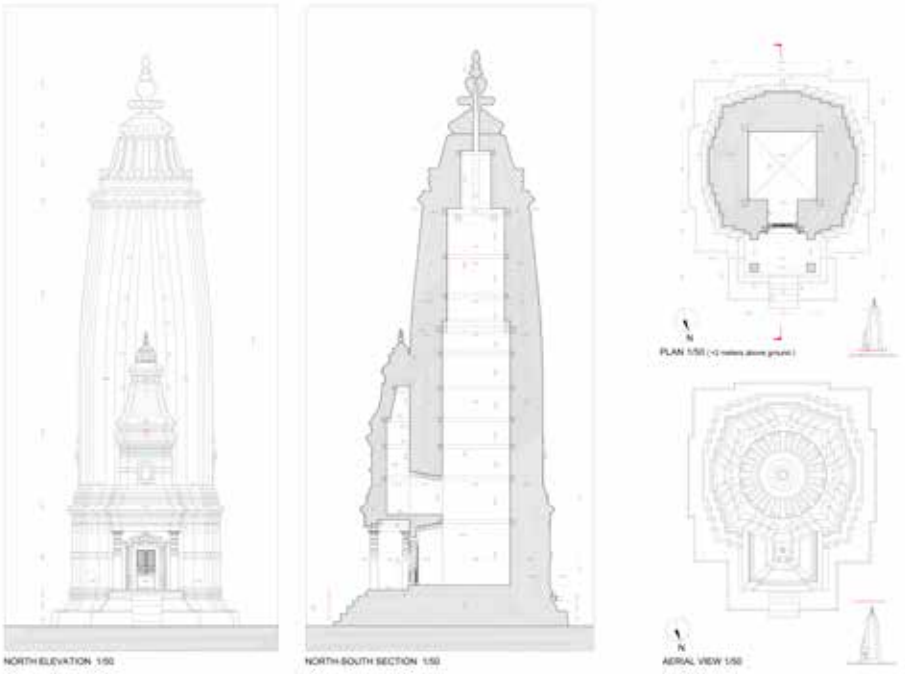

Fig 12. Drawing of the anantapura temple, as a restitution after 2/3 of it collapsed. © Pierre Gérard Bendele, Ludovic Dusuzeau/UNESCO Kathmandu