

ACCU Nara  
International Correspondent

# The Tenth Regular Report



公益財団法人 ユネスコ・アジア文化センター文化遺産保護協力事務所  
Cultural Heritage Protection Cooperation Office, Asia-Pacific Cultural Centre for UNESCO (ACCU)

## 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 seventeen reports submitted by international correspondents in the Asia-Pacific region.

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# Bangladesh



## Lalbagh Fort, the Significant Monuments of Mughal, Dhaka

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The Lalbagh fort was built during the reign of Mughal Emperor Aurangzeb (1658 AD-1707 AD) mainly to properly perform the works of administration together with the maintenance of the hundred present security of the provincial governor. Situated at the heart of the city of Dhaka, this fort and the museum bear testimony to the cultural heritage and prosperity of the Mughal period. A very rare and skillful combination and amalgamation of Bengali, Indian and Persian architecture is evidently found in these monuments. In consideration of this unprecedented work of architecture and its style of construction, the Lalbagh fort is regarded as a distinguished specimen of Mughal architecture.

During the reign of the Mughal Emperor Jahangir (1605-1627), Islambungalow Khan the then provincial governor transferred capital from Rajmahal to Dhaka. But this ruler was so much busy in making his administration stand on a firm footing that he found little time peaceful to build up any architectural plant worth noticing and praising. Nearly 50 years of this, when a British Baptist named Taverniar came to Dhaka, he found Nawab Shaista Khan residing in a wooden bungalow. But within a very short time, he built up this fort and other important buildings within the

fort during his two phases of the assignment as provincial governor (1663 AD-1688 AD). For a short interim period in between two phases of the governorship of Shasta Khan, ShahaJada (Prince) Azam (July 1678 AD-1679 AD) appointed Subeder (General) of Bengal. The exquisitely beautiful mosque still existing within the fort area as a specimen of Mughal architecture is known to have been built by Shajada (Prince) Azam Shah.

### Lalbagh Fort

The fort of Lalbagh stands in the South-East corner of the Dhaka city on the bank of river *Buriganga*. The fort was named 'Aurangabad fort' after the name of the Mughal Emperor Aurangzeb. The rectangular fort is surrounded by high walls all around and it measures 1,082 feet to the east-west in the length and 700 feet to North-South in breadth. There are two high and spacious getaways to the North-East and South-West corners and a small gateway in the north of the fort. Besides, the whole of the interior space of the fort was divided into 22 lawns and those were decorated with flowers and plants that assumed a very attractive look as a whole. Till now the tradition of maintaining the beauty of the garden is going on. Each of the lawns is separated by walk-paths made of bricks. Moreover, many fountains of water were set up at the middle of garden and that was linked up with some other channels beautifully designed from the West to the North-East and to the South. All these luxurious and pompous piece of works manifest the financial prosperity, peaceful political stability and above all the high artistic taste of the Mughals. Almost at the middle of the fort, there is a *Mazer* (Mausoleum) of *Pori Bibi*. To the west of the *Mazar*, the mosque of Shajada Azam Stands and to the East, there is a two storied building which was a *Dorbar* hall (an assembly hall). To the east of this *Dorbar* Hall, there is a tank which had been dug during the Mughal regime. Besides these, there is military barracks towards the south and an octagonal two-storied observation tower in the southwest corner of the fort.



A general view of Lalbagh Fort



The main gate of Lalbagh Fort



Prince Azam Shah Mosque

### Prince Azam Shah Mosque

An emblem of super excellence of the architectural artistic skill is the Azam Shah mosque which was constructed by Prince Azam Shah within the fort area in the year 1679 AD. The mosque measures 65 feet in the length and 32.5 feet in the breadth. On the four corners of the mosque, there are four octagonal pillars and the top of the pillars are beautified by small domes. The bodies of the pillars are decorated by panel designs. This is a three-domed mosque of which the third dome is comparatively larger than the other two. Mughal architectural tradition was adopted in making the domes. The lower parts of the domes look like round domes decorated with a large sized leaf designs from outside. There are three entrance doors to get into the mosque of which the first one is larger and the other two are comparatively small. In front of the door, multifarious arch styles, the characteristics of the Mughal art have been distinctly shown.

### Bibi Pori's Tomb

Bibi Pori's tomb lies at a distance of only 170 feet to the east from the Azom shah mosque. Pori Bibi alias '*Iran Dukbt*' was the daughter of Nawab Shaista Khan. She was exquisitely beautiful and loved by Shaista Khan. She died at a very early age and the *Nowab* was deeply shocked by her premature death. The extremely shocked *Nowab* constructed a mausoleum on her grave to perpetuate the memory of the beloved daughter. The construction of the mausoleum was a skillful combination of the Persian, Indian and ancient Bengal art.

### Tank, Audience Hall and *Hammam* (the Royal Bathroom)

At the middle of the north and south gates of the fort, there is a Mughal tank which is square in size and each side is 235 feet long and covered with retaining walls on all sides. There are also four staircases at four corners.

At a little distance from the west bank of this tank, there stands a two storied building graceful to look at. At the

ground floor of this building, there are a bath room and three waiting-cum-resting rooms of the viceroy. For all arrangements of supplying hot and cold water, there was separate equipment with an oven, etc. The upper storey also has three rooms. They might have been used for the administrative work.

### Military Barracks and Water Reservoir

After an extensive excavation for a long period at the high mound of mud within the fort area, a vast military barracks has been discovered. The barracks was constructed to fortify the fort and to strengthen its security measures. Just at the middle of this building there was a water reservoir where water was collected and preserved from the river Buriganga. The artificial fountains in the fort were kept alive supplying water from this reservoir.

### Conclusion

The high excellence and advancement of architectural performance is one of the glorious achievements of the Mughal rule in Indian sub-continent. They rose to the pinnacle of glory by constructing enormous administrative buildings, mosques, mausoleums, a military barracks, *hammams* (the royal bath room), etc. During the reign of Akbar, Jahangir, Shahjahan, Aurangzeb, the height advancement and supremacy of architecture is evidently noticed side by side with their remarkable financial stability.



The general view of mausoleum of *Bibi Pori*



The close view of mausoleum of *Bibi Pori*



The interior of the *Hammam*



The audience hall and *Hammam*



The military barracks



Tank



## Preservation of the Excavated Remains – Some Issues of Reference at Sarnath

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Sarnath, the place where the enlightened delivered his first sermon was nothing more than a series of rolling mounds and few heaps of bricks until 1794 AD. The name Sarnath is the derived form of Saranganath, a form of Shiva holding a deer, who was the presiding deity of a temple there. Its association with Buddhism was completely lost, when Jagat Singh, Dewan (Minister) of Raja Chet Singh of Benaras, ordered for quarrying of bricks and stones from a place near Benaras called Sarnath, where a great heap of brick was readily available.

The great heap of bricks was the Dharmarajika stupa of Mrigdava, which was completely dismantled and carted to Benaras. The work was stopped only when some pieces of bones along with ashes, and some gold leaves, pearls and other objects were found in a casket of green marble. Thanks to one Mr. Jonathan Duncan, a resident of Benaras, that this finding was report to learned world in 1798 AD and association of something Buddhist with Sarnath was established. For almost five centuries the name Mrigdava and anything Buddhist was forgotten from the human memory. The place was instead known as Sarnath,

Ever since 1794 AD antiquarian attention was focussed at Sarnath. In 1835-36, Alexander Cunningham, a Major then, spent 18 months and Rs. 517 on excavating the site with sole intention to retrieve the relic casket. The borings and burrowing at Dhamek (Pl. 1) and Chaukhandi did not reveal anything but the make-up of the stupas. The other digs, however, yielded a monastery, a temple and a chamber full of statues. Later in 1851 Major Kittoe, Archaeological Enquirer to the Government, started excavation at this place and brought to light a monastery to the south-east of Jagat Singh's stupa (as the Dharmarajika was known and referred), a rectangular structure to the west of Dhamek which he preferred to call 'Hospital' and rows of votive and donative stupas to north and east of Dhamek (Pl. 2). Though no chronological information could be derived from these findings yet the topography and contours of the Mrigdava were changed considerably. Major Kittoe, following Hwen tsang's description believed in three stupas in Mrigdava – Jagat Singh's stupa and Dhamek were already there and the third he identified a short distance north of Jagat Singh's stupa, which he could not probe.

Major Kittoe's fatal illness prevented him from reporting his excavation properly and most of the details were lost, some informal communications survive. His work was further continued in 1853 by Mr. A. Thomas followed by Dr. F. Hall and Mr. Buttler. In 1865 Mr. C. Horne and in 1877 Mr. Rivett Carnao also did their antiquarian hunt. In all these attempts some more structural remains were added to the personality of the site. Since these efforts,

except those by Kittoe, lacked planning and academic purpose, proved little beyond the haphazard digs. Finally in 1903-04 Mr. F. O. Oertel of the Public Works Department started detailed excavation. The changes in the heritage area from the times of Cunningham (Pl. 3). He cleared the area where Kittoe had identified his third stupa and could expose a very elaborate temple built of lavishly carved burnt bricks belonging to the last phase of occupation and the Asokan Pillar and lion capital to the west of it and a large number of images of Buddhist affiliation.

Remains at Sarnath attest only to the century of Asoka on the earlier side while the last remains are those of the 11th -12th century AD. whereas the Mrigdava and Buddha association is more than two hundred years older than Asoka. Not much reliance can be placed on the findings and more importantly, neither on the procedure of findings. As the minor antiquities and potsherds were not considered important, only few complete earthen wares and some objects which caught the fancy of the diggers were preserved.

Excavations at Sarnath continued intermittently till 1932. Each passing year of excavation added some new features to the ancient monastic settlement at Sarnath, thereby changing the landscape. A large number of remains movable as well as immovable were laid bare. Large proportion of the movable remains found their ways to various quarters of the world and some unfortunate ones got watery grave (in the pier of Duncan's bridge on river Varuna) or were crushed to make concrete or refashioned into other building material (at Queen's College). Some fortunate ones which had survived the vagaries of time and were probably in good shape found their way back to Sarnath (museum) or other museums or collections.

The immovable property at Sarnath, with sole exception of Dharmarajika Stupa which was vandalised by Jagat Singh, most survive till date (Pl. 4). However, with modifications some induced deliberately and some due to ignorance of the executioner. Many of the structural remains have been done away with and some have been re buried to create a better movement plan for the visitor. Still a comparison of what was excavated and what we have today will reveal that drastic changes have been made in structures and many of the structures have now become almost modern with the use of modern building material. It may be a big question as to whether we are moving in the field of conservation? To what extent conservation should be permissible and at what cost? And it is not the story of Sarnath only rather it is the tale of almost all of the excavated sites and standing ancient structures

We are not sure what was the original shape of Dhamek let aside the Dharmarajika, which is no more today. From all the remains I would like to stress upon Dhamek to show the tell-tale marks of the passage of a century. I would also like to suggest the original shape of the Dhamek stupa. There are a few good pictures of Dhamek in different time frames that provide state of preservation of the monument (Pl. 5 & 6).

Now, if the documentation of 1905 AD, specially the drawings and photographs, is taken as a bench mark for the study of this shift, it may be seen that structures that had withstood the two onslaughts of human destruction coupled with vagaries of nature for almost 1200 years found the last century the most difficult for survival. Plans and elevation drawings attest to this fact. The drawing of the west face of Dhamek is sufficient to illustrate the marks of last century (Pl. 7). There are eight projected niches around the drum of the stupa separated by recesses. Seven of the projecting niches are capped with simple tapering cone, but the one on the west is special as it shows a shoulder above the straight sided drum and is capped by gently curved dome topped by two receding stepped boxes, on top of which is a socket for holding flagstaff. The shape alone was not different, the decoration that it bore were also different than that of the drum.

The significance of the western projection has been a topic of debate among scholars and researchers. Cunningham and Oertel the two serious excavators have deliberated on it at great length forwarding their own views for dedicating the stupa for one or the other form of Buddha. The two justifications, although very logical, failed to satiate my hunger for the architectural queries. Dhamek attracted me not only for its dimensions and shape but also for its architectural peculiarities, keeping the time frame for its construction in mind.

The projections on regular interval remind of the *up-shikara* or *anga shikharas* that developed in the temple architecture around the same time with the purpose perhaps to break the monotonous linear verticality as also to make the structure more stable. Whatever be the original reason for these projections, to me they appear to be the up-shikhar or anga-shikhara, i.e. the miniature form of the original tower/spire. The eighth decorated projection appears to retain the actual shape of the stupa of the final stage. On the basis of the detailed drawing published in 1904-5, a 3D model is attempted (Pl. 8).

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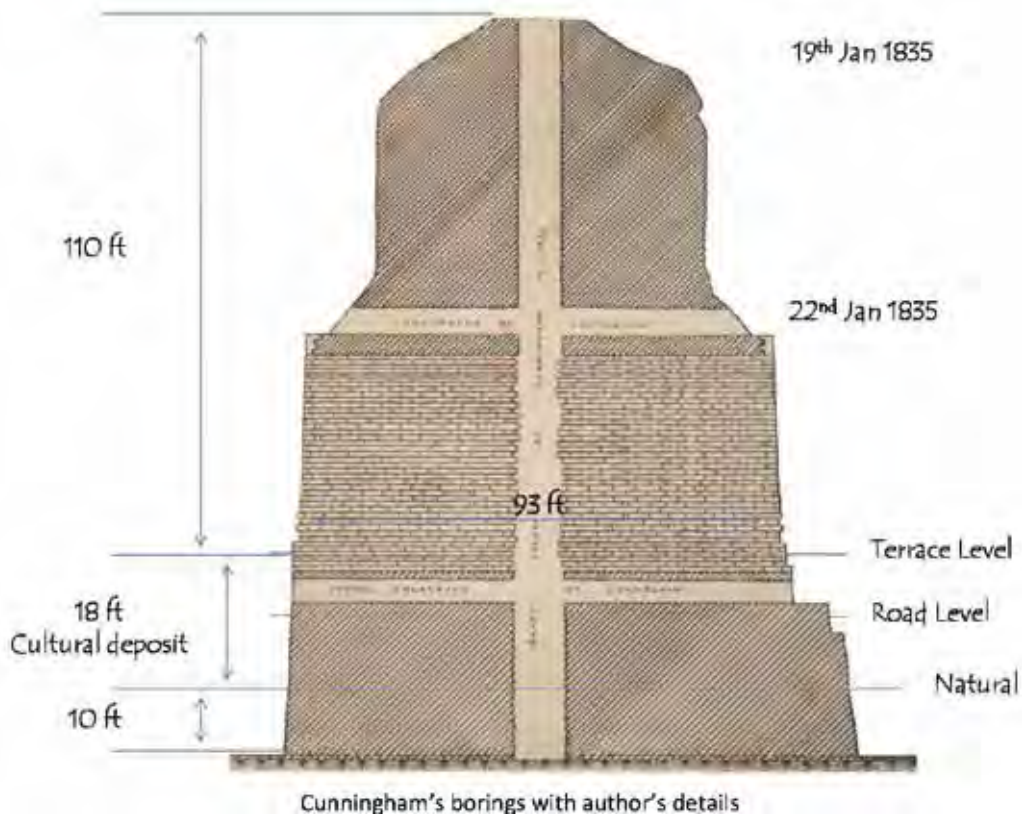


Plate : 1

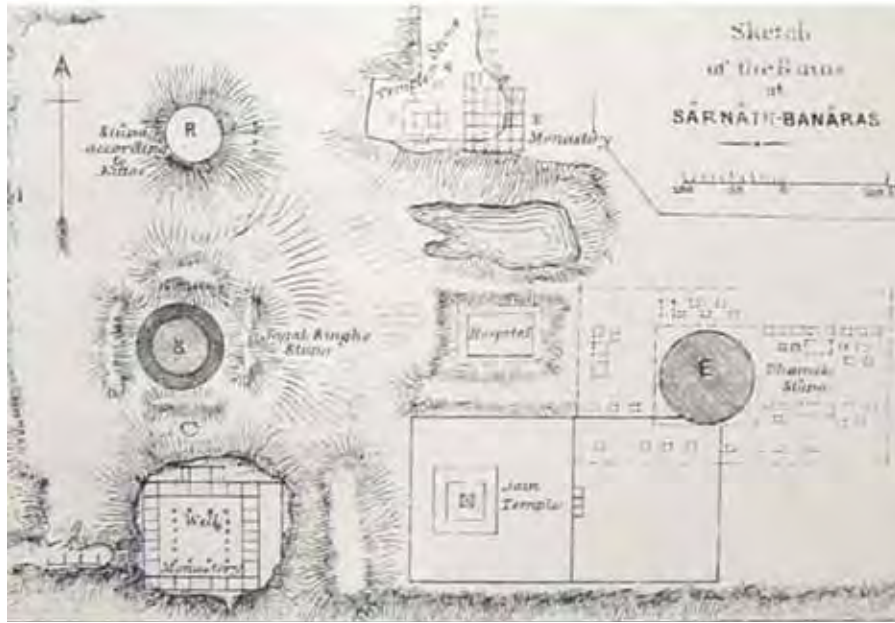
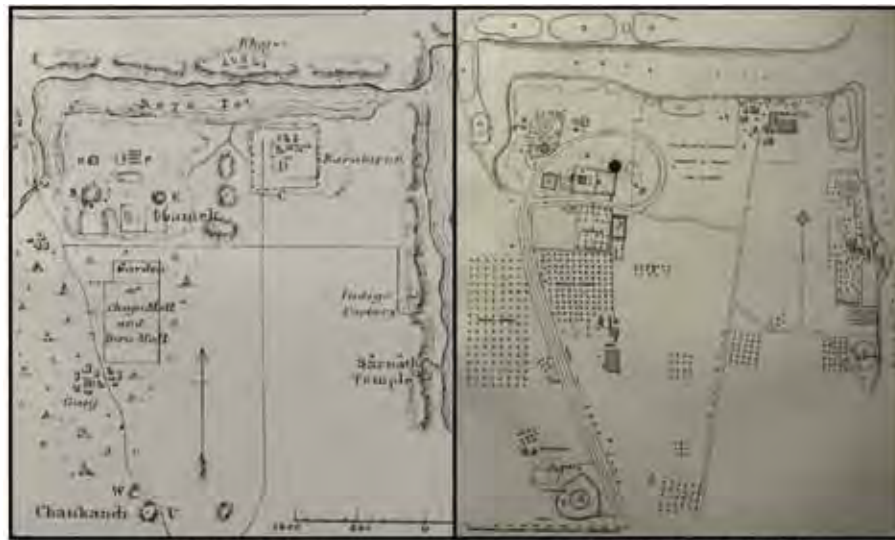


Plate : 2



1871: Cunningham

1904-05: Mr. F. O. Oertel

Plate : 3



Plate : 4



Plate : 5





Martin Hurlimann: Picturesque India; 1928

Martin Hurlimann: India; 1965

Plate : 6



Drawing of western projection. 1905: right side decoration has been probably conjectured.

Photograph of western projection. 2010:

Shape of other seven projections. 2010:

Plate : 7



The original shape of Dhamekh: after drawing of the western projection

Plate : 8



## Restoration of the Garrison Cemetery at Srirangapatna, Karnataka

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### Introduction

The Garrison Cemetery is located in Srirangapatna, a town of great religious and historic significance situated on the western island of River Kaveri, in Karnataka. The town takes its name from the celebrated Ranganathaswamy temple (the 9th century AD) which dominates the town, making Srirangapatna one of the most important Vaishnavite centers of pilgrimage in south India. Srirangapatna became the seat of the local viceroy of the Vijayanagar Empire during the 15th century AD. In 1610 AD, when Raja Wodeyar of Mysore took possession of Srirangapatna, it became the capital of the Rajas of Mysore and continued to be the seat of government under Haider Ali and Tipu Sultan until its seizure by the British during the last Anglo-Mysore war in 1799 AD. Srirangapatna has also had strong trade relations with overseas especially the Middle East exporting best quality sandalwood and spices and it was here that the famous Mysore Silk began to be woven. Tipu Sultan the celebrated ruler of the Sultanate of Mysore was one of the earliest and fiercest opponents of the British and Srirangapatna as a strategic capital withstood bravely the expansion of British rule into the Southern India for more than fifty years.

After the downfall of Tipu Sultan in 1799 AD the capital was shifted to Mysore and a British Garrison was stationed under General Wellesley, who later became the Duke of Wellington. This probably was the circumstance under which the Garrison Cemetery came into existence as evident from the first and last burial records available on the site; 1801-1867 AD. Garrison Cemetery thus houses the tombs of soldiers from all ranks, members of their families and civilians stationed there. They served different regiments of the British army that was stationed here and at Mysore prior to and post war.

The cemetery is located on the lush green left bank of River Kaveri in the midst of a fertile fruit orchard and covers an area of 3.5 acres having shrunk over the decades succumbing to land grab. The restoration works were undertaken by a Mysore based Conservation firm Ravi Gundu Rao & Associates, in association with the Dept. of Archeology, Museums & Heritage, Karnataka (State Government). The project was entirely initiated and funded by the descendants of a Swiss based regiment known by the name 'de Meuron', which served the British Army in the last Anglo-Mysore war. I was fortunate enough to be assigned the role of a Project Leader for the entire restoration project.

### Architectural Significance

When the study began there were about 312 tombs however further clearing of vegetation and excavation revealed several more predominantly razed to the ground. In addition to these about 30 headstones all dating 1800

AD are laid in a row at the right hand corner of the entrance within the cemetery premises. These belong to the French and appear to have been placed here much later. There are very few tombs that resemble one another and most of them are masterpieces of art, beauty and proportion. It is one of the largest existing cemeteries found in the southern part of India with so many of the tombs and headstones in fairly good condition. The headstones are an important archive of the different Regiments that served the region, the aftermaths of an important war that affected the British who continued to stay and many unrecorded tales that can be interpreted from the beautifully inscribed calligraphic epitaphs.

This cemetery is also an important record to visualize Srirangapatna as it may have existed in the late 18th and early 19th century along with the fort walls, temple, Tipu Sultan's mausoleum, his summer palace, mosque and other memorials completing the picture of a predominantly religious Hindu town reigned by a powerful Muslim ruler with British and French battalions stationed briefly. Excepting for some colonial bungalows and a few tombs scattered randomly there aren't many remains of the French and British in this historic town now. Immediately after the downfall of Tipu Sultan the focus was deliberately shifted entirely from Srirangapatna to Mysore to ensure it never restores its earlier might and will to oppose the British ever again.

### Condition Assessment

The conservation program was divided into two parts first being a study and documentation of its history, architectural details and assessment of its existing condition, that took about six months to complete and second being the repair and restoration works that lasted about thirteen months.

The cemetery was found to be in a state of poor maintenance when the study began with very dense growth of vegetation hiding many of the tombs and making it almost impossible to even tread on some parts of the site. The wooden gate at the entrance was mostly dilapidated however the design and all metal hinges remained integral. The gate posts and the compound wall were mostly intact except requiring extension or reconstruction and lime plastering in certain portions. These along with most tombs were devoid of lime wash or present only in the form of scattered scales. Some tombs were found to be either totally or partially demolished, evidences of the original form and ornamentation thankfully remaining intact. Platforms were found to be missing for some tombs causing disorientation or dislocation of the entire tomb while in some cases they lay hidden beneath the soil. Ficus and vegetation growth within the structures had caused severe structural cracks and splitting off of portions from

the tomb. Deterioration, delamination and discoloration of lime plaster from surfaces of all the structures was the most common issue that needed to be addressed.

The embellishments did not vary much, mostly ranging from scrolls of acanthus and foliages, simple columns with plain base and capitals along the corners, and layers of recessions and projections along the sides of horizontal surfaces. The most exquisite and fine detailing, predominantly floral in nature were found on the urns and finials. Many of these had fallen off, some were in a poor state of deterioration, and most were gone, long ago. Many intricate details in lime plaster, especially along the thinner edges of horizontal recessions and projections over the top portions of the tombs were hidden behind several layers of lime wash. The headstones made of local stones like Chloritic Schist, Granitic Gneiss and Dolerite, were discolored due to deposition of dirt and salts and in some cases the inscriptions were indecipherable. Some headstones were partially or totally detached from the tomb.

### Restoration Works

The major works involved clearing of wild vegetation, main gate and gate post repairs, partial and total reconstruction of tombs, lime re-plastering, addressing structural and superficial cracks, restoration of decorative plaster works, application of lime wash, cleaning & consolidation of headstones using chemicals, providing sign boards, basic site surface drainage system and least maintenance landscapes.

Lime and bricks were the predominant materials used in the restoration of the cemetery. The lime was procured from a local quarry and the entire process starting from slaking of lime to preparation of lime mortar was undertaken in a lime centre located 10 kms away from the site. The coarse lime mortar constituted slaked lime and coarse aggregates in the ratio of 1:3 ground for 15 minutes in a diesel run lime mortar mill. The fine coarse lime mortar constituted slaked lime and coarse aggregates in the ratio of 1:2 ground to form a uniform mix for 16 hours in the same mill. On the site prior to starting any mortar related works, the contents in the bags were emptied into a big metal tray and mixed well with jaggery syrup and tree gum for better workability and avoiding shrinkage cracks. A total number of 12-18 masons, craftsmen and other skilled workers were involved in the restoration and repair works.

Brick platforms laid in lime mortar were constructed and left un-plastered around tombs to prevent stagnation and seepage of water. The collapsed tombs as well as missing portions were first cleared of all the vegetation and ficus growth using ammonia based chemical solution following which well-burnt bricks, laid in lime mortar, were used for reconstruction. Where, in good condition the original flat bricks were reused after carefully cleaning it off the mud and mortar. The ornamental details in fine and coarse lime mortar were recreated after studying the missing portions referring to similar tombs in the premises. Some intricate embellishments were redone in fine lime plaster only as the details were minute and

required greater workability of the medium. These works were however limited to less intricate ones. Where it was suspected that some ornamental details remain hidden beneath layers of lime wash, they were scrapped carefully by deft hands, prior to undertaking of any plaster works. The plastered surfaces were first cleaned by soft nylon brushes to remove any loose and deteriorated particles, as well as discolorations. The surface was then dampened and the first layer of course ground mortar was applied using trowels followed by fine mortar. Three coats of lime wash were then applied on the plastered surfaces followed by three coats of colorless; silicon based hydrophobic coating using mechanically regulated sprinklers. The color of the lime wash was approved by members from BACSA (British Association of Cemeteries of South Asia, Bangalore) so as to keep it as close to what it may have looked like originally. Extreme care was taken to maintain an even spread of both the lime wash layers as well as hydrophobic coating so as to maintain an even texture, color and functional efficiency. The headstones were mostly cleaned using water, non reactive soap solution and soft nylon brushes. All the headstones were covered with films before and after the restoration works so as to prevent further staining from lime products.

### Conclusion

One of the challenges faced during the restoration was that it was not easy to explain to the masons "how much to restore" in terms of more intricate and less intricate ornamental details. As a pre-restoration policy for this cemetery, it was decided that the more intricate details (requiring very skilled craftsmen and hence more money, both then unavailable) could be undertaken at a later stage when the required resources came along. Constant supervision and monitoring were a pre-requisite, given that the restoration of these small structures would sometimes progress at a tremendous speed. The study did not reveal any definitive patterns for having positioned the tombs in the manner it exists now and though tombs of all sizes, shapes and style were repeated frequently, they could not be categorized into a few groups thus adding to the charm and challenge for restoration. Garrison Cemetery proved to be an ideal training ground to school, the semi skilled workers and semi-masons in graduating to semi masons & masons respectively. Prior to restoration the cemetery was only visited occasionally by foreign tourists who came in search of their ancestral tombs. The cemetery has now been included in all the tourist brochures and circuits and is under the custody of the government. A watchman who was part of the entire restoration phase now takes care of the cemetery, including offering basic guidance to the visitors, maintaining the orchard and lawns as well as reporting to the concerned authorities periodically. Garrison Cemetery has proved to be an excellent example of a restoration work based on a public-private partnership in southern India.



Before restoration, after clearing of vegetation



After restoration and maintenance of minimal landscape



Before restoration, after clearing of vegetation



After restoration and maintenance of minimal landscape



The wooden entrance gate and original gateposts before restoration



The new entrance gate and gateposts after restoration



The cemetery before clearing of vegetation and ficus growth



Construction of brick platforms in lime mortar where originals were missing



A tomb during restoration of decorative elements



The tomb after restoration



Intricate details hidden behind layers of lime wash



Layers of lime wash carefully scraped and embellishments in lime mortar exposed



Before restoration, partially demolished tombs



After restoration



Before restoration, after clearing of vegetation



After restoration



## Rescue Excavation of Gambar Wetan III Temple Site

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The rescue excavation of the Gambar Wetan III Temple site was held in May 2012 in Indonesia, and the important remains were found at the site. The temple is a significant evidence to comprehensively reconstruct the history, the function, and positioning patterns of the temples around Gambar Wetan site. The rescue excavation was carried out according to the report on stone findings which was presumed as part of a temple structure. This supposition from unearthened findings was also strengthened by the ROC report data (*Rapporten van den Oudheidkundigen Commise*) in 1908 and the ROD (*Rapporten van den Oudheidkundigen Dienst*) in 1915. It was mentioned in a Dutch official report that there were other temples besides Gambar Wetan. Gambar Wetan II temple was found in 1992. There is a strong suspicion that the other temples were buried by Mount Kelud eruption which occurred for several times before 1908 and 1915. Due to its vulnerability, the temple needs protection through the rescue excavation. The rescue excavation was conducted in order to identify archaeological remains in Gambar Wetan Temple site on 5–6 May 2012 by a team from the East Java Archaeological Office.

The Gambar Wetan Temple site is located in Blitar Regency, East Java Province, with geographic coordinates of 49 M 0636542 UTM 9119042 and altitude of 590 meters above sea level. The site is positioned in an area of 16,000 m<sup>2</sup>, located on the slope of Mount Kelud, on the edge of a lava river (Figure 1). Based on the figures found in the site, it can be described that the this site was built during Majapahit Kingdom period. The figures are: Dwarapala statue placed at the bottom of the cliff, shows number figure of 1438 AD, *Dwarapala* statue placed on the stair (figure 2).

### Rescue excavation

Rescue excavation was carried out by several stages as follows: coordination with related parties; literary studies of particularly Netherlands reports; land surface survey to identify archaeological remains around Gambar Wetan Temple site; interviews with supervisors who had good knowledge on local soil condition; the excavation, and documentation (verbal and pictorial).

The area of excavation was chosen based on the soil outcrop showing the location of the temple, which was 3.6 meters north of GambarWetan I Temple. The rescue excavation was carried out by the grid system method; that is, an area of 14 m × 14 m was divided into boxes of 2 m × 2 m. In order to facilitate data recording in each box, all boxes of 2 m × 2 m was divided into four small sections measuring 1 m × 1 m (a quadrant). The quadrant was named with wind directions: a southwest quadrant, a northwest quadrant, a northeast quadrant, and a southeast quadrant. While the pit technique was used with an interval of 50 cm and the depths were varied according

to the soil condition. The depth of the foundation was usually as deep as 170 cm. The excavation team unearthened 34 boxes scattered at four quadrants. Thirteen-one out of 34 boxes contained archaeological remains in the form of a point of the temple, the outer wall of the temple, reliefs, panels of reliefs, inner stones, stairs, steps, (Figure 4-9). Other findings were potteries and small number of coins.

The findings were restored into the form of basement of the temple with a size of 8 m × 8 m, which was named Gambar Wetan III Temple. The batur was constructed by andesite stones. Both of Gambar Wetan III Temple and Gambar Wetan I Temple are similar in orientation and face in the same direction to Mount Kelud (east). Based on the structure of the temple, batur is the bottom part of the building, and there are body and roof above the batur. Based on the findings of pottery and the veil of the pillar, it is assumed that the roof and pillars are also made from natural materials.

### Conclusion

For safety reasons, the excavated findings have been temporarily covered by soil. The existing condition of the site shows intensive and extensive data of archaeological remains. Therefore, it needs a larger scale excavation for further identification of the site. On the other hand, the temple is located on the slope of Mount Kelud, therefore, the conservation policies by the government should be implemented properly to protect it from the possible eruption. At present, only protection efforts have been conducted, and disaster mitigation devices are just as important.

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Figure 1. Location of Gambar Wetan Site



Figure 2. Dwarapala statue in front of the upper stairs



Figure 3. Temple of Gambar Wetan I



Figure 4. Box B1 was located at quadrant II, the box was opened only for 1 x 2 meter in size to observe details of the southwest corner of the temple.



Figure 5. Box B2 was opened to determine the outer boundary of the wall in the south and the possibility of in situ reliefs. Soil strip activity indicates that the corner part of the temple is intact.



Figure 6. At Box B4, a statue relief was found, which was positioned at the middle of the wall dividing the front and back corner part in the same of length.



Figure 7. Box C1 was opened to observe the details of the front wall of the temple directs to the north. The corner between the front wall and stairs cheek was found at the depth of 91 cm.



Figure 8. Box C1, at the depth of 170 cm from soil surface; there were 4 stairs found in this box, and it is assumed that there was one more stair buried in the soil (top part of this stair was appeared).



Figure 9. Box D1, one piece of relief which was part of the staircase found at the depth of 72 cm, and one more relief was found towards the walls of the temple.



## Diagnosis of Damage in Historical Museum of Jakarta

**Indah Sulistiana Kuncoro**, *Architect / Teaching Assistant*  
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### Introduction

The degraded condition of Historical Museum of Jakarta moved the Department of Tourism and Culture in the government as the owner, to set up MoU with the Royal Dutch Embassy in Jakarta to support for research, documentation and recommendations for conservation of the building. The damage of the building extended into problems of water leak, termites, rising damp, cracks and wood decompositions. The Royal Dutch Embassy gave the assignment Centre for Architecture Documentation (PDA- Pusat Dokumentasi Arsitektur) to carry out technical research, documentation and to make recommendations for conservation. This work was done from December 2010 until June 2011. During the research work I was involved as part of the team in PDA and did the field survey, diagnosis of damage and made recommendation of the repair work. The objectives were to record all damage in the building components for both mechanical and physical condition, to analyse all the possible causes and to draw up the repair strategy before the conservation work.

### Architectural Significance of Historical Museum of Jakarta

The construction of Historical Museum of Jakarta started on 25 January 1707 in the Dutch colonial period in Indonesia. It located in Kota, the core historical district in Jakarta. The name of building was Ex Stadhuis Batavia, and then it was used for the governor office of West Java. The first restoration was implemented in 1972-1974 and used for the military district office, but then it was changed again to Museum Fatahillah and now became Historical Museum of Jakarta. It is preserved as an historical building of Jakarta City. The architectural significance of this building is shown on its rustic character and building technology in the colonial period. The wall is made of thick brick as the load bearing structure. Wood materials are used for floor beams and planks, doors and windows, stairs and also the whole structure of the bell tower.

### Field Survey and Damage Diagnosis

Drawing by measurement was conducted to record the present state of the building configuration by making plan, sections and drawing component's details through sketching on the site and then transferred them into AutoCAD drawing. This work is very important to recognize the building structure and to understand the relation of the scale, space quality, material character in detail approach. After that, the work continue in stage on diagnosis of damages on the building. Material investigations had been done by taking material sample of the brick wall, plaster and wood into the laboratory. Some visual observations on damages followed by basic experiments directly on the building component to know the resistance and degradation level. Analysis on possible cause followed the mapping of symptoms and damages on the building with interpretation of their risks.



The old painting by Fr. Valentijn, the 17th century.



The old photo from KITLV collection, Tropen Museum.



Photo 1. Survey on the roof



Photo 2. Photogrammetry survey



Photo 3. Measuring and drawing on site



### Mechanical Defect

- Displaced axis of wooden truss (in the attic room). This defect was identified by the measurement on the distance on each wooden truss caused by the imperfect manual work as the traditional system of construction. The symptom shown by the different numbers of measurement resulted in the distance of each trusses, but no decline caused by cracks or porosity was identified. It has potential risk for further delineation and torsion by the extended wind load.
- Deflection. The defect occurred in the middle part of the central gutter horizontal balk in the attic room was caused by the upper load. The horizontal balk made cracks and deflection. It has potential for extended leaks on the central gutter above it.
- Deformation. The deformation occurred on the wooden plank of the second floor in general, was caused by the load in long duration of years, and the long length dimension of plank. It provoked the shrinkage going up on both pole and created the major risk for quests walk circulation inside the museum especially for children.
- Joint gaps (on the most eastern joint among the main trusses and secondary truss) were caused by the response from the joint articulation to the horizontal force which transferred from the displacement axis.
- Vertical cracks (on the columns of the base level of bell tower) were caused by the upper load of wooden structures and by being continuously exposed to termite attacks.

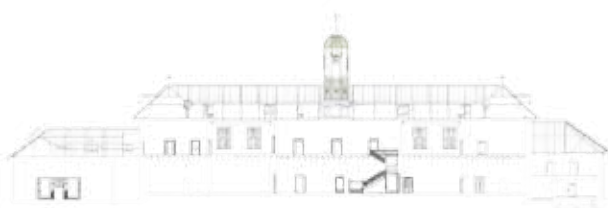


Figure 1. A building section based on documentation 2011

### The Relation of Special Symptoms in Bell Tower Structure

**Symptom 1:** The pivot wooden beam for hanging the bell cannot be rolled.

**Assumption:** It is possible due to un-levelling on the one side of bell columns or the main bell tower column.

**Symptom 2:** Combination of a crack (3 cm in max depth, 80 cm in length) and decomposition (12 cm diameter on the surface) in the end of the cracked wooden column.

**Assumption:** The existing crack was caused by the small preliminary one that had been made by manual defective work of making a traditional joint. Because it located in the high position, the wood experienced aggressive expansion-shrinkage which caused extension of a crack up to 80 cm length long in the slow duration. The rain water, caught into the crack, stayed and penetrated to the end of the crack. In the wet and high humidity environment, bacteria came and destroyed the wood cellulose in that point and gave an opportunity to the lichen to grow, and the decomposition of wood. The risk was more serious on the secondary cause on decomposition rather than the crack itself, because it can destroy wood cellulose faster to weaken physical strength than the slowly extended crack. The risk was high because the crack located in the high tower that was always exposed to rain water.

**Symptom 3:** There was a crack in the one horizontal balk of central gutter, and deformation can be seen on the next three horizontal balks which were spanned parallel between wooden truss columns.

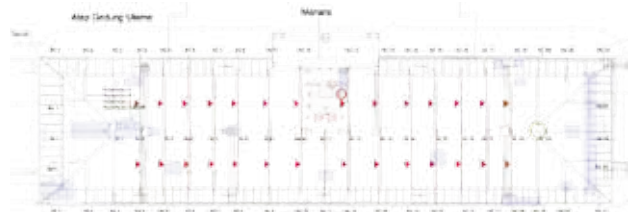


Figure 2. Mapping on damage in the attic floor and the bell tower



Photo 4. Tower structure



Photo 5. Trusses in the attic room



Figure 3. Deformation of the wooden floor plank

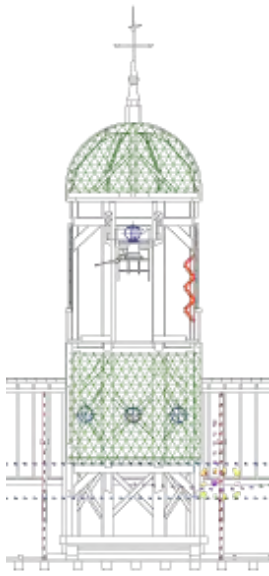


Figure 4. The bell tower structure



Photo 6. Defects on the tower column structure

**Assumption:** It received upper load which were transferred from the articulation between tower column and roof wooden truss.

**Risk:** Further leaks on the central gutter.

#### Common Physical Defect

Physical defects on wood materials ranged from early stage of decomposition, porosity, hollows caused by severe porosity, shrinkage, and discolorisation. Those damages are shown in the graphic below.

#### Recommendations for Repair

The axis displacement of roof trusses has to be supported with the diagonal steel cable that can be adjusted on its joint with detailed structural calculation on it in the conservation work phase.

The relation of the symptoms in the bell tower defect indicates un-levelling of the wooden structure on the bell tower. The potential risk is to provoke imbalance of the tower. The structure calculation will have to be conducted to find the point where the un-levelling started along with structure consolidation. The Bell Tower needs periodical monitoring on the stability of the structure.

Blocking the further rain water penetration has to be conducted while applying disinfectants and wooden repair works.

General strategy of the repair work has to be planned chronologically according to the management system and cost budgeting. They should be based on the priority of the building components as follows:

1. Repair of roofs and gutters includes waterproofing of the whole building (main building, right and left wing) at the same time.
2. Carpentry works package for each main building, right and left wing consist of repairs on wooden beams, wooden floors, doors and windows, and stairs. The work package can be done in parallel or in



Photo 7. Cracks of 3 cm depth on the wooden column



Photo 8. Decomposition on the wooden column

order with the main building, left and right wings of the museum.

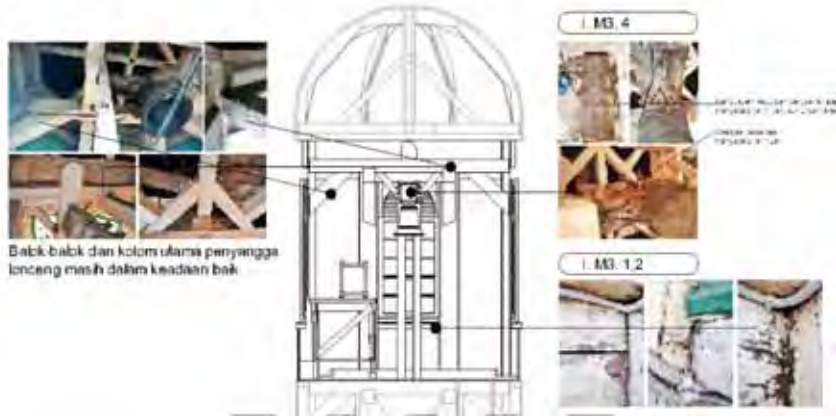
3. Mechanical electrical works and the site utility work.

#### Acknowledgement

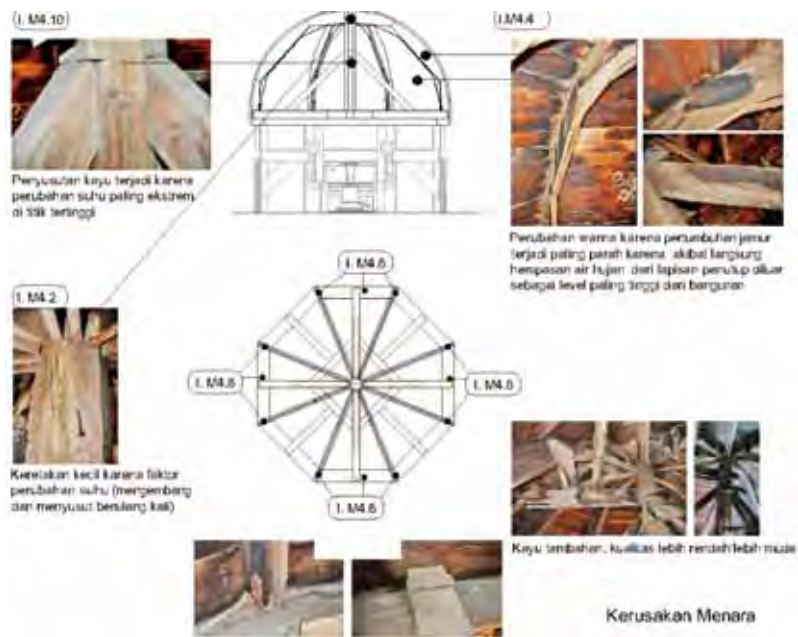
I would thank to all of my senior colleagues who I worked with and gave me an opportunity to be involved in this project, they are Han Awal, Cor Paschier, Hubertus Sadirin, Ria Febrianti, Nadia Rinandi, all surveyor in PDA, Martinus, Kemaludin, David, Kristanti, Rian Timadar, Eko, Suwedhi and BP3 Serang team.

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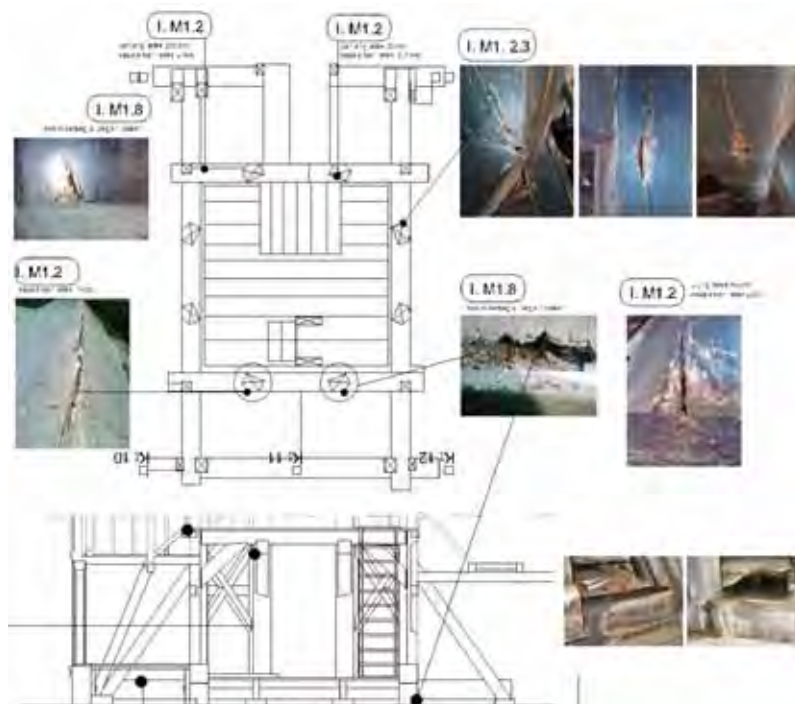
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Graphic 1. Physical defects on the dome of the bell tower



Graphic 2. Physical defects on the dome of the bell tower



Graphic 3. Cracks and porosity on the base of the bell tower structure



## Restoration of Ubosoth (Bothd) of Wat Chonprachumthat Chanaram, Kampung Dalam, Tumpat, Kelantan, Malaysia

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### Introduction

Wat Chonprachumthat Chanaram or Wat Kampung Dalam, as commonly known by the locals, is a Siamese Buddhist *wat* (temple complex) located at Kampung Dalam in the Tumpat district of Kelantan State. It is situated about 5 kilometers from the town of Tumpat and about 12 kilometers north of Kota Bharu, the capital of Kelantan State. Tumpat district is the northern most district of Kelantan State which shares an international border with Thailand to the west. Sungai Golok (or Korok River) that divides Malaysia and Thailand lies west of Tumpat. The proximity of Tumpat district to Thailand explains a strong Thai influence on the local cultures as reflected in numerous Thai Buddhist temples in this district.

Wat Chonprachumthat Chanaram is currently managed by chief monk named Prakhu Kassem Thamaviphat. According to Thamaviphat, two Buddhist temples were built earlier by the local Siamese at the site of a local school (Sungai Pinang Primary School). The temples were then moved to a former scout camp site at nearby Kampung Kok Keli. Later the local Siamese migrated across the Kelantan River and established a village settlement at Kampung Dalam. They built the Wat Chonprachumthat Chanaram which is considered as one of the oldest Siamese Buddhist temple complexes in Kelantan (about 100 years old). The Wat Chonprachumthat Chanaram compound comprises of



An aerial view of the Wat Chonprachumthat Chanaram at Kampung Dalam, Tumpat, Kelantan

many buildings including Ubosoth (Bothd), Sala Karn Prak Rian - Mae Tek (monk resident), a multipurpose hall, a workshop, a resting space and a main gateway. The Wat Chonprachumthat Chanaram also serves as a cemetery for the local Siamese.

During September 2011 to March 2012, the Federal Government of Malaysia, under the auspices of the Department of National Heritage (Ministry of Information Communications and Culture, Malaysia), allocated an amount of RM 308,000 (USD 103,000) to restore Ubosoth (Bothd) of Wat Chonprachumthat Chanaram. The restoration works were completed successfully as scheduled due to the full commitment by the project team members as well as involvement and support by the monk circle and local Siamese communities.

### Architectural Significance

Ubosoth (Bothd) was built in 1918 by a chief monk named Phrak Khru Ophad Phuthakhun. It is a single-storey masonry brick building that has unique Siamese architectural elements of double layer roofing of clay tiles (*singgora*) and dragon motif roof ornaments. Built in symmetrical order, Ubosoth (Bothd) has a main hall with 8 internal masonry columns, surrounded with 26 external columns and wide corridors. At the main entrance is a chengal (hardwood) timber door with Chinese architectural elements such as bronze door rings and dovetail locking system. The original Ubosoth (Bothd) ceiling covering the main hall was made of zinc sheets decorated with religious Buddhist paintings. A large-sized sitting Buddha statue is located inside Ubosoth (Bothd).

The Sala Karn Prak Rian - Mae Tek building is located at the center of the Wat Chonprachumthat Chanaram compound. This timber building portrays unique Siamese architectural design which is reminiscent of old Thai palaces. The building features intricate wood carving patterns as commonly found in many temples in Thailand. No nails were used in the construction of this building; instead the builders used a special technique of wood joint. Another unique feature of the Wat Chonprachumthat Chanaram is its main gateway. There are three towers on top of the gateway with three entrance doors.



The Wat Chonprachumthat Chanaram includes (from left) multipurpose hall, monk resident and main gateway

### Building Defects

Before the restoration of Ubosoth (Bothd) began, a building conservator was appointed to document the building conditions and facades through the method of Historical Architectural Building Survey (HABS). Common building defects diagnosed on Ubosoth (Bothd) included salt contamination, termite infestation, rising damp, roof leakage, eroded dragon motif on roof, and rusted zinc sheet ceiling. Building conditions were documented systematically using HABS 1, HABS 2 and HABS 3 (before, during and after restoration) to ensure minimum disturbance to the building authenticity and integrity.

#### Restoration Works

The restoration works of Ubosoth (Bothd) were carried out over a period of six months from September 2011 to March 2012. The major works involved are as follows:

#### i. Roofing

The existing clay tiles roofing (*singora*) were leaking due to cracked roof tiles and defective roof joints. Before the roof restoration work began, temporary zinc sheet roofing was built as a shelter to protect the building from heavy rainfall. After the temporary roofing was built, broken clay tiles and termite-infested chengal timber battens were dismantled carefully. The clay roof tiles and timber batten were in such poor condition and cannot be salvaged. New clay glazed roof tiles were used to replace the existing clay tiles. New *chengal* timber battens were obtained from local sources. These new replacements are of similar profile and material to the original ones. Before fixing the new roof tiles and timber batten, pest control specialists were engaged to conduct anti-termite treatment using effective chemical spray and injection at the building perimeter.



Site discussion with the monks and local Siamese communities before the restoration of Ubosoth (Bothd)

The existing 8 concrete dragon motifs at the roof edges were in poor condition due to continuous weathering. Skilled craftsmen lowered down one of the existing dragon motifs as reference to make a new molding based on the existing profile. The craftsmen produced 8 new dragon motifs of similar profile to the original dragon motifs and installed them onto the roof edges.

#### ii. Wall

Ubosoth (Bothd) was built in masonry brick with load bearing walls and columns. The wall surfaces were tested using a moisture meter to gauge the level of moisture content or dampness in the walls. Some parts of the lime plaster walls had high moisture contents due to natural factors such as building proximity to the river bank and rising damp. The average moisture level in the walls at 1.2 m to 2.0 m from ground level was  $\geq 75\%$ , while the average reading for walls of 2.0 m height to the roof level was much lower at  $\leq 30\%$ . The moisture meter was also used to mark the level of rising dampness in the walls.

Ubosoth (Bothd) had defective plastering at the curved surface of the external corridors. The workers carefully hacked off the weak plaster to expose the bricks. This is important to ascertain the existing bricks are in good condition and usable. Three plastering mockups were done at site based on the reference ratio of 3: 6: 2: 1 (Coarse Sand : Fine Sand : Lime : Adhesive Material/Pozzolan). These mockups were left for a month to determine the strength of the plastering. Finally, the mockup with no cracks (ratio of 3: 6: 2: 1) was chosen for re-plastering of the wall. The curved surface profile of the wall was recorded using a piece of plywood. The workers carefully molded the new plaster according to the curved wall surface. Pictorial records were taken before, during and after the process to document the procedure.



Temporary zinc-sheet roofing was built as a shelter to protect Ubosoth (Bothd) from heavy rainfall



Dampness, broken plaster and termite infestation are some of the common building defects found at Ubosoth (Bothd)

**iii. Floor**

The existing internal floor of Ubosoth (Bothd) and the external corridor were made of cement render. During restoration, ceramics floor tiles were used as the new floor material, similar to that of the floor tiles at the Temple of Emerald Buddha in Bangkok, Thailand.

**iv. Ceiling**

The existing ceiling of Ubosoth (Bothd) was made of zinc sheets with religious Buddhist paintings. The ceiling was rusty and fragile due to roof leakage, while some ceiling panels were missing. Craftsmen from Thailand were engaged to produce the new ceiling sheets with religious Buddhist paintings.

**v. Door and Window**

Based on in-situ timber species verification by the Malaysian Timber Industry Board (MTIB), the existing door and windows of Ubosoth (Bothd) are of *chengal*

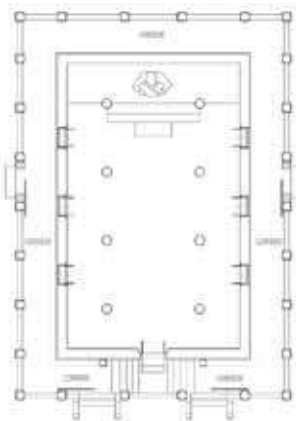
hardwood (Natural Group Strength No.1). All existing door and windows were still in good condition so no repairing works was necessary. During restoration, the old paint on the door and windows were removed manually using a scrapper. The entire building was repainted in white on both external and internal walls based on the findings of paint analyses.

**Conclusions**

The restoration of Ubosoth (Bothd), Wat Chonprachumthat Chanaram showcased another successful conservation work coordinated by the Department of National Heritage, Malaysia. The project team members including building conservator and contractor had collaborated effectively to ensure a timely project completion. During the project duration, the monk circle and the local Siamese communities had participated actively in site meetings and discussions, and voiced their concerns and interests as the project progressed. The local Siamese communities



A roof mockup using new clay glazed tiles was set up at site for technical references



The floor plan of Ubosoth (Bothd) showing a main hall surrounded with external corridors and columns



The existing rusted zinc sheet ceiling of Ubosoth (Bothd) was replaced with new zinc sheets of religious Buddhist paintings



New dragon motif at the roof edge was produced using a mold of similar profile

have expressed their gratitude and appreciation to the Minister of Information Communications and Culture, Malaysia and the Department of National Heritage for the

restoration of Ubosoth (Bothd), Wat Chonprachumthat Chanaram for future generations.



Exterior views of Ubosoth (Bothd) after restoration



Interior views of Ubosoth (Bothd) after restoration



External walls and corridor of Ubosoth (Bothd) before and after restoration



The roof structures and elements of Ubosoth (Bothd) before and after restoration



## Excavation of Bathing Tank at Ha. Utheemu

**Aishath Moosa Fikree**, *Curator*

National Museum, Department of Heritage, Ministry of Tourism, Arts and Culture

Utheemu is an island of the Northern most Atoll (Thiladhunmathi Uthuru Buri), of Maldives. It is popular for many significant historical events, especially that of the great National hero Muhammed Thakurufaanu who freed Maldives from the Portuguese. As such many historically significant sites are found on the island. In this island, there is a bathing tank (used to clean up before praying in the nearby Kandhuvalu Mosque), now completely buried by the passage of time. Elders of the island had seen it above ground in earlier times. It was the islanders request to excavate the tank for last year's National Day, *Rabeeul Awwal* (4 February 2011), as it is observed to celebrate the victory of Muhammad Thakurufaanu over the Portuguese in the year 1573 AD. It was in March 2012 that a team from Maldives National Defense Force was able to go there to dig the tank, but they stopped after few days of work. The tank was not completely excavated and a team from Department of Heritage went to the island to continue the excavation in April 2012.

The team from Department of Heritage excavated the tank until it reached the bottom of the tank. The work was carried out with the help of the staff at Boduthakurufaanu Memorial Centre (a unit of the Department of Heritage) and a few youngsters in the island. At first, a sketch drawing of the tank was made, and dimensions of the

tank were taken. After which, water from the tank was pumped out. After which 4-5 people worked inside the tank to take out the sand. Trowels and spades were used to remove the sand and they were carried out of the tank using sacks and wheelbarrows. This sand was then sieved by using 5 mm sieve and few pot shreds and two ceramic remains were discovered. A machine was used to spray water on the limestone blocks around the tank to remove the growth of moss. With the aim of investigating how the tank was constructed and designed, the tank was dug until its bottom was reached. Upon excavation to the bottom layer timber blocks were found all around the tank. A sample was taken from this to confirm the material (timber of coconut palm). The excavation took five days and a conservation report was written. The tank is rectangular with steps made using limestone blocks running down into the tank. Timber blocks were used at the bottom in the first three rows. They were locked from each corner. In some layers, limestone blocks were used on top of them. The steps are made above the limestone layers. Steps are made by using rectangular limestone blocks.

The tank is in danger and many of the limestone blocks have cracks and are about to fall out of the tank. Therefore conservation work is urgently needed to this site.



Before excavation



After excavation



During excavation : pumping out water



Timber blocks around the tank





## Some Newly Found Ancient Turkic Complexes with Stone Statue from North-Western Mongolia

**Rinchinkhorol Munkhtulga**, *Researcher*  
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The territory of Mongolia was a heartland of Inner Asian nomadic empires during the period from the 3th century BC to the 13th century AD. In the mid 6th century, the ancient Turks founded a great nomadic empire in the Eurasian Steppe. But in a short time the Turkic Empire was divided into two powerful wings and the east one dominated in a vast territory until first half of 8th century AD which spreading out from the Altai mountains to Khingan mountains and from the lake Baikal to the Great Wall of China. At the same time the ancient Turks played an important role in political, social and cultural lives of the Eurasian societies. Also they strongly influenced ethnogenesis, culture and tradition of later Inner Asian Turkic- and especially Mongol-speaking peoples.

Ancient Turkic memorial complex is an important monument for the study of the Inner Asian nomadic culture between 6th and 8th centuries AD. Monuments of this kind often consist of stone enclosures, stone statues and balbals and they spread over almost the whole territory of Mongolia. Zavkhan county situated in the north-western part of the territory of Mongolia includes some of the richest Ancient Turkic monumental sites. There is no enough systematic research on most of the Ancient Turkic monuments in the region.

In 1983, D. Tseveendorj, an archaeologist of the Mongolian Academy of Sciences discovered six complexes with stone statues from Bayankhairkhan soum of Zavkhan county. He photographed the stone statues and made the first brief description of the complexes (Tseveendorj 1983). In 1996, D. Bayar, an archaeologist of the Mongolian Academy of Sciences wrote a precise description, made drawings and took photographs of the complexes (Bayar 1996). Between the 4th and 11th of September 2011, the author undertook a survey to search the memorial complex with stone statues and examined the early-found stone statues in the territory of Bayankhairkhan soum.

We photographed the early-found stone statues and took rubbing from one of them. We found one complex with a stone statue near the place named Dood Ulaan Bulag by information of a local person. Also by field-walking survey, we found five enclosures with three statues from Taadagiin Uvur site. All of the newly-found four statues and their complexes were documented by description, photography and drawing. The stone statues were very suitable for rubbing because each statue was made from stone has 4 almost plane surfaces.

### 1. The complex of Dood Ulaan Bulag

The complex was situated on the level ground surface, to the north of a spring Dood Ulaan Bulag, about 30 km to the west from the center of Bayankhairkhan soum. Around the complex was a ground prominence like a low dike. There was a rectangular stone enclosure at the western

part of the complex. A stone statue and a row of balbals are located to the east of the enclosure (Fig. 1 and 2).

### Enclosure

The enclosure of the monument consisted of three vertical stone slabs. All of the slabs sloped to the outside. There was no slab of the west side.

The measurement of the slabs:

Slab	Length (cm)	Thickness (cm)	Height above the ground surface (cm)
North	145	4-9	26
East	163	7.5-14	34
West	136	4-8	25

There were few stones inside the enclosure (Fig. 3).

### Stone statue

According to the early Inner Asian nomadic rite, the nomads erected a stone statue at the east side of the enclosure as an imitation of a deceased person. A little statue was located 37 cm to the east from the enclosure. It sloped to the east by its top. The statue was 27.5 cm high above the ground surface and 57 cm high vertically from the ground surface to the sloping top. It was 30 cm wide in the bottom but 27 cm in the centre and 19.5 cm thick.

A human figure was very approximately represented as an engraved pictorial representation on the left surface of the stone. A head, arms, and cup (or legs?) expressed by full and half circles and eyes were depicted with two oval shapes. The nose was missing (invisible). A slanting line imitated a mouth. It is possible that a vertical line drawn down to a mouth, represented a beard. There was a line under the head which was longer than the line representing mouth. It was similar to the line of mouth in shape and it seemed to be a collar of a dress. The left and right hands were depicted with two connected half circles on the chest. It is possible that a direct line from the left shoulder to the edge of the surface represented a lapel of dress or some tools in the left hand (Fig. 4).

### Balbals

Balbals are mysterious symbolic stones that were erected in a row from the east side of enclosure or a stone statue to the sun-rising direction. The complex of Dood Ulaan Bulag had a row of six balbals directing to the east. The first balbal was located 92 cm to the east from the statue.

The measurement of distances between the balbals:

Balbals	Distance (cm)
1-2	624
2-3	330
3-4	542
4-5	444
5-6	1,681

The balbals were generally little. For example, the 6th greyish pink coloured balbal was 19 cm wide, 13 cm thick and 33 cm high above the ground surface (Fig. 5).

## 2. The complex of Taadagiin Uvur

The complex was situated in front of the mountain Taadag, 18 km to the west from the center of Bayankhairkhan soum. There were five rectangular stone enclosures joined in a sloping line directed to the north. Three of them had the stone statue. A local person informed us that several years ago there were another two statues. It means that originally there should have been five statues or each enclosure had a statue (Fig. 6).

### Enclosures

The enclosures of the complex of Taadagiin Uvur were of the same construction. Each enclosure consists of a rectangular fence enclosing an area filled by stones to make up flat platform. Each side of the fence constructed of 2 or 3 vertical stone slabs. The eastern slab of the southern side of the enclosure 1 is 73 cm long, 4.5-8 cm thick and 24 cm high above the ground surface. Some fence slabs of the complex are missing. The enclosures numbered by a sequence from the south to the north (Fig. 7).

### Stone statues

The upper part of the statue of the enclosure 1 was damaged because it was made of very thin stone. It had only a depiction of hands with fingers. The wrinkles (?) of the sleeves were visible (Fig. 8 and 9).

There was depicted a bearded man figure with a stylistic headdress on the statue of the enclosure 2. He was depicted having narrow eyes, a long nose, long moustaches on his wide face, taking a cup in his right hand and holding a dagger by a handle in the left hand. The dagger was connected with two straps to a belt. A little bag and a whetstone or a file hanged down from a belt on the right side (Fig. 10 and 11). There were depicted a figure of a young man (maybe a woman because there was no belt) who had no beard and holding a cup in his right hand on the statue of the enclosure 3. His/her wide face had narrow eyes close to each other, a very long nose and a little mouth. The body was thinner than head (Fig. 12 and 13).



Fig. 1: The complex of Dood Ulaan Bulag. A view from the east.

The measurement of the stone statues:

Enclosure No.	Width (cm)	Height above the ground surface (cm)
1	49	43
2	31	87
4	29	62

### Balbals

Enclosure No.	Number of the balbals
1	2 or 3
2	10-11
3	1 (?)
4	1-2
5	11
Total	24-28

The first balbal of the enclosure 2 was brownish yellow and its thick sides were directed towards the north-south. It was 27 cm wide, 18 cm thick and 39 cm high above the ground surface. The distance between the first balbal and the second one was 405 cm. The last balbal of the enclosure 5 was located to the north from the balbal row. The distance between the enclosure 5 and its last balbal was about 60 m (Fig. 14).

### 3. Conclusion

The Ancient Turkic memorial complexes with stone statues of north-western Mongolia have not been documented archaeologically well even today and no one can give the exact number of ancient monuments of this region. In this report I attempted to present only some data of newly-found monuments. We are convinced that the Ancient Turkic memorial complexes with stone statue of Mongolia will increase in number by future survey. The complexes have been preserved well through the historical time. But now, most of them are rapidly damaging. For example, some stone slabs of the stone fence of the complex of Taadagiin Uvur were removed for a modern sacrificial mound named owoo near the site. And also, as mentioned above, 2 of the 5 statues of the complex were looted several years ago.

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Fig. 2: The plan of the complex of Dood Ulaan Bulag. 1-stone slab; 2-stone statue; 3-balbal



Fig. 3: The enclosure of the complex of Dood Ulaan Bulag. A view from the south.



Fig. 4: The stone statue of the complex of Dood Ulaan Bulag. A view from the east.



Fig. 5: A *balbal* of the complex of Dood Ulaan Bulag. A view from the east.



Fig. 6: The complex of Taadagiin Uvur. A view from the east.



Fig. 7: An enclosure of the complex of Taadagiin Uvur. A view from the north-east.



Fig. 8: The stone statue of the enclosure 1. A view from the east.



Fig. 9: The rubbing of the statue of the enclosure 1. A view from the east.



Fig. 10: The statue of the enclosure 2. A view from the east.



Fig. 11: Taking a rubbing from the statue of the enclosure 2. A view from the east.



Fig. 12: The statue of the enclosure 4. A view from the east.



Fig. 13: The rubbing of the statue of the enclosure 4. A view from the east.



Fig. 14: The *balbal* row of the enclosure 2. A view from the west.



## The Heritage Conservation Training Program in the School

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### Background

When the Kathmandu Valley was inscribed on the World Heritage List, it was a special moment for the country. It helped to spread the news around the world about this beautiful country. The Kathmandu Valley was still virgin and less disturbed from imported civilization and the traditional society of the Valley looked very happy and innocent from advanced technological progresses. Kathmandu Valley World Heritage Property (KVWHP) was nominated as a single site consisting seven separate monument zones. It consists of three medieval Durbar Square sites of the cities, two famous temple sites, Pashupatinath and Changu Narayan and two stupa sites, Boudhanath and Swayambhunath.

The place appeared perfect for nomination, not only for the exceptional interest of heritage both relevant and widespread, but also for being almost un-contaminated. It was in coincidence with the nomination that the first building with a reinforced concrete frame started to appear. This was the medium that allowed dangerous hybridization. The choice was well balanced, from the point of view of the quality of the objects, but risky, for the extension of the total area involved and of each single zone. Moreover, the sites were different in their character, managed by different bodies with different religious requirements and involved with different ethnic realities.

Kathmandu Valley was inscribed on the list of World Heritage, in fact, to be supposedly ideal conditions, but it was possibly fated to disappear in time with the sudden introduction of modern technology and of the process of "westernization" or "modernization". The consequences were the same as in so many other developing countries: the unbearable urbanization and the passage from rural to urban economy generated a fast erosion of the built, urban and environmental heritage. World Heritage Committee had decided to inscribe the Kathmandu Valley property on the list of World Heritage in Danger on its 27th session in 2003.

Department of Archaeology (DoA), the responsible body of state party in the Government of Nepal, has been working to conserve and preserve the authenticity and integrity of KVWHP and done several activities as recommended by UNESCO. After its effort and cooperation from other stakeholders, KVWHP was removed from the list of World Heritage in Danger in July 2007. Among these activities, one of the most effective programs was raising community awareness through interactions and DoA still continues this awareness program through different activities: for example, interaction of communities with different stakeholders, awareness programs through different media, the photo exhibition in the protected monument zone, school students and teachers training on heritage conservation and management program etc.

### The Training

It is believed as a universal truth that students are the most efficient agents for developing community

awareness and they are the future of the country as well. So, the Department of Archaeology has decided to conduct heritage training programs for school student including teachers from this fiscal year 2068/69 (2011/12). However, the program annually continues, training programs were conducted only in two schools within two separate monument zones of the Kathmandu Valley World Heritage Property.

One of the schools within the protected monument zone was chosen for the training and selected students from grade 8, 9 and 10 as well as the teachers of social studies. The Dolagiri Secondary School in Changanarayan and Adarsha Kanya Niketan Secondary School in Lalitpur were chosen for the entire program in this year. One hundred and seventy students and 19 teachers (80 students and 12 teachers from Dolagiri and 90 students and 7 teachers from Adarsha Kanya) participated in the training program. The training course was student-friendly; however it was for a week and was a bit different subject for them.

In the training course, introduction to heritage in general and world heritage, importance of world heritage, tourism and world heritage, conservation and management of world heritage, integrated management plans, the framework of Kathmandu Valley World Heritage Property, national and international legislation on world heritage conservation and management, the role of the community on conservation and management of world heritage, the role of school students and teachers on conservation and management of world heritage, the role of the stakeholders and their responsibilities in Nepalese context, general introduction of disaster risks in cultural heritage and field visits were included.

The students and teachers participated actively and whole school family were very happy with this event. The training was conducted in the beginning of the academic year that was informative to the community and school environment. Most of the resource persons were from the Department of Archaeology, as they are directly involved in different projects related to World Heritage conservation and management either in the field or in the policy level, and some of them were the professors from Tribhuvan University. They shared their knowledge and experiences in heritage profession and the students realized need of heritage conservation of



The students and teachers from Shree Dolagiri Secondary School with the staff from Department of Archaeology

their surroundings.

At the end, the photo exhibition program was also held in the same protected monument zone as another tool for the community awareness. In the exhibition, most of the photographs were related to the housing construction within the Protected Monument Zone, its bylaws and some exemplary photographs of the building renovation, monument conservation, conservation and management related photographs, which were also very interesting for the community, school students and teachers and other stakeholders. The exhibition attracted hundreds of people (either students and teachers or other stakeholders and tourists) not only from Nepal, but also from the different parts of the world. To develop awareness on conservation and management of valuable monuments and heritage sites to the community was the main objective of the exhibition.

### Conclusion

The target group of the training was specially students and teachers from the schools within the protected monument zone; they are also users as well as caretakers of heritage and interlinked with community/residents of the site as an integral part of the entire site. So, it was thought that school community (students and teachers) would be the best medium to develop awareness of the community or the residents and to enhance their knowledge on the heritage site. The training program

was very much appreciated by the school as well as by the community people. They need similar and/or more advanced trainings every year and more schools should be involved as the feedback was given by the trainees. So, it was the great achievement for the Department of Archaeology regarding developing community awareness program on heritage conservation and management. The achievements can be pointed out as follows:

1. It was a good example for involving school community in developing community awareness on heritage conservation and management conducted in Kathmandu Valley World Heritage Property area and it would be a sample project for further program for Department of Archaeology.
2. It was one of the best platforms for using the trained heritage professionals as resource persons from Department of Archaeology that encouraged the professionals to be more responsible and enhance their expertise.
3. The school family (students and teachers) realized that they are also a part of the heritage and they are the key for making awareness to the community.

It was the first step, however the Department of Archaeology already introduced different programs for community awareness, but this program seemed very useful and the result of the program showed its importance in practice.



The students observing the photo exhibition



The students observing the photo exhibition



During the Training session in Shree Adarsha Kanya Niketan Secondary School, Mangal Bazar, Lalitpur



A group of trainees (school students) of Shree Adarsha Kanya Niketan Secondary School with the organizer group from DoA



During the training session, trainees (school students and teachers) from Shree Adarsha Kanya Niketan Secondary School, Mangal Bazar, Lalitpur



The local (stakeholder/resident of WH Property) observing the Photo Exhibition



## The Kaitiaki Monitoring Programme: Community Management of Coastal Cultural Heritage Sites in Murihiku

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### Introduction

The Murihiku/Southland Region lies on the southern end of the South Island of New Zealand (Figure 1). Although northern New Zealand is often regarded as where the first regular contact between Europeans/Pakeha and Maori began after the arrival of Capt. James Cook in 1769, it was actually in Murihiku that the earliest continual interaction between these cultures occurred, this being between Maori and Pakeha sealers and whalers. The coastline of the Southland/Murihiku Region contains archaeological sites dating from initial Maori occupation in ca. 1300 AD to the early contacts between Maori and Pakeha in the late 18th century through to substantial European colonisation in the 19th century.

However, the Murihiku coastline has been experiencing increased erosion over the last ten years with many heritage sites being rapidly lost. Not only are the Runanga (local Maori councils) of Murihiku concerned about loss of their Maori heritage and those Pakeha sites which are also part of their whakapapa (genealogy), other groups who have links to this heritage or who are responsible for managing this heritage on behalf of all New Zealanders are also concerned with this loss. In 2003 five organisations formed the Southland Coastal Heritage Inventory Project

(“SCHIP”). The aims of this project are to understand the loss of coastal heritage sites on the Murihiku coast and investigate, managed and protect a select number of these sites according to heritage best practice. Out of this project was developed the *Kaitiaki Monitoring Programme* where volunteers from local communities have been trained to monitor archaeological sites within in their own takiwa (area) of coastline. This report briefly describes SCHIP and then explains how the *Kaitiaki Monitoring Programme* has been developed, this programme being the first of its kind in New Zealand.

### The Southland Coastal Heritage Inventory Project (“SCHIP”)

The Southland Coastal Heritage Inventory Project (SCHIP) was founded in 2003 by the Southland Regional Council (also known as Environment Southland), the Department of Conservation, Te Ao Marama Incorporated on behalf of Kaitiaki Runanga of Murihiku, the New Zealand Historic Places Trust and the New Zealand Archaeological Association. Each of the partners have a responsibility, either as part of their statutory function or as part of their organisations objectives, to contribute to the investigation, protection and management of New Zealand’s/Aotearoa’s cultural heritage. The project was therefore established out of a concern by the project partners about the loss of Murihiku’s coastal cultural heritage sites through increased coastal erosion. The aims of the project are to understand the nature and extent of the coastal archaeological/heritage record on the Murihiku/Southland coast and, using data from field visits to sites, makes decisions on the protection and management of various sites. In 2011 the Southland District Council also joined as partners of the SCHIP project. The partners meet regularly to manage SCHIP and make decisions on project fieldwork and site management.



Figure 1. The Murihiku/Southland Region of New Zealand, Invercargill being the regional city. (Map sourced from InfoMap 266. Crown Copyright Reserved).



Figure 2. The area of coastline between Waiparau Head and Rowallan Burn surveyed for heritage sites by SCHIP during fieldwork in 2004 (Stage I) and 2006 (Stage II). This area of coastline has been experiencing increasing coastal erosion over the last 10 years which has led to significant heritage loss (Source: SCHIP 2008).



Figure 3. Locations of Maori and Pakeha heritage sites assessed, including newly discovered sites, during the SCHIP 2004 (Stage I) and 2006 (Stage II) fieldwork (Source: SCHIP 2008).

No of sites	2004	2006	Total
Number of previously recorded sites	202	115	317
Number of recorded sites eliminated from project	45	7	52
Number of sites searched for	157	118	275
Number of sites searched for and found	70	50	120
Number of sites searched for but not found	87	68	154
Number of new sites found	57	52	109
<b>Total number of sites assessed including new sites</b>	<b>127</b>	<b>95</b>	<b>228</b>

Figure 4. Results of the SCHIP 2004 and 2006 coastal fieldwork to record archaeological/ heritage sites on the Murihiku coastline. Of the 275 previously recorded sites, only 120 could be relocated, 56% of previously recorded sites were not found.

In 2004 and 2006 two stages of fieldwork were undertaken to visit all known archaeological/heritage sites along the eastern and southern Murihiku coastline and record any new sites discovered during the site visits (Figure 2). This stretch of coastline was chosen as it was easily accessible and contains the majority of coastal heritage sites. Ultimately, a report on this fieldwork was produced in April 2008 which clearly illustrated the loss of cultural heritage sites on the Murihiku coastline. Of the previously recorded 275 sites searched for during the fieldwork, only 44% (120 sites) were able to be found (Figures 3 & 4). However, the fieldwork also recorded 109 new archaeological sites with almost a third of these sites being of Pakeha/European origin and the remainder being of Maori origin.

Pre-Pakeha Maori in Murihiku typically occupied the coastal environment with its sand dunes and beach terraces, and so it is in this sandy matrix that many of the occupation sites are found. The reason that the majority of Maori archaeological sites are coastal in Murihiku is because subsistence greatly depended on hunting and gathering from coastal resources, such as fish, shellfish, sea birds and seals, as the environment was too cold for horticulture. Later Pakeha settlers settled on the coast and inland, but the coast was crucial for the exploitation of resources such as seals, whales, timber and flax, for example. The soft matrix in which the coastal Maori and Pakeha archaeological sites lie is particularly sensitive to sea erosion and any increase in sea height and wave action can bring about the rapid loss. They are also sensitive to various types of land use such as farming.

The 2008 fieldwork report showed that erosion from the ocean was the main threat causing the loss of archaeological sites with the combination of wind and ocean causing the most rapid loss. The next major threat to sites was from live stock (particularly cattle) impacting

on sites through animal activity. In addition, it was also found sites from all periods of Maori and Pakeha history are being lost, with the significant early sites containing evidence of the first settlers on coastal Murihiku being the first to disappear due to their original close proximity to the sea.

The 2008 fieldwork report made a number of recommendations on how the known archaeological sites could be managed. These recommendations ranged from the further investigation of sites, such as by coring and test pitting to determine the surviving extent of sites, radiocarbon dating a variety of sites to understand the age of sites being lost, salvage excavations, and protection of sites through various New Zealand legislation eg. Historic Places Act (1993) Heritage Covenants. Since 2008, the SCHIP partners have funded and achieved many of the recommendations greatly expanding on our knowledge about the Murihiku coastal heritage resource, retrieving culturally significant data from a number of sites and recovering important tangible evidence from sites which would have been lost to the sea (Figures 5 to 12). In 2012, the SCHIP partners produced an Action Plan & Strategic Overview document to guide the project over the next five years.

One of the most important recommendations from the 2008 SCHIP fieldwork report and 2012 Action Plan & Strategic Overview document was that ongoing monitoring of archaeological sites on the Southland/Murihiku coast was required to be able to understand what is happening to this heritage in the long term. This monitoring could be undertaken by local people who could be equipped and



Figure 5. The Tokonui 15th/16th century archaeological site (F47/53). Very little remains of this Maori archaeological site which has now almost been totally lost through coastal erosion. The midden is thick with marine shell, fish bone, hangi stones and also contains whale and moa bone. Adzes (toki) were also found as well as koiwi. The SCHIP partners funded a salvage excavation of this site in 2011 to recover as much data as possible about the past occupation and taonga (Maori artefacts) which were being lost to the sea (Source: SCHIP partners 2011. Archaeologist Jakob Oskam-Schmidt pictured).



Figure 6. Context view (top) and close view (bottom) of what remained of the Tokonui archaeological site in 2011. The effects of coastal erosion can be clearly seen as only a ca. 3m width of the site remains. The site would have originally extended for many meters to the right of the photographs.

trained by heritage professionals to monitor archaeological sites.

As the majority of sites were of Maori origin, there was therefore the opportunity for SCHIP to involve local Maori to participate in the ongoing monitoring of coastal archaeological sites within their own takiwa. As many local Maori also had past links with the Pakeha sites they could also monitor Pakeha sites alongside Pakeha monitors. The monitoring programme would therefore be a combination of both Maori and Pakeha volunteers working together to understand the changes to their heritage in their own area and act as kaitiaki (“guardians”) of these sites.

### The Kaitiaki (“Guardian”) Monitoring Programme

In 2012, Dean Whaanga from Te Ao Marama Incorporated on behalf of Kaitiaki Runanga of Murihiku and the author wrote and published the *Kaitiaki Monitor Training Guide: Murihiku - A training guide for the monitoring of archaeological sites* and the *Kaitiaki Monitor Field Book: Murihiku - a field book for the monitoring of archaeological sites* on behalf of the SCHIP partners. The training guide and field book were developed particularly for the Murihiku region and with Murihiku Runanga cultural protocols in mind. The training guide requires



Figure 7. A small hangi (oven) being excavated at Tokonui (Source: SCHIP partners 2011).



Figure 8. Two argillite toki (adzes) as found (top) and photographed in the laboratory recovered from the Tokonui site (F47/53).

that the Kaitiaki Monitor training be undertaken at a local Marae (Maori meeting/discussion place) near where the sites to be monitored are located so various sites can be visited as part of the training process.

The training guide is divided into four sections, these being:

- Section 1: Takiwā, Method and Archaeology.
- Section 2: Kaitiaki Monitor Field Equipment and Recording Archaeological Sites.
- Section 3: Tikanga and Karakia.
- Section 4: Land Access, the Law Protecting Our Heritage and Koiwi.

The first section of the guide explains the areas (“takiwa”) of coastline which are to be monitored (Figure 13), the method of how the monitoring process is to be undertaken (Figure 14) and how to recognise archaeological sites (Figures 15 to 24). The second section describes the field equipment provided to the Kaitiaki Monitors by the SCHIP partners (such as a field backpack, GPS digital camera, first aid kit, measuring scale, stationary and *Kaitiaki Monitor Field Book*) and how to record the archaeological sites using a camera and the field book. Section 3 describes the Tikanga (“custom” or “lore”) of Murihiku. Three Karakia (Maori prayers) are also provided, one to open archaeological work, one to close archaeological work, and one to be used during the recovery of koiwi (burials). In Section 4 the law on accessing land, the protection of archaeological sites and artefacts is explained as well as guidance on what to do when a fossicker, for example, is encountered and what to do when taonga or koiwi are found on the coastline.



Figure 9. Oyster shell pendant found at Tokonui (F47/53).



Figure 10. Fragments of bone from Tokonui, some worked: moa at top and centre right, whale at centre left and bottom.



The guide also provides Appendices showing the locations of all known sites on the Murihiku coastline, examples of Maori taonga which have been found during SCHIP fieldwork and which may be encountered by the monitors (Figures 25 to 37), how to identify toki or adzes, one of the more common artefacts found at Maori sites (Figure 38), and how to recognise bones from both Maori and Pakeha sites (Figure 39). It can be seen from the examples of taonga shown in figures 20 and 25 to 37 that a very large amount of Maori and Pakeha material culture is being lost every year on the Murihiku coastline and so too is part of the story of Maori and Pakeha settlement.

A key emphasis of the training guide is that the monitoring of cultural heritage sites in each monitors' takiwa is voluntary, should be enjoyable and how often sites are visited is at the discretion of the kaitiaki monitor. The guide is a visual document so children can also be part of the monitoring process and hence this knowledge of heritage can be passed on through the generations.

On the 20th and 21 of July 2012, the *Kaitiaki Monitoring Programme* was launched at Te Rau Aroha Marae in Bluff (Figure 1). This event saw ten monitors trained in the recognition and recording of heritage sites and in the recovery of taonga (artefacts) at risk of loss to the ocean or from theft (Figure 40). The training included site visits to local archaeological sites and instruction on use of the field equipment. The successful launch attracted local and national media coverage with Runanga from other parts of New Zealand requesting copies of the training guide soon



Figure 11. Dean Whaanga of Te Ao Marama Incorporated on behalf of Kaitiaki Runanga of Murihiku recovering a large Maori toki (adze) made from Southland argillite found lying on the beach at Tokonui. This adze may have originated from a site no longer present and lost through coastal erosion.



Figure 12. Close view of the toki in Figure 11.



Figure 13. Example of a Takiwa (area) where one of the Kaitiaki Monitors will monitor archaeological sites. A red dot = site not found, blue dot = site found, green dot = new site.

after the launch.

## Conclusions

The ongoing loss of cultural heritage sites along the Southland/Murihiku coastline through coastal erosion and damage to sites by particular land uses presents challenges to those concerned about the loss of the tangible evidence of New Zealand's culture. However, the Southland Coastal Heritage Inventory Project (SCHIP) and the *Kaitiaki Monitoring Programme* have provided the opportunity for a pro-active community based approach to the protection, management and recording of archaeological sites and the recovery of artefacts (*taonga*) that would otherwise be lost to the sea. This community monitoring initiative is the first of its kind in New Zealand. Over the next five years the *Kaitiaki Monitoring Programme* will provide crucial information on heritage loss along coastal Murihiku which would otherwise not have been able to be achieved previously.

## Acknowledgements

This report would not have been possible without the support of the Kaitiaki Runanga of Murihiku and the *Kaitiaki Monitoring Programme* volunteers who have provided access to their valuable cultural heritage. *Tēnā koutou*. Essential to this report has also been the SCHIP partners. I would like to thank Hazel Heal and Vivienne Timlin of the New Zealand Historic Places Trust for their help in the preparation of the backpacks for the training programme.

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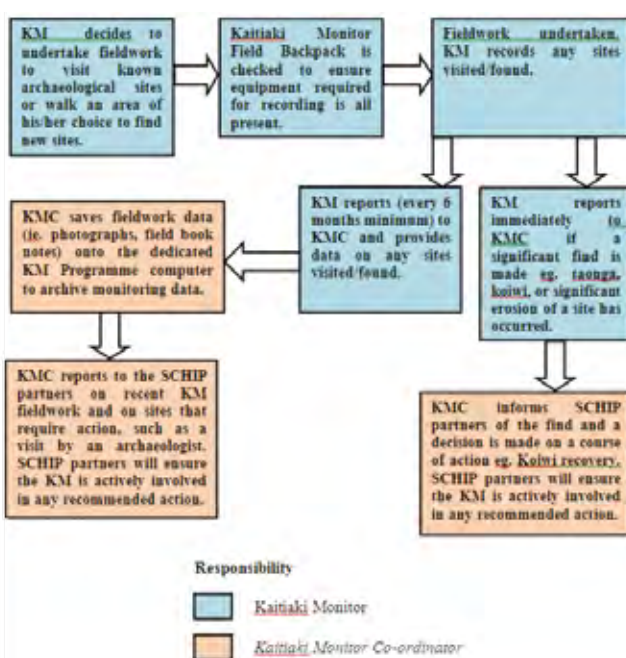


Figure 14. Flow diagram showing the method used for the Kaitiaki Monitoring Programme. Note that the Kaitiaki Monitor can undertake fieldwork at any time they wish but must report at least every six months to the Kaitiaki Monitor Co-ordinator.



Figure 15. Dummy's Beach/Kahukura eroding midden (G47/128) (Photo: SCHIP).



Figure 16. Midden site exposed high up on a cliff above a beach (Photo: Matthew Schmidt).



Figure 17. Colyer's Island adze flaking sites (Photo: SCHIP).



Figure 18. Various midden sites from coastal Southland/Murihiku. Note the top photograph has Pakeha (19th century fence posts) and Maori archaeological evidence (midden) (Photos: SCHIP).



Figure 19. Hangi stones and midden from the remains of an oven exposed by a deflated dune (Photo: SCHIP).



Figure 20. Pakeha/European artefacts from a 19th century occupation site (Photo: SCHIP).



Figure 21. Wooden boat wreck from a European/Pakeha vessel (Photo: SCHIP).



Figure 22. Remains of a Maori Waka (canoe) being recovered by local Runanga/Runaka and the Southland Museum (Photos: Southland Museum). The lashing holes used to join the timbers during building of the waka can be seen in the bottom photograph.



Figure 23. A 19th century Pakeha/European stone tramway formation on a beach flat used for transporting timber along the coast (Photo: SCHIP).

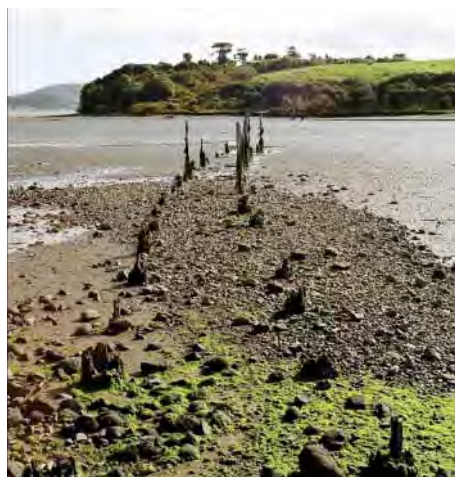


Figure 24. Jetty piles (Photo: SCHIP).

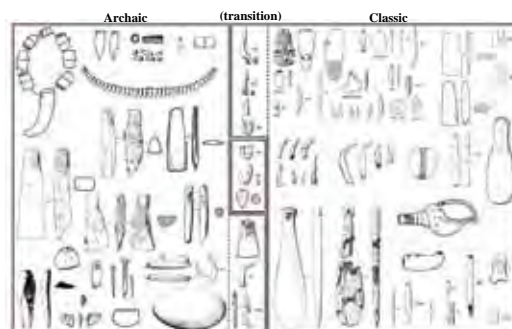


Figure 25. Examples of Maori artefacts from Archaic (Early ca. 1300-1500AD) and Classic (Late ca. 1500AD-late 1800s) Period sites which can be found along the Southland/Murihiku coastline (Figure from Davidson 1984).



Figure 26. Distal end of an argillite chisel/toki. Duff Type 6A. (Photo: Matthew Schmidt).



Figure 27. Lithic material: a - schist stone file, b - polished stone fragment, c - adze fragment, d - chert flake, e - adze fragment reworked, f - chert flake tool, g - chert flake (Photo: SCHIP).



Figure 28. Lithic material: a-b,e - quartzite?, c- porcellanite, d - unknown, f - clear quartz, g - silcrete, h- polished adze fragment - nephrite/pounamu? (Photo: SCHIP).



Figure 29. Hammer stone used for making toki/adzes (Photo: Southern Pacific Archaeological Research).



Figure 30. Selection of moa bone and dog bone fish-hooks. Such fish hooks can be found exposed on beaches from an eroding site (Photo: SCHIP).



Figure 31. Moa egg shell (Photo: SCHIP).



Figure 32. Moa bone barracuda lure hook point and one piece moa bone fish hook (Photo: SCHIP).



Figure 33. An example of a small piece of fragmentary bone (possibly an awl) (Photo: SCHIP).



Figure 34. Ivory chevron amulet (Photo: SCHIP).



Figure 35. Worked whale bone (Photo: SCHIP).



Figure 36. Bone paua whakatiriwhana or lever (Photo: Southern Pacific Archaeological Research).



Figure 37. Shell pendant (Photo: Southern Pacific Archaeological Research).

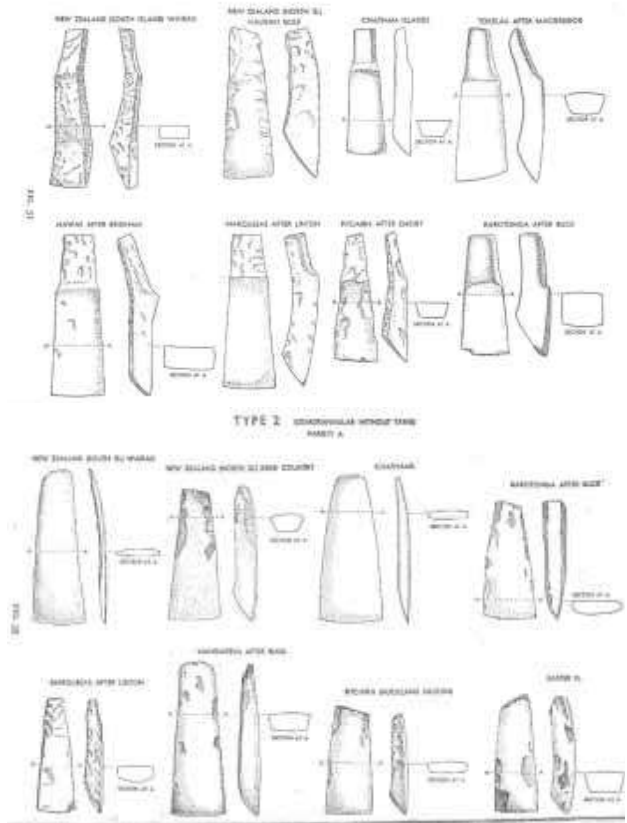


Figure 38. Duff (1977) Adze types 1A (top, centre) and 2A (bottom). These are the most common adze types in museum collections in Murihiku/Southland and so are probably the most common type found on coastal sites (see Jennings 2009:67).

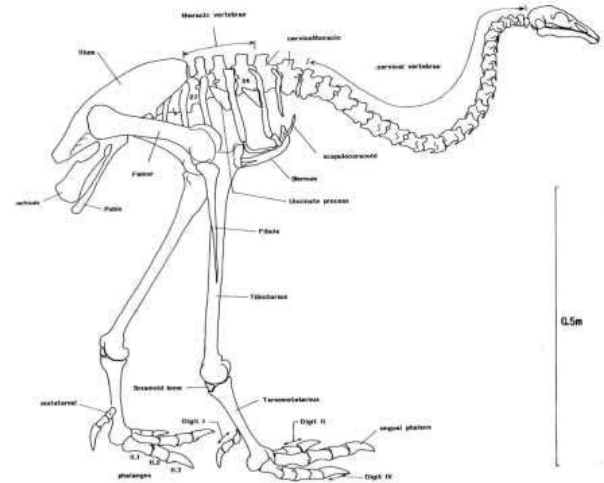


Figure 39. Skeleton of a Moa. This flightless giant was unique to New Zealand and quickly became extinct sometime between 1300 AD and 1500 AD (Figure from Worthy and Holdaway 2002). Bones of moa can be found in early Maori sites on coastal Murihiku.

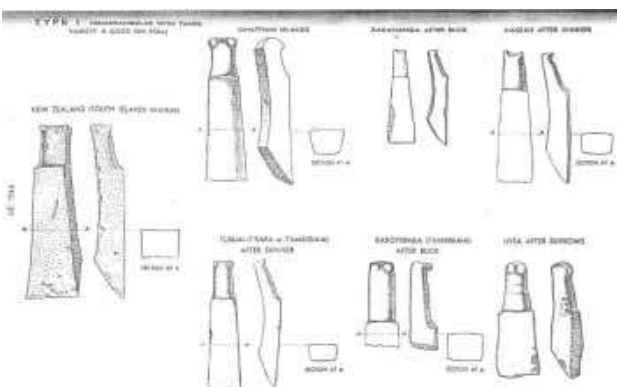


Figure 40. The Kaitiaki Monitors during a site visit on 21 July 2012.



## Conservation of Lahore Fort, A World Heritage Monument

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### Historical Background

Lahore Fort was built as early as the city itself and the first authentic reference to Lahore Fort was made by Al-Biruni in the 1021 A.D. The fort was ruined by the Mongols in 1241 A.D., but it was re-built by Sultan Balban in 1267 A.D. It was again destroyed and plundered by Amir Timur's Army in 1398 A.D. and again built by Sultan Mubark Shah in 1421 A.D. Mughal Emperor Jalaludin-Akbar demolished the earlier mud structures and built it in burnt brick masonry some time before 1566 A.D. and the same is thus referred to by Abul Fazal in Ain-e-Akbari:-

*"Lahore is a large city in Bari Doab. In size and population it has few rivals in old books it is called Loawar. It lies in longitude 109o 22', and latitude 31o 50'. In this everlasting reign the Fort and palace have been built of burnt bricks. As it was for some time the seat of Government, lofty edifices were erected and delightful gardens added to its beauty".*

### Architecture

The present configuration of Lahore Fort can justifiably be attributed to the master of fortification planning, Jalal-uddin Muhammad Akbar. From its planning and its extensive use as a royal residence, it is clear that the site was envisaged as a fortified palace rather than a defensive fort. All the three Mughal emperors, Akbar, Jahangir and Shah Jahan, concentrated on building exquisite palace structures after the first fortification walls had been constructed to secure the perimeter of the citadel. Later on Akbar's successors, Jahangir and Shah Jahan and Aurangzeb added several precious architectural buildings to the fort. The Lahore Fort contains 21 different monuments of architectural and historical significance. Mainly the Fort can be described by six Quadrangles; the brief description is as under.

#### 1. Diwan-e-Aam Quadrangle

The configuration of the area dates to Akbar's residence at Lahore for fourteen years, when the city became the capital of the Mughal Empire (1584-1598). The existing layout of trees and vegetation was carried out during the British and post-Independence periods. The quadrangle itself is maintained as grassy lawns with flowers and shrubbery. Originally it was bordered by a large number of cells; however, foundations alone of those dalans are now extant.

#### 2. Moti Masjid Quadrangle

The courtyard itself represents various periods of the Mughal rule. The palaces built by Jahangir, mentioned in his memoirs were probably located in this area. Dalan-e-Sang-e-Surkh implied buildings were built in red sandstone, the foundations of which are extant, which may have belonged to the periods of Akbar or Shah Jahan, rather than Jahangir. The Moti Masjid Quad has been so named in view of the location of Moti Masjid in

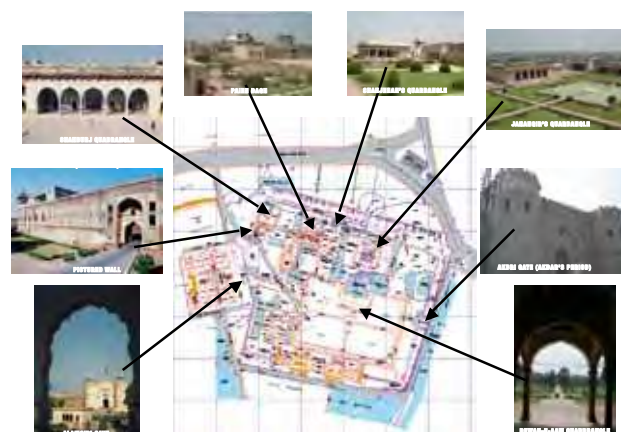
the southwest. It is bordered by cloisters on the west, Dalan-e-Sang-e-Surkh on the east with Mai Jindan Haveli beyond, and southern aspect of the so-called Khwabgah-e-Shah Jahani on the north. Presently it houses an ill-placed cafeteria built around an enormous historic tree.

#### 3. Jahangir's Quadrangle

Jahangir's Quadrangle is among the first quadrangles laid out during Akbar's stay in Lahore and as such carries enormous significance. However, during the Sikh and particularly British periods it underwent large scale interventions. The damage was caused not only due to the construction of many structures within the quadrangle and abutting various chambers palaces particularly the eastern and western dalans, when the buildings were converted into barracks. During 1980s, the Department completely restored the Mughal setting. There are however, still some of simple fresco decorations which appear to be original and need to be protected.

#### 4. Shah Jahan Quadrangle

This quadrangle incorporates two buildings dated to Shah Jahan's period, the Diwan-e-Khass and Khwabgah-e-Shah Jahani. This quadrangle was probably Shah Jahan's favourite abode and as such must have been profusely ornamented. This is a more intimate chahar bagh of size 150'x150', compared to Jahangir's Quadrangle. It is bordered by the elegant Diwan-e-Khass on the north, Khwabgah-e-Shah Jahani on the south, the rear dalans of Jahangir Quad's Mashriqui Iwans line the eastern periphery, while the attached accommodation of the Lal Burj border the western aspect. The quadrangle is laid



out in the form of a chahar bagh or paradisaal garden, including the central tank and mahtabi (central platform). Directly below Diwan-e-Khass is the Arz Gah, also dated to the Mughal period.

##### 5. Paien Bagh Quadrangle

The Paien Bagh is conjectured to have been a garden for the use of the imperial female entourage; however, so far no historical accounts have been found to support this assumption. There is also no record of the buildings that stood there and how they came to be lost. Paien Bagh Quad at present incorporates the Khilwat Khana area, although in fact they were probably two distinct areas. The northern aspect has a small pavilion, the Khilat or Khilwat Khana, while the west and east peripheries are bounded by the Kala Burj and Lal Burj respectively. The remains of foundations in the Paen Bagh area point towards a large number of chambers with enclosed gardens or spaces. The so called 'Imperial Zenana Mosque' or Royal Ladies Mosque is accessed from the Paen Bagh.

##### 6. Shah Burj Quadrangle

Northern west corner of the Lahore Fort contains one of the unique and the most profusely decorated mirror palace called as Shish Mahal. It was built by the emperor Shah Jahan in 1631-32 and it was formed the haram portion of the Fort. The palace consists of loughly halls in front and several rooms behind and either sides. There is specious courtyard in front of chamber, and its floor is paved with variegated marble stone slabs such as sang-e-badal, sang-e-musa and sang-e-khattu etc. In the center of the courtyard there is a shallow water bastion in the circular shape. Four fountains and water channels are the main features.

##### Lahore Fort (During Sikh Occupation)

After the decline of Mughal's authority in Punjab in later half of the 18th century the Sikhs occupied the Fort. The Sikh utilized the Fort, at one stage decorating it with beautiful frescoes, at other stages, they built new structures with architectural elements borrowed or copied from Mughal monuments, while damage was caused when it became the scene of Inter-Sikh wars. Various structures were added by the Sikhs: the northern fortification wall, kharak Singh Haveli, Hammam of Sher singh in shish Mahal, Aath dara, Haveli on Shish Mahal, so-called Naag Temple, and some other structures inside the Fort, which affected the original planning of the Mughal era

##### Lahore Fort (During British Rule)

After the conquest of the Punjab by the British forces in 1849 A.D., the Fort came under the British Military



occupation. The British also made a lot of additions and alterations in the original layout. They demolished the southern fortification wall and brick stairs were replaced for political reasons. Postern Gate and the road leading to the fort, Barood Khana, a curator residence, garages outside Shish Mahal, and residential quarters of staff etc. The establishment of British cantonment in 1849, inflicted severe damage to the original palace buildings, when these were converted into barracks etc. and many barrack structures were built in the quadrangles, thus destroying the quality of Chahar Baghs. The British period was destructive due to the establishment of a British cantonment and due to baser uses of elegant palace buildings.

It was in 1905 after the visit of Viceroy Curzon that action was taken to dismantle the cantonment structures after British army units began to vacate them. A concerted effort to restore Mughal imperial structures dates from that period. Although several makeshift British structures were removed, some survived until after 1947. Most of them were pulled down after Independence leaving only a few intact.

#### **Protection of the Fort**

Lahore Fort was protected under the Ancient Monuments Preservation Act 1904 vide Notification numbers of its protection are 2524 dated: 27-01-1920 & 11078 dated: 09-04-1920. The Lahore Fort was handed over to Department of Archaeology in 1924 for proper conservation and maintenance. Since Fort has been taken over by the Department, all the immediate measures for the systematic removal of shabby additions were taken to revive the original glory and layout of the buildings and gardens of the Fort.

#### **World Heritage Inscription**

Lahore Fort was inscribed on the World Heritage List, jointly with Shalamar Gardens, in 1981. Both sites were inscribed on the basis of Criteria (i) (ii) and (iii), specifically, that “they represent a masterpiece of human creative genius, exhibit an important interchange of human values over a span of time or within a cultural area of the world, or developments in architecture or technology, monumental arts, town planning or landscape design, and because they bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or has disappeared.”

#### **Factors Contributing to Deteriorations of Lahore Fort**

##### **1. General Causes of Decay**

###### **i. Climatic causes:**

- a. Ground water
- b. Rain, particularly monsoon rains
- c. Temperature variations.

###### **ii. Biological Causes:**

- a. Birds
- b. Bats
- c. Insects: particularly wood beetles and white ants (termites).

###### **iii. Botanical Causes:**

- a. Vegetation growth (Trees/Plants)
- b. Fungi
- c. Moulds and lichen

- d. Algae and moss

###### **iv. Natural Disasters:**

- a. Floods and fires
- b. Earth quakes
- c. Wind storms

###### **v. Human Causes:**

- a. Lack of preventive conservation
- b. Wear and tear
- c. Human vandalism
- d. Environmental pollution
- e. Unorganized tourism
- f. Wars

###### **vi. Internal Causes:**

Humidity and contaminated air (including CO<sub>2</sub>, soot, dust and H<sub>2</sub>S) by vehicles

#### **2. Critical Causes of Decay of Lahore Fort:**

In the light detail analysis based on physical survey, it was revealed that various buildings within Fort are deteriorated or damaged due to general causes, but the most serious / critical due to:

##### **i. The Action of Water**

Apart from the action of rainwater and moist wind, the presence of water in any form accelerates the decay of most buildings. The effect of capillary absorption may extend several feet above level damp soil. As an example the damage to Pictured Wall is extensive apart from other structures. The rainwater is more destructive exceptionally heavy downpour in monsoon season. Original storm water disposal system is either chocked or inefficient causing water penetration in the structure resulting deterioration of structures. Some of the later period addition has also disturbed the drainage system of Mughal period.

##### **ii. Effects of Temperature Variations**

In Lahore the temperature varies from 0°C in winter and up to 47°C in summer. As all the building materials expand in when heated and contract when cooled, this thermal expansion and contraction cause thermal movements in the structures, causing stresses in various components of the buildings. These thermal movements are serious cause of deterioration in the structures of Lahore Fort.

##### **iii. Insect Attacks**

All organic materials are vulnerable to insect attacks and causes a tremendous amount of damage by weakening the wooden structures, and special mention here is to be made to termites or white ants because the harm they do is not externally visible until too late to be repaired. In country like Pakistan where all sorts of climate can be found all the year round, a wide range of wood eating boring insects are found. The monsoon is the best season for termite to flourish and attack the various portions of Lahore Fort.

#### **Conservation and Site Management**

The Department of Archaeology, Government of the Punjab has been doing its level best for maintaining and managing the World Heritage Sites particularly the Lahore Fort, within available resources.

UNESCO, Islamabad took a positive step in 2005 and a Management plan for the Conservation of Lahore Fort was developed, after carrying out the detail studies



and documentation of all the structures inside Lahore fort including the surrounding environment. The main objective of the management plan is defined as follows: to organize and monitor the tasks in a manner that they achieve the objectives. For the preparation of UNESCO Lahore Fort Master Plan 2005-2011, it incorporates a management framework for the site, and carries extensive baseline data including graphic and photographic documentation, condition surveys and dossiers of references and excerpts from various reports (from 1,881 onwards). The various quadrangles have been numbered and each building carries a hierarchy of number system related to the spaces. Recently, the Government of the Punjab has very generously approved a conservation project for its conservation and development amounting to Rs. 300 million. The conservation works at various monuments inside the fort is in progress and will be completed up to 2015.



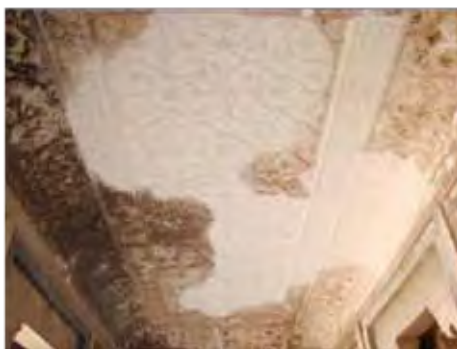
Restoration of glaze lime plaster fresco paintings



Restoration of fresco paintings



Before conservation



Restoration of stucco tracery work



During conservation



After conservation



## The Old Church of San Juan, Barangay Pinagbayanan, San Juan, Batangas, Philippines

Grace Barretto-Tesoro, Associate Professor

Archaeological Studies Program, University of the Philippines

The excavation of the Old Church of San Juan located in Barangay Pinagbayanan, San Juan, Batangas, Philippines is part of a research project that aims to investigate the developmental history of the town of San Juan from its establishment in the mid-1800s until its transfer to its current location in Calit-calit in the 1890s. Archaeological work commenced in 2008 with surveys conducted along the coast of San Juan and neighbouring towns in Batangas. The old church was first recorded as an archaeological site in 2008 (Barretto-Tesoro *et al.* 2009a). From 2009 to 2011, two stone houses dating from the late 1800s to the early 1900s were excavated by members of the University of the Philippines-Archaeological Studies Program. The locations of these stone houses in relation to the old church suggest that they were residences of local elites (Barretto-Tesoro *et al.* 2009b; UP-ASP 2010, 2011). Below are the results of the excavation of the Old Church of San Juan conducted from 20 April to 27 May 2012.

### Background

The town now known as San Juan was once part of the neighbouring town of Rosario. In 1848, it officially separated from Rosario and became an independent municipality. The original seat of the government of San Juan was located along the coast now known as Barangay Pinagbayanan. Due to seasonal flooding and a great flood in 1883, the parish priest requested that the town be transferred. This request was granted by the Governor-General years after. Eventually in 1890, the seat of government and the church were transferred seven kilometres inland to Calit-calit. To date, several stone ruins have been documented in Barangay Pinagbayanan which includes ruins in a church complex, remains of residential units, and what is believed to be the old municipal hall.

### The church complex

In 2008 the ruins of two structures were recorded in the church complex; the larger structure found in the northern part of the site, which will be referred to as the main structure, and a smaller structure in the south now known as *tarangkaban* from the root word *tarangka* meaning 'lock' but contextually means gate. The *Tarangkaban* has holes which appear to function as locks for an opening or entryway. In subsequent visits to the site in 2010, at least two more stone features, which could be remains of previous structures separate from the main structure, were noted.

Prior to the 2012 excavation, the site was cleared of most vegetation except for the two large trees found within the confines of the main structure (Figure 1). The presence of the antipolo (*Artocarpus blancoi* Merr.) and dita (*Alstonia scholaris*) trees, including the cemented section of the ruins which served as a stage for social activities in the community, helped us select the locations of the trenches. A total of eleven trenches were opened in the

site – nine in the main ruins and two trenches for other stone features found in the vicinity. Beforehand the team conducted a foot survey of the area and marked other stone features with wooden pegs.

The main structure has a north-south orientation and measures 26.5 m × 15.6 m. The ruins include twelve upright pillars, the south wall and parts of the east wall. There are remains of walls connecting some of the interior pillars found in the southeast section of the main structure. Pillars on the west show characteristic evidence of arches. A buttress continues supporting the northwest pillar (Figure 2) and the other exterior pillars located in the west side of the main structure also exhibit evidence that buttresses were once attached to them but were no longer visible.

The walls and pillars are made of tuff blocks with lime mortar as binding agent. The foundations uncovered in some trenches were also of tuff blocks and lime mortar. The aggregates used for walls were rocks of varying types such as tuff blocks, river stones, corals, fragments of limestone and even lime mortar fragments.



Figure 1. East side of the main ruins in the old church complex of San Juan, Batangas showing the two large trees in the interior (Photo by G. Barretto-Tesoro)



Figure 2. Remaining buttress attached to the northwest pillar (Photo by A. Tesoro)

Analysis of the sediment deposits in the trenches revealed several episodes of flooding. These deposits are clayey sand or clayey silt found covering lime mortar floors. These lime mortar floors have impressions suggesting tuff blocks were once laid on them. Some walls that connect pillars were found resting on flood deposits which suggests that modifications to the structure were done to mitigate if not overcome the effects of flood inside the structure.

There were few artefacts found during the excavation of the main structure compared to the large number of artefacts found in the stone houses previously excavated in 2009 to 2011. The artefacts found in the main structure include small fragments of porcelain, stoneware vessels, and earthenware pots. There were also glass shards and a couple of animal bones. The current interpretation for the dearth of artefacts was that the main structure was not really used because the place was abandoned before the construction was completed. It is most likely that the artefacts were flood-borne deposits.

The hypothesis for the construction not being completed is based on the stone pillars found north of the main structure. These stone pillars were aligned with the pillars of the main structure and have the same construction materials but appear to be unfinished. Their proximity to the main structure indicates that they could have been part of the main building. A trench opened where the outside pillars were located reveals the absence of rubble which was present in the trenches in the main structure. The absence of rubble in the outside trench suggests the absence of walls indicating that the construction was not completed. In addition, not a single square nail was found in the church complex site whereas there were square nails recovered from the stone houses excavated from 2009 to 2011 - 743 square nails from Structure A and 147 square nails from Structure B. The standing interpretation is that the church roof was not even constructed and that would explain why we did not find any square nails. The square nails were used to nail down galvanised iron roofing commonly used around that time. Nor did we recover roof tiles that would suggest that they were used for roofing.



Figure 3. The L-shaped flooring found west of the main ruins in the old church complex of San Juan, Batangas (Photo by A. Tesoro)

Other structures in the old church complex include an L-shaped flooring measuring 15 m × 15 m and made from tuff blocks (Figure 3) and a circular stone feature initially thought of as a base of a bell tower. After excavation, the circular stone feature turned out to be a lime kiln (Figure 4) which produced the lime used for mortar in the construction of the structures in the church complex.

San Juan observed its centennial in the 1990s celebrating the transfer of the church and seat of the government. A National Historical Institute (now National Historical Commission of the Philippines) marker was installed to signify the historical importance of the church ruins. Through archaeological excavations carried out so far the local residents have learned of the presence of other structures such as the lime kiln and the L-shaped flooring. This new knowledge further enhanced pride in their history and encouraged them to protect and preserve the ruins.

#### Acknowledgements:

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Figure 4. The lime kiln excavated in the old church complex of San Juan, Batangas (Photo by A. Tesoro)



## Preservation of the Courthouse, and Demolition of the First Parliament House of Samoa

**Mainifo Viliamu**, Senior Museum Officer  
Ministry of Education, Sports and Culture

### Introduction

The German annexation of Samoa was from 1900 to 1914. The Governor by that time was Wilhelm Solf and the courthouse was built in 1906 as a central office for the German colonial government. The architect was Albert Schaaffhausen, the government architect for the German administration. The architecture style was a mixture of Historicism (a copy of old European style) and Art Deco, which was in fashion in Europe at that time. The building was used originally as court house and administration building, also for the British/New Zealand administration. The British/New Zealand occupation force took over Samoa from the Germans in 1914.

In 1914 under New Zealand administration, the Union Jack flag was raised in a special ceremony in front of the building. The leader of Mau Independence Movement, Tupua Tamasese Lealofi II was shot at its doorsteps on "Black Saturday" in 1929. After independence in 1962 the place was used as the main office of the Government of the Independent State of Western Samoa. Until 1993, the museum used to occupy the very place where was the seat of the Samoan Prime Minister's Office and Cabinet.

The Justice and the Supreme Court was housed in the courthouse for many years before moving to their multi-million tala modern house at Mulinu'u. Now the



The original courthouse



The courthouse as it exists today

courthouse is vacant with the plan of the government to restore and preserve this historical site for future generations.

A historically-viable project for preservation or simply an old run-down building in a prime position was about to be tendered out. With time fast running out, this was the question being put to our citizens. Some of whom wished to restore the once beautiful landmark, the old courthouse for future generations.

Situated on the beach road of Apia, the courthouse was built in 1906 under the German administration and was also in use when New Zealand governed Samoa. It housed the first Government of Samoa after independence in 1962 until 2010; the Court of Samoa dispensed justice from it. It is also on the corner of the road where on December 28 in 1929, the Zealand military police fired to a peaceful procession of Mau protesters, turning the day into violence and the event to become known as Black Saturday. In short the area is deeply steeped in history of Samoa. For these reasons former politician, Hans Joachim Keil and German Consul, Arne Schreiber have organized a series of meetings to work with a committed group of like-minded citizens.

"I want to do this for the community," says Mr Keil. "I don't want to look back in years to come and wish that I had done my best to help preserve and restore this fine piece of architecture. There is too much wishful thinking around. Even if we fail, at least I will have tried." Mr. Schreiber is equally passionate about the project. "You can't have a future without a history" he says. "You need to be able to see your history."

### Demolition of the first old Parliament House of Samoa

Old Parliament house was constructed in the year 1916 by a Samoan builder (*tufuga*) Solofuti Fili from Satupaitea Savaii. At first it was a traditional Samoan house with thatched roof and woven blinds and the floor was covered with stone pebbles. It was there our former leaders had meetings and discussed matters for the betterment of Samoa. It was built in the unique Samoan traditional architecture with local resources not relying on funding agencies or Western Union. The Samoan have lived self-sufficiently for thousands years, and they still have amazing skills and knowledge to use our own resources around us. The central pillars (*poutu*) of the Maota Fono were presented as gifts by then joints head of states Malietoa Taumafili II, Tamasese Meaole and the first Prime Minister of Samoa, Mataafa Faumuina Muliuu II.

The Samoa's flag was raised in front of it for the first time on January 1962 by the first Prime Minister, Fiame Mata'afa Mulinu'u II. It is one of few remaining reminders of Samoa's struggle for independence. It has hosted many debates and discussions on plans towards independence

which resulted in drafting of the constitution. Later in 1972, the current modern Parliament building was open. The old building was later used by the original ombudsmen as its office. Prior to the opening of the new courthouse, the *fale* was used by the Land and Titles Court.

The *malae o Tiafau* at Mulinu'u was a place of sorrow and anger as the elderly, youngers, former and current political figures, mourned the *fale fono* there as it was about to be torn down. Many congregated there to say their last goodbyes to the old *fale fono* because the government decided to tear it down. They reminisced about the past as in their memories they recalled the roles their forefathers played in the struggle for independence while others were visibly angry and in tears.

Most felt betrayed by the government for not heeding their cry to keep the birthplace of independent Samoa from being destroyed. Some could only look on and sing hymns and songs as they paid tribute to their country's freedom cemented in that house. Others used the opportunity to take their last photos of the building. Former member of Parliament and Cabinet Minister Letagaloa Pita, was furious about the decision to demolish the house. He compared its tearing down to the removal of the rights of all Samoans.

Initial constructions of the *fale fono* began on the 12th of July 1916 by a head carpenter, Solofuti Fili from Satoalepai Savaii and his workers. The building was christened three months later on the 18th of September 1916.

The *fale fono* has played a major role in Samoa's struggle for independence in 1954, the member of the Fono Fa'avae gathered at the *fale fono* to discuss Samoa's future. In 1960 the *fale fono* hosted an important debate that discussed on Samoa's future towards independence, which resulted in the drafting the constitution. This constitution was later adopted as the official Samoan constitution when Samoa declared its independence by raising the flag in front of the *fale fono* on the first of January 1962.

The *fale fono*, Samoa's first parliament building was torn down on the 11th of March, 2012. The decision of Prime Minister and his cabinet to tear down the historic building met with criticism from the public. Before the demolition of the building, there had been talks of turning the site into a memorial or political museum. Currently there is no firm indication as to the intended fate of the site.





## Ruhuna Cultural Triangle of Sri Lanka

**Sujeeva Kaushalyani Peiris Deraniyagala**, Conservation Supervisor  
Central Cultural Fund

Sri Lanka's southern region presently covering mainly Galle, Matara, Hambantota and Monaragala districts were known as "Ruhuna" or "Rohana" in ancient times and it was one of the three ancient provinces of the island. But ancient "Ruhunu rata" covered a larger portion of the island; bounded by the river Mahaveli in the north and east and river Kelani in the west part woven around the central hills taking shape of half doughnut. Indian Ocean surrounds the whole region from southeast, south and southwest. Ruhuna was protected from Indian mainland invaders because of its location away from the sub continent, of which the Anuradhapura and Polonnaruwa kingdoms frequently subjected. On the other hand the sea around the region is rather deep with no land in between southern tip of the island and the Antarctica. Further the island's south eastern coastal area is protected by a vast reef, which is distracting and ships passing the island had to sail considerably away from the island.

These factors contributed to the civilization in the region to grow independently and comparatively peacefully than island's other ancient kingdoms. King Devanampiyatissa's [B.C. 307–267] brother Prince Mahanaga founded Magama sub-kingdom [Magama was the capital city in the Ruhuna region] in the 2nd century B.C. He built many Buddhist temples, reservoirs and tanks to uplift the culture and agriculture of the region. Sandagiriya Stupa in Tissamaharama, built by him is considered to be the oldest stupa in the southern region [presently conservation of this stupa is completed by the Central Cultural Fund].

According to legends, Ruhuna's history is older than that of Anuradhapura. The first Aryans from India settled down in the north east region of the island and made several principalities like Tammenna and Upatissanuvara. It is believed that brothers and troupe of Princess Baddhakachhana, who came from Madura, India to marry King Panduvasdev [B. C. 504–474, reign from Upatissanuvara] had moved into the southern region and built Magama in the 4th century B.C. Anuradhapura was made capital some 50 years later around B.C. 400 during King Pandukabhaya's [B. C. 437–367] reign. Since then Ruhuna became a haven to disgraced royal family members or fleeing royalty under enemy invasions. Heroic King of Sri Lanka, King Dutugemunu [B. C. 161–137] was born and grown up in Ruhuna and both his parents were descendants of southern sub-regional kingdoms. Prince Dutugemunu fought with King Elara [B. C. 205–161, a Chola from India captured Anuradhapura and ruled for 44 years] and regained the capital for Sri Lankans. Anuradhapura and subsequent kingdoms held esteem from ancient chroniclers that history of Ruhuna sub-kingdom was not considered as significant and thus its written history was discontinued time to time. But ancient scripts like "*Sihalavattuprakarana*", "*Rasavahini*",

"*Saddbarmalankaraya*", "*Dhatuvamsa*" etc. and inscriptions installed in historic places, helped immensely to build the history of the region.

It is significant that *Rubuna* sub-kingdom and its culture had been able to survive from Indian and other foreign influences and to secure identity of its own. Hindu influence was evident in culture, art and architecture from late Anuradhapura period and thereafter, but strangely the force was reduced when it reached the southern region so that people in the South had been able to minimize them. Therefore culture and architecture of Ruhuna can be safely described as descending from early Anuradhapura period. It is true that during occupations of European nations, the region had undergone vast changes in art and architecture, religion and culture, but these could be identified and sieve-out to restore original status if required.

"Ruhuna Cultural Triangle" programme is implemented to secure these ancient arts and to ensure their survival for further period enabling future generations to benefit. Central Cultural Fund and the Department of Archaeology will jointly carry out the work identified in five distinct sectors.

1. Exploration and documentation of pre and proto historic human settlements and ancient landscapes
2. Documentation and conservation of historic structures belonged to different eras including those of the European occupation
3. Documentation and conservation of ancient religious places including art, archival materials, literatures etc.
4. Documentation and conservation of mural art, inscriptions and other historically valuable materials
5. Establishment of site museums / information centres [wherever necessary] and developing tourist infrastructure facilities.

The selected area presently belongs to four districts: three in the southern province (Galle, Matara, Hambantota) and one in Uva (Monaragala). Two teams comprising of architects, conservators, and archaeologists will carry out the work with assistance of draughtsmen, photographers and other related professionals. Twenty-six sites in Galle, 46 sites in Matara, 60 sites in Hambantota and 47 sites in Monaragala have been selected for this programme. Some sites are dating from Anuradhapura period and the latest belongs to the British period up to the early 20th century. Thus the programme will be able to restore and document vast number of sites and historic landscapes belonging to diverse cultural spheres that evolved through long period of time.

Necessary excavations leading to comprehensive conservation programme will be carried out once the

first phase is completed with the objective of displaying the archaeological, historical, cultural and religious monuments of historic sub-region of Ruhuna and bringing back its ancient grandeur. Since the Central Cultural Fund draws its revenue through tourist ticket sales, this new region has potential of attracting large number of tourists. Development of tourism will also benefit inhabitants within the region through increased employment opportunities.

The region's close proximity to popular coastal resorts, Arugambay, Unawatuna; natural/ wild life reserves, Yala National Park, Bundala, Kalamatiya and Rakawa Lagoons, Kumana Bird Sanctuary, Hambantota Salterns; and close connectivity to the hill country through Bandarawela Tea Route etc. further enhance the potential for tourism. Another advantage will be the present mass scale infrastructure development programme in progress within the region. Country's first highway was commissioned recently and is highly successful reducing 3.5 hour drive between Colombo and Galle to just about one hour. Apart from this construction of Harbour at Hambantota is in progress while the second international airport of the island will be constructed in Mattala or Weerawila making the area very much attractive to foreign tourists.

Considering all these, it is anticipated that the "Ruhuna Cultural Triangle" will be highly successful through conservation and presentation of large number of historic structures neglected for considerable time while answering many questions hidden under array of cultural layers that remain unexplained so far.

#### **Some significant historic structures and landscapes within the region selected for the programme**

##### **Galle District – [Total 26 sites]**

1. Thotagamuwa Purana Vihara – dates back to the 15th century and presently with murals belonging to the 19th century. The great Buddhist scion of the 15th century and a scholar monk Thotagamuwe Sri Rahula lived in this temple.
2. Galle Fort – one of the two living World Heritage Sites in the island. The 16th century Dutch fort was recently conserved by the CCF with the assistance of the Government of the Netherlands.
3. Thunmahal Viharaya, Gintota, Galle – the ancient temple with exquisite murals.
4. Roomassala Mountain – the natural reserve located on the coast but extraordinarily consist of rain forest vegetation.
5. Garumuni Walawwa – the 19th century mansion of de Soysa family and now being donated to CCF, presently in a much deteriorated condition. There is good collection of period furniture and an archival collection.

##### **Matara District [Total 46 sites]**

1. Star Fort – also known as Van Eck redoubt, built by the Dutch in 1763–65
2. Nupe Market- Dutch market built in 1784
3. Kushtarajagala Statue and Temple – the life size relief carved in solid rock and considered be one of the

finest statue in Mahayana style [7–9th century A.D.]

4. Devundara Devalaya – being dedicated to God Visnu and located in the most southern tip of the island for daily rituals and traditional customs.
5. Wewurukannala Raja Maha Vihara – in Kandyan Period [15th–19th century A.D.], the temple with the largest seated Buddha statue in the island with the height of 50 m.

##### **Hambantota District [Total 60 sites]**

1. Mulkirigala Raja Maha Vihara – rock temple carved out of a huge outcrop and dates back to the 2nd century B.C. Believed to have planted one of the 32 Bodhi saplings brought by Arahat Sanghamitta in the 2nd century B. C. Beautiful mural paintings belong to the period.
2. Naigala Purana Vihara – The rock temple with a pleasant setting and lots of mural paintings
3. Ramba Viharaya – the royal monastery complex of ancient Maha Nagakula city of Ruhuna Kingdom in the 11th century A.D. Renowned academic centre of the island between the 11th and the 12th centuries.
4. Minihagalkanda – pre-historic human settlement evidences found and designated as an archaeological and nature reserve.
5. Kirinda Viharaya – built by King Kavantissa of Ruhuna in the 2nd century. Located on top of a rock with a panoramic view of Ruhuna Jungles and the Indian Ocean.

##### **Monaragala District [Total 47 sites]**

1. Maligawila – the tallest free standing statue of Buddha in the island [16 m] belonging to the 8th century A.D. One of the finest standing Buddha images in Sri Lanka.
2. Buduruvagala – the 9th-10th century complex consisting of seven statues of Mahayana sect. The largest standing Buddha images [16 m] in the island.
3. Dambegoda – the 9th-10th centuries, A.D. 10 m high Avalokitheswara Bodhisatva crystalline limestone image is considered to be one of the finest in the world.
4. Dematamal Viharaya – dating back to the 3rd century B.C with unique sculptures and a stupa believed to be built by Prince Saddhatissa [a brother of King Dutugemunu].
5. Kataragama - an apt example of multi-religious living monument in the island with interwoven religious customs of Buddhists, Hindus, Muslims, Christians and Vedddhas –the aboriginal people of the island. The stupa [height 95 ft] dates back to the times of King Mahasena of Ruhuna Kingdom.

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Photographs and Maps: Central Cultural Fund archives, Jayatissa Herath Associates



Ancient divisions of Sri Lanka



Dambegoda bodhisattva statue



Kataragama Kiri Vehera



Entrance to Mulkirigala



Kirinda Raja Maha Vihara



Buduruvagala statues



Kustarajagala Bodhisat



Galle Fort



Dambegoda Statue being conserved



Kasagala mural



Maligavila Buddha statue





Mulkirigala Rock temple art



Rumassala mountain overlooking the sea



Sithulpawuva temple



Sandagiriya Stupa being conserved



Thotagamuwa ancient temple



Mulkirigala wall paintings



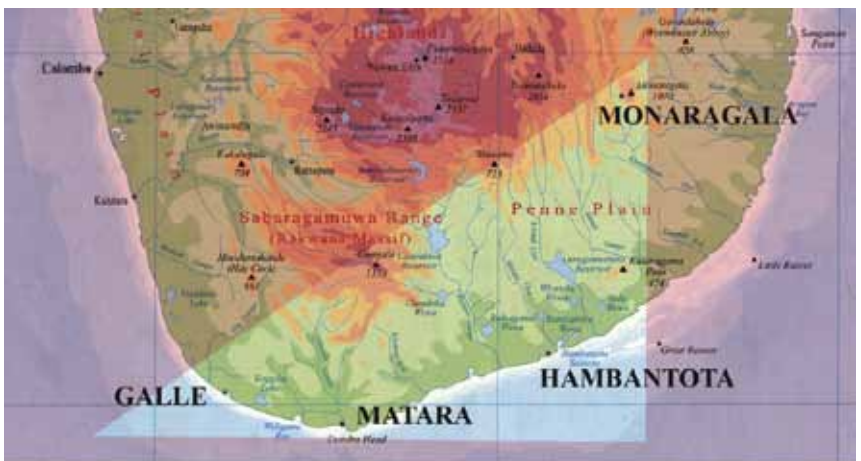
Seegala painting on walls



Wewurukannala temple



Nupe market



**SOUTHERN CULTURAL TRIANGLE**

Southern Triangle



## Spirit of the Historic Place: Sanam-Luang

**Pongthorn Hiengkaew**, *Conservation Architect*  
Office of Archaeology, Fine Arts Department, Ministry of Culture

### Introduction

Sanam-Luang or the royal ground is an open area in the centre of the old town area of Bangkok. It is surrounded by several important places, for example Grand Palace and National Museum. Superficially observed, Sanam-Luang looks like a large lawn, there is nothing to be interested. However, in fact, it is a place where ancient royal custom continues for at least 500 years.

### Background, History and Significance

Bangkok was established in 1782, the beginning of the reign of King Rama I. The city planning of Bangkok was imitated in physical and belief from the former capital, Ayutthaya (AD 1350-1767). One of important places was Sanam-Luang. Sanam-Luang has been served as the place where official royal ceremonies were held. A significant ceremony was royal cremation. Therefore, people called Sanam-Luang as Tung Phra Meru (the ground for royal cremation ceremony), an informal name. In 1897, King Rama V reign, the city was development and consequently the size of Sanam-Luang was also increased about the present size.

Sanam-Luang, a large historic monument in Bangkok, was registered as the national historic monument in 1977. Its size is 120 m × 589 m. It is located in inner ring of Rattanakosin Island, the old town area of Bangkok,

and is surrounded by Grand Palace in the south, Wat Mahathat in the west, Ratchadamneon road in the north, and Supreme Court in the east. At present, Sanam-Luang is still an important part of the setting of historic area in Bangkok in the aspect of physical forms and ancient belief.



Fig. 1. The aerial view of Sanam-Luang



Fig. 2. A map of central area of Bangkok (Koh Krung Rattanakosin) in 1897, the green colour is Sanam-Luang.



Fig. 3. A map of the central area of Bangkok in 1932 showing the shape of Sanam-Luang (in green colour) that was improved in 1898.



Fig. 4. Sanam-Luang after improvement in 1898 during the King Rama V reign.



Fig. 5. Sanam-Luang in the present day

**Royal Cremation Ceremony: Belief, Pattern, and Sustainability**

Royal cremation ceremony is an important Thai royal ceremony maintaining for at least 500 years. It is a significant cultural heritage of Thailand that preserves principle essence of belief in royal ceremony, architecture, fine arts, traditional craft, and location.

Royal cremation ceremony is a tradition derived from Brahmanism, Devaraja (the King as the God) belief. The belief came into Thailand via influence of ancient Khmer civilization. It is believed that the king is God descending to the earth to provide nation with peace. In addition, together with cosmology belief in Buddhism, there is Sumeru Mountain which is the centre of universe and it is the highest level of heaven where the top of the mountain is Indra. When the king and royal highness, believed as divine king, pass away; they return to house at Sumeru Mountain where is a genuine home for them. Hence, it is necessary to arrange a ceremony in the best way to send them back home. The royal cremation ceremony represents Brahmanism and Buddhism beliefs via any symbols in custom, for example, royal crematorium and cortege.

Royal cremation ceremony is arranged at Sanam-Luang after the king and royal highness have passed away for at least a year. This is because building the crematorium is the most important component in royal cremation ceremony. The royal crematorium is a temporary

building for conducting cremation ceremony. According to Brahmanism and Buddhism beliefs, the building is planned, built, decorated, and then demonstrated in symbols. In addition, it presents a magnificent traditional Thai architecture. Royal crematorium looks like a huge mountain representing centre of universe and residence of God. It is located in the centre of the ceremony area and is decorated with paintings and figures of Deva and Himavana animals. Therefore, it presents a clear image of heaven, according to the religious belief. After finishing the cremation, the crematorium is disassembled and removed from Sanam-Luang. The materials of royal crematorium are dedicated to temples or public organization.

From the evidence in Ayutthaya period (1350-1767 AD), the biggest royal crematorium was 102.75 m height and 16 m column span width. The structures were composed of woods, bamboo, plaster and papers. The decoration was beautified by colour intricate perforated papers and the gold leaf. The style and scale of royal crematorium of the Ayutthaya period had been used until 1869. After that, the scale has been reduced and the form has been improved. Nowadays, the material of construction has been changed from woods to steel because it is difficult to find some materials used in the structure and decoration and also economical reasons. However, the main belief and the way of royal crematorium ceremony are still the same.



Fig. 6. and 6.1. Royal crematorium (Phra Meru Mas) of King Rama IV in 1869: It was the last huge royal crematorium in 80 m height, that was built according to traditional royal crematorium since the Ayutthya period



Fig. 7. Aerial view of HRH Princess Sangwan's royal crematorium (Phra Meru Mas) in 1996: The area planning represented concept of the universe, the royal crematorium was in the center as it was Mount Meru.



Fig. 8. The royal crematorium (Phra Meru Mas) of HRH Galyani Vadhana in 2008



Fig. 9. and 9.1. The decoration of royal crematorium: a figure of Devas and Himavana animals were presented in the area of Mount Meru.

In April 2012, at Sanam-Luang, royal cremation ceremony was arranged for Her Royal Highness Bejaratana, the only child of King Rama VI. The royal crematorium was designed by Fine Arts Department, Ministry of Culture. The height of crematorium was approximately 36 m. The ceremony was conducted by Bureau of the Royal Household and several government organizations.

At present, royal cremation ceremony is preserved and it is necessary to pass it to the next generation. For preserving the royal cremation ceremony, the systematic knowledge management and human resources development, particularly specialists in all branches, are needed to maintain and conduct the crucial royal ceremony with the former belief and pattern.

### Conclusion

Sanam-Luang appears a historic monument that is not outstanding in construction when compared to

other historic monuments in Bangkok. However, it is a remarkable place that represents spirit of the crucial cultural heritage of Thailand and sustains the royal ceremony in consistent with the former beliefs.

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Fig. 10. and 10.1. The cortege of King Rama V's royal cremation ceremony in 1911



Fig. 11. and 11.1. The cortege of royal cremation ceremony in 2008



Fig. 12. A Thai architecture specialist from Fine Arts Department was enlarging the decorated ornament of HRH Bejaratana's royal crematorium in 2012.



Fig. 13. The HRH Bejaratana's royal crematorium was under construction in 2012.



Fig. 14. The HRH Bejaratana's royal crematorium: The roof architectural ornament was assembled.



Fig. 15. and 15.1. Details of decorated ornaments of the HRH Bejaratana's royal crematorium



Fig. 16. The HRH Bejaratana's royal crematorium shows the crematorium as Mount Meru.



Fig. 17. The wooden royal carriage, built in 1795, was restored for the royal cremation ceremony.



Fig. 18., 18.1. and 18.2. The ancient performances, Nang-Yai and Mong-Kum, are sustained as a part of the royal cremation ceremony.



## The 2011 Archaeological Excavations in the Old Termez Citadel

**Akmaljon Ulmasov**, *Researcher*

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Old Termez was one of the largest settlements, which contained many structures and monuments dating to different times. The city that was also known as Tarmita, had a total area of 500 hectares and was located 12 km north-west of the modern Termez. It consisted of a citadel, two settlement sites and a *rabad*<sup>1</sup> in the suburbs (Fig. 1). For many centuries Termez-Tarmita was one of the largest cities of Bactria. At the turn of Anno Domini, with the propagation of Buddhism in this area, Buddhist structures began to appear in great numbers. At the beginning of the 7th century this town was mentioned in the recollections of Chinese traveller Xuanzang Sanzang. According to him, the city wall was extended by 20 *li*<sup>2</sup> (10 km); at that time there were 12 monasteries and stupas, and more than 1,000 monks served in Ta-mi (Termez). This means that at the time of threshold of the Arabic period in Termez, Buddhism saved its importance. Archaeological excavations conducted in the settlement confirmed the data provided by Xuanzang Sanzang and resulted in the discovery of Buddhist structures: monasteries, temples and stupas. The largest of them was the so-called Kara-tepa located to the north-west of the settlement; it consisted of semi-cave structures (*vihara*) and stupas. The formation of the monastery in Kara-tepa

belonged to the 2nd century AD, when Kushan kingdom was ruled by the most famous king, Kushan Kanishka I. Another settlement in old Termez was Fayaz-tepa, a Buddhist monastery, which located 1 km north-west from Kara-tepa.

The oldest part of the city located on the banks of Amu-Darya River; it was built on a natural hill of quaternary sandstone. The rectangular citadel covered the area of 10 hectares. Originally, the citadel was the base and the core of the city. Over time the city expanded, and a fortress appeared on its ancient territory. The length of the fortress walls along the river bank was 470 m. The citadel's north-western wall was up to 230 m long. Due to predominant presence of rulers' palaces, temples and administrative buildings, the city fortress had strong fortification. The fortress wall was 7-8 m thick and 18-20 m high. The advantage of building a fortress on the hill was that the hill provided natural defences and enhanced the fortification power of the citadel. Presently, in some sections the walls are as tall as 20 m. Due to its location on a natural hill, some historical sources referred to the citadel as "Kuhandiz". As it was never seized, it was recognized as "Madinat ul rizhol", the City of the Brave.

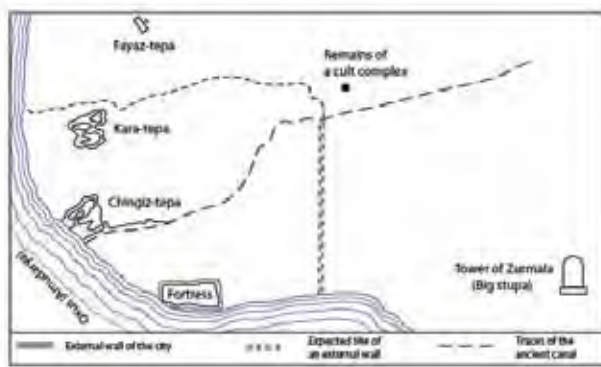


Fig. 1. The old Termez settlement layout (according to M. E. Masson, 1930).

In the Middle Ages Termez was a major trading and manufacturing centre. Like other Central Asian cities, it consisted of a citadel, a fort, and two rabads. Each part of the city was circled by defence walls. Scientifically, the archaeological finds from the citadel confirmed that Termez was founded 2,500 years ago. In this respect, academic research performed by archaeologist Shakirdjan Pidaev in 1971-1986 was very valuable.

<sup>1</sup>A Suburb of a town; this term comes from the Middle Ages and now is used by all researchers in Uzbekistan, Russian and others.

<sup>2</sup>Traditional Chinese unit of distance; one li equals to 500 metres.

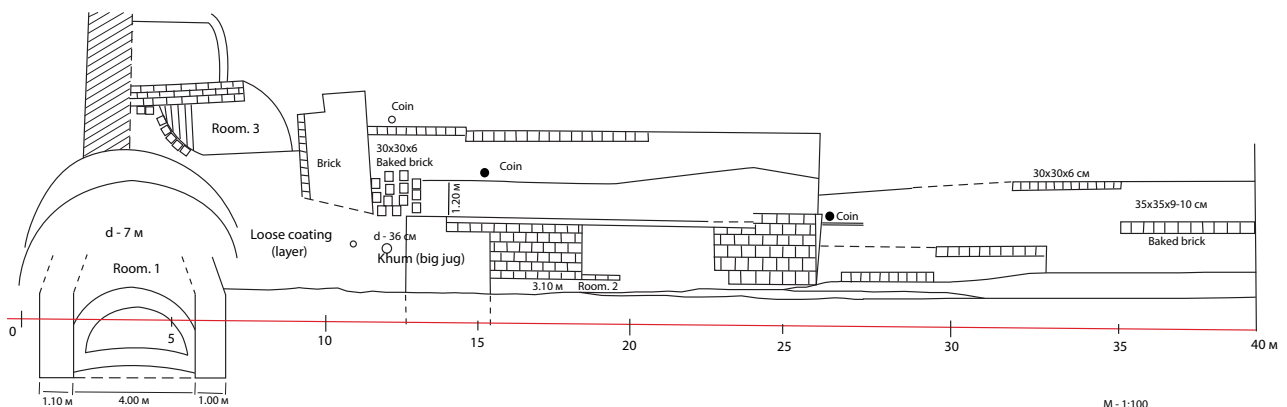


Fig. 2. The preliminary plan of the fortification wall on the citadel.

As a result of archaeological excavations conducted in 2011, part of the wall was exposed in 60 by 10 metres (Fig. 2 and 3). The depth of the excavation pit was 8-10 m. One of the towers, which were erected every 20-25 meters, and its inner chamber were studied. While clearing the topmost section of the fortress wall, remains of a semi-circular tower dating to the 16-17 centuries were discovered. Although the tower was made of baked bricks, it was built on soft sediments. The semi-circular tower with a radius of 3.5 m dated to the late Middle Ages; the surviving remains of the tower had the size of 1-1.2 m. The tower was made of baked bricks of 27×27×5 cm. Clearing the inside of the tower revealed an inner chamber of the later construction period. The wall of this chamber was about 1 m thick, 3.5 m long and about 1.9 m wide.

Archaeological excavations conducted on the site have shown that the defensive walls of the citadel dated to the 10th-12th centuries. Most probably, they were destroyed in the process of maintenance and construction. The corner tower has been preserved better. Besides, on this section the walls of the Kushan of the early medieval periods were cut longitudinally by more than 24 m. The cross-section clearly showed that the wall's masonry of square and rectangular contained air bricks. On this section the surviving remains of defensive walls dating to the 10th-13th and the 15th-16th centuries stood right on the ruins of the walls of the Kushan period. Now the ruins of the Kushan period defensive walls have been found to be 120 meters long; they have been cleared to the depth of 1.45 m; the height of these walls has not yet been established.

Archaeological excavations resulted in the discovery of more than 300 new archaeological objects in different degrees of preservation, dating to different historical periods. Among them were carved and glazed ceramics, terracotta figurines, jewellery, iron and bronze objects, fragments of glass artefacts, and coins. Ceramics alone provided a diversity of materials: in particular, wonderful glazed bowls and pots decorated in a uniform style –

ornamental painting against bright blue background (Fig. 5a to 5c). Chiragi lamps, while some of them were completely intact, with their numerous fragments also testified the great skills and mastery of the Termez potters. Stone cauldrons with primitive linear ornaments were carved out of monolithic stone and presented the example of a very labour-intensive effort invested by the masters.

In the course of the field work, the author performed restoration and conservation of numerous archaeological finds. Specifically, an amazing pitcher with carved ornament showing a dimorphic creature was restored. On the pitcher's handle one can clearly see a snake crawling upwards (Fig. 6a and 6b). Glazed vessels of different shapes, chiragi lamps, iron arrowheads, and other items have also been restored and conserved. Among the restored items one should give specific mentioning to a stone cauldron reconstructed of several fragments. Despite the fact that the glued section of the cauldron constituted less than half of it, the vessel has been fully restored (Fig. 7a and 7b).

In addition to the restoration work, the author was actively involved in producing the excavation pit layout and made drawings. Thus, more than 200 archaeological items were drafted and drawn, and 50 of them were traced.

### Conclusion

As a result of archaeological excavations carried out in 2011, a defensive wall of 60 meters long, three watch towers on the north-western citadel wall, an inner chamber, and a corridor were exposed. Height, thickness and construction time of the wall's main lines have been studied. Subsequently, one third of the exposed wall was restored using bricks obtained from the excavation pit debris. There is no doubt that the restoration of the wall makes it possible to get an idea about the medieval art of construction developed by our ancestors; and the wealth of archaeological material testifies to the advanced culture and development of manufacture skills and crafts.



Fig. 3. A general view of the excavation area of the citadel wall.



Fig. 4. A semi-circular inner chamber of the tower No.2.

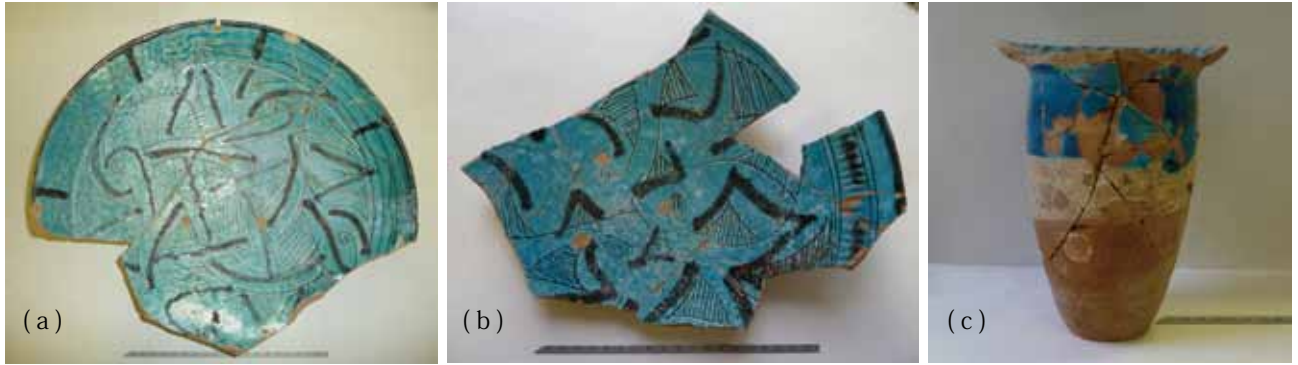


Fig. 5. Standard glazed ceramic vessels: (a, b) chalice; (c) pot.

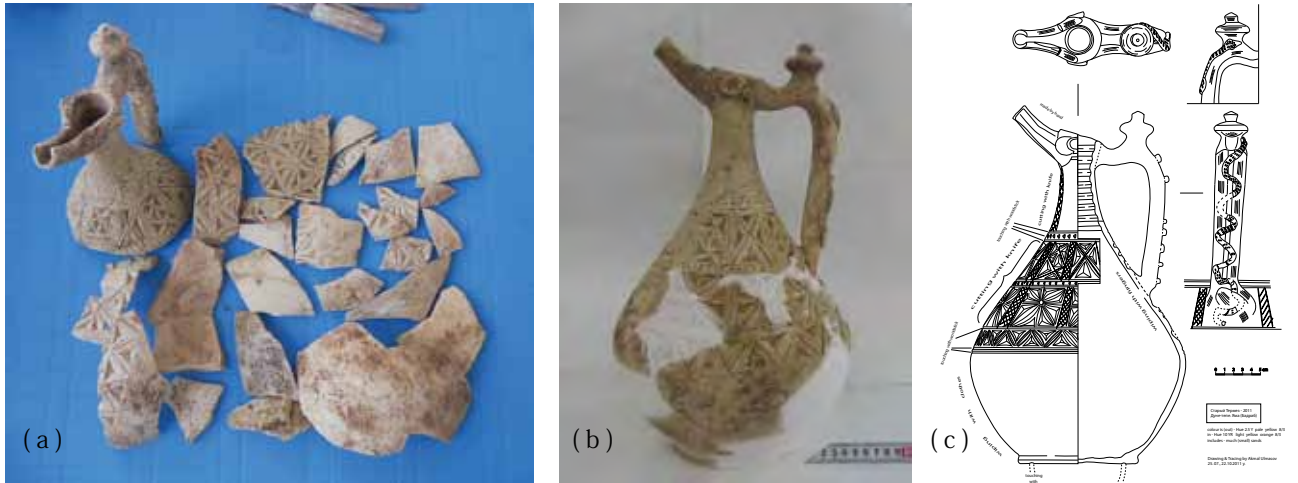


Fig. 6. Restoration of a single-handle carved pitcher; (a) before restoration, (b) after restoration, (c) a traced drawing.



Fig. 7. Restoration of a stone cauldron; (a) before restoration, (b) after restoration, (c) drawing ("point" style).





## Surveying a Part of Hanh Cung's Wall in the Nguyen Dynasty, Thang Long Imperial Citadel Centre, Ha Noi

Nguyen Chi Cong, Staff

Center for Preservation of the Co Loa Historical Site and Hanoi Citadel

Thang Long Heritage Preservation Centre, Ha Noi held the science conference to report results of discovery and survey of a part of Hanh Cung's wall in the Nguyen dynasty.

The survey plan was made by Thang Long Heritage Preservation Centre in corporation with the Heritage Preservation Institute and it was implemented from December to April 2012. The survey aimed to determine original factors, fundamental characteristics, to evaluate technical conditions and harmful reasons in a wall of Hanh Cung in the Nguyen Dynasty. Thang Long Imperial Citadel Centre, Ha Noi took main responsibility for project planning, conservation design and renovations. The wall of Hanh Cung was selected to be studied based on the principles, because it had relatively clear original traces, typical states and changes; less relation to other architectures and it situated in a convenient location for visiting to survey.

We examined and selected a part of Hanh Cung's wall with 15 m in length and 4 m in height on Hoang Dieu road, next to West gate of the Old Hanh Cung (existing entry gate of Thang Long heritage preservation centre, Ha Noi ) for the survey. Then the survey was implemented as follows: studying documentary profiles; surveying, drawing architectural structures and its condition; removing inappropriate supplementations, discovering the original architecture, exploration of the ground; surveying and studying building materials, determining harmful agents; analyzing for general evaluation. From the results of studying, a survey report

gave specific proposals to preserve and restore boundary walls and eight Hanh Cung's gates in the heritage area. It was needed to expand this survey to the comprehensive one such as evaluation for wall construction of Hanh Cung with the supplementary survey in other special locations

According to "*Đại Nam nhất thống chí*," published in 1805, when building Ha Noi citadel under Vauban model, the Nguyen built boundary walls from Doan Mon door around and inside of the palace where the King took a rest after the southern patrol. Currently in the ancient citadel, there were relatively undamaged eight gates of Hanh Cung. The eight gates and boundary walls were surrounded by broken bricks in Ha Noi citadel in Nguyen dynasty. There were two gates in the south in two sides of Doan Mon, two gates in the north behind Hau Lau, one gate in the east directing to Nguyen Tri Phuong roan, one gate in the west directing to Hoang Dieu Road, and two gates in two sides of Kinh Thien shrine

Gates of Hanh Cung "was categorized" with some heritages in Ha Noi citadel since 1925 under France State protection. The campus was the strategic headquarter from 1954-2004, the headquarter section of Ministry of Defense. This was the working and meeting place where the government published important policies to manage battlefields, to lead people in the whole nation and to make the victory in the spring of 1975 for unification. We expected that after survey, we would cooperate with international experts for its restoration to the originals.





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