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ACCU Nara International Correspondent

The ACCU correspondents periodically send reports on cultural heritage protection activities in which they have been recently involved. This is a collection of nine reports submitted by international correspondents in the Asia-Pacific region.

The Twenty-ninth Regular Report

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Bangladesh



Gokul Medh Temple (Behula-Lakshmindar's Bashor Ghar), a Remarkable Architecture of Ancient Bengal

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Pundranagara, the capital of the ancient Pundravardhana *Bhukti* (Province) is currently known as Mahasthangarh. This place is located 12 km north of the Bogura district of Bangladesh. A provincial capital was established here about two and a half thousand years ago and the area of this capital is 1525 m in length from north to south and 1372 m in width from east to west. The capital city was surrounded by a high-security wall, and it was actually a fort city. Also, for the

protection of the fort city, the river Karatoa flowed to the east and the north, and the south and west sides were covered by a deep moat. Up to 20 km north, south, and west of the Pundranagara, suburbs were developed and a number of homesteads, religious institutions (Buddhist temples, a Buddhist monastery and stupa) ancient roads, ponds, and wells were built (Figure 1).



Fig. 1. Location of archaeological sites near Mahasthangarh. No. 3 is Gokul Medh.

The ancient site Gokul Medh is also known as *Bashor Ghar* of Behula-Lakshmindar, the hero-heroine of a Bengali romantic folktale. (*Bashor Ghar* means the room where newlyweds spend the first night after the wedding.) Behula is one of the main characters in *Manasamangal* poesies based on which there is a popular story in society in Bengal. According to 'Purana', Behula is Usha, the wife of Aniruddha of heaven. On the other hand, according to the folktale, she (Behula) was the daughter of Shaeben of Ujaninagara. Lakshmindar was the youngest son of Chand Saudagar of Champaknagara. Behula was the wife of Lakshmindar and he was the hero of Manasamangal poesies (Pidiya 2003:202). Many high cultural mounds are associated with their names for many

different reasons here. Netai Dhopanir Paat, Ojha Dhanantarir Dhap, Chand Muah Hat cultural mounds are associated with this story and these cultural mounds are located a short distance from the Gokul Medh site.

The archaeological site Gokul Medh or Behula-Lakshmindar's *Bashor Ghar* is situated 4 km west of the capital Pundranagara. The cultural mound is 80.46 m in length and 55.77 m in breadth. An extensive temple was established at a height of 13.10 m above the plain and this temple is a remarkable example of multi-chambered architectural genius. The geographical location, architectural style, construction technique, and construction method of this ancient site is

of special significance. This type of construction style is rare in ancient Bengal. A total of 172 chambers have been unveiled in various shapes and sizes from archaeological excavations. The chambers, built at different heights, were arranged in ascending order from the bottom to the top. These chambers were placed at several heights but built in the same row and were filled strongly with adhesive earth. It can be easily presumed from the location of the chambers built at different heights that these were used as foundations for a lofty temple or stupa. Such a multi-storied parallel buttress-walled foundation is a significant architectural feature of ancient Bengal (Figures 2, 3, & 4).



Fig. 2. Gokul Medh, after excavation; the photo taken from the ASI annual report in 1935-36.





Fig. 3. General view of Gokul Medh

This innovative construction technique was prevalent in Bengal for five centuries before the arrival of Islam. This method can be compared to our present-day piling system. The technique was very useful and effective in the alluvial soil of Bangladesh for constructing any religious or sacred building of large size as well as high above the flood plain. Similar construction methods are also found in *Abicbchbatra* in the Bareilly district of Uttar Pradesh in India far from Bengal (Ahmed1997:41-42). The plinth of the shrine is a polygon of twenty-four sides and an octagonal floor can be seen above it. Most probably a Buddhist temple or stupa was built on this floor. However, at present, there is no evidence of walls built above this floor (Figure 5).

Besides these, many terracotta plaques, ornamental bricks, human figures, and animal figures have been found at this site during excavations. These terracotta plaques are typical 'Gupta' in style. "On the strength of the evidence supplied by these terracottas the monument may be assigned to the 6th or 7th century AD" (Majumdar 1990:69) (Figures 6, 7, 8, 9 & 10).

The artifacts found indicate that the massive ruin was originally a Buddhist shrine. The temple was exposed by a 1.46 m wide staircase outside on the north-east side at a

Fig. 4. Aerial view of Gokul Medh

height of about 7.62 m from the plain. "On the north-east, at a height of about 25¹ from the foot of the mound, was discovered a staircase 4¹ - 8" wide, with landing, leading up to a terrace encircling the shrine" (Majumdar 1990:67).

A square temple (8.22 m \times 8.22 m) and a verandah were built on the same site during the Sena period (the 11th to 12th centuries CE) after demolishing or abandoning the Buddhist temple or stupa. There is evidence that the second phase of construction began here during the Sena period in the 11th to 12th centuries CE (Zakaria 2007:194).

Inside the later period temple, a human skeleton was found in the chamber. Below this chamber, there is a circular brickbuilt pit measuring 3.68 m in diameter (Figures 11 & 12). A stone with 12 holes was found inside the pit and a gold leaf was discovered in the middle hole. A depiction of a bull can be seen on the gold leaf. Researchers believe that the exposed architectural structure was a Shiva temple due to the depiction of a bull on the gold leaf. "It appears that the gold leaf was placed here as the foundation deposit of a shrine, and it may be suggested that the shrine, judging from the bull figure, was dedicated to the worship of Siva" (Majumdar 1990:68).



Fig. 5. Ground plan and circular pit of Gokul Medh; the photo taken from the ASI annual report in 1935-36.



Figs. 6-7. Fragments of terracotta plaques; photos taken from the Gokul Medh excavation report in 1934-35.



Figs. 8-10. Fragment ornamental bricks; photos taken from the Gokul Medh excavation report in 1934-35.



Fig. 11. Later period temple in aerial view

Fig. 12. Later period temple in close view

The researchers believe that the bull figure and terracotta plaques are from the later period. "The bull figure on the gold leaf is rather crude, as compared with the contemporary terracottas, and there is no doubt that in the latter the Bengal artists have always excelled" (Majumdar 1990:60).

At present, Gokul Medh temple is a protected monument by the Department of Archaeology of the Ministry of Cultural Affairs of Bangladesh. Apart from researchers, a number of tourists and visitors come to visit and explore this archaeological site just to see the Behula-Lakshmindarer's *Bashor Ghar*, as this place (Gokul Medh) is associated with the story of Behula-Lakshmidar, a popular folktale of Bengal. But archaeological excavations here in 1934-35 unearthed the remains of a grand and amazing building. This type of architectural construction technique and construction method is not seen much in Bangladesh. Excavations have revealed ancient structures and artifacts from the first phase of a 6th to 7th century Buddhist temple or stupa and the later phase of the 11th to 12th century remains of a Hindu temple.

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Bhutan





Ruins of Mitenpa Lhakhang

Introduction

The Mitenpa Lhakhang ruins are located in Chapcha *gewog* in the Chukha district. They are situated on the slope of a hill at Mitekha village. The village is located about 40 kilometers from Thimphu town and is connected by a feeder road from Damchu, alongside the Thimphu-Phuentsholing highway. It takes around one hour to reach the ruins from the highway (see Fig. 1). The village is said to have had only five

households in the past and even to this day there is only one house nearby the *lhakhang* ruins which is currently occupied. Today, the ruins remain partially covered by overgrowth, worn down by weather and time.

Exact location of the ruins (Site coordinates) 27°15'22.51°N; 89°32'14.52°E



Fig. 1. Aerial view of the ruins. Google Earth

Historical background /Oral history

Temples and monasteries, locally known as *lhakbangs*, are the religious structures found throughout Bhutan. They were built several centuries ago, some of them as early as the 5th and 6th centuries AD or before.

The Mitenpa Lhakhang ruins date back to sometime between the 17th and 18th centuries during the time of Tsamdrak Choeje Ngawang Drukpa. Tsamdrak Choeje Ngawang Drukpa was the founder of Mitenpa Lhakhang who also founded Tsamdrak monastery located in the same village. Tsamdrak monastery was in existence by at least the 18th century. And according to oral history, Mitenpa Lhakhang was built earlier than Tsamdrak monastery. This places the date of the *lbakbang* sometime between the 17th and 18th centuries. Tsamdrak Choeje Ngawang Drukpa was a renowned teacher who gave teachings to the 2nd Gangtrul Tenzin Legpai Dondup (1645-1725). Long before Lam Ngawang Drukpa, a Tibetan master called Drigung Chopa Rinpoche prophesied that his son Drubthob Sangay would visit Bhutan to establish his linage. As prophesied, a Drubthop named Authay Sangay is said to have visited and witnessed a burning stone at the place where the *lbakbang* ruins lie today three times in a row. This is how the village got its name: "mi" means fire, "te" means to burn, and "kha" means the place, and so the *lbakbang* was named Mitenpa.

According to an oral history, the *lhakhang* was lost to fire. After the fire, it was impossible for the villagers alone to restore the *lhakhang* and it is said to have been left in ruins. A few years later, the villagers also couldn't live long in the village due to a water shortage and are said to have abandoned the place. Today, we can see house ruins some meters away from the *lhakhang*.

Archaeological investigation of the site

The existing ruins of Mitenpa Lhakhang are mostly covered in debris and vegetation. Although the structure was destroyed by fire, some portions of the walls are still standing, which provide evidence of the past architectural layout and form of the building.



Fig. 2. Joist holes in the rear façade of the ruins



The *lhakhang* is double storied, as one can clearly see the joist holes in the rear façade of the ruins (Fig. 2). The main entrance to the *lhakhang* is from the south and there is another entrance to the room from the east (Fig. 3). The ground floor of the ruins comprises a platform which is raised about one meter above the ground. The raised platform houses five large statues (Fig. 4). The statues are about 7 feet tall. All the statues are significantly damaged without faces or arms. These statues are made from earth. Twigs and bamboos were used to form the shape of the statues and hold the plaster from outside. The statues,

being faceless and armless, are very difficult to recognize. One can see a portion of a robe painted red on two of the statues.

The area below the raised platform, which measures 6.7 meters in length and 3.2 meters in width, was used for carrying out rituals. Towards the north-western façade of the wall, one rectangular slit is placed about one foot above the statue (Fig. 5). It is placed at quite a height and most probably was used for proper air circulation and light as there is no evidence of any windows inside the *lbakbang*.





Fig. 3. Plan of Mitenpa Lhakhang, Lam's zimchu, and choeten ruins



Fig. 4. Faceless remains of the statues inside the Ihakhang ruins







Fig. 6. Attached wall behind the Ihakhang

Fig. 5. Rectangular slit

Attached to the *lhakhang* is a small room-like structure. Almost all portions of the walls have collapsed except the rear façade of the wall. The exterior eastern wall of this lhakhang provides evidence that the room was attached at a later date as the walls are well plastered like the other outer walls of the *lhakhang*. In addition, there is the presence

of $kemar^1$ (Fig. 7) which are placed at the top portion of the exterior walls to signify it as a religious structure. It is difficult to examine the function of this room as it is covered with debris from the collapsed wall. However, by judging from the size and its location, it probably must have been the caretaker's room, which are found in most ancient temples.



Fig. 7. Attached room at the Mitenpa Lhakhang ruins

Nearby the *lbakbang* there is an open space for gatherings and performing festivals. The entire lhakhang ruins are constructed of stones and rammed earth. The outer walls of the *lbakbang* are plastered using fine-grained soil.

Towards the northeast of the *lhakhang* ruins lies a large structure, comprising ruins of the Lam's residence (Fig. 8). Lam Ngawang Drukpa himself being a great lama, his residence was also very large. Normally, lhakhangs are located above a Lam's residence. However, at Mitenpa, it must have been built purposefully above to protect the lhakhang from enemies, as the main entrance door overlooks the *lhakhang*. There are wall ruins in front of the ruins



of the residence, which probably must have been built for defensive purposes.

The residence complex measures about 21.35 meters at the rear façade and 21.45 meters at the front, with a wall thickness of 1.55 meters. One can determine that the residence is four storied from the joist holes remaining in the walls (Fig. 9). The structure comprises two large rooms on the ground floor and two small rooms attached to the eastern and western sides. The residence must have been used to house the Lam's followers as the structure is too big to be used by only the Lam.



Fig. 8. Lam's residence (zimchu) plan



Fig. 9. Joist holes at Lam's zimchu

The wooden lintels of the doors and windows are still intact, but blurred with soot (Fig. 10). The remains of soot and the blackened portion of the wall corresponds to the oral history which says that the structure was lost to fire. Part of the structure is partially buried under the soil (Fig. 11). Thus, scientific research and excavation is crucial to determine its age, form, layout, and function of the entire complex.



Fig. 10. Wooden lintels of doors



Fig. 11. The ruins being buried under the soil

Cambodia



Restoration and Renovation of the National Museum

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Introduction

Although the COVID-19 pandemic had a devastating effect on various sectors in Cambodia, including the economy and tourism, the task of restoring and preserving the national heritage is still in progress. As we are reminded that the museum has implemented a long-term roof repair according to the restoration master plan, which is scheduled to be completed in four years (2021-2024), including the installation of an automatic fire fighting system.

In 2021, the roof repair project started on the northern roof and was completed in early 2022 in the first phase and then rapidly continued to the second phase, focused on the southern roof of the museum. On the other hand, the museum also had renovated the layout of the exhibition gallery such as changing the wall color, upgrading the lighting, and refining the style of the collection display to improve the aesthetics of the museum even more. This report will reveal the overall restoration and renovation of the National Museum building in 2021-2022.

1. First phase: roof repair

The museum roof structure survey found the difference damage in various parts of the roof, which could be divided into four areas according to the disparate conditions of decay. The reparation plan was also divided into four stages: the northern, southern, western, and eastern stages. According to data from the survey above, the northern roof is the most damaged part and needs to be immediately restored before continuing with the other parts of the restoration plan.

A. Damaged condition

During the repair, it was found that the components of the wooden roof were very fragile. Not only the batten and the rafters but also the large and long wooden roof beams that play a critical role in supporting the roof structure were deeply decayed, due to humidity from leaking water in the roof top, termites, and also the nesting and stool of pigeons. Moreover, the ornaments of this section also have cracks on the outside of the cement and the inner wooden frame was almost falling down. The condition of damage in this area is divided into three sub-parts as follows:

Damage in Block 1: The roof structure is the most damaged, especially the roof timber and wooden ceilings. The timber flashing such as principal rafters, rafters, and purlins are very rotten due to termites and moisture from seepage (Figure 1). The repair technique requires the dismantling of all roof tiles and removal of the rotten parts, restoration of the main structure timber which is not in place, and the addition of supporting accessories to stabilize the timber to make it stronger. Some rotten timber was removed and replaced with new timber, which was soaked or sprayed with termite repellent.

Damage in Block 2: Construction components are damp and moldy (Figure 2), and we found that in this part most of timber components were covered with mold and some of them were also decayed and cracked. The plates of the wooden pediment on both sides have shrunk to enable water to leak into the roof when it rains. Restoration needs to remove the tiles, clean the mold on the timber, check the level of damage of the components and make repairs, and apply anti-fungal paint to the components.

Damage in Block 3: Not so different between both parts above, the timber in this part is also damaged but most of the components such as rafters and purlins are still in better condition than in Block 1 and Block 2. The water gutter is sloped, tiles have decayed and peeled from their original place, causing water to seep into the exhibition gallery. Some timber has been damaged by moisture including the roof ridge beam and ornaments of the roof such as Neak Cheng,⁽¹⁾ Neak Dong Kda,⁽²⁾ Javea.⁽³⁾ Restoration in this part is the same as for the two blocks above: dismantle the roof tiles, restore the damaged timber, change the water gutter, repair timber ornaments, and cover it back with mortar in the same style (Figure 3).



Fig. 1. Timber components of the roof structure, which are rotten



Fig. 2. Mold on timber components

Fig. 3. Damage to the structure of the gable pediment

B. Repairs

Dismantling part of the roof for the restoration. Based on observations of previous restorations, this repair can also be done in the following order:

General damage plan study: Inspect the condition of the roof damage and prepare a risk plan showing the problem points or damaged spots. At this stage, the expert team collected detailed data of the damage through recording, painting or sketching, photography, etc. The survey results will be an important research document for the basis of repair, conservation, and project planning or improvement in the next step.

Dismantling the damaged area: Start dismantling the damaged area to check the actual damage situation, make notes and take photos of the damage before starting restoration work to keep as a document for reporting after completion of the restoration project. For disassembly to repair, be very patient and pay attention to each part, especially roof components, to ensure that this disassembly does not add further damage. Another precaution is to preserve as much of the timber as possible. All these components of the roof structure need to be reused to avoid complete replacement (Figure 4). The repair and dismantling steps are as follows:

- Remove all damaged tiles, as they are convex and leaky.
- Remove unusable timber that is seriously damaged.
- Repair the damaged parts of timber components, such as principal rafter, purlins, common rafters, battens.
- Reinforce principal timber components that are damaged but cannot be dismantled by adding new wood.
- Clean mold and moisture from the roof structure by applying a moisture-proof coating on the timber and inspecting the damaged parts and testing how it affects the timber.
- Clear out insects and apply pesticides to structure timber.
- Add plate wood to fill in cracking wooden pediment

and mixing material to fill in cracking wooden timber. - Repair, clean, and repaint the decorative gable and fill the shrinking of the pediment with wooden plate and Nagasfinials. The decorative gable of the pediment has a twopart wooden structure and is covered with mortar which appears as an ornament. But the structure of the decorative gable is decayed and needs to be removed and replaced with new timber (Figure 5).

Restoration material

Some of the material used in this restoration are local products and some are imported from neighboring countries. The wood that we use as rafters, principal rafter, purlins, and battens is taken from various provinces in Cambodia. However, the paint for protecting timber structure such as Marak is imported from Vietnam instead of natural local Marak, as the local Marak producers have decreased in number. In addition, we use chemical pesticides imported from Thailand for soaking wood to prevent termites from damaging the timber.

2. Exhibition Hall Renovation

Some changes were made in the gallery of the museum, such as the wall color, lighting and display. Some of the wall paintings were changed along with the different colors in the gallery according to the chronology of Khmer art and the special exhibition galleries. Display of the collection also changed by grouping the collection in series and as a storyline. This modification aims to make the gallery more aesthetically pleasing and also to prevent damage to the walls, and the rearrangement of the collection is intended to be more orderly and will provide visitors more understanding of the story or genre of Khmer art (Figures 6 and 7).

Gallery before improvement

-Wall in the hall: There were stains from pigeon stool



Fig. 4. Restoration of the beam and replacement of the strut timber





Fig. 5. Gable timber and Neak Cheng

ambodia

covering the wall, and peeling paint and mortar, which made the wall look dirty and in bad condition.

-Wooden support: There were stains from pigeon stool and some damaged parts needed to be repaired.

-Light: Lack of light bulbs and not enough light in the gallery. Most light bulbs were broken and needed to be replaced with new ones to enhance the light in the gallery.

Stages of improvement

-Start of repair work: Cleaned the gallery by removing old wall paint and bulging mortar that has been peeled off, removed pigeon stool stains and dirt on the walls, and then repaired the damaged part of the wall by closing the cracks with mortar plaster and repainting with a new set of colors. In this repainting work the old color in gallery was covered by the new color as decided by the team. -Dismantling of wooden supports: Some of the damaged wooden supports were removed and replaced with new ones, but others were kept and repainted with a new color, because some of them could be repaired and used again.

-Replacing damaged bulbs: Removed some of the broken light bulbs in the gallery and replaced them with new light bulbs and reset the light bulbs to magnify the light and aesthetics in the display room.

-Re-arrangement of the collection into the gallery: Before rearranging, all the images were cleaned and then put back into the gallery. However, the collection was not arranged completely in the same way as the original display.







Figs. 8-10. Aesthetics in the Angkor and Post-Angkor gallery after renovation

Conclusion

The roof repairs focus on reinforcing the structure of the roof and maintaining the aesthetics of the building from the outside, by keeping the form intact but ensuring that it is stronger. In particular, in regard to the materials used in restoration work, we do not focus only on raw materials, because some raw materials have almost no local producers, so it is necessary to use imported goods from neighboring countries, except for wooden timber that we take from various provinces in the country. The refinement in the gallery is a renovation of the upper surface, removing dirt and stains, but not focusing on the details of the interior wall restoration, as we did not remove all the wall mortar to repair but just filled in some damage parts and repainted them with new color instead of the old colors. As a result of the above repairs, we improved the condition of the building, with no more leaking water from the rooftop, making the structure more stable and stronger than before. We treated the new structure timber with pesticide to prevent damage from termites, and waterproofed the roof timber with Marak. However, for this work, there are still limitations in terms of repair techniques, data collection, and recording work that need to improve for the next project. Finally, we still need more help from our collaborative partners and we would like to suggest that ACCU share any comments or ideas and also documents on the conservation techniques of this type of building by providing more restoration training courses in Japan or in Cambodia directly.

Appendix

- ⁽¹⁾ Part of the ornamentation in the shape of a dragon head (Neak Cheng)
- ⁽²⁾ In the middle part of the gable of the pediment and shaped as a sham dragon body which is covered with mortar on the timber (Nesk Dog Kda)
- ⁽³⁾ Top part of the roof gable (Javes)



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China



Digital Long March Pilot Project: The Application of New Technology in the Exhibition and Cultural Dissemination of Military Heritage

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Abstract: On August 1, 2021, the "Digital Long March" pilot project was officially launched.¹ This project is an attempt to comprehensively integrate 5G, AR, 3D digital, and other technologies and aims to provide best practices for the exhibition and protection of military heritage sites.

Keywords: Military Heritage, Digital Technology, Internet, 5G, AR Technology

1. The Trend of Applying New Technology in Cultural Heritage Conservation

On October 28, 2021, the General Office of the State Council issued the "14th Five-Year Plan for Cultural Heritage Protection and Scientific and Technological Innovation," pointing out that the "14th Five-Year" period is critical to promote a socialist cultural influence. It is imperative for China to develop from a country with a large cultural inventory to one with strong protection and management capability. It is necessary to give full play to the unique advantages of cultural heritage in order to present China truthfully and comprehensively, and enhance the cultural influence of China.

In the past decade, the Internet and digital technology have developed rapidly in China, showing huge potential in the protection and utilization of cultural heritage. As early as 2017, the State Administration of Cultural Heritage planned and deployed the "Internet + Chinese Civilization" Threeyear Action Plan in the "Thirteenth Five-Year Plan for the Development of National Cultural Relics," vigorously promoting the integrated development of cultural heritage protection and technological development, especially in the areas of Internet technology, big data, information sharing, crossborder creative industry, and smart applications.

Now China has entered a new stage of high-quality development. With the advent of the "post-epidemic" era, demand for cultural products is increasing, and cultural products are constantly developing in terms of product types, presentation methods, and communication channels. The cultural content of the Internet has shown to exert great influence. Therefore, it has become increasingly important to comprehensively promote technological innovation as well as in-depth integration of innovative technologies with cultural heritage conservation.

2. Background to the "Digital Long March" Project

As an important type of cultural resource in China, military heritage faces its own unique challenges in terms of protection and utilization. The Long March heritage sites are good examples to demonstrate those challenges. The sites bear witness to the history of the Long March as well as the marching route of the Red Army. The sites are huge in number and rich in type. But at the same time, they are also generally small and sparsely located. There are thousands of Long March sites scattered among 15 provinces, autonomous regions, and municipalities along the Long March route, making them difficult to protect and manage, and even more difficult to exhibit to the public. The Long March sites embody the history, memory, and emotion of the revolution, and still have strong appeal today. However, most of them won't attract attention at first sight. In many sites, there is relatively little historical information that can be visually perceived (Figure 1-2). According to the conservation principles of cultural heritage in China, cultural heritage sites need to retain authenticity. Any kind of reconstruction of ruins or archaeological sites is not permitted, which makes the exhibition of military sites more difficult. Currently, most of the exhibitions at military sites are relatively simple in content and form, focusing more on lecturing about history but not so much on interacting with visitors. Therefore, they lack public appeal, especially to the younger generation.



Fig. 1. Typical battlefield along the Long March route



Fig. 2. Typical ferry sites along the Long March route

¹ This project was organized by China's State Administration of Cultural Heritage, and carried out by Beijing Tsinghua Tongheng Urban Planning and Design Institute, China Unicom Group, Beijing Film Academy, and Sinomap Press.

The protection and utilization of the Long March heritage sites urgently require new ideas and innovative methods. In 2016, the State Administration of Cultural Heritage issued the "Notice on Strengthening the Work of Revolutionary Heritage Sites," in which it was clearly stated that "the exhibition and utilization of military heritage sites are eligible for the support provided by the "Internet + Chinese Civilization Action Plan." In 2019, President Xi Jinping presided over the ninth meeting of the Central Comprehensively Deepening Reforms Commission. He reviewed and approved the "Great Wall, Grand Canal, Long March National Cultural Park Construction Plan," which required the planning and construction of Long March as well as other national cultural parks. The Fifth Plenary Session of the 19th Central Committee of the CCP set strategic goals for cultural development during the "14th Five-Year Plan" period, reiterating that "national cultural parks such as the Great Wall, the Grand Canal, the Long March, and the Yellow River" are important national cultural facilities and critical cultural development projects. Among them, the "Digital Reproduction" project, as one of the six major projects in the construction of the Long March National Cultural Park, emphasizes that digital technology and Internet thinking should be fully utilized to comprehensively enhance the exhibition and dissemination of Long March heritage sites and cultural resources. However, currently, there is a lack of best practices and referable experiences. The relevant theories, methods, and practical solutions need to be further explored. In the same year, under the planning and organization of the Science and Technology Department of the State Administration of Cultural Heritage, the "Digital Long March" project was officially launched, aiming at exploring a path for the protection and utilization of military heritage sites through new technology and praxis.

3. "Digital Long March" Project

The project created the following Internet-based content: an online map of Long March Heritage Sites and a WeChat miniprogram comprising a 5G+AR immersive experience app as well as a field study course, both featuring scenes at the Dadu River Crossing Site in Shimian County, Ya'an City. The project also includes construction of the supporting 5G network and organization of promotion activities. As a pilot

project, the "Internet + Long March" project not only aims to apply new technology in only one aspect but also hopes to integrate multiple technologies at different levels, online and offline. The project strives to gather experience in content creation and technical innovation as well as project management, in order to set best practices for future projects.

3.1 "Digital Map of Long March" WeChat mini-program

Currently, there are a lot of people who have walked or want to revisit "the Long March route" and the related heritage sites. However, many sites cannot be found through common navigation applications. In addition, the existing sites contain rich history but are sparsely scattered. It is therefore difficult for visitors to have a clear understanding of the overall history of the Long March, as well as the causes and consequences of relevant events. It is quite common for tourists to still feel unclear about the history even after the visit. In response to this problem, the project launched the "Long March Heritage Sites Map" (Figures 3-5). This is an app accessible through WeChat. The app mainly uses GIS, big data, and other technologies to visually display the geographic information of more than 1,600 Long March heritage sites and important museums across the country. The app allows searches by category, name, and location. It also correlates the Long March heritage sites with major historical events. When the user clicks on the "Zunyi Conference" event, for example, the app will not only provide a brief introduction to the event but also display all the Long March heritage sites related to this event on the map. National-level protected sites are provided with more information on the address, opening hours, introduction, and pictures. Users can have a clear and comprehensive understanding of various information about the Long March and its related sites through the online map. In addition, the Mini Program also provides interactive functions such as "Information Reporting" and "Today in the History of the Long March." The "Long March Heritage Sites Map" draws a "space-time map," so that the numerous scattered sites can not only be clearly identified but also be presented in a concise and direct way. On the macro scale, the app provides a path for the exhibition and utilization of military heritage.



Figs. 3-5. Interface of the Long March Heritage Sites Map

3.2 The "Crossing Dadu River" 5G+AR App

The "Crossing Dadu River" app is a 5G+AR app that provides an immersive experience of the site. It sets the scene at the Dadu River heritage site, an important ferry along the Long March. In May 1935, the Red Army carried out night raids and landing battles here. They managed to break the defensees on the Dadu River and bravely crossed the Dadu River paving the way for subsequent troops to cross the river. The story of "17 warriors crossing the river," and "the Marvellous Gunner Zhao Zhangcheng" are among some of the famous stories in the history of the Long March. However, due to changes in the natural environment over the years as well as the damage caused by construction, great changes have taken place in the trenches, riverbanks, and other parts of the landscape. In addition, the content of the on-site exhibition and interpretation is limited, resulting in a poor experience for tourists, which also makes it especially hard to attract the younger generation.

In response to the problems mentioned above, the app uses 5G communication technology, AR space cloud, and 3D digital content to achieve a "seamless integration" between the crossing site along the Dadu River and the virtual scene of the historical event. At the real-life experience location of

"Zhao Zhangcheng, the Marvelous Gunner," the audience only needs to use their mobile phones to point at the trench ruins by the Dadu River to watch virtual Red Army soldiers firing mortars with the real background in 360 degrees. The vivid presentation of the historic scene at the very site greatly enhances the visitors' experience (Figures 6-9). In addition, users can also take photos with virtual Red Army soldiers through the app. People can also "hunt for treasures" in the museum or offer virtual flowers to the memorial site of General Sun Jixian, who led 17 warriors to cross the Dadu River. By combining "panoramic AR" with the display of battlefield sites, the app adheres to the basic principles of cultural heritage conservation, such as "not changing the original state of heritage site," "minimum intervention," and "not reconstructing and disturbing the sites." Meanwhile, the app restores vivid historical scenes. It provides a new perspective for the exhibition of military heritage sites. Together with the development of the project, a 5G network was built for the Dadu River Scenic Area. The project gives full play to the advantages of 5G technology, which greatly reduces the size of the app and the computational load on the mobile phone side, and improves the accessibility of the app, while still obtaining higher-quality images and smoother effects.



Figs. 6-9. Superposition of the real environment and AR virtual scenes, which can be viewed 360-degrees through a mobile phone screen.

3.3 Study course and other programs on the Internet

In addition, the project is also developing a field study course for the Dadu River Crossing site. The field study is integrated with online applications and is specially designed for primary and middle school students (Figures 10-11). The main content includes walking the "Long March Route" and on-site teaching. It aims to integrate the history of the Long March into site visits and storytelling. There are sections like the "Little Commander" and "Learning from the Great Gunner." There are also interactive activities such as AR experience and weight-bearing competition. The course enables students to acquire historical knowledge and appreciate the spirit of the Long March. At the same time, the project gives full play to the advantages of the Internet, and has carried out extensive publicity and promotion programs, including follow-ups to research courses; the production of special promotional films and micro-videos; working with Sina to

launch the "Unforgettable Memories" program; inviting He Senbao, an influencer in the heritage and museum sector, to give lectures and launch publicity activities; holding "micro-exhibitions" at Tao Ran Academy as well as the historic Red Building of Peking University. With Internet thinking, the project explored a variety of new communication and promotion methods, such as course output, online and offline integration, multimedia linkage, Internet matrix, etc., with obvious results. For example, related topics have reached 100 million views on Sina; related videos were viewed 25 million times and an online discussion reached 19,000 comments; mainstream media such as the People's Daily, People's Liberation Army Daily, and China Natural Resources Daily all reported on the project. The project has been successful in exploring and applying new methods to disseminate revolutionary history.



Figs. 10-11. Teaching materials of the field study course. Designed for young people, the course explains history in simple terms and covers relevant knowledge in military matters, history, geography, cultural heritage protection, etc.

Conclusion

The successful implementation of the "Digital Long March" project has demonstrated the approaches and scenarios of applying new technologies such as big data, 5G communication, AR space cloud, 3D digital technology, and Internet matrix in the exhibition and protection of military heritage. It provides experiences on the integration of different technology, and cooperation of different disciplines, and also brings a new way to conserve military heritage sites. The world is presently

undergoing major changes, and technological innovation is one of the key variables. China's economy and Chinese society have also entered a new stage of development. Innovation, cross-border integration, and technological empowerment are the general trends. As 3DGIS, satellite navigation, multiple remote sensing, virtual reality, the Internet of Things, artificial intelligence, and other information technologies are gradually introduced into the field of cultural heritage conservation, the application of these new technologies will have even broader prospects in the future.

India



Management Model for Site Museums at World Heritage Sites in India

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Introduction

India has a glorious and rich heritage with thousands of years of occupancy, with many grand forts, palaces, monuments, as well as nature sanctuaries and other landmarks that draw tourists from all over the world. It has thirty-two cultural sites which have been inscribed in the World Heritage List by UNESCO. These sites are important landmarks for any country and thus their story needs to be told, and the best possible way of informally educating the masses about them is through museums. In this regard, site museums become a vital entity. The advantage of a site museum is that it tells the story of a single site through time and space.

The site museums of India, particularly those located at World Heritage Sites, are distinct from other museums in India. A site museum elucidates the story and meaning of the site. Its exhibits have the sole purpose of interpreting the site for visitors. The main objective of these museums is to allow things to be studied and shown in their natural setting while maintaining their ecological context (Sharma, 1998). The potential of site museums located at World Heritage Sites is enormous; they draw a wide range of visitors from all walks

of life because these sites attract the most tourists due to their international acclaim. In order to safeguard, document, and exhibit movable cultural material in its original setting, as well as provide on-site interpretation and educational experiences for visitors, site museums require a long-term management plan.

General Overview of Site Museums

Lord Curzon's personal interest and excitement in learning and conserving India's magnificent past by maintaining monuments and founding museums accounted for various archaeological museums in India with the immense support of Sir John Marshall. Site museums are a valuable adjunct to sites that are themselves educationally interesting, such as Sarnath, Nalanda, Khajuraho, Sanchi, Hampi, Konark, Dholavira etc. However, a site museum which is difficult to find and is located half a mile away from a site is almost valueless (Banerjee, 1990).

The fundamental context of archaeological artefacts is provided by on-site museums: the excavation and the immovable artefacts (the ruins). The ability of the personnel



Map 1. Map showing site museums at WHS in India

to interpret the archaeological record into a compelling exhibition without compromising the authenticity of the original site and items embodied is critical to the success of an on-site museum (Biswas, 2011). For the audience to comprehend the lives of the people behind these objects, the context of archaeological discovery at an on-site museum requires extensive interpretation.

It is important that the visitors can digest all material presented to them if the interpretation is done correctly, and when they leave the museum, they have a complete picture of the site's past as well as a deeper understanding of how archaeology revealed that tale. Staff at the museum should make extra effort to explain the places and their tales to the general public. Evidently, several case studies around the globe have proved that a site is well preserved if the local community is more aware and wants to be involved in the safeguarding of the site for posterity.

Sir Mortimer Wheeler established a separate Museums Branch at ASI in 1946, after independence, when the three major site museums of Harappa, Taxila, and Mohenjodaro went to the other side of the border. Then, there was a surge in the number of site museums established by ASI (Sharma, 1998). Presently there are forty-five archaeological site museums established by ASI. Of these, eleven are located at World Heritage Sites (Map 1).

Site Museum, Nalanda

Nalanda is known for having the world's largest Buddhist monastery as well as a famous learning centre. The site museum, which opened in 1917, is more than a hundred years old and is located in close proximity to the site. It houses a remarkable collection of stone and bronze sculptures of Buddhist gods and goddesses, as well as a few Hindu pantheon representations, all of which exhibit the Pala School of art at its best. A few stucco heads from the late Gupta period are also on display. Royal seals from the Gupta and Maukhari kingdoms, as well as several official seals from the Nalanda monastery are among the museum's highlights. There are also some artefacts from Rajgir on display. This museum is located in close vicinity of the archaeological site and thus visited by many visitors. However, the display and lighting of the museum needs a major revamp with focussed LED lights which can further enhance the exhibits.



Fig. 1. Terracotta Gallery at Nalanda Museum

Site Museum, Sanchi

Sir John Marshall founded the museum in 1919 to display the various types of artefacts discovered in Sanchi and the surrounding area. The museum's important antiquities include an Ashokan lion capital that is identical to the one at Sarnath, gateway and railing fragments, monastic and household utensils made of iron, copper, and bronze, as well as casts of a few relic caskets, as well as carvings from the Mauryan to the Medieval periods. This museum is also located at the entrance pathway which leads to the top of the hill where the stupa is located. The main issue of the museum is accessibility. The nearest town where you can find a place to stay is Vidisha, which is 10 km away. The area nearby the museum has hardly any cafeterias or cafes. The museum should become a place for gatherings and all these basic requirements boost the visitor outflow. Presently, most of visitors come to Sanchi for few hours and leave because of the dearth of local infrastructure, which thus leads to no involvement of the local community with the site. The government, along with local bodies and in collaboration with ASI, should devise a strategy to cater to visitors with basic facilities.



Fig. 2. Sculptural Gallery at Sanchi Museum

Site Museum, Hampi

The museum, which was established by ASI in 1972 and is housed in a modern structure in the village of Kamalapur, contains one of the world's most valuable antique collections, with items dating from the Prehistoric to the Medieval periods, including stone sculptures of Brahmanical deities, stucco figurines, hero stones and sati stones, and other minor antiquities uncovered during excavations. The central courtyard features a scaled model of the excavated remains of Hampi, which is a unique element that contributes to a better under standing of the site. The museum's information kiosk, which is available for visitors, has not been in working condition since prior to COVID-19. Although WHS of Hampi is spread over a larger area, the museum is located many kilometres away from the major tourist attractions and thus attracts only a few visitors.



Fig. 3. Site Museum, Hampi

Site Museum, Konark

On the northern flank of the well-known Sun Temple is the Konark site museum, which has been open to the public since 1968. It has four galleries with almost 200 antiquities from the Temple complex on display. The reconstructed wheel, *dikpals* and celestial nymphs, the gigantic head of a crocodile, stone carvings of flora and fauna, Surya-Narayan, Gaja-vyala, some erotic figures, Salabhanjikas, and other notable objects on display include an image of Surya in sandstone, King Narasimha in discussion, marriage scenes,

the various incarnations of Vishnu etc. The museum is located half a mile away from the site and receives almost negligible visitor footfall. Contributing to this is the Visitor Interpretation Centre of Konark, which has been opened by Indian Oil Corporation just adjacent to the site. The visitor interpretation centre receives many tourists irrespective of the high ticket price as they find it more engaging. The whole setup encourages their senses to delve into the immersive experience.



Fig. 4. Display of antiquities at Site Museum, Konark



Fig. 5. Interior of Visitor Interpretation Centre, Konark

Site Museum, Khajuraho

The museum foundation was laid in 1910 by W.E. Jardine (political agent of Bundelkhand) and was called Jardine Museum. However, the present museum was conceptualised in the year 1952 after the Archaeological Survey of India took over its charge. Before 2003, it was located near Matangeshwar temple complex. Now, however, it is also situated half a mile away. It houses around two thousand sculptures and architectural elements from the eleventh to

twelfth centuries, representing three major faiths: Buddhist, Brahamanical, and Jaina. Some of them are considered medieval art masterpieces. This museum also must deal with a location accessibility issue. One has to really struggle to reach the museum without a personal vehicle. Although the museum showcases one of the best sculptures of Chandella art, the display technique of the exhibits is quite old.



Fig. 6. Gallery at Site Museum, Khajuraho

Site Museum, Dholavira

The site museum at Dholavira was established in 2007. It comprises information and relics from the ancient site of Dholavira. Several seals and sealings, a graduated scale made on a burned rib bone of an animal, beads of semiprecious stones, copper, gold, shell, and terracotta were among the notable artefacts discovered during excavation at the site. Among the clay figures, the unicorn animal figure is a noteworthy find. This newly inscribed WHS needs a more interactive museum. This museum has the potential to provide a captivating experience by using various multimedia techniques for visitors. Instead of showcasing the techniques of water harvesting, bead making, and bangle making through a long monotonous descriptive model, these techniques can be well elaborated with interactive models.



Fig. 7. Display of antiquities at Site Museum, Dholavira

Site Museum, Bodh Gaya

This museum was established in 1956 to house the separate sculptures and antiquities found in the excavation at Mahabodhi temple complex. Buddhist sculptures from the first century BC to the eleventh century AD are on display at the museum. There are also vestiges of the former temple and the remains of temple railings dating from the second to first centuries BC. The museum has a very gloomy, dull, and tedious ambience. The museum does not have any signage

on the main road and one has to really struggle to find it. This museum is also located quite far from the site. Here, there are hardly any descriptive panels about the exhibits. The whole experience of visiting this museum is unsatisfactory. This WHS is such an important pilgrimage site of Buddhism and caters to visitors from all around the globe all year round, but still the museum has not garnered any attention from the authorities.



Fig. 8. Remains of Railings at Site Museum, Bodh Gaya

Site Museum, Taj Mahal

The museum was established in 1982. It is housed in the building near the western wall of the enclosure known as Naubat Khana. It is a double storey building with a quadrangle projection outside. The museum displays various exhibits related to the period of Shah Jahan and the construction of the Taj Mahal. It broadly consists of miniature paintings, manuscripts, government decrees, specimens of calligraphy, arms, utensils, plans and drawings of the Taj Mahal complex, specimens of inlay works, marble pillars etc. The World Heritage Site of the Taj Mahal, which is also one of the Seven Wonders of the World, is the most visited monument in India. Still, the visitor flow to the museum is bleak, irrespective of the fact that the main mausoleum is located just adjacent to it. The museum's lighting doesn't do justice to the exhibits and in fact the reflection of the light on the showcases hinders your interaction with the exhibits. However, there are plans to open a visitor interpretation centre in the vicinity of the site but the visitors will have to wait until the official work materialises.



Fig. 9. Site Museum, Taj Mahal, Agra

Site Museum, Fatehpur Sikri

The museum has been open since May 2014. To display objects found during excavations that took place in 1976–1977 and 1999–2000 was the primary motivation behind this remodelling. The Treasury Building is another name for the Fatehpur Sikri museum location. The museum now has four galleries. The museum collection comprises of terracotta

objects, porcelain dishes, arms, coins, jewellery, layout plans of architectural buildings at the premises, and some sculptures of Jain Tirthankars. The museum has a rich collection of antiquities. However, it is still not visited very much by tourists. One reason could be that the museum does not fulfill the needs of visitors and doesn't cater to the onlookers' need for multisensory stimuli.



Fig. 10. Site Museum, Fatehpur Sikri, Agra

Site Museum, Goa

This museum has been functioning since 1964 in the convent of St. Francis of Assisi. The collection of the museum consists of Brahmanical sculptures, hero stones and sati stones of the early and late medieval periods. Portraits of governors and viceroys, coins and currency, revenue and court fee stamps, wooden and bronze sculptures, and armoury of the Portuguese period are also on display. A 3.10 m high bronze statue of Afonso de Albuquerque greets visitors at the main entrance. In the visitors' lobby, maps showing sea routes of the early explorers are on display. Apart from this, the museum also has a counter for the sale and display of ASI publications. The museum also has an audio-visual show on World Heritage Sites in the lobby. The location of the museum is very significant and caters to numerous tourists all year round. The museum is well maintained and has a welcoming atmosphere. However, the audio-visual segment in the entrance lobby can be improved with much newer technology and equipment.

Site Museums, Red Fort

In 2019, a number of new museums concentrating on the period from the early medieval era to the advent of the Mughal period were inaugurated. The five existing museums within the Red Fort complex inside the British era barracks are Yaad-e-Jallian, Museum of 1857, Azadi Ke Deewane (earlier known as Swatantara Sangram Sanghrahalaya), Subhash Chandra Bose Museum, and Drishyakala.

The 'Yaad-e-Jallian' museum and 'Museum of 1857' both opened in January 2019. The former showcases the Jallianwala Bagh incident of April 13, 1919, and the latter portrays the historical narrative of the 1857 war of Independence. Several Indian art works from the 16th century until India's Independence are also exhibited here. Azaadi ke Dewaane, which was initially opened in 1995 as Swatantara Sangram Sanghrahalaya, is dedicated to the unsung heroes of the Indian Freedom Struggle, and was inaugurated after being



Fig. 11. Maritime Gallery, Site Museum, Goa

revamped in March 2019. Another remarkable museum on Subhash Chandra Bose was opened in 2019 as well. This museum has been established in the same barracks where General Shah Nawaz Khan, Gurbaksh Singh Dhillion, and several other INA soldiers were imprisoned. This museum houses several rare photographs, badges, medals, and uniforms of Subhash Chandra Bose and other INA officers. Drishyakala is an art museum established by Delhi Art Gallery (DAG) in collaboration with ASI. The earlier site museum at Red Fort, established in 1909 and housed in Mumtaz Mahal, has been closed. The entire story of Red Fort and Delhi has been well elucidated with the latest technology in the Red Fort Visitor Centre established by the Dalmia group, which will be open to the public soon.

The Ministry of Culture, Government of India is planning to make Red Fort a socio-cultural hub of informal learning and research and thus many new museums on Jammu and Kashmir, Arms and Armoury, and a design centre based on Aatmanirbhar Bharat ideology will be established in the near future.



Fig. 12. Colonial Barracks converted into a museum at Red Fort



Fig.13. Museum of Netaji Subhash Chandra Bose at Red Fort

Almost all the site museums established by the Archaeological Survey of India face the same major issues. Aside from a lack of awareness of the museums, other key issues in their management include the following:

Inadequate Staff – Almost every ASI museum suffers the problem of insufficient staff. Most of them only have a curator, a multi-tasking staff member, and a few security guards. Hence, the museum's staff is often overworked and responsible for a variety of duties alone, such as curation, registration, research, display installation, site assessments. All this work requires a proper team of museum specialists.

Obsolete Display Techniques - In site museums, the sole facilities are permanent exhibition galleries with static displays and storage areas. Most of the buildings are very old and need a major revamp to provide a more engaging and pleasing experience. The vital point is that displays without storyboards or other explanations make it difficult for visitors to understand the significance of the site and the objects on display. Nowadays many multi-sensory devices are being used to stimulate the interest of visitors to absorb and learn about exhibits. Still, none of the site museums at World Heritage Sites in India utilise these techniques. However, the visitor interpretation centres are optimally using these techniques and devices to their full potential.

Infrastructure Issues - Most of these museums can be classified as depots rather than true museums because they lack instructional facilities and temporary exhibition galleries, both of which contribute to a museum's dynamic nature. Inadequate environmental controls and a lack of laboratory space also prohibit the museums' treasures from being properly preserved. There are hardly any cafés or museum shops as well. Most tourists arrive at an archaeological site or a museum with limited information, and as a result, they do not form a connection between the archaeological remains and the history offered at the start of their visits. A site museum that lacks information is difficult to understand for non-specialist visitors.

Accessibility is a Key Issue - The majority of archaeological sites are located outside of cities or populated areas. The connectivity of the site with public transport is very significant. The site museums of Dholavira and Lothal suffer greatly because of this issue. Access to archaeological sites and museums is majorly inadequate, especially during the rainy season because of bad roads. Also, the accessibility for differently-abled is quite questionable. While some museums have ramps, Braille panels, and accessible washrooms, many others do not, which excludes a major section of society.

Insufficient Mitigating Efforts – More than eighteen percent of India lies in Seismic Zone IV which is considered as a high damage risk zone. Earthquakes, landslides, and floods are India's most destructive and devastating natural calamities. However, a well-planned mitigation policy or efforts have not been addressed at site museums. The most recent example is Typhoon Amphan in 2020, which created havoc in the eastern part of the country. The site museum at Konark was also affected by it. The various informational panels were damaged, however, reinstallation work is currently in progress.

Management Model for Site Museums

The management model has to be multifaceted and holistic in approach to cater to the needs of site museums in India, especially those which are located at sites of Outstanding Universal Value, i.e., World Heritage Sites. The foremost step should be taken at the government level, with the Ministry of Culture and Tourism, formulating a collaborative master plan for the management of archaeological site museums together with key stakeholders such as museum professionals, archaeologists, academics, local residents, non-governmental organisations, and other heritage-related individuals or organisations in India. There should be four stages to this collaborative effort: identifying problems or obstacles, prioritisation, suggestions, and implementation (Nevra, 2006).

Another significant issue of management is lack of public awareness. Although archaeology is taught in school history classes, they are mainly confined to medieval and modern history, and the link between the classes and museums is tenuous. Museum visits, which are currently limited to museum weeks, are insufficient to raise awareness. India's Ministry of Education, Ministry of Culture, and Ministry of Tourism should collaborate to start public education at the school level. Education professionals should be employed at site museums, and events for children, adults, and families should be organised with a more engaging format, such as school visits, guided tours, which should be interactive, and storytelling sessions. We know that when people are aware of heritage values and understand why and what should be protected, quality control and monitoring will occur naturally.

Furthermore, storyboards with supporting visuals, photographs, models, dioramas, and diverse multimedia displays should depict the cultural chronology and circumstances of the place (Sharma, 1998). They should also urge tourists to participate in the archaeological site and provide a strong link between the ruins and the discoveries. This is required in order to convey a sense of their significance and to depict life in an ancient society. Audio-guides (multilingual), short films, or documentaries about the site and its collection, and pamphlets can all help visitors better comprehend the site and enjoy their visit. Visitors who are well-informed are significantly more likely to avoid destroying either a site or its museum, as they can quickly develop an attitude of safeguarding a location that holds significance for them.

The museum should have a disaster management plan in place, as well as mitigation activities against natural and human-made risks. Roads should be modified so that the location, as well as the museum, is accessible to visitors throughout the year. Also, there is a dire need to upgrade the public transportation system for all site museums as they are mostly in rural settings. The visit to a site should be "pocket friendly" in terms of logistics. Moreover, apart from collections management, these museums should work on content management, which means archiving metadata, the story of the location and the artefacts, digitisation, and use of the latest multimedia technology.

Conclusion

The most crucial issue for all these site museums in India that hampers their potential to serve as dynamic sociocultural institutions is lack of resources. The Ministry of Culture, Government of India along with the Archaeological Survey of India need to work on this. They must rework the strategy and recruitment process to hire efficient, welltrained, and subject-specific personnel. A standardised team of Curators, Conservators, Education Officer, Visitor Experience Manager, Social media specialist, Volunteers, Interns, multitasking staff, and security guards should be the staff at each site museum. Their responsibilities should be clearly defined with optimum output. The local community could also be engaged to supply craftwork for museum shops, cater to museum personnel, or perform other domestic tasks. This will inculcate a sense of belonging among the locals.

Subsequently, the site museum has to increase its presence online in a much more vibrant form. More so after the pandemic, the online activities should not be limited to virtual lectures and webinars. The use of information technology and artificial technology should be well utilised. The pandemic brought about a dynamic shift in the working culture of people around the world. The site museum must adapt and become more relevant to visitors. All site museums should digitise their entire collection and make this database available to visitors online. The website of the site museum should be continuously updated and become more appealing with some interactive short questionnaire tool which inculcates the interest of the visitors. Regular evaluation of visitor perception about the site museum should be taken into account to formulate strategies on museum management and visitor participation.

Abbreviations

WHS - World Heritage Sites ASI - Archaeological Survey of India

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Kazakhstan

The Research of Cult Objects of the Bronze Age in the Territory of the Burabay Mountain Forest Massif

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Abstract: On a field expedition in 2022, archeological research was undertaken by scientists of the Institute of Archeology named after A. Margulan in the Burabay district of the Akmola region of the Republic of Kazakhstan. The expedition was focused on the Taskamal megalithic complex located in the inner basin of the Burabay mountain forest massif. The monument consists of three main elements that are inscribed in the landscape: two long megalithic lines made of masonry walls and an artificial terrace with two ramps. The complex also includes a mine for granite, a workshop, and a platform that juts out from one of the walls. The monument contains a bas-relief, stone stelae, and menhirs. Two burial grounds were explored to the north of the complex. Three fences were excavated at the Kyzyltobe burial ground, with two of them being funerary monuments. A "dolmen-like" object was investigated in fence No. 50; it is a stone box with floor slabs and a round hole. In the territory of the Zhumakai burial ground, two ritual objects were recognized-a cromlech and a stone layout with a stele. Moreover, there was an exploration and revision of archaeological sites carried out-ore workings and developments of placers at the foot of Mount Sinyukha, and to the north of Lake Bolshoye Chebachye and Lake Maloe Chebachye on the Sarybulak stream, a burial ground and a Bronze Age settlement of Borovoe. The result of the work shows a rather peculiar society of ancient miners and metallurgists that was formed in the Bronze Age in the Burabay region against the background of other Fedorov and Sargary-Alekseev groups.

Keywords: Bronze Age, archaeological excavation and exploration, Burabay, Fedorov culture, Sargary-Alekseev culture, fences, megaliths

The Taskamal megalithic complex

The monument is located in the Burabay district of the Akmola region of the Republic of Kazakhstan, 7.9 km southwest of Burabay village, in the inner basin of the Kokshetau mountains (Fig. 1). An ancient highway runs through the territory of the complex, going from the Akylbay pass, between the Zheke-Batyr mountains (826 m) and the Camel mountains (690 m) to the Ablaykhan meadow, at the foot of the Sinyukha mountain (947 m). It is located 4.3 m equidistant to three lakes. Southwest of Lake Borovoe, southeast of Lake Maloe Chebache and to the northeast of Lake Shuchiye. The total area of the entire complex is about 18 hectares.



Fig. 1. The location of monuments: 1.1. The megalithic complex Taskamal; 1.2. The Bronze Age mine; 1.3. Borovoye settlement; 1.4. Borovoe burial ground; 1.5. Workings of the Bronze Age on the Sarybulak stream; 1.6. Workings of the Bronze Age on the shore of Lake Maloe Chebache; 1.7. Workings of the Bronze Age on the shore of Lake Bolshoye Chebache; 1.8. Kyzyltobe burial ground; 1.9. Burial ground and Zhumakai settlement

In the plan, the monument is represented by zigzag lines at right angles. It consists of three linear sections. The south western and northeastern zigzag lines are artificial stone structures made of granite blocks and slabs. They form walls oriented along the northwest-southeast line. The central one, perpendicular to two walls from the line, is a natural rocky ridge oriented along the northeast-southwest line. Two artificial zigzag lines descend in opposite directions from each other. From the northeast, the southwestern wall is closely adjacent to the artificial terrace and two ramps descending in opposite directions along the axis of the wall (Figs. 2, 3).



Fig. 2. Southwestern wall (view from the top): 2.1. The area with a terrace platform; 2.2. The area from the edge of the terrace to the tourist observation point

The southwestern wall, which is located on the elevation of the natural ridge, is in the best condition. The masonry is laid dry, and large boulders, blocks, and slabs are tightly fitted to each other. According to their position, after producing boulders from a natural vein, they were delivered to the construction site in the same order and successively packed. If the shape of the boulders did not match, stone wedges of various shapes, tiles, or bedding of small stones were used to fix the masonry. Some granite blocks have impact tubercles and their reverse sections, proximal chips, knockouts, drilling marks, and notches are under the wedges (Figs. 3, 4).



Fig. 3. The wall at the outer leveled area opposite the terrace: 3.1. View from the southwest; 3.2. View of the masonry area with a bas-relief

Along the wide aligned outer platform of the terrace and up to the very entrance from the outer platform to the terrace platform, stone blocks are laid one by one, 5–6 in a masonry (Figs. 4, 5.1). The average block sizes in the masonry are from 0.4×0.4 m to 1×1 m. There are also specimens 1.1×3 m in size. At the junction of the terrace and a short southeastern ramp, an entrance was made in the wall from the outer area to the terrace area. It has an L-shaped outline, a long section of 4 m and a short entrance section of 0.5 m. The width of the opening from the outside is 0.95 m, and the width of the long vestibule is 0.85 m. The passage has 11 steps. The height of the stepped spans is from 0.2 m to 0.4 m. The outer wall

of the hallway is decked with the main masonry of the wall the way that the attached blocks protrude outward by 0.45– 0.85 m. The length of the attached section to the opening is 2.1 m, and the width of the masonry is 0.6–0.7 m. The preserved part has 3-4 layers of masonry. The sizes of the boulders are from 0.5×0.55 m to 0.85×1.2 m. The second part of the outer wall is decked with the masonry of the next main section of the wall at the end and side by side with the masonry of the beginning of the inner wall of the hallway. The latter arches into the terrace and consists of 13 stones, the dimensions of which gradually decrease from 0.2×0.4 m to 0.1×0.1 m (Fig. 5.2).



Fig. 4.1. Masonry against the terrace; 4.2. Masonry at the end of the northeastern ramp

The central platform is 12×32 m in size and has a vague rectangular outline in plan. It is extended along the line northwest-southeast parallel to the stone wall, adjoining it from the northeastern side. On the aligned upper section, there are the remains of a 6×6 m square structure. Nine stones protruding from the surface have been preserved. The two northern stones in the structure are apparently heaped menhirs. Small foundation stones are well fixed next to them (Fig. 5.2).

The northwestern ramp is 80 m long, the southeastern one is 20 m long. Between the main platform and the ramps, step subsidence is fixed on both sides. The northwestern ramp ends in front of the modern tourist viewing area and is not fixed on the site behind the road.

In the structure of the artificial embankment of the terrace there are vertically set slabs or dug-in stones, which form crepes that protect the embankment from spreading along the slope of the ridge, and which are found along the edge



Fig. 5.1. The plan of the terrace area and sections; 5.2. Southwestern entrance; 5.3. Outdoor terrace area with a fallen stele

of the terrace and across the ramps. On the long northeastern ramp, 14 lines of crepes in different states of preservation were found.

On the outer surface of one of the boulders at the base of the masonry wall in the area under the terrace, a bas-relief of a bull or a cow was found. The dimensions of the image from the muzzle to the back are 1.75 m, from the upper to the lower part of the body 0.8 m. On the surface of the bas-relief there are traces of chipping and processing. Several details by which the animal can be accurately identified have been

preserved—the head and hind leg. The bend of the upper back, withers, neck, and the front leg are partially visible. The animal is in a sitting position, with its legs bent under itself. The head is oriented towards the southeastern end of the wall and the entrance to the terrace area. The head size is 0.3×0.4 m. The almond-shaped eye, rounded ear, muzzle, and nose are highlighted. The eye is shown as a thick ridge with a narrow indentation in the center. The ear in the region of the rounded forehead is marked by chipping and trimming. The hind leg is demonstrated as anatomically correct, showing a wide hip, narrow leg, and hoof. The size of the element is 0.4×0.4 m. The leg is turned inward and separated from the body by narrow embossing. In the area of the bend of the joint, it takes a horizontal position. The hoof is shown turned down, its width at the base is 0.1 m. According to the chipping in the lower part of the body, the second leg had identical dimensions. The distance between the hooves is about 0.2 m (Fig. 3.2).

An important dating feature is the presence of a terrace in the complex on the central platform and on the outer platform under the wall of stone stelae. Two small fallen stelae 0.7 m long and 0.35 m wide were found on the central site (Fig. 5.3). Along the edges of the concave sides, traces of squeezing are visible. Analogies to these stelae occur in late Fedorov monuments of East Kazakhstan. In box 2 of fence No. 39 of the Betkuduk burial ground, 0.2 m above the ceiling, there was a 0.95 m high tetrahedral stele (Ermolaeva, 2012: p. 21, Fig. 7; 8, 1, 4; Photo 8). Several stelae were found at the Temirkank burial ground. In barrow-fence No. 80, a stele 0.63 m high was placed on the western side and lined with small stone slabs. The width of the faces is 0.18-0.24 m. To the south-west of it, at a distance of 0.5 m from each other, there were three more stone stelae from 0.5 to 0.7 m long. The monument on a two-blade socketed arrowhead dates back to the 13th to 10th centuries BC. Stone stelae are known in the late Fedorov monuments of Altai, Central Kazakhstan mausoleums of the Begazy-Dandybay culture of the middle to second half of the 2nd millennium BC (Beisenov, Varfolomeev, 2008: pp. 40-45, Photos 33-35). Three stelae similar in shape and size were found during the study of mausoleum 1 of the Begazy burial ground (Margulan, 1998: pp. 157–159, Figs. 8, 11–12; 3, pp. 70–75).

The destination of the monument is affirmed by its planigraphy and topography. The northwestern wall is oriented strictly to the point of sunset on the day of the summer solstice. The visual axis runs from the observation deck, through the ramp, and onto the rocky ridge behind which the sun disk is hidden. The main view from the terrace is directed to the southern sector and the area of the daytime pass of the sun. The sunrise point coincides with the visual line that runs at the junction of the southeastern wall and the natural rock ridge connecting both long masonries. In accordance with technological methods and some analogies in the monuments of the Bronze Age of Central Asia, the monument can be dated to this period and attributed to the Fedorov or the Sargary-Alekseevsky culture that came to replace it. This is the first such studied object in the territory of Kazakhstan.

Fence №50 Kyzyltobe burial ground

Within the framework of the implementation of the project, an archaeological exploration was carried out in the vicinity of the Burabay mountain forest massif, 1.5 km southeast of the Abylaikhan village and 500 m northwest of the western slopes of the Karabaur ridge. A burial ground of the Bronze Age was discovered in the architecture of the burial structures of which granite megaliths are recorded, topographically located in a hollow between two ridges. In the southeastern part of the necropolis, traces of an ancient watercourse, about 60 m wide, are marked. The width of the grave field



Fig. 6. Fence No. 50 - Kyzyltobe burial ground: 6.1. Excavation at a level of -15 m from the modern surface; 6.2. Cleared walls of the fence and the central stone box; 6.3. Floor slab with a knocked-out round hole; 6.4. Drawing of a petroglyph of a deer from the inner surface of the wall of the box

along the North-West-South-East line is 150 m and the length along the North-East-South-West line is 250 m. The burial ground is elongated along the west-east axis, and is oriented towards the saddle of the hill, which is part of the Karabaur ridge system (Fig. 1). Archaeological research was carried out to study the building and architectural principles on fence No. 50.

The monument represents as a stone square fence in the center of which there was a box made of massive granite slabs. The dimensions of the outer stone fence in terms of plan were 4.6×4.6 m. Each side of the fence consisted of 3-4 granite slabs, about $1.2 \times 0.6 \times 0.1$ m in size, mounted on a long rib. The space between the outer fence and the stone box was laid in one layer with torn stones of various types up to 0.25 m in diameter. The stone box was installed in a previously dug 1.75×1.4 m and 1.4 m deep rectangular pit. The pit is oriented with its axis along the SW-NE line. The box was built from two long $1.65 \times 1.6 \times 0.2$ m granite slabs and two small slabs arranged between longitudinal small slabs measuring about $1.6 \times 1.0 \times 0.15$ m (Fig. 6.1, 6.2).

The top of the stone box was covered with two large granite

slabs. A hole was made in the large slab, forming a hole with a diameter of 0.9 m at the junction of the overlapping slabs (Fig. 6.3). There were no burial remains; a round granite boulder covered with white chalk powder was found at the bottom of the box. On the inside of one of the slabs of the central box, a petroglyph of a deer was discovered in the process of studying the techniques used when working with granite slabs.

Based on the planigraphy of the burial ground and the burial rite revealed on other studied objects according to the type of cremation, and the shape and ornamentation of the ceramic vessels, it probably belongs to the Fedorov archaeological culture. Similar fences made of large slabs were investigated in the middle of the 20th century near the village of Burabay by A. Orazbaev (1958, pp. 216–294).

Cult complexes of the Zhumakai burial ground

The burial ground and the Zhumakai settlement are located 2 km southwest of the Abylaikhan settlement [Fig. 1]. The settlement occupies the upper terrace of the Apakai hill range and the burial ground is located on a slope. The length of the grave field is 600 m, the width is 200 m, and it



Fig. 7. Zhumakai burial ground: 7.1. Stone cromlech; 7.2. Stone layout and stele; 7.3. A fallen stele

is elongated along the southwest-northeast axis. In the upper part of the burial ground, two objects were found that had cult features—a cromlech and a stone layout with a stele.

The cromlech with a diameter of 6 m consists of a double row of red granite stones, laid tightly to each other. On the inner side of the eastern sector of the cromlech three large stones are laid adjoining the ring of the fence. Behind the fence on the outside, opposite the layout, another boulder was set. To the east of it and one meter from the laid axis, two dark-colored boulders were set (Fig. 7.1).

A few meters to the north of the cromlech there is a rock fill with a fallen granite stele. About ten large ragged stones are fixed on the surface, oriented in a northwest-southeast direction. The length is 5.5 m, the width is 4 m (Fig. 7.2). A fallen stele was found near the southeastern edge of the ridge. The length of the stele is 1.32 m, the maximum thickness is 0.3 m. The thickness of the base is 0.18 m, the length is 0.4 m. The dimensions of the upper part (the crown) are $0.11 \times 0.14 \times 0.08 \times 0.08$ m (Fig. 7.3). Fragments of ceramic vessels were discovered among the recovered materials at a nearby settlement, which can be attributed to the Fedorov or Sargary-Alekseev culture (mid-2nd millennium BC).

Conclusion

During the period of field research in 2022, several different cult monuments of the Bronze Age were identified on the territory of the Burabay mountain forest massif and in its vicinity. The key object for the population of the region and, obviously, a wider area during this period was the Taskamal megalithic complex. Besides megalithic walls, there were recorded terraces and ramps, a bas-relief, stone stelae, and menhirs. The cult, probably of a ritual-commemorative nature, had a dolmen-like crypt-cenotaph at the Kyzyltobe burial ground, a cromlech, and a stone layout with a stele of the Zhumakai burial ground. According to the presence of ore mines, workings, and the remains of foundry production on the territory of the region in the Bronze Age, groups of miners and metallurgists settled within a vast pastoral district inhabited by a kindred population of the Fedorov culture and the Sargary-Alekseev culture that replaced it. The recorded objects clearly demonstrate a developed character, not only social, judging by the presence of a complexly organized megalithic monument, but also an appropriate level of architecture and a complex set of worldviews.

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Nepal



Rehabilitation of Cultural Heritage: Challenges and Opportunity

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Introduction

The Nepal Earthquake 2015 on 25th April 2015, magnitude 7.6 on the Richter scale, badly affected 14 districts with a huge amount of physical destruction as well as human casualties, and impacted 31 districts overall. Another shock was felt on 12th May 2015 and after-shocks kept occurring for around a year continuously and frequently, and that made the general population extremely frightened. Things settled down after about a year and post-earthquake reconstruction and rehabilitation activities have gradually been implemented by the related authorities.

1.1 Earthquake 2015

The Nepal Earthquake 2015 on 25th April, magnitude 7.6 on the Richter scale, and another big shock on 12th May 2015, badly affected 14 districts with huge physical destruction as well as human casualties in 35 districts. These earthquakes damaged several significant cultural heritages of Nepal, including many cultural and historically significant monuments within the Kathmandu Valley World Heritage property. Seven protected monument zones were severely damaged and many monuments collapsed completely. In total, 140 monuments were affected by the 2015 earthquake: 33 monuments completely collapsed and 107 monuments were partially damaged, with some of them partially collapsed (DoA, 2015). Conservation, renovation, and rehabilitation of the damaged and collapsed monuments started immediately after the earthquake through temporary protection measures such as salvaging and documenting the artifacts from the sites. The Department of Archaeology of the government of Nepal started the renovation and rehabilitation of monuments, but in Hanumandhoka Durbar area, Hanumandhoka Durbar Museum Development Committee and Kathmadu Valley Preservation Trust (KVPT) were also involved in the rehabilitation of this significant cultural heritage, having permission or approval from the government of Nepal/ Department of Archaeology (DoA). Currently, many of the damaged monuments have been rehabilitated by the government of Nepal in coordination with local governments and other stakeholders as well.

1.2 Post Earthquake Recovery and Emergency Situation

It has been the practice worldwide that human beings should be the first priority for recue in any kind of disaster situation, followed by everything else (SHRESTHA, 2009). In the same way, there were several rescue teams from different agencies either from the government of Nepal or non-government agencies within an hour immediately after the earthquake (SHRESTHA, 2016). The Department of Archaeology inspected the site as much as possible in order to find and identify collapsed or damaged monuments within an hour immediately after earthquake.

Within a week however, a preliminary assessment was carried out, and the Department of Archaeology deployed a team consisting of an archaeological officer, an engineer/ architect, and a photographer as an *EMERGENCY HERITAGE RESCUE TEAM* at the various sites. The rescue team worked jointly with a battalion of the Nepal Army and Armed Police Force as well as the Nepal Police. The main objective of this joint team was to salvage the art objects and other elements scattered around the collapsed and damaged structure at the site; therefore, the team salvaged all elements and stored them in proper places with onsite documentation - photographs, listing, or detailing the name and number of objects salvaged, the storage place, custodian, and other required data.

At the same time, immediately after earthquake, the Department of Archaeology published a public notice in the national daily newspapers for support to protect every kind of cultural heritage and its elements during this situation from vandalism, theft, and other harmful activities, and that all such activities would be punished as per the national legislation, which made people very much aware of the need to protect their cultural property (DoA, 2015). In this way, the Department of Archaeology played its role in the post-earthquake situation in coordination with several other agencies.

1.3 Salvaging the Scattered Elements of Damaged Heritage

The Department of Archaeology did its best, however, the earlier situation was dreadful and very difficult to emerge from and control; but due to its leadership and enthusiastic staff in support and coordination with national experts and other government agencies, it was possible for all heritage sites to come under the Department's control. Then it was possible to prepare as much documentation as possible through the preliminary assessment.

Department of Archaeology formulated a *NATIONAL EXPERT TEAM* immediately in that situation, which consisted mostly of structural engineers, architects, archaeologists, earthquake engineers, legal experts, and other necessary experts. The expert team visited sites as and when necessary in the process of detail assessment of the entire sites (DoA/GoN, 2016a). The expert teams were also involved in proper instruction for the stabilization of vulnerable and remaining structures for their rehabilitation or conservation, or renovation after proper planning had been carried out (SHRESTHA, 2016 & 2017).

In the case of the Hanumandhoka Durbar area, as a leading governmental authority in close cooperation with and receiving support from UNESCO Kathmandu Office, the DoA actively led in preparing documentation, and in the recording, reassembling and storage of salvaged artifacts and all kinds of materials collected from scattered heaps in the area within Hanumandhoka Durbar PMZ; which was very useful later on during the renovation and rehabilitation of monuments.

1.4 Coordination

Coordination plays a vital role in any activity, especially during a disaster or fulfilling any mission. The coordination among almost all stakeholders at many sites (Hanumandhoka, Patan, Bhaktapur, Swayambhu, Bouddha, Pashupati, Changunarayan, Sankhu, Bungamati, etc.) was of high standard during the salvaging and storing of the artefacts, which achieved a significant result in terms of smoothness in the post-earthquake rehabilitation. From the very beginning of the post-earthquake salvage and storage of all elements from the site, the local people were very aware and very much interested in the salvage and securing of storage in coordination with the DoA and other local authorities and institutions (DoA/GoN, 2015a).

The major authorities responsible for these sites were the DoA, Durbar Protection and Maintenance Offices, Museums and Museum Development Committees, related municipalities, the Metropolitan Police, the local Nepal Army base (Garrison Gun), various local clubs, social organizations, and local people. The DoA, in coordination with the local community, mobilized the all-volunteer groups; actually, the UNESCO Office in Kathmandu supported the DoA in salvaging, documenting, re-assembling, and storing the elements recovered from the sites and also raising the awareness of local people and organizations that secured the sites and remains (DoA/GoN, 2016a). ICOMOS Nepal and the Earthquake Response Coordination Office (ERCO/DoA) also played a vital role in this regard, and without their coordination it would not have been possible to carry out the project mobilizing UNESCO's support and the expertise of national experts as well.

The DoA is the sole authority of the government regarding cultural heritage conservation and management, and anyone must obtain permission or approval before conservation, renovation, or rehabilitation of cultural heritage; therefore, KMC has been working collaboratively, especially since the earthquake, and even before. The DoA/Government of Nepal granted permission to KMC to renovate the monuments in close coordination with the DoA, local communities, and all other stakeholders as necessary. In this way, the coordination among all the national authorities and stakeholders in the post-earthquake rehabilitation process has been going smoothly without any problems.

2. Rehabilitation of Cultural Heritage: Planning and Implementation

During the post-earthquake response and recovery process, very short-term emergency planning was adopted for the temporary protection of the monuments as well as of the sites, as the rainy season was due very soon after the earthquake. Before launching a mid- or long-term plan, this temporary type of planning was implemented, which worked very well; however, during the period of mass destruction, all efforts tended to be inadequate, but all those involved performed very tactfully and helped to protect and preserve the remaining heritage components, and this was seen to be a vital and significant task.

Soon after this, mid-term planning was also adopted, prioritized on the basis of vulnerability, and vulnerable monuments were conserved and/or rehabilitated during that time, including the rehabilitation of prioritized monuments, with detail documentation being prepared as well as the assessment of monuments and preparation of drawings for monuments which did not have any kind of document or drawings as well.

Regular plans were also formulated and prepared as part of the long-term planning for special implementation to carry out the rehabilitation activities completely.

2.1 Priority

In the beginning, the most vulnerable monuments had priority in terms of rehabilitation, specifically for temporary protection and their sustainable rehabilitation. Many of the monuments were at great risk or in a most vulnerable condition due to the first and second quakes, and were later affected by the several aftershocks. Therefore, these vulnerable cultural heritage properties had first and top priority in both the short-term and long-term rehabilitation plans. Similarly, less vulnerable but partially collapsed monuments/ cultural heritage had second priority, and cultural heritage properties which were completely collapsed had last priority for their long-term rehabilitation (DoA/GoN, 2015b). In prioritizing cultural heritage, a six-year recovery plan was prepared, however, it was subsequently not followed. The projects were carried out differently, however, with slightly different priority (DoA/GoN, 2015a), and the rehabilitation of cultural heritage is still being carried out continuously.

The government's annual plans were also prepared regularly as previously, focusing on rehabilitation of all earthquakeaffected structures including cultural heritage. Selection of projects for each annual plan was scheduled from the initial as well as the detail assessment of the earthquake-affected cultural heritage list, which was very appreciated, but the different interests and conflicts of interest resulted in the priorities being different from the six-year rehabilitation plan (DoA/GoN, 2016; 2016a; 2017; 2018; 2019). Priority was first given to the rehabilitation of collapsed monuments, instead of vulnerable cultural heritage, however, all the earthquake-affected monuments are being rehabilitated one after another, which is very good and achieving a world record in this regard.

The projects have been implemented continuously as per the annual plan of DoA (GoN) and are being carried out without any obstacles, however, some priorities are different than in the initial plan. The implementation of rehabilitation projects has been carried out with outstanding achievement, however, the efforts have been faced with several issues and challenges (SHRESTHA, 2017).

2.2 Challenges

Several difficulties or challenges were faced during the response and rehabilitation stages. The magnitude of the disaster and the extent of damage covering a large part of the country impacted the overall system of government. The most challenging part, in fact, was that the government was going through a phase of transformation, with a constitution that had not been finalized. The Constitution was adopted on 20th September 2015, slightly less than five months after the earthquake, which led to political unrest and a blockade that hindered rehabilitation for the following four months (DoA/GoN, 2020). The National Reconstruction Authority (NRA) was established only in December 2015. Furthermore, in many areas, particularly within the Kathmandu Valley, local government bodies had recently been restructured, but hadn't managed to establish themselves as new municipalities.

The difficulties initially faced, particularly during the response phase, was also linked to natural circumstances. The aftershocks continued, making it dangerous to work around damaged structures (DoA/GoN, 2020). The earthquake took place at the end of April, two months before the heavy monsoon rains began. The initial concern was to protect the damaged structures, as well as the salvaged material from collapsed structures, from the rains (DoA/GoN, 2015). Good collaboration developed between community members and the security forces, with regular coordination from the Department of Archaeology (SHRESTHA, 2017; KVPT, 2017).

There was political pressure to implement reconstruction projects in a hurry. The implementation of projects needed to follow the Public Procurement Act. This meant the restoration projects were tendered out, usually to the lowest bidding contractor, who would often further subcontract the work (DoA/GoN, 2020). The standard system did not make funds available for adequate research, documentation and design, and therefore the projects were often not clearly defined. Furthermore, arrangements and funding for proper supervision of the projects were lacking.

Collaboration with international partners has been a further challenge. Since the earthquake, there have been discussions annually at the World Heritage Committee of placing the Kathmandu Valley on the List of World Heritage in Danger. The government has been against this and has defended its position, particularly since danger listing was not going to help with the required rehabilitation works (SHRESTHA, 2019). The partnership with international agencies and organizations has been through bilateral and multilateral agreements. Most of Patan Durbar Square has been rebuilt through international funding. Individual projects in Hanuman Dhoka have been carried out by foreign agencies or through foreign funding. Lack of clarity on working procedures with international partners has led to complications with certain projects.

Challenges have been faced from the initial post-earthquake emergency and recovery phase to the implementation of rehabilitation projects of earthquake damaged cultural heritage in different situations. The identification and assessment of monuments without any documentation was a big challenge; sometimes the locals' voice was only the way to identify them and list them in the initial assessment report. Several monuments were identified without any documentation, which created a big problem in carrying out their rehabilitation. But finally, in coordination with locals, experts, and kindhearted donors (providing their records—photographs, drawings etc), this process was able to proceed.

Similarly, as mentioned above, the legal provisions in the Ancient Monument Preservation Act (AMPA) for disasteraffected rehabilitation on one hand and the provisions of the Public Procurement Act on the other also created a big challenge during the massive destruction caused by the disaster and its rehabilitation. There was no provision regarding post-earthquake rehabilitation of cultural heritage in the AMPA and there was no way beyond the tendering process to carry out all these massive activities; however, it is being carried out.

Lack of adequate documentation (including drawings, photo graphs, etc) was another challenge in carrying out the rehabilitation work, challenges were exacerbated by the inadequate budget allocated by the government in the beginning. The budget issue was settled later, but still this challenge has not been eliminated; it exists in a different way.

The lack of human resources, especially in terms of traditional techniques and skills, was another challenge faced in this process. The number of traditional craftsmen, skilled masons, carpenters, etc. is still very low and even the number of conservation experts within the department is also inadequate; due to which managing the proper conservation and rehabilitation of cultural heritage was very difficult.

2.3 Opportunity

As mentioned under the lessons learned, there are some critical aspects of monument rehabilitation that need to be amended. There are several issues regarding the conservation, rehabilitation, and management of cultural heritage that could be opportunities for heritage key stakeholders, as they have so far been detrimental to the process of monument rehabilitation.

The governance system for cultural heritage needs to be clarified within the parameters of the 2015 Constitution of Nepal and linking this to the required legislation. The Department of Archaeology must always be the responsible technical authority, the primary key authority, for protecting cultural heritage. It must be provided with the required legal backing, as well as the expertise and procedural flexibility to carry out cultural heritage conservation, rehabilitation, and management as well. This will need a further amendment to the Ancient Monument Preservation Act, 2013.

Research is required that allows for the promotion of traditional knowledge, customs, rituals, skills, and materials and quality issues. This would encompass the fields of history, architecture, structural engineering, archaeology, living heritage, customs, traditions, rituals, etc. This kind of research needs to be done on traditional knowledge, skills, and construction materials as well. There should be a separate section in the National Building Code for the establishment of norms and standards specific to historical buildings, in detail, with much clearer provisions.

Conservation of cultural heritage requires detailed documen tation, which goes together with the preparation of detailed inventories, assessment of physical condition, and establishing protocols for their protection as well. The prepared information should be linked to a database that would be used for integrated management of the sites, monuments, objects, and many other aspects, linkages, or dimensions of cultural heritage. Putting in place an effective procedure for the protection of cultural heritage, which includes the maintenance of sites, monuments, and objects, enabling the practices of intangible heritage.

The community within this system of ownership, responsibility, and use of cultural heritage is to be involved as stakeholders. This would include the traditional artisans, those carrying out rituals, priests, and persons who are repositories of knowledge. They must be provided with support, certification, and reputation.

Similarly, each and every activity involved challenges, however, they could also be taken as opportunities depending on their nature. For example, the salvage and storage of the elements from the damaged heritage was a big and unimagined issue. This issue accelerated the efforts to think in a different way about their proper documentation even for salvage including their future use during rehabilitation, as well as about their safe storage. It enabled us to produce a good documentation system during the post-earthquake emergency response and recovery phase, which provided the best way to reuse those fragments with proper identification during the rehabilitation phase.

The earthquake scenario also provided a good opportunity through the assessment of damage, which led to various innovations in capacity building through training and planning in several aspects. The post-earthquake rehabilitation guidelines are another example of an opportunity provided by the situation of the earthquake, as they had not existed before Earthquake 2015. This also provided a very good opportunity for reliable coordination and support with solidarity among several stakeholders regarding cultural heritage conservation and management. Furthermore, several opportunities have been provided by this unique situation to understand the various aspects of cultural heritage in detail through carrying out specific research, which could be secured for future use or to transfer to future generations. For example, rescue archaeological research including excavation was carried out in the three core city areas of Kathmandu Valley World Heritage Property, aiming to find out the antiquity of the Durbar Square area of the entire area of the cities. It was evident that the Kasthamandap area has been continuously cultivated since the 6th century (Conningham, 2017), which is the latest information on Nepalese history to the world.

Most of the monuments damaged by the earthquake comprise significant cultural heritage constructed at least two or three hundred years ago and not studied much regarding their characteristics in terms of aspects like disasters (earthquakes) etc. It was the best opportunity to learn about the character, nature, and craftsmanship of our ancestors and their creativity.

3. Conclusion

The progress that Nepal has made in the rehabilitation of cultural heritage might be a world record, with 673 significant monuments (among 920) being rehabilitated to their previous state (DoA/GoN, 2022) within six years after this kind of big earthquake or any other disaster. There is no record of this elsewhere in the world; therefore, it can be said to be the best achievement in the history of conservation after a disaster. In the same way, Bouddhanath Stupa was the first monument rehabilitated after Earthquake 2015,

which was initiated by the community led by the Bouddha Area Development Committee. It is an example of an achievement led by the community with technical support from the Department of Archaeology, Government of Nepal, which is also a world record in that there is no record of such a large monument being rehabilitated by the community within a year and half after such a big disaster (BADC/GoN, 2017).

Rescue archaeological research and excavation was carried out in the three core city areas of Kathmandu Valley World Heritage Property. The aim of this research was to find out the antiquity of the Durbar Square area of the three cities. It was evident that the Kasthamandap area has been continuously cultivated since the 6th century (Conningham, 2017), which is the latest information on Nepalese history.

Most of the monuments damaged by the earthquake comprise significant cultural heritage constructed at least two or three hundred years ago and not studied much regarding their characteristics in terms of aspects like disasters such as earthquakes, etc. It was the best opportunity to learn about the character, nature, and craftsmanship of our ancestors.

It was also a lesson for not only professionals but also the community that most of the monuments and surrounding settlements had access to a large and adequate open space, which could be used by the community either in their daily life or during the disaster; therefore, the important lesson is to keep all of the open space intact in this context.

The several states parties to the World Heritage Convention as well as Nepal's friendship circle countries showed their solidarity in the rehabilitation of cultural heritage of Nepal damaged by the earthquake and also gave either financial or technical support in this regard (DoA/GoN, 2016, 2017, 2018).

The community are now in self-aware situation; however, they were not interested in the conservation of heritage before Earthquake 2015, but after they are strongly aware of it and were very interested in rehabilitating heritage by themselves in many cases (DoA/GoN, 2019; Shrestha, 2017), which is a big achievement in heritage conservation (DoA/GoN, 2015-2018; Shrestha, 2016).

As such, however, a disaster is not a good term in connection to human society or even for this whole universe, but it could sometimes be a big opportunity to learn about the past to step forward to all humankind. The Nepal Earthquake 2015 was such a big challenge; in the meantime, it proved that it was also a good opportunity in several ways.



Fig. 1. Kashthamandap, Hanumandhoka Durbar Protected Monument Zone, KVWHP (DoA)

Fig. 2. Trailokya Narayan Temple, Hanumandhoka (DoA)



Fig. 3. Gaddi Baithak, Hanumandhoka Durbar Protected Monument Zone, KVWHP (DoA)



Fig. 4. Khauma Gate, Bhaktapur Durbar Protected Monument Zone, KVWHP Fig. 5. Tava Sattal, Bhaktapur Durbar Protected Monument Zone, KVWHP (Author) (Author)





Fig. 6. Sundari Chowk, Patan Durbar Protected Monument Zone, KVWHP (DoA) Fig. 7. Mani Mandap, Patan Durbar Protected Monument Zone, KVWHP (Author)



Fig. 8. Anantapur Temple, Swayambhu Protected Monument Zone, KVWHP (Author) Fig. 9. Pratappur Temple, Swayambhu Protected Monument Zone, KVWHP (Author)







Fig. 10. Bouddhanath Stupa, Bouddhanath Protected Monument Zone, KVWHP Fig. 11. Guhyeshwori Sattal, Guhyeshwori, Pashupati Protected Monument (DoA) 500, KVWHP (DoA)





Fig. 12. Gaurighat Sattal, Pashupati Protected Monument Zone, KVWHP (DoA)

Fig. 13. Nanak Math, Pashupati Protected Monument Zone, KVWHP (DoA)



Fig. 14. Bhashmeshwor Sattal, Pashupati Protected Monument Zone, KVWHP (DoA) Fig. 15. Capacity Building Training for Professionals (Author)





Fig. 16. Capacity Building Training for Professionals (Author)



Fig. 17. Conducting Traditional Technical Training for locals - Sankhu (DoA)



Fig. 18. Conducting Traditional Technical Training for locals - Sankhu (DoA)



Fig. 19. Conducting Traditional Technical Training for locals - Sankhu (DoA)



Fig. 20. Manakamana Temple, Gorkha (DoA)



Fig. 21. Pangboche Monastery, Solukhumbu (DoA)



Fig. 22. Tsarang Gumba (Monastery), Mustang (DoA)



Fig. 23. Technical Training on Documentation / Photography for Professionals by ACCU Nara in Kathmandu, Nepal (ACCU Nara)

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Te Papa Atawhai Cultural Heritage Conservation Projects, Southern South Island 2022-2023

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Introduction

In my last report I presented some examples of heritage conservation projects and initiatives underway in the Southern South Island ("SSI") over the 2021-2022 year. This report provides an update on those projects and new projects where conservation work has been undertaken and/or where a first stage to conservation planning has occurred. These projects have been identified through Four-Year Heritage Plans for each of the six Operations Districts which make up the SSI Region.

Historic Backcountry Huts – Freeman Burn, Caswell Sound, Martins & Big Dam/Turnbull's Dam Huts

The Freeman Burn Hut, built in the 1930s of corrugated iron and native Rimu timber by the Murrell family, has had conservation work undertaken on the structure by the Back Country Trust guided by its Conservation Plan and Works Specification. Works are set to continue over the next few months. In Figures 2 to 5 can be seen the hut as it was in 2021, in 1960 and then during restoration works undertaken this year. Unfortunately, it was found during the restoration that more of the framing timbers than expected were borer ridden and had to be replaced. It was decided that the framing timbers would be replaced with modern treated timber to ensure the longevity of the hut in the damp Fiordland environment. As these timbers would be hidden from view by the interior walling, this was seen a good compromise for the overall conservation of the structure. Interior timbers were replaced like-for-like with re-purposed Rimu to match the timber originally used in the hut. The end result will be a hut aged back to what it was like in the 1960s which is the period of its history where the internal layout is known. The hut will be available to any person who visits Fiordland National Park when the project is completed.

Three huts have had their Conservation Plans and Works Specifications completed but are waiting on the restoration work to commence which is dependent on available funding. These are the 1949 Caswell Sound Hut, the 1910 Martin's Hut, and Big Dam Hut (Turnbull's Dam Hut) possibly built ca. 1898 but could be earlier.

Murihiku Kaitiaki Monitoring Guide Update

This writing of this guide is underway but has been delayed due to more pressing conservation work. Its reach is planned to be extended to now include the wider Southern South Island region rather than just Murihiku. The equipment for the key Te Papa Atawhai people who will most often come across heritage in their day-to-day work has been sourced and purchased so once the guide is competed, training and implementation can commence.

McMeeking's Historic Farmstead, Otago Peninsula, Dunedin

This small farmstead on the Otago Peninsula dates back to the 1870s and provides a continuous history of small-scale colonial dairy farming that spans 125 years. Two of the key tasks to be achieved over the last year as recommended in the Conservation Plan was to ensure the heritage buildings were water-tight and that encroaching vegetation was removed. This work was completed with the most challenging work being the removal of huge Macrocarpa trees located next to heritage dry stacked stone walls (Figures 6 to 10).

William Rathbun's Grave, Bowen Falls, Milford Sound, Fiordland

Conservation work has progressed well on this grave, which dates to 1894. The broken headstone was removed and taken to a monumental mason to measure up to produce a new headstone (Figures 11). Marble, which is in keeping with the stone type used for headstones during the late Victorian period, has been ordered for the new headstone and this should also last better in the dynamic environment under which the grave is located i.e., under the wash of a large waterfall and in a flood zone area. Vegetation was also cleared from around the grave which was covering the ironwork and obscuring the grave itself (Figure 12). The ironwork will be able to dry out aiding in its conservation until funds can be sourced to restore the fragile parts of the ironwork. During vegetation clearance, a plaque was found noting details of Rathbun's burial (Figure 13). It is unclear when exactly the plaque was placed on the grave but could have been in the 1990s.

Star of the South Cannon Recovery, Chalky Inlet, Fiordland

In July 2021, a cannon was found on the beach in Chalky Inlet in the Fiordland National Park by two members of the public who were looking for signs of a rare native bird which may be locally extinct. The find was reported to DOC and so DOC managed the cannon's recovery. The cannon likely came from the steamer called the Star of the South which hit a rock in Chalky Inlet and ran aground in 1865. According to two newspaper articles in the Otago Daily Times from 1865 and 1867, after the ship was grounded two passengers from the Star of the South took the cannon to a small beach with the intention of taking it to higher ground and signal for help. After realising how difficult it was to move the cannon once it was brought ashore, it was abandoned on the beach. By good fortune, the passengers and crew were rescued only a few days after the grounding and the ship was re-floated going back into service until ca. 1884.

By the time that the appropriate consents were obtained for the recovery of the cannon, a number of persons who had visited the area since its discovery reported that it could not be found. Fortunately, in April 2022 a small team found the cannon (Figure 14) and with the help of a local helicopter company, the artefact was flown out of Fiordland and eventually made its way to the conservation lab at the Maritime Archaeology Association of New Zealand ("MAANZ") headquarters in Wellington (Figure 15). The cannon will take ca. 2-3 years to conserve and then it will come back to Fiordland for display in the Te Anau Visitor Centre which is the closest town to where the cannon was found.

Māori Cultural Heritage Sites Record Upgrades & Island Hill Homestead Repairs, Mason Bay, Stewart Island/Rakiura

As noted in my previous report, the erosion of the huge dune system in Mason Bay on the west coast of Rakiura has seen the exposer of numerous Māori archaeological sites over many years (Figures 1). Climate change causing increased high wave activity has been accelerating this erosion and this will continue. Dune restoration work by DOC is also seeing sites become exposed which are required to be monitored and managed if possible. In February 2022, a DOC heritage team as well as a volunteer from the University of Otago looking for heritage sites with bone for potential DNA analysis, attempted to relocate fifty-six known heritage sites in Mason Bay. Thirty-three sites were relocated, and their condition recorded. It was found many of these sites had been affected by wind erosion where they were on the open dune plain areas and coastal erosion (Figure 16). Twenty-three sites could not be relocated due to either erosion destroying them or vegetation growing over and hence obscuring them since they were first recorded in 2015. Six new heritage sites were identified, all these being Māori sites. The site record forms for these sites are being updated and new site records for new sites created.

The Island Hill Homestead in Mason Bay, Stewart Island/ Rakiura dates to 1884 and was built by the runholder William Walker. By 1926 an extension was added to the building and today the homestead is as it was from this time with a mix of late 19th and early 20th century fabric. Over several years DOC has restored and managed the homestead and its associated buildings which include a woolshed and yards, historic fence lines, and a large equipment and workshop outbuilding. Restoration work was carried out on this Pakeha (European) homestead in February 2022 and a photographic record taken of all the buildings (exterior and interior) in the farming complex (Figures 17 and 18). The restoration work focused on the wall papering of one of the homestead rooms using traditional papering methods involving placing scrim on the timber walls, then gluing newspaper over the scrim and then gluing on heritage wallpaper.

Ned and Phil Callery Cottages, Golden Point Reserve, Macraes

The DOC Golden Point Historic Reserve at Macrae's is important for the story is tells about alluvial and hard rock mining for the Macrae's area from the 1860s through to the mid-20th century. The cottages of Ned and Phil Callery, who were hard rock miners at Golden Point, were built in the 1920s and are of an unusual build material for this time being built of sod and mud brick. The cottages require various works guided by a Conservation Plan and Works Specification which includes repair of their roofs and better drainage around the cottages installed. This key work is hoped to commence in 2022-early 2023.

Subantarctic Heritage Conservation Work

The Hardwicke settlement site (1849-1852), German Transit of Venus site (1874) and Sandy Bay, Enderby Is. 19th century fingerpost were visited by the DOC National Eradication Team in February 2022 to undertake conservation on these

sites. Heritage conservation tasks are undertaken during the wider pest eradication work on Auckland Is's by rangers with experience in heritage maintenance work. Heritage conservation work undertaken included: The boardwalk to the Hardwick Cemetery was cleared of encroaching vegetation and seedlings were cleared from within the cemetery fence; a section of the 1868 Amherst ships spar at Hardwicke which had lay on the ground on small blocks in 2020 to aid conservation, had fallen off its blocks and so was placed back on the blocks and then treated with a single coat of Metalex timber preservative (Figure 19); overhanging vegetation was trimmed back from Transit of Venus monument site and plants removed from encroaching on monuments themselves; the Sandy Bay finger post was not secure and was blowing in the wind. With the best of intentions someone had previously added a piece of wood (with bent galvanized nails) to the post to allow guy ropes to be attached. These guy ropes were made of twine and were not improving the posts security. This additional wood, nails, guy ropes and associated pegs were removed. The post hole was re-dug, and the post was lined with boulders to better secure the post in the soft peat. Additional boulders were placed around the post above the ground and the post treated with preservative (Figure 20).

Astronomers Point Conservation & Management Plan & the Homeward Bound Conservation Plan & Battery Restoration Methodology

Funding has been received for a Conservation and Management Plan to be developed for Astronomers Point in Dusky Sound, Fiordland (https://www.doc.govt.nz/parks-and-recreation/ places-to-go/fiordland/places/fiordland-national-park/heritagesites/astronomers-point/). In April 1773, this was the most accurately located place on earth. It was here that Capt. James Cook anchored his ship the Resolution for five weeks during his second voyage to New Zealand. William Wales of the Board of Longitude built an observatory on the small headland to test the accuracy of Larcum Kendall's copy of John Harrison's chronometer H4. From these tests, Wales was able to measure Longitude accurately and hence determine Cook's exact location on earth. The area of forest cleared by Cook's men can be seen today as well as the tree stumps left behind. This is one of the most visited heritage sites in Fiordland but requires advice on the management of the heritage and risk to the site from visitors.

The Homeward Bound Stamper is the best example of a text-book gold stamp mill to be found in the New Zealand goldfields (https://www.doc.govt.nz/parks-and-recreation/places-to-go/otago/places/macetown-historic-reserve/homeward-bound-stamper-battery/). Although a Conservation Plan, mill blueprint, engineering methodology etc. have been developed to guide preservation of the mill over the years, these reports are outdated. A comprehensive plan and methodology incorporating modern approaches and technology is now required to stabilise and conserve this hugely complicated structure.

Conclusions

The above projects to conserve and manage cultural heritage sites in the SSI Region of DOC are only a small part of the heritage conservation work undertaken annually by the Region. Other than these projects, heritage rangers continually maintain and conserve numerous heritage sites as part of their day-to-day operations. This work could not be undertaken without contributions from external parties.

Acknowledgements

The heritage conservation work in the SSI can only be achieved

through the dedication of the DOC Heritage Rangers and Operations Managers in the Region, Iwi and the input from the DOC Heritage Advice Team. Key to the success of these projects is also the contributions made by external parties.



Fig. 1. Locations of heritage sites discussed.



Fig. 2. Freeman Burn Hut built in the 1930s (Photo: NZHP Ltd).

Fig. 3. Freeman Burn Hut in the 1960s (Photo: DOC archives).



Fig. 4. Freeman Burn Hut during restoration (Photo: Rob Brown).



Fig. 5. Freeman Burn Hut during restoration (Photo: Rob Brown).



Fig. 6. Vegetation around the 1870s McMeeking's Cottage (Photo: DOC).



Fig. 7. McMeeking's Cottage 1870s after surrounding vegetation is removed (Photo: DOC).



Fig. 8. Huge macrocarpa trees endangering buildings and stone walls at McMeeking's Farmstead (Photo: DOC).

Fig. 9. Huge macrocarpa trees endangering buildings and stone walls at McMeeking's Farmstead (Photo: DOC).



Fig. 10. Stone walls exposed after macrocarpa trees were removed at McMeeking's
Farmstead (Photo: DOC).Fig. 11. One of the two pieces of broken headstone being removed from the 1894
William Rathbun grave, Milford Sound. Note the water fall mist (Photo: DOC).







Fig. 12. Built up soil and vegetation removed from the 1894 William Rathbun grave, Fig. 13. Grave plaque found under soil and vegetation at Rathbun's grave (Photo: DOC). Milford Sound (Photo: DOC).



Fig. 14. Star of the South 1865 cannon being recovered from Chalky Inlet (Photo: DOC).



Fig. 15. The Star of the South 1865 cannon in its conservation bath at the Maritime Archaeological Assn of New Zealand ("MAANZ") conservation laboratory in Wellington (Photo: Kevin Jones).





Rakiura. Native dune grass pikao can be seen around the oven, invasive exotic which has been restored over a number of years by DOC (Photo: DOC). marram grass species having been removed (Photo: DOC).

Fig. 16. Māori oven recorded in restored dune area, Mason Bay, Stewart Island/ Fig. 17. The 1884/1926 Island Hill Homestead, Mason Bay, Stewart Island/Rakiura



Fig. 18. The Woolshed at Island Hill built in 1953 from a mish mash of timbers recovered from the beach and around the homestead area and recycled 19th century windows.



expedition

on small wooden blocks and wood preservative applied in undertaken in February 2022 (Photo: DOC). February 2022 (Photo: DOC).

Fig. 19. The 1868 Amherst spar which has been placed Fig. 20. The Sandy Bay, Enderby Is. finger post before (left photo) and after (right photo) conservation work

Philippines

Biblioteca del Convento de San Pablo de Agustinos-Manila: A Digital Repatriation of a Lost Archive

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Historical background

The San Agustin Convent and Monastery in Intramuros, Manila originally named Convento de San Pablo, is a UNESCO World Heritage Site run by the Augustinian Fathers of the Order of Saint Augustine, under the Province of the Most Holy Name of Jesus in the Philippines. The San Agustin Church, as it is most popularly known, was assigned by Miguel Lopez de Legazpi to the Augustinian Friars in 1571 upon the order of King Philip II of Spain. The church displays outstanding features such as the baroque style retablos, the crypto collateral chapels that act as buttresses, and the trompe l'oeil murals on the walls and ceilings. The former monastery, which was transformed into a museum in 1973, is now a premier repository of the treasures of the Augustinian Order, and of the rich centuries-old colonial and ecclesiastical art in the Philippines. At present there exist an Old Biblioteca on the second floor of the Convent and a Monastery containing rare books from 1552 to the present.

Since 1571, San Agustin had the most significant library in the Philippines. It experienced a series of misfortunes through the years. The first building of San Agustin suffered great losses in 1574. During the attack of Limahong, the city was set on fire and many houses were burned, including the monastery of San Agustin with all its supplies as well as books and ornaments, since everything was kept there, and the recently founded monastery was made of bamboo, and nipa.¹

The second building, made of bamboo posts, slabs, and nipa, was burned again during the funeral rites of Governor General Gonzalo Ronquillo de Peñalosa in 1583. The third structure, made of wood and bamboo, was destroyed by fire on Palm Sunday, on March 30, 1586, (thus) destroying their house again. The losses included the rich private library, which was one of the best in Manila.²

The present building, built in 1587 and made of sturdier materials, withstood the strongest earthquakes, calamities, and invasions. Originally, the library was located in the cloister of Santa Potenciana. Except for this section, the rest has undergone many changes, especially after 1701.³ According to Fr. Agustin Maria de Castro, OSA, "For some time, the Augustinian Friars enjoyed complete peace and abundance in spiritual and temporal goods and there was no specific fear that things would change; but it happened that, because of the wars declared in Spain against England in the last days of December 1761, two warships sailed from England and promptly reached Madras, and there was formed a squadron of fifteen ships that reached and entered this bay

of Manila on the 22nd of September 1762."⁴

Fr. Agustin Maria de Castro, OSA further mentioned that "The convent and church was also plundered and embargoed. This was publicly announced on the 3rd day of November of 1762. On the 8th of December they again inspected the convent; they went to the Library and took all the books to the house of Don Santiago Orendain, Lawyer and resident of Manila; he sold them little by little. They also took the two Archives of the convent and the Province and delivered them to the Lawyer for him to inspect, and after the processes we recovered and returned them to the convent, but many pages of the province were missing. They left the convent in a bad state that when we returned to recover it, which was in January of 1764, or a bit before, we did not find a bench or board to sit or a nail to hang the hat."⁵

The British Soldiers of Admiral Samuel Cornish looted more than 5,000 old books. After being reconstructed by the Augustinian friars, the library was again damaged during the Spanish-American War of 1898. The third big wound was the bombing of Manila by the United States in February 1945, which caused many of the Library's treasures (around 20,000 volumes) to be destroyed. Today's Library of the San Agustin Convent is only a shadow of what it once was.⁶

The project: A Digital Repatriation of a Lost Archive

The project "A Digital Repatriation of a Lost Archive" came about when Dr. Patricia Maria Araneta, the Southeast Asia Programme Manager of the Prince's Foundation School of Traditional Arts, suggested the collaboration with San Agustin to Dr. Cristina Martinez Juan of the University of London School of Oriental and African Studies. The funding of the entire project will come from a NEH-AHRC Digital Humanities grant. The Augustinian Community of San Agustin Convent and Monastery recognized the importance of the proposed work and expressed their support for the project proposal for the Digital Repatriation of the Lost Archive of the Spanish Pacific. The San Agustin Museum Director, Rev. Fr. Ricky B. Villar, OSA, after a series of dialogues, an actual meeting at San Agustin, and email conversations, finally signed the project agreement last June 10, 2021, on behalf of the Augustinian Community, where it is stated that the San Agustin Convent and Monastery will provide full access to study the remaining manuscripts, books and materials in the library; give access and share any photos or documentation about the library that may help in the digital reconstruction of the library's contents and also its history; and work with specialists and help administer any grants that might come through to help catalogue and digitize the materials in the library.

¹ Rodriguez, Isacio, O.S.A. The Augustinian Monastery of Intramuros. CSA, Makati, 1976. p. 6

² Rodriguez, The Augustinian Monastery. p. 8

³ Rodriguez, The Augustinian Monastery. p. 35

⁴ De Castro, Agustin Maria, O.S.A. The Augustinian Convent of San Pablo, Manila. San Agustin in 1770. Museo San Agustin Manila, 2015. p. 4

⁵ De Castro, The Augustinian Convent of San Pablo. p. 61

Last June and July 2022, those involved in the project, Dr. Cristina Juan of SOAS and the Project Head, Dr. Cristina Lee of Princeton University and archivist Dr. Regalado Trota Jose, rummaged through the books at the library and the book storage area at San Agustin. The target was to check if there were any books that survived the British invasion. It is remarkable that there exist books as early as the 16th up to the 18th century, with proof of ownership of *Convento De San Pablo de Manila*. All of this will help to digitally repatriate books and manuscripts looted during the British invasion,

from 1762-1764. The books will be catalogued, scanned, and digitized. As part of the agreement, a senior person from San Agustin is presently assisting in the cataloguing of the selected books and manuscripts. The inputs will be placed in a custom metadata spreadsheet created by the project manager so that in-depth information can be made about each of the books. Among the oldest books that still exist today in the Old Bibliotheca of San Agustin are those published in 1552, 1567, 1568, 1589, 1591, 1594, 1596, and 1597.



Fig. 1. Cross section: "Convento de San Pablo Manila" by P.U. Solis



Fig.2. The old Biblioteca, 1865



Fig. 3. Convento de San Agustin, Manila



Fig. 4. This shows the location of the previous library parallel to Santa Potenciana St.



Fig. 5. Present library, the second floor of the Convent and Monastery



Fig. 6. Cataloguing books at the present library. Some of the books will be eventually restored.



Figs. 7-14. Ongoing project and present cataloguing of books at the present library





Fig. 16. Archival book dated 1567



Fig. 17. Augustinian seal found among the old books

Figs. 18-19. Archival book cover and the title page dated 1568



Figs. 20-21. Book dated 1591

Figs. 22-23. Book dated 1594





Figs. 26-27. Book dated 1611

Fig. 28. Book dated 1667



Fig. 29. Contemporary painting at the San Agustin Museum portraying the Historian and Librarian of San Agustin Convent, Fr. Agustin Maria de Castro (1740-1801)



Figs. 30-32. Title page, cover page, and notes about the librarian. The book dated 1656.

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Figs. 33-34. Book dated 1735 with notes by the former librarian, Fr. Agustin Maria de Castro, OSA stating several volumes of this book exist in the San Agustin Convent of Manila.

Further reference and details about the project

"Towards the end of the British occupation, the majority of the materials from the San Pablo library ended up in the hands of the Scottish Hydrographer, Alexander Dalrymple (1737-1808) who very briefly became the Governor General of the Islands as he replaced the notorious Dawsonne Drake. When Dalrymple died without an heir, his huge collection of books and manuscripts was auctioned off, among them what are now called the Manila Papers. From this mother lode began the slow dispersal coming out of the United Kingdom through a series of auctions that caused the collection to be fragmented in three continents. Today only about a hundred items are located in the original site. The rest of the San Pablo collection can be found interspersed among the Lilly Library at Indiana University, the Lopez Museum in Manila, the British Library, SOAS University of London, and King's College."7

"This digital humanities project seeks to repatriate the books and manuscripts that were taken from the archives of the Convent of San Pablo. Using the original index of the contents of the library of San Pablo, the Spanish and British accounts of the use and dispersal of the library's contents, the records of auctions, library acquisitions and provenance records, the project will piece together a virtual reconstruction of the materials in the library as close to as it might have been in 1762."⁸

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⁷⁸ https://library.pbilippinestudies.uk. Repatriating a Lost Archive in the Spanish Pacific: The Library of the Convent of San Pablo (Manila, 1762). This public prototype is generously funded by a November 2020 Seed Corn grant from SOAS, University of London and by an Everrett Helm Visiting Fellousbip to the Lily Library.

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