

ACCU Nara
International Correspondent

The Sixth Regular Report



(財)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 recently involved. This is a collection of the fifteen reports and two special reports submitted by fifteen international correspondents in the Asia-Pacific region.

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Ancient City Site 'Pundrangar' of Bangal and its Cultural Evidence

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Ascertaining the time of emergence of 'Bangal' or 'Bangaal' nationality has been difficult as it is imagined. Similarly, determining the political or geographical boundary of the then 'Bangala' is very difficult and based on imagination because it was constantly changing from time to time under different regimes. There is no historical record remained to identify ancient Bangala. Glimpses into the literary stories, legends and fables regarding on the events in those days are the only source of our knowledge about ancient Bengal.

In ancient Hindu regimes, we find no particular territorial name of Bangal as a whole. Various fragments of information were known in different times. In northern Bengal it was known as Pundra, Barendra and in western Bangal, it was Rardh, Samatat, Horical and Bongaal. Besides, some part of in northern and western Bengal, it were called Gauda for some time. After the conquest of the Muslims in this area, the whole of the vast territory was called Bangala which was subsequently called Bengal by the Europeans. The word Bengal is undoubtedly a derivative of Bangala. The famous Chinese pilgrim Huen-Tsang's report that there were four independent kingdoms in the then Bengal: Pundrabardhan (North Bengal), Samata (East Bengal), Tamraliptty (South or South-west Bengal) and Kornashubarna (West Bengal).

Among these, Pundra was an ancient racial name. The Pundra people were believed to have lived in the northern part of Bengal. That is why the region was popularly known as land of Pundra or Pundrabardhan.

The ancient site of Pundranagor is now lying underneath the Mahasthan Garh. It was known from the archaeological research that this city had prospered as a very rich and resourceful habitation from fourth century B.C. to fifteenth century A.D.

Gauda, Nibiti, Sukhsma (Radha), Jharikhand (Samtal Pargana), and Burdwan belonged to the vast Pundra kingdom. Pundrabardhan Vukti (The biggest administrative unit) once comprised of the entire territory of Bengal in the eastern side of the Ganges. Presidency, Rajshasi, Dhaka and Chittagong- these four former divisions of Bengal belonged to the Pundrabardhan Vukti at certain times and the capital of this vast Pundra Kingdom was at Pundrabardhan. In ancient times, it was a very prosperous city. Mahasthan Garh of today which is only 7 miles away towards the north of Bogra town is suppose to be the ancient city of Pundrabardhan by the scholars and specialist. It is assumed that just after the return of King Alexander the Great to Greece, Chandra Gupta Mourya established a kingdom covering a vast part of India. It is also apparent from the Greek writings that the northern part of Bengal and perhaps the whole of the delta was watered by mighty rivers belonged to the Maurya Empire. An inscribed stone found at Mahasthan Garh (seven miles away towards the north from Bogra town) undoubtedly proved that the Mourya Empire ruled in North Bengal. That inscription in Brahmi letters also proved that in north Bengal the centre of the Maurya administration was Pundrangal ie Pundranagor. We found a mention of the provincial Mourya Governor,



Seal (3rd century B.C.)(Replica)



Sunga plaque (2nd century B.C.)



Inscription (3rd century B.C.)



Punch mark coin (2nd century B.C.)

'Mahamatra', in that inscription which obviously proved that Mahasthan Garh of today was the historic city of ancient Pundrabordhan. The inscription said that at a certain time famine occurred in that area following natural disasters when the centre of the state issued two orders to the Mahamatra (Provincial Governor). The first order of the state would not be made out. The second order of the state directed to the regional governor to launch a relief operation for the famine affected people together with Gondok and Kakonik (punch marked coins that were in vogue). This sort of punch marked coins have been discovered at various places in the country.

The Sunga Empire controlled the eastern part of India. It was established after the fall of the Mauryan empire. The Sunga dynasty was established by Pushamitra Sunga in 185 B.C. and continued until A.D. 50. Pundranagar most probably came under the Sunga reign, because many Sunga plaques were found in the archaeological excavations of the fortified city site Pundranagar.

During the fourth century A.D., the Gupta king established a vast empire in India. The first king of this dynasty, Sree Gupta, had once been the ruler of a small kingdom at the beginning of the fourth century A.D. Subsequently, other emperors of this dynasty became more powerful and ruled over the empire for more than two hundred years till the middle of the sixth century A.D. Pundranagar as a whole was a part of the vast Gupta Empire.

Several royal edicts inscribed on copper plates were discovered in the north Bengal, and it is now evident that this region of Bengal was once under the jurisdiction of the Pundra Bardhan Vukti and was governed by a ruler called 'Mahamatra' appointed by the Mauryan emperor. Eventually in course of time, the Gupta emperors became weak and emaciated. Meanwhile, a mighty ruler named Sasanka sprang up and took possession of the vast kingdom of Gauda (comprising Bango and Gauda). Raja Sasanka was given a distinguished position in the history of Bengal because he dreamed to establish an independent Bengal empire. Though partly, he became successful in realizing his dream.

After death of 'Sasanka' (A.D. 606 - A.D. 636), confusion and lawlessness reigned over Bengal for a long time until a man named 'Gopala' (A.D. 750) became king of the country through an upsurge of the cross section of people. Thus the Pala dynasty came to power and Pundranagar came under the Pala dynasty. Dharmapala and Devpala, the two powerful rulers of Pala dynasty, ruled Bengal for a long time and some other Pala rulers reigned for a short time.

Thereafter the Pala dynasty declined and the Sen dynasty began to rule with ascending the throne of Vijay Sen. Since 11th century A.D. Vijay Sen, Ballal Sen and Lakshman Sen reigned in Bengal till the Muslim conquest by Iktiar Uddin Muhammad Bakhtiar Khilji. Thus Bengal came under Muslim control.



Surya image (5th-6th century)



Terracotta head (5th-6th century)



Terracotta bust (5th-6th century)



Standing Buddha (5th century A.D.)



Earth touching Buddha
(9th century A.D.)



Vishnu image (11th-12th century)



Conservation of Semtokha Dzong (Fortress)

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The Kingdom of Bhutan, the only Buddhist country lies in the eastern Himalayas between India and China, two of the largest and most populous countries in the world. Bhutan, as everyone is aware, is a Buddhist country. The country has inherited from its past a rich legacy of natural and cultural heritage, which is alive and vibrant to this day. Its culture, customs, belief system and traditional ethos are deeply imbued with the profound middle-path philosophy of Buddhism. Bhutan has a very rich architectural heritage with over two thousand lhakhangs (temples) and monasteries and over ten thousand chortens (stupa) scattered in every corner of the kingdom. The majority of the monuments dates back to the 17th and 18th century but many have their roots as far back as the 7th and 8th century. Besides the main monuments, many of the beautiful traditional farmhouses, some dating back over hundred years, are also still intact and utilized in almost all the villages in Bhutan.

The restoration, preservation and rehabilitation of historical and cultural monuments and sites and the encouragement of the development of traditional architecture in Bhutan is an important national policy and finds great emphasis in many Government documents.

Semtokha Dzong

Built in 1629, the Semtokha is the most ancient dzong (fortress) in Bhutan and its historical significance is still increased by the fact that it has conserved its original design up to today, while most of the larger dzongs (fortress) have been altered by repeated additions.

The whole complex forms a rectangular of 70 m by 60 m located upon an outcrop of the mountain, with steep slopes going down on three sides. The four entrances on four sides of the structure gives access to the interior courtyard and is mainly built for defense purpose with all facilities such as store for storing grains, under ground passage to water sources and interconnection of all rooms with a secret door for movement of troops.

As in other dzongs, (fortress) the main structure is a central towering building, the utse, (tower) housing the shrines. Above basement, whose floor is only slightly below the pavement of the courtyard, its main floor is reached by steps facing the entrance of the dzong (fortress). A vestibule and a large square hall provide access to the main shrine, axially located and very high, since its ceiling is level with the floor of the third storey and to the two lateral shrines. All these rooms have mural painting on their walls and decorated with fine woodworks.

Conservation of Semtokha dzong (2005 – 2008)

The main objective of the project was to conserve and rehabilitate Semtokha Dzong (fortress) from the dilapidated condition and restore to its original form and design in order to establish it as one of the most significant national heritage sites in the country. It included the establishment of the Dzong (fortress) as the centre of Monastic Arts in Bhutan and to promote and preserve the living monastic culture of the country.

The project included activities such as conservation of the existing Dzong (fortress) structure, development and rehabilitation of the spaces inside the Dzong (fortress) such as basement cells which were not used for many years in order to suit the new uses of the Dzong (fortress) and as a significant national heritage site beside conserving the skills of craftsmen and promoting and safe guarding the national heritage.

This conservation project was funded by the Royal Government of Bhutan and Government of India with a total cost of US\$ 3.37million. The major conservation work undertaken from 2005 and completed in 2008 is first of its kind in Bhutan where original architecture of old timber and stone wall structures with mud mortar were preserved.

It is during this conservation period that we have discovered four entrances, located at four sides of the structure mainly built for defense and under ground passage for fetching water during war. And also it is during conservation of the dzong (fortress) that we could document the over all structure and how it was designed. Usually such structures built in those days without any nail and iron materials, built purely with stone, timber and mud don't have a single drawing or any short of documentation but surprisingly it is very interesting to see how symmetrically the rooms were placed, drainage system, rain water flushing toilets etc. were incorporated in this mega structures.

Problems

As conservation of culture heritage is relatively new and modern concept to Bhutan, preservation and continuation of the very art and architecture practiced over the centuries and conservation of the historic monuments that are edifice of our thriving culture present an uphill task everywhere in the country. As I understand, it was the experience for most of the architects, engineers and managers who implemented such conservation projects for having to deal with negative reactions and substantial interference starting from top decision makers to the general public and end users of the heritage site. Apart

from this, Buddhism, which forms the principal veins of Bhutanese culture, has precepts such that come into contradiction with some of the main ethics of modern conservation.

Another common challenge that we face in heritage sites or conservation projects in Bhutan is from the fact that all our monuments or heritage sites besides ruins are living monuments. Monks and caretakers who live in these heritage buildings in the same way as they used to hundreds of years back, undeniably pose lot of threat to these structures. With time increasing population of monks and visitors cause uncontrollable process of

wear and tear. Besides, almost all the Dzongs, (fortress) monasteries, temples and other heritage buildings which are made of stone, mud and wood have very poor water supply and drainage system. Today, management of water, sewage, waste and fire is a major issue and pertinent challenge in all our heritage buildings.

In Semtokha Dzong, (fortress) we have tried to incorporate a simple and sustainable system of water supply, drainage or sewage and disaster management, mainly fire, which have set good example for future conservation projects.



Photographic documentation during conservation of Semtokha dzong



Anlong Thom: Cultural Village Development Project¹

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The research project was carried out by Living Angkor Road Project (LARP) team, (IM Sokrithy, Ea Darith, Heng Than, Khieu Chan, Srun Tech, Kim Samnang and Lanh Udom Rainsey) and supported by Cambodian National Commission for UNESCO, supervised by Mrs Tan Theany, Mr. Khoun Khun Neay and Dr. Hang Peou, APSARA Authority. The action plan was made for five months work.

1. Introduction

Anlong Thom is one of seven villages located on the eastern part of the Phnom Kulen (Kulen Mountain) and on northeast of Angkor. The village stretches on a large lower elevated area on the south-eastern part of the mountain. Phnom Kulen is a high plateau with 25 kilometers length from northwest to southeast on 15 kilometers in width from southwest to northeast. The plateau stands from 300 to 450 meters above the sea level.

Anlong Thom village is supplied by the Thnal Dach marshy water-source. Two accesses lead to the village. One comes up from the east passing through down town of Svay Loe district by a natural path. This path is accessible only by pedestrians. The second is coming up by the west passage, the new tourist road from Banteay Srei district where they have to pay for the road. It's about 24 km away from the check-point, and about 8 km from the water fall.

2. History

Kulen Mountain was a former Khmer capital city in the 9th century in the reign of the King Jayavarman II (802-850); it was called "Mahendraparapata" (the mountain of Indra). It has also been a sacred place of the Khmer Empire at that time up to now. There were more than 30 ancient brick temples, some ancient inscriptions, ancient dikes, rock shelters² with relief, sculptures on river bed, ceramic kilns, and canals rock painting, which indicated occupation on the plateau from early time of the Angkor period, and most probably, the early human settlements in the region. These conferred the important historic, aesthetic, scientific, technological and sacred values of the Phnom Kulen.

The region was well known of the practice and preservation of tradition, beliefs, customs and continuing practice of the archaic slashed-and-burn agriculture, hunting and gathering, which were extremely important for their cultural heritage.

3. Objective

The project aimed to create a plan for a cultural village, Phum Anlong Thom, developing from on their own historical and cultural resources. The plan would be served as a "Model for Preservation and Development of the Community from their Existing Cultural and Natural Resources".

The details of objectives were:

- Systematically identify historic sites, cultural and natural values of the community.
- Mapping the historic, cultural and natural sites, and the study of vernacular architecture
- Conducting the anthropological survey and social-economic studies

4. Findings from the surveys

The present report is on the final stage while other project is ongoing in the field. That is "Phnom Kulen Archaeological Program, Archaeology & Development Foundation" conducted by J.B. Chevance, which included the data of previous works (J. Boubet 1973 and J.B. Chevance, 2008 - 2009). We found five rock paintings.

Rock Painting

There were five rock shelters located on the eastern edges of Kulen, on 150 m to 190 m high above the sea level, where we found paintings remained on walls or ceilings of each shelter. Administratively, these sites situated in Thmo Chrounh village about 7 km east of Anlong Thom village. The five rock shelters were lying along a creek flowing from north to south (see map).

In addition, there were many rock shelters along the creeks as well, but with no paintings and carvings. The paintings were different from one another. The paintings were at the place where sunlight and water could not reach and at about 70 cm to 5 m high from the ground. We found two kinds of rock arts with a quick look: the painting and the line drawing. Those were the first discovery in the Kulen area.

5. Conclusion

The exceptional wealth of the Kulen is not limited to its archaeological and artistic remains, but includes a living cultural heritage of inestimable importance in anthropological terms. Kulen populations are known to be particularly conservative with respect to ancestral traditions, and a great number of archaic cultural practices that have disappeared elsewhere, continue to be performed in its village. What is more, many of these

¹ Extracted information from LARP report and photos

² Literally called Poeng in Khmer

traditions are only found here, reflecting the specificity of the Kulen's rich historical legacy.

The Kulen heritage offers incomparable potential for economic prosperity, which can in turn provide favourable climate and necessary means for protection of the Khmer heritage for the generation to come. However, the situation remains extremely delicate. Under the present conditions of persistent poverty in economics as well as in administrative terms, the potential wealth of the region will be exposed to exploitation on an unprecedented scale. It is only on a context of well regulated economic dynamism that the cultural heritage can be protected and in turn it will make essential contribution to economic stabilization, sustainable development providing durable national interest to Kulen.

6. Recommendation: General question

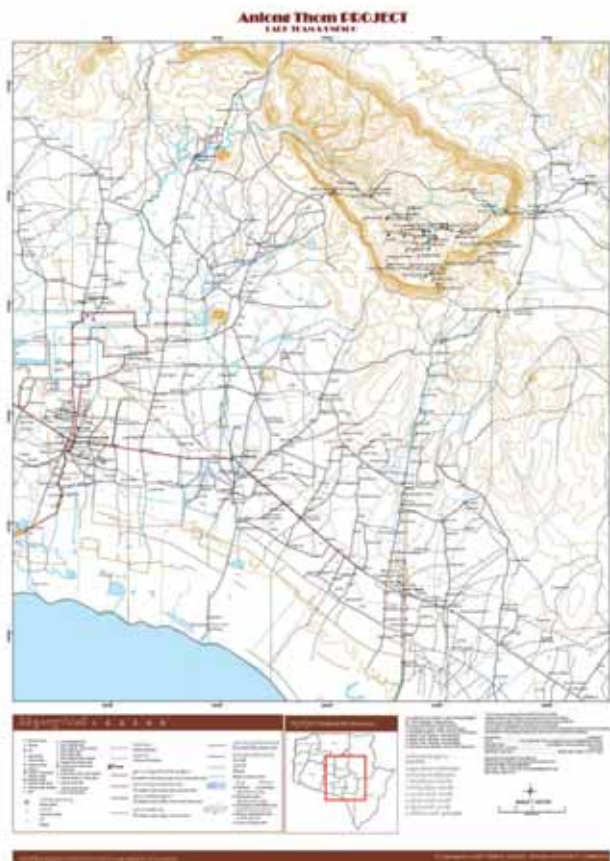
- Minimize any development project because the current landscape and environment are valuable for the community.
- Preserve the existing landscape and environment because they are valuable resources for future Anlong Thom.
- Encourage local people to preserve their identity and their natural and cultural resources
- Enhancement and promotion of community values in the context
- Any approach for the community should be ensured to reach "sustainable development" which is a mechanism

of subtle equilibrium among nature, culture, human, and social and economic activities.

Planning for Development

The future of Anlong Thom community much depends on their potential in cultural and natural resources. Several plans have been formalized for the community as follows:

- Agriculture Plan: The idea is not to create any project, but to formalize a plan for exploiting existing resources, promoting and exporting agricultural products.
- Tourism Plan: There is a need to promote "new destination" from existing resources: nature, environment, culture, history, geology, science, etc. Archaeological and 3D drawing maps will serve for the planning.
- Water Plan: Kulen is chateau d'eau of Siem Reap. The water source is used here and supplied Siem Reap city and other downstream districts. An idea is proposed to closely work with villagers living in the region in order to share water sources for healthy management system.
- Human Resources Plan: Most of Anlong Thom population is still illiterate and in low education level because the village is distant from the city. The research shows that villagers manifest high motivation in vocational training. Any development plans should be accompanied by a training program.



A topographic map of Angkor and Kulen region



Rock painting locations



The rock temple



Reclining Visnu and other Brahmanism gods near Poeng Tbal



Srah Dam Rei: elephants and lions



Poeng Dai Rea



Rock painting: a head of bull, a palm, a series of square traits, zigzag and others



Rock painting at Poeng La-ang Thom: three human images, two bulls and circles



Rock painting at Poeng Kumnou: two human images and three bulls



Poeng Kob: The painting of human beings, the spiral showed behind the head (areole?) and other animals



The trait found at Peong Veal Preah Pad



Conservation of Arab-Ki-Sarai

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The Arab Sarai (Lat. 28°35' N; Long. 77° 14' E), located in South District of New Delhi, was built by Akbar's mother (Haji Begum), and was so called because it was the habitation of some three hundred Arabs, whom she may have brought back from Mecca (The Seven Cities of Delhi, p. 62). The Arab Ki Sarai comprised a large enclosure adjoining to south western corner of the Humayun's tomb.

It is divided into two quadrangles by series of cells provided with a gateway in the centre. Immediately outside of its lofty eastern entrance, approached by a gateway from the east, is the second quadrangle, originally bounded by arched cells, known as mandi (market). It was a later addition by Mihr Banu, chief eunuch in the time of Jahangir, A.D. 1605-1627 (Inventory of Monuments and Sites of National Importance, vol. I, part 3, Delhi Circle, p. 92).

Conservation is the process of preserving the built heritage whether it is a historic monument or site or cultural property created in the past. This process ensures to keep this heritage in a state that it remains a valuable source of knowledge, for the coming generations. The word 'conservation' is a general term used in preserving our cultural heritage. It is the action taken to prevent decay and includes all actions that prolong the life of our cultural heritage.

Conservation work was carried out in the cells adjoining to the eastern gateway and eastern gateway, eastern and southern walls, dalan of the northern gateway, cells, ceiling and floor in Arab-Sarai. The monuments including the eastern and western gateways and the arched cells along the central courtyard have been extensively repaired using traditional building materials and techniques. Major works included repair and restoration of damaged arches of the cells; relaying the terrace concrete; underpinning of the dislodged stones of the random rubble masonry; water tightening the structural remains in the complex; edging of the plaster concrete over the wall; and relaying the floor concrete. The southern flank of the complex originally had a stepped well, but it was almost covered with structural debris. It was conserved and provided proper structural stability.

The masonry of the eastern and southern walls had fallen and bulged out in parts. It was reconstructed and the open joints were pointed to arrest the growth of vegetation and water flow into the structure. The decayed and missing rubble masonry of the cells adjoining the eastern gateway was reconstructed and the floors were relaid with lime-concrete. Broken patches of the parapet-

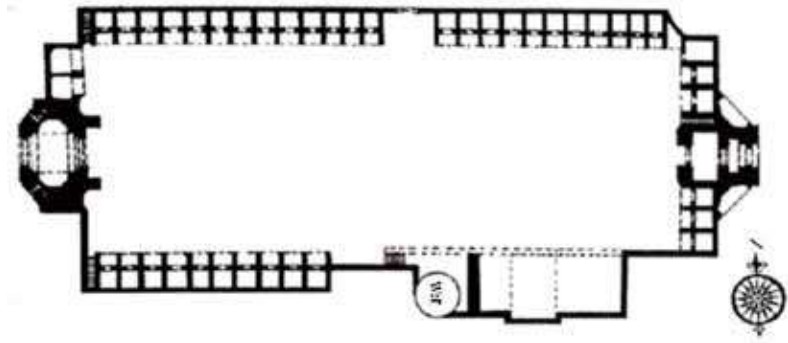
wall over the west dalan of the northern gateway were repaired. Open joints in rubble walls, ceiling and floor of the gateways were pointed and the holes, hollows and cracks were grouted. In the Mandi area of the Sarai, the breaches in the southern wall were closed and the out-of-plumb masonry was repaired. The fallen portions of the eastern gateway were restored. The damaged and bulged wall of the inner cells was reconstructed in keeping with the original and the arches were strengthened. The work of face-lifting of the monument has been completed. Extensive structural repairs which involved rubble stone masonry, pointing and plastering with composite mortar were carried out by following the original pattern.

Apart from this, the worn-out and decayed wooden gate of the eastern gateway was replaced by a smaller iron gate. During the conservation work, an ancient stepped well was also partially exposed and the masonry was preserved. A garden was also developed at Arab-Ki-Sarai and bajri was spread over the causeways.

Conservation works in Arab Sarai were done as and when there were requirements. Unnecessary intervention to the monument was discouraged and ceased. Best possible treatment was given to the monuments in respect to the availability of materials and techniques. It is only due to these in time works, the monument is standing as a witness of the history to the present.

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Plan of Arab Sarai



Eastern gateway of Arab Sarai in early 20th century



Eastern gateway of Arab Sarai (before conservation)



Eastern gateway of Arab Sarai (after conservation)



Damaged cells at Arab Sarai (a general view)



Cells, Arab Sarai (before conservation)



Cells, Arab Sarai (after conservation)



Mosque, Arab Sarai (before conservation)



Mosque, Arab Sarai (after conservation)



Well, Arab Sarai (before conservation) Well, Arab Sarai (after conservation)



Well, Arab Sarai (after conservation)



Damaged cells, Arab Sarai (before conservation)



Damaged cells, Arab Sarai (after conservation)

ACCU
REPORT



Restoration of the Old Palace Sumbawa

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Preface

Old Palace of Sumbawa is one of the important cultural heritage in Indonesia. Old Palace is situated on the island of Sumbawa, Sumbawa Besar Regency, West Nusa Tenggara Province, Indonesia. Old Palace Sumbawa was built in 1885 by the kingdom of Sumbawa, governance Sultan Jalaluddin Muhammad Shah III. The building was constructed to replace the previous palace that has been burned, and used by the King.

This palace has the prestige architecture building in the form of stage twins with 99 poles rafters. The number 99 is a symbol of the attributes of God in Islam (Asmaul Husna). Poles of the building is cylindrical-shaped with a diameter of 30-40 cm. These poles stand on umpak stone. The distance between the poles is between 5 to 5.30 m at the north-south direction, and 2.5 to 2.9 m in the east-west direction. The foundation of the building is 18.1 m x 31 m. The height of the building is 13.5 m. Palace building consists of two units, connecting each other at the second floor of the building and two separate floors of the building west and east building. The first floor has 12 rooms; while in the second floor has two large rooms. Wood shingle material is used for saddle-shaped roofs and storey buildings. All the building components including beams, floors, walls and roofs are made of wood. The spaces are grouped according to function of the public space, semi-public and private. Since 1994 up to now, the Old Palace building has been used as a museum in Sumbawa region.

Old Palace of Sumbawa is a large wooden building with complex and serious problems in structure, architecture and materials, which needs proper handling of restoration. Restoration efforts of this building are one of the models of cooperation between Indonesia and Japan. One of the cooperation is the assistance of Japanese experts from the Agency for Cultural Affairs and JACAM (Japan Association of Conservation of Architectural Monument). The palace building refurbishment project has been carried out from 2004 and scheduled for completion in late 2010.

Restoration Work

In accordance with the procedure of restoration of cultural heritage buildings in Indonesia, before restoration, technical studies of restoration must be carried out. Technical studies for restoration were conducted in the year of 2001 by restoration experts from Indonesia and Japan. Technical studies for refurbishment aimed to provide appropriate guidance in the restoration of the Old Palace of Sumbawa. Some of the activities undertaken in the restoration of technical studies included the research of the building; documenting the building; building materials research; environmental research and its layout; and the methods and techniques of building renovations.

Based on the results of technical studies of restoration, we concluded the overall condition of the building. The main problem was the slope of the main buildings



Old Palace Sumbawa, 2001



Old Palace Sumbawa, 2001

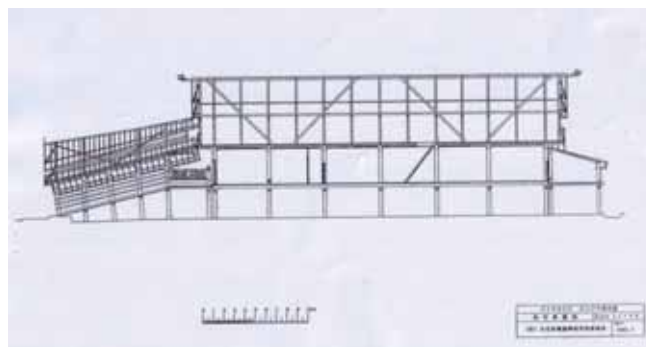


Figure of elevation of the Old Palace of Sumbawa drawn by JACAM, 2002

caused by the shift of the main building structure; the main pillars of buildings had a tilt to the west. Another problem was caused by the inevitable nature of wood materials: frame floors, floorboards, walls and roofs were partially damaged and weathered.

Based on the study and analysis of building structures on the technical studies in 2001, the method of handling damage of the building was decided as partial restoration. Partial restoration was carried out by straightening the sloping main poles without dismantling all building components. Dismantling of building components was performed only on non-structural members. Before straightening the main poles, the stakes between the poles and the beams should be loose. After that, the main structure was pulled to be straightened, and then tensioned with spikes again.

The restoration phase I in 2004, conducted with the aim of early preparation before straightening the main poles of the building, targeted on restoration activities such as strengthening the foundation by utilizing a local foundation, *umpak umpak-rock* as the base of the main poles; drainage improvement around the building; making the museum collection storage warehouses as well as exhibition space; making the demolition of buildings storage warehouses; manufacturing four concrete blocks as the main attraction poles; and the procurement of substitute materials.

In the second restoration in 2005, the work began to

uphold the supporting poles by using heavy equipment such as pulleys, winches and other assistive devices, equipped with alternating strings, drawn from the eastern side by holding on reinforced concrete beams that had been prepared previously. Several times, we tried to pull the pillars which had the slope, but these efforts were not very effective, even though some parts of the wall which were believed to strongly bind the construction were released, especially those located on all four corners of each building. Overall, 10 were dismantled in a series of walls in the first floor, but the position of the main poles were not moved, so that the enforcement was stopped, because if the way was forwarded, we feared it would cause further damage. Enforcement efforts of poles did not show a significant buffer, for the structure of the Old Palace was interrelated with each other. Considering this situation, the evaluation was conducted to assess the need for restoration by total dismantling of building components, except the main pillars and beams pile fastener.

Restoration Phase III in 2006 changed the method of restoration from partial to a total refurbishment, resulting in additional volume of work. The barracks, built to accommodate the demolition, were no longer sufficient, and so we needed additional space to accommodate dismantled wooden members. New problems occurred when dismantling building components on the second floor as the floor boards, beams under the floors, walls, doors and windows, as well as the roof, and some of the defects in the original elements were found. Tensile



The poles of the building leaned to westward.



Moving of the main beam by a pulley, 2008



Enforcement of the main poles, 2008



Inspection of the main beam before reinstalling, 2008

beam of a size 35 x 40 cm with a length ranging from 5 up to 6.60 m deteriorated at the top. Based on technical considerations, this element must be replaced. The replaced beams due to damage summed into as many as 26 among 31 beams in total. According to an agreement on a replacement, it was decided to use teak wood of good quality with good size and length of a wooden cross with the original size. To obtain materials for replacement with the same technical requirements, these materials must be imported from Java.

Restoration Phase IV in 2007 targeted restoration activities such as dismantling the original building components on the second floor, amputations and fillings. Amputations were performed on 11 damaged main poles followed by replacing the damaged section with the same wooden material. From the total dismantlement of the second floor, it was revealed that roofs of the building were severely damaged. The deteriorated materials, caused by bacteria and beetles, cannot technically be used again. With these considerations, the replacement of elements should pay proper attention to authenticity.

The aim of restoration of phase V in 2008 is to improve the poles enforcement; to reassemble structural members; and to replace components into the original position, especially with main structural consolidation. The restoration work included installation of main blocks of size 35 x 45 cm; fitting ornaments carved on the bottom surface of the beam, attached by screws and reinforced with glue; amputation pole; strengthening the main structure by installation of reinforcing beams by filling

the block of wood poles along 60 cm between the beams reinforced with bolts and clamps as many as 31 points; and conservation of components of the original buildings in the traditional way.

The aims of restoration of phase VI in 2009 includes reassembling non-structural building components such as partial roof truss, floor, walls, doors and windows, and installation of lightning protection devices. Until October in 2009, the achievement of Old Palace Sumbawa restoration project has reached 80%.

The restoration phase VII in 2010 has reached the final stage. Until now, the progress of restoration of Sumbawa Old Palace has reached 95%, the remaining work has to be completed in 2010 which is perfecting the installation of building components.

Conclusion

The restoration plan of the Sumbawa Old Palace from 2004 to today, changed from a partial restoration to total restoration. Changes in the restoration guideline of this building have resulted in changes in the volume and schedule of the restoration work. Changes in the restoration plan have become an important factor to achieve restoration aim of cultural heritage.

Note:

Umpak-umpak: rounded stone, used as a foundation of a traditional building.



Restoration work, 2009



Restoration work, 2010



Restoration work viewed from above, 2008



Restoration work viewed from above, 2010



Conservation of Wall Murals at the Old Machap Mosque, Alor Gajah, Malacca, Malaysia

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Introduction

The Old Machap Mosque is located at Bukit Sedanan (Sedanan Hill), Durian Tunggal, Alor Gajah in the State of Malacca, Malaysia. It was built in 1902 by Jailani Mendik Masap or locally known as Datuk Machap, a Makasar descendent from Indonesia. The mosque was designed symmetrically with two-tier roof structures and a small dome on top the roof, a typical design of many traditional mosques in Malacca. The Old Machap Mosque started off as a place of worship for Datuk Machap and his Muslim communities. During the World War II, Datuk Machap helped the local Chinese communities. In return, the Chinese communities had gathered a great sum of money to renovate the mosque. The original structure of the mosque which was made of timber had been replaced with bricks, timber, terracotta tiles and roof clay tiles. A marble plaque was placed onto the exterior wall listing down, in Chinese characters, the name of donors and the amount of donations. In the 1980s, the mosque was rarely used as the nearby areas were turned into a reservoir for the State of Malacca. Today, the Old Machap Mosque and its surrounding areas are located in a reserved land owned by the water company Syarikat Air Melaka Berhad. The mosque and its cemetery area are currently maintained by Haji Mohd Husin bin Mahmor who is the 8th generation of Datuk Machap descendant.

Apart from its unique roof design, the mosque is also known for its wall murals depicting the images of plants, flowers, fruits and vases. In 2008, under the National Heritage Act 2005, the Old Machap Mosque has been listed as a heritage building. On 21 December 2009, the Department of National Heritage, Ministry of Information, Communications and Culture, Malaysia took an initiative to conserve the wall murals at the Old Machap Mosque. The conservation of wall murals involved removing the new layers of paints which had been painted over during the last restoration. Local experts from the National Art Gallery were engaged to conserve the wall murals. The conservation works were completed on 8 January 2010 at the cost of RM 22,000 (\$6,414 USD).

Wall Murals

There are 27 panels of wall murals found on the northern, southern and eastern exterior walls of the Old Machap Mosque. The wall murals portray several images including plants, flowers, fruits, geometrical shapes, and vases. These images are also found above window and door frames. Some of these images are in 3-dimensional forms that make them unique. The color scheme, design and the painting methods of these wall murals are similar to those used in China. However, there is no image of human figures



The Old Macap Mosque was designed symmetrically with two-tier roof structures and a small dome on top the roof.



A view showing the mosque and the nearby reservoir



A marble plaque was placed onto the exterior wall listing down, in Chinese characters, the name of donors and the amount of donations.

or animals on the wall murals. This is due to the fact that the Islamic teachings forbid the use of figurative motifs at religious buildings including mosques and musollas. There is no record of when the paintings were drawn on the exterior walls but it is believed that they are related to the Chinese donors that had helped to restore the mosque in the 1940s.

Conservation of the Wall Murals

Before conservation works began, a dilapidation survey of the wall murals was conducted by a team of experts from the National Art Gallery Malaysia. All panels of wall murals were carefully inspected and documented. The survey identified that the wall murals had shared common defects which were over painting, chipping and breaking of plaster on the surface of the murals; and scratches on both the plaster as well as the original painted surfaces. Some were found to have stained marks and crusts from dried paints. During the last restoration of the mosque, there were attempts to repaint the wall murals though they were not done accordingly. However, only a few murals, mainly above the window and door frames, were left untouched, portraying the original colours of the paintings.

Conservation works began on 21 December 2009. The main purpose of the conservation works was to clean the wall murals, particularly removing the new layers of paints to the original paints. This includes the identification of the defective murals and demarcating them on scaled drawings, collection of preliminary data such as the weather conditions, humidity as well as the intensity of UV rays at the site. Further investigations were carried out to identify the defects for each wall mural and determining the types of paints used. The conditions of the wall murals were recorded before, during and after conservation. Each wall

mural was given a special code for documentation and references.

The cleaning process involved both dry and wet cleaning techniques. The dry cleaning process was carried out manually by using soft brush, wire brush and scraping tools. All dirt and dusts found on the wall murals were carefully cleaned before applying the wet cleaning technique. The wet cleaning technique involved removing of new layers of paints using cotton tips and chemical solutions such as ethanol and trichloroethylene. Paper pulp technique was also applied onto wall murals which contained high level of moisture. The paper pulp technique requires three to four days depending on the moisture level and weather conditions. Scraping works were also carried out to rectify mainly on over-painted wall murals. During conservation works, plastic sheets were used to protect the wall murals from dusts and rain. All wall murals were later protected with synthetic resin coating of methacrylates (paraloid B 72).

Conclusions

Conservation of wall murals at the Old Machap Mosque required knowledge and skills. Using appropriate methods and techniques in the conservation works helped to prolong the lifespan of the wall murals. Upon completion of the wall mural conservation, the mosque resumes its function as a place of worship. The conservation of wall murals at the Old Machap Mosque has shown a good collaboration between the Department of National Heritage and the National Art Gallery Malaysia in conserving the heritage building. Today, the mosque is frequently visited by the locals as well as tourists who appreciate its unique wall murals and also its scenic view over looking the reservoir.



Wall murals found on the exterior walls depicting the images of plants, flowers, fruits, geometrical shapes and vases



The wet cleaning technique involved the application of cotton tips and chemical solutions to remove the new layers of paints.



Paper pulp technique was applied to areas which had high level of moisture content.



Plastic sheets were temporarily used to protect the wall murals from dust and rain

A wall mural before (above) and after (below) conservation



Images of the wall mural revealing its original colours (right)



The Khoit Tsenkher Cave Rock Paintings

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Mongolian National Commission for UNESCO

Justification

Given the considerable and unique importance of Mongolian rock art within the cultural heritage of Mongolia and Central Asia, it is clear that petroglyphic art is a principle part of the Mongolian historical and cultural heritage. Research of the rock art sites in the territory of Mongolia has been conducted for over 130 years. During this period, a lot of rock art sites has been found and studied constantly. Those sites reveal that the art of petroglyphs once highly developed in Mongolia in the past.

Rock paintings of the Khoit Tsenkher cave date back to the Upper Palaeolithic period (20,000-15,000 years ago). In one of corners of the cave measuring 2.5 m high and 1.5-2.0 m deep, numerous symbols and animals were painted overlapping each other on the ceiling and wall. A quiet standing stag was portrayed clearly among the animals. Also a standing buffalo with horns looking ahead was represented separately. In another corner of the cave, many animals including oxes, ibexes, elephants, ostriches were pictured, overlapping each other. It is interesting that dotted lines were drawn over the ostriches. On its wall in a cave hollow measuring 10 m long and 8 m wide a camel with two humps was portrayed. Also many symbols and trees were painted at the height of 2.0-2.5 m not far from the wall, where the camel was portrayed. Lions, elephants, argali sheep, ibexes, ostriches, antelopes, camels, as well as symbols were painted with mineral-based paints of rosy and brown colours on the walls deep inside the cave.

Outstanding universal values

Rock paintings of Khoit Tsenkher cave are unique and different from other rock paintings commonly found in Mongolia and considered as a special ancient arts form in terms of the uniform style for drawing wild animals with 'real' features. Considering the method of painting of different kinds of animals, their colours and views, the Khoit Tsenkher cave rock paintings show their original artistic, cultural and historical features which are different from the other rock paintings in Mongolia and her neighbouring countries.

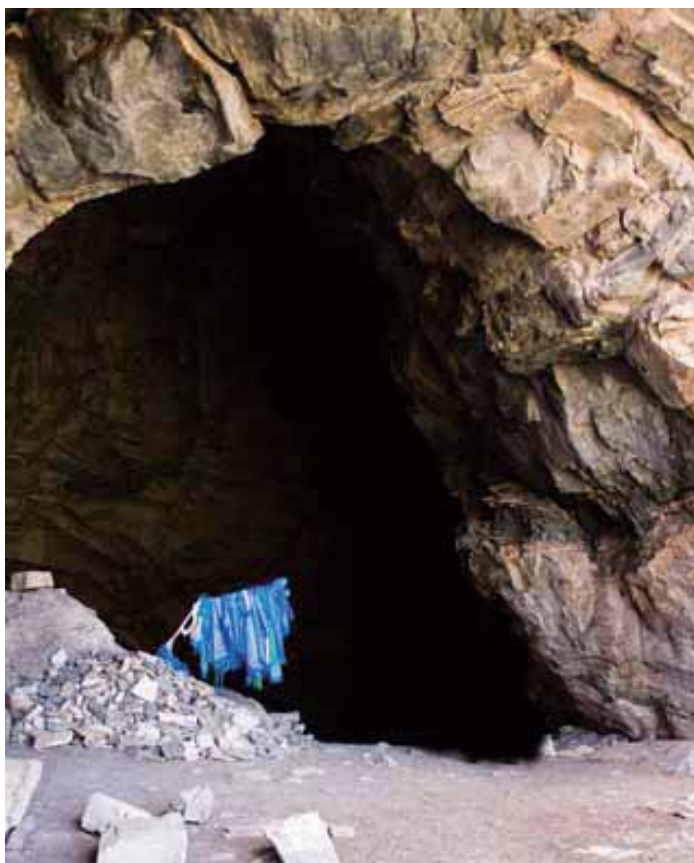
Khoit Tsenkher cave paintings definitely demonstrate an original and unique history and culture world. Their styles and elements manifest exclusive traditions of ancient Mongols' culture and lifestyle. These rock paintings represent Central Asian and mainland Asia's neighboring countries' earliest culture, and date back to the earliest Homo's creations. The paintings do not only illustrate just objects, but also reveal artistic imaginations and techniques of painters. One of specific features of

Khoit Tsenkher cave paintings is that they do not depict or portray human beings at all. They are devoted to only animals, in particular wild animals.

Conservation

Rock paintings of Khoit Tsenkher cave have been eroded and damaged due to their old age and impacts from weather elements. Besides, the most alarming concern appears inappropriate human actions affecting integrity of these heritage elements negatively. These rock paintings had not attracted people's attention until some years ago and local residents' beliefs and customs played an important and positive role to ensure integrity of rock paintings.

Unfortunately, rock paintings have been damaged due to improper human actions and livestock hoofs in recent years, whereas names of nearby places have changed by and large as compared to that used in old days or even 100 years ago. In some cases, some earliest and most important paintings showing buffalo and red deer have faded away and deleted due to impacts of above modern day factors and phenomena. Previously, people were not attracted to or interested in these rock paintings because of lack of information and its isolated remote location. Currently, it is concerned that better information about the sites is disseminated, the more carelessly people become to spoil and damage these valuable historical items. Another concern looks that using old-fashioned research techniques might damage paintings when cleaning surface of rocks and highlighting rock paintings with additional unnecessary drawings on rock surface.



The entrance to the Khoit Tsenkher cave



The Khoit Tsenkher cave rock painting



People's Involvement in Heritage Conservation: Swayambhu Stupa Conservation

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The Swayambhu Stupa is one of the most important and the oldest monuments of Kathmandu valleys, which is still worshipped not only by many people in Nepal but also people in many other countries in the world. The stupa has the perfect tranquility between the Buddhists and Hindus and it is the symbol for the world peace. There is no inscription and any other evidence about the exact date of its construction, but some of the inscription say that some parts of the stupa was reconstructed in the medieval period (13th – 16th century A.D.) and there were many conservation work done in the medieval period as well as in the Rana period (18th – 19th century A.D.). But there is no full documentation about the previous conservation/renovation work of it, except some documents only mentioning the donors' name list and amount they donated.

The major renovation of Swayambhu Stupa was held under the direction of Dharma Man Tuladhar, a devoted businessman and sponsored by Lamas in NS 1038. At that time the nine niches shrines, four shrines of Taras along with those of the five Dhyani Buddhas, were rebuilt; which was sponsored by three brothers Harsa Sundar, Pushpa Sundar and Ram Sundar .

Since the NS 1038 renovation of Swayambhu Stupa, there had been no need to repair the stupa, but some of the parts such as parasols, pinnacles and jewel clusters needed to be repaired and they were repaired in NS 1098. Before restoration, gilded gold on copper sheets were gradually worn out, and wooden materials were also decaying day by day due to natural weathering during a long interval of renovation, nearly about a century. So, it was needed to renovate the whole stupa as it was done in NS 1038.

Conservation of Stupa

The Department of Archaeology (DoA) had given

permission for conservation work to the Federation of Swayambhu Conservation and Management (FSCM). At first, gilding Swayambhu with gold on the copper sheets which were used as the covering of niches, hermika, goldhoja, trayodasha bhuvana and pinnacle was completed and some minor structural conservation of the stupa was made.

The next objective was the conservation of wooden structures of the Swayambhu stupa, especially the wooden structures used in above-mentioned hermika for jhallars, goldhoja and the rings of Trayodasha Bhuvana as well as in the 'yashti' (the major vertical pillar, which is used as the vertebra or the spinal cord of the stupa and it is in the inner side from foundation to the top).

The project was launched by the Tibetan Nyngma Meditation Centre, California (an international donor agency) with the cooperation of Department of Archaeology (Government of Nepal) and Federation of Swayambhu Management and Conservation (Local NGO).

A technical committee was organised for the project in the right way, consisting of the representatives from DoA, District Administrative Office, District Police Office, Kathmandu Metropolitan City (KMC), Guthi Sanasthan, KMC 15 Ward Office, FSCM, donors and local organizations as well as local people, which was the leading committee for the conservation of Swayambhu stupa. Beside this, there were three more committees for the different tasks: Conservation (Removing/ Reinstallation) Monitoring Committee (CMC), Gold and Gold Gilding Monitoring Committee (GMC) and Gold Gilding Experts Committee (GEC), which almost consisted of local people and local organizations of Swayambhu. Those committees helped a great deal to carry out the conservation work smoothly. Actually the local people and the local organizations played a vital role for



The deteriorated wooden parts of hermika



Removing copper sheets for gold gilding

motivating the whole people to care for the heritage conservation and everyone in the area was taking care of the work as well as monitored indirectly, which helped to secure/guard the archaeological remains of stupa during the conservation work.

Conclusion

The goal of Swayambhu Conservation Project was to gild with gold on the worn out copper sheets covering the main stupa of Swayambhu. The gold gilding of the whole copper sheets as previously planned according to the heritage conservation guidelines and installing in their original places of nine niches around the dome, has completed successfully within its targeted time frame. However, there were some problems in management during the conservation work after the completion of nine niches shrines and the work was delayed for some months, due to the lack of understanding for local people/community involvement and coordination between the local organizations and the leading organization management (FSCM) team. The problem was solved and the work has completed successfully.

The Swayambhu conservation project was one of the great important conservation work done not only in Kathmandu valley, but in Nepal. It was really such a big conservation project that was funded by the foreign donor agency. The conservation work was held for Swayambhu stupa after an interval of a century, which

is also a great important matter for all. Although there was not any documentation on previous conservation of stupa, the project has prepared a well documentation this time, which can be helpful to everyone on conservation of the stupa in the future and heritage conservation as well.

The conservation work was also very important for those who were really devotees of Lord Buddha and worried themselves that stupa were deteriorating to the worst condition. Conservation of Swayambhu stupa was the great achievement in the following points:

- An example of people/community involvement in heritage conservation in Nepal, which is very rare;
- The conservation work was done after an interval of a century for the whole stupa;
- Complete documentation on the structure and conservation process of the stupa was made, which can be useful for other ancient monument/heritage conservation as well as for the future generations or for the future conservation works.

The Swayambhu conservation project was the great achievement, but the heritage conservation does not end once it is completed. Conservation is a ongoing process and people should remember and well consider it. The communities will learn from this project for the future conservation of the stupa and heritage as well.

Swayambhu Stupa



Before conservation



During conservation



After conservation



Vajra N Manadal after conservation



Performing Puja during conservation by the head priest

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REPORT



Managing the Effects of Coastal Erosion on Heritage: Maori Archaeological Sites on Muaupoko (Otago Peninsula), Dunedin

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The New Zealand Historic Places Trust

Introduction

The first people to colonise New Zealand were of East Polynesian origin making landfall on the New Zealand coast *ca.* 1300 A.D. These people developed their own unique culture known today as the Maori culture made up of the various Iwi (tribes) distributed throughout New Zealand. Before Europeans (Pakeha) began to colonise New Zealand soon after the arrival of Capt. James Cook in 1769, Maori had explored all parts of New Zealand (Aotearoa) and lived on the coast and inland concentrating in areas where horticulture was possible and where fresh water and marine resources were also available.

In Southern New Zealand, i.e. the lower half of the South Island constituting the Otago/Southland Regions (Figure 1), horticulture was not possible prior to Pakeha arrival due to the cool temperatures not being conducive to the horticultural species available to Maori. Because of this, Maori occupation was concentrated on the coastal areas for most of the year due to the availability of marine resources as a staple food source, particularly after the extinction of moa possibly sometime in the 15th century A.D. (Figure 2). This concentration of a large portion of Southern Maori archaeology/history on the coastline is now providing challenges to Iwi on how to manage their cultural heritage resource due to notable increases in coastal erosion which is destroying archaeological sites at an alarming rate. This loss of sites appears to have accelerated on the Otago/Southland coastline over the last *ca.* six years. This report presents one way in which this heritage loss is being managed on Muaupoko (Otago Peninsula), Dunedin.

Maori Coastal Archaeology

Otago/Southland coastal Maori archaeological sites are predominantly midden sites consisting of cooking and living debris from occupation activities (Figure 3). These sites commonly contain marine shell, bone (from fish,

bird, sea mammal, dog and, in early sites, Moa) and *hangi* (oven) stones. They can also contain a variety of artefacts such as flake tools, adzes, fern root beaters, fishing equipment (hooks and sinkers), adornments etc. and, if the environment is right, wooden artefacts (Figure 4). Midden/occupation sites can also contain human remains (*koiwi*). Other sites along the coast consist of *pa* (defended retreats or living areas typically on high locations) and *kāinga* (village settlements). But as Maori living structures were made of wood, little above ground evidence of these *pa* and *kāinga* can typically be seen, and so middens are the most noticeable evidence of Maori occupation as they are exposed on eroding coastlines.

Maori Archaeological Sites on Muaupoko and the Effects of Coastal Erosion

Muaupoko was occupied soon after the first arrival of Polynesians in New Zealand (Figures 5, 6 & 7). Today the Otakou Runanga (Council) located at the Otakou Marae on the Otago Peninsula are the Maori guardians of the archaeological sites and have *kaitiakitanga* (guardianship) over the land and water.

Muaupoko was an ideal place for settlement by Maori due to the abundance of sea and estuarine resources, such as shellfish, fish, and seals, and large flightless birds, such as Moa (Figure 2) which were prevalent early on. The exposed midden, occupation and oven archaeological sites recorded along the shores of the inlets and along the beaches reflect the different activities of Maori here over hundreds of years including moa hunting, fishing, tool manufacture and the trade and exchange of goods from outside the area (see below). Occupation was seasonal on Muaupoko prior to Pakeha (European) arrival, as shown at other archaeological sites which have been excavated and researched along the Otago/Southland coastline, to take advantage of the changes in resources available in



Figure 1. The Southern Region of New Zealand and the location of Muaupoko (the Otago Peninsula), Dunedin. The Southern Coastline from the Waitaki River southwards is experiencing increased coastal erosion causing significant loss to Maori heritage. (Map sourced from InfoMap 266. Crown Copyright Reserved).

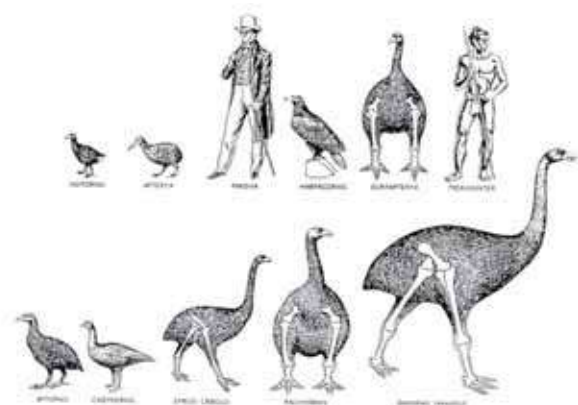


Figure 2. Large flightless birds were the only terrestrial fauna available to Maori to hunt as New Zealand had no terrestrial mammals. Moa were the main game hunted and became quickly extinct perhaps in the 15th century AD. (Figure from Anderson 1989).



Figure 3. Typical examples of eroding coastal Maori middens along the Otago/Southland coastline containing marine shell, bone, hangi (oven) stones and artefacts. Such middens are eroding at an increasing rate (Photos: Matthew Schmidt).

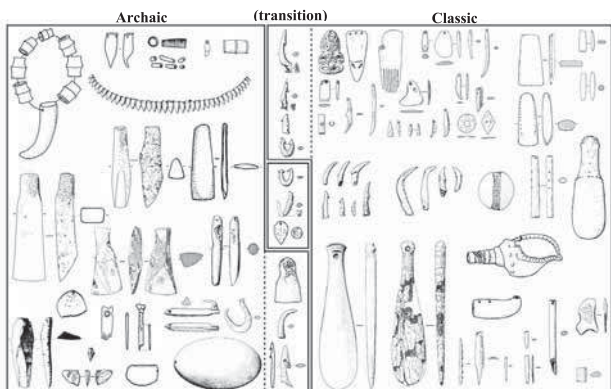


Figure 4. Examples of Maori artefacts from Archaic (Early ca. 1300-1500AD) and Classic (Late ca. 1500AD-late 1800s) Period sites. (Figure from Davidson 1984).



Figure 5. Muaupoko (Otago Peninsula), Dunedin (Sourced from NZMS 260 144 Ed 2, Crown Copyright Reserved).

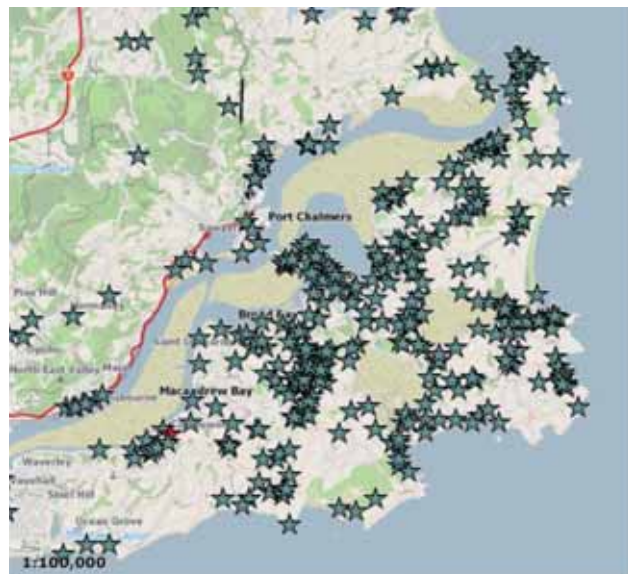


Figure 6. Distribution of Maori and Pakeha recorded archaeological sites on Muaupoko. Stars indicate recorded archaeological sites. The majority of sites recorded on the coast are Maori sites with inland umu (ovens) on high points concentrated on the outer half of the peninsula (image sourced from ArchSite the NZ Archaeological Assn. online site recording scheme www.ArchSite.org.nz).



Figure 7. Google Earth image of Muaupoko (Otago Peninsula) showing the long coastline where Pre-Pakeha Maori occupation was concentrated. The focus of Maori occupation on the coast has meant that increased coastal erosion is causing significant loss to Maori archaeological heritage on Muaupoko.

the *takiwa* (territory, region) during the year. Later in the history of Muaupoko, and possibly just prior to Pakeha arrived, permanent settlements had become established.

As Maori often occupied landforms typical of the coastal environment around New Zealand such as sand dunes and beach terraces, it is in this sandy matrix that many of the midden/occupation sites are found on Muaupoko. This soft matrix means that these sites are particularly sensitive to sea erosion and any increase in sea height and wave action can bring about the rapid loss of these sites, as illustrated in Figures 8 to 12. Of note on Muaupoko is that even coastal terraces comprised of a solid matrix of compacted earth and volcanic stone are eroding at an increased rate and as such is the evidence of Maori occupation on these terraces (Figures 13 to 17). The consequence of the sensitivity of many of the archaeological sites on Muaupoko to increased sea erosion is that sites from all periods of Maori history are being lost on the peninsula, with the significant early sites containing evidence of the first settlers on Muaupoko being the first to disappear.

Material Culture Retrieved from Eroded Sites

Artefacts from the middens/occupation sites which have fallen onto the beach have probably been picked up by



Figure 8. Eroding dunes on Muaupoko. The steepness of the dunes illustrates their rapid loss through increased sea erosion (Photo: Shar Briden, DoC).



Figure 10. Close view of eroding dune face showing exposed archaeological site as a thick band of midden (Photo: Shar Briden, DoC).

the general public for many years. Fortunately, in some of the inlets and bays on Muaupoko where increased erosion has been observed, an amateur archaeologist has been walking the beach at these locations at low tide for the last four years and retrieved any archaeological remains encountered. These finds have been carefully stored and their location noted on a map of these inlets and bays. Members of the Otakou Runanga have also recovered artefacts etc. from the beaches meaning that at least some of the material culture being found has their provenance known.

The most sensitive of finds, which are unfortunately becoming more common, are those of human remains which are washing out of the dunes. These burials are known as *koiwi* and represent to Maori their *tipuna* (ancestors). They are therefore of the highest importance to Runanga and are the most concerning issue in the erosion of the archaeological sites.

In Figures 18 to 23 are shown the variety of *taonga* (treasures) and faunal remains being recovered on Muaupoko and which is part of the Parson's Collection, that being archaeological remains recovered by the amateur archaeologist Juliet Parsons. It can be seen from



Figure 9. Close view of eroding face of old sand dune showing dark charcoal stained stratigraphy and midden indicating past occupation. Hangi (oven) stones and midden lie scattered on the beach in front of the site (Photo: Shar Briden, DoC).



Figure 11. Hangi Stones on the beach indicating where an oven was located in the dunes. This archaeological feature has dropped straight down onto the beach as the site has been eroded back by increased wave action (Photo: Shar Briden, DoC).

these figures that not only are the every day activities and diet of Maori on the peninsula illustrated but also evidence of the extensive trade networks which were active between Runanga/Iwi prior Pakeha arrival. The *pounamu* (greenstone/jade) is from either a Central South Island or South Island West Coast origin. The obsidian is from the North Island with the two colours of obsidian identified possibly indicating two different source locations. The silcrete from which the flake tools are made is from a source outside of Dunedin and the adzes are made from different varieties of stone where some varieties may originate from beyond the Peninsula.

Wooden artefacts require an anaerobic environment to be preserved and are not common in New Zealand Maori archaeological sites. The wooden box type structure found (unknown function) as shown in Figure 24 was therefore a significant find. It was manufactured from Totara wood which used to be part of a *waka* (canoe) with one of the pieces originally being part of an outrigger canoe float. This piece of outrigger canoe float is one of only three which have been found in an archaeological site in New Zealand. This artefact is currently being conserved by Dilys Johns at the Conservation Laboratory, Department of Anthropology, University of Auckland.



Figure 12. Charcoal stained soil and midden being eroded out of the soft sand dune (Photo: Shar Briden, DoC).



Figure 14. Another example of the loss of a site located on a hard earth and volcanic rock terrace (Photo: Matthew Schmidt).

It can be seen, therefore, from the examples of archaeological remains recovered, that a very large amount of Maori material culture is probably being lost every year on Muaupoko and so too is part of the story of Maori settlement on the peninsula.

Managing the Loss of Muaupoko Archaeological sites

The increased sea erosion of Muaupoko's archaeological sites presents challenges to the Otakou Runanga on how to manage this loss of heritage. Currently the NZHPT (New Zealand Historic Places Trust) Regional Archaeologist, the DoC (Department of Conservation) archaeologist for the area, two independent professional archaeologists and an amateur archaeologist currently reporting finds, are supporting the Runanga in making decisions on the management of the archaeological sites. Three approaches on how to manage the eroding sites have been considered by this group (as stabilisation of any sites cannot be achieved):

1. Record cultural items as reported and undertake no formal monitoring
2. Monitor in a controlled manner those sites at high risk of rapid loss from erosion and visit other sites on an as needed basis.
3. Choose which sites to undertake salvage excavation



Figure 13. Archaeological site located on an eroding terrace. The hard earth and volcanic rock composition of the terrace is a tougher matrix to erode than sand dunes, but sites such as this also appear to be eroding more rapidly. Artefacts exposed lie next to the scale in the photograph (Photo: Matthew Schmidt).



Figure 15. Close view of terrace site showing dark cultural layer containing marine shells, fish and seal bone and stone flakes (Photo: Matthew Schmidt).

and monitor other sites at high risk of rapid loss from erosion.

Option 1 would mean further unmonitored loss of heritage with the risk of important material culture or koiwi found by members of the public not being reported. Option 3 is the most extreme of intervention and may recover significant information from the most at risk sites before they disappear. However, the resources available to the Runanga, NZHPT and DoC to conduct an excavation(s) are limited and funding is not freely available for salvage excavation. In addition, funds would also have to be sourced for post-excavation analysis of material and so although finance may be found for excavation, material recovered may sit for many years in storage before analysis.

Controlled monitoring (Option 2) has therefore been considered as the best and most practical method at present in managing the loss of archaeological heritage on Muaupoko. In undertaking regular visits to chosen sites, recording what is found and the changes which have occurred, data can be collected in a controlled manner which can then be used to undertake an analysis of the heritage loss. This analysis will then inform on future management options on the most at risk sites. Costs for



Figure 16. The author on an eroding volcanic rock/earth terrace where an early archaeological site has been extensively eroded (Photo: Matthew Schmidt).



Figure 18. Artefacts recovered from eroding archaeological sites on Muaupoko. Top: large argillite(?) adze; middle: small basalt adze or chisel, pounamu chisels; bottom: basalt 'rough-out' of adzes in process of manufacture; far right: basalt stone fern root beater reworked into an adze (Photo: Matthew Schmidt).

this option are low with little equipment being required (standard field kit plus a GPS, digital camera and a PC) and the use of volunteers means low personnel costs. This option also means that obtaining funding for this archaeological work should be easier with any additional funding gained being used to preserve unique wooden items recovered.

To better undertake this monitoring, the NZHPT is writing an *Iwi Archaeological Site Monitoring Guide and Iwi Monitoring Field Book* to be used to train members of the Runanga so as they can undertake monitoring of their archaeological sites. This approach to site monitoring has not been undertaken previously in Southern New Zealand.

Conclusions

The ongoing loss of archaeological cultural heritage on Muaupoko by increased coastal erosion is by no means isolated to this location. Along the length of the Otago/Southland coastline archaeological sites are being lost or severely damaged. Muaupoko, though, is an example of where at least some of the archaeological evidence may be recovered in a controlled manner when little funding for archaeological salvage work is available. In addition, the training of Iwi monitors will mean Runanga will be directly



Figure 17. Close view of terrace site showing cultural layer containing marine shells, fish and seal bone and stone flakes with hangi stones lying on the beach (Photo: Matthew Schmidt).



Figure 19. Stone fishing sinkers showing carved groove for line attachment (Photo: Matthew Schmidt).

involved in the managing of their own heritage with support from various agencies and archaeologists.

Acknowledgements

This report would not have been possible without the support of the Otakou Runanga who have provided access to their valuable cultural heritage. Tēnā koutou. Essential to this report also were archaeologists Juliet Parsons, Dr Jill Hamel, Shar Briden and Brian Allingham.



Figure 20. Various stone tools. Far left: intricately shaped silcrete knife; top row: silcrete and porcellanite flake tools and a silcrete chopper/knife; middle row: silcrete, chert and silcrete flake tools; bottom row: three obsidian flakes from the North Island and a silcrete blade (Photo: Matthew Schmidt).



Figure 21. Bones from eroding middens on Muaupoko. Far left: dog; centre: bird ? large bones from mollymawk with long limb bone fashioned into an awl; far right: fish with barracouta jaws, barracouta being a common fish species found in the middens (Photo: Matthew Schmidt).



Figure 22. Moa bone. Top: pieces of leg, vertebra and pelvis; bottom: moa femur (Photo: Matthew Schmidt).



Figure 23. Seal bone. Seals were also a focus of predation by early Maori and is a common bone found in early sites. As moa and other land bird numbers dwindled, seals became an increasingly important food source and were hunted out in many coastal areas (Photo: Matthew Schmidt).



Figure 24. Wooden box structure (unknown function) as found in-situ on a beach on Muaupoko. The timbers have been cut and drilled and had once been part of a waka (canoe) (Photo: Matthew Schmidt).

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INTRODUCTION

The case study of the 200 year old Khaplu Palace, in a very remote and mountainous area of Pakistan, will present the outcomes and issues of documentation and conservation of an outstanding example of a vernacular monument using EDM device for the first time.

Since 1991, Aga Khan Cultural Service Pakistan (AKCSP)¹ has been involved in monument conservation in the Gilgit-Baltistan (formerly Northern Areas of Pakistan), with the active participation of local people. The conservation of the 700 year old Baltit Fort in Hunza by AKCSP demonstrated a strong regional innovative model of heritage conservation, long term sustainability and its use for local development. It also presented the concept of architectural documentation for practical conservation in Pakistan. During these projects on-site training of architects and engineers was offered, as well as summer internships for students from architectural schools in order to enhance exposure to firstly, conservation and secondly, to the architectural survey as a basic step before any intervention.

In an area where the legislation regarding the protection and inventory of the monuments is not fully active, the documentation of vernacular monuments and settlements becomes even more crucial. Furthermore, international recognition in the form of UNESCO heritage awards for completed projects made AKCSP realize the process of documentation as being a specialized field in conservation. Essentially, all the previous projects were following international guidelines for conservation but the more specific guidelines (Article 16, Venice Charter) relating to the precise recording and reinterpretation of monuments were slow to receive attention. Pursuing an advanced master's studies in architectural conservation at Leuven, Belgium provided me with the chance of getting hands-on experience and exposure to recent practices in heritage conservation. REDM was one of the methods which I introduced for the first time in Pakistan for heritage documentation, and Khaplu Palace was the first monument surveyed using this method.

PROJECT LOCATION AND THE SURVEY

Located in the rugged Karakoram mountain range at the height of 2500 meters, the Khaplu Palace is the finest surviving edifice of royal residence in Baltistan. Its significance lies in its cultural importance as a former seat of royal government in the area, and in its quality as a building, both aesthetically and as an exemplar of traditional building typology with influences from neighbouring regions (Kashmir, Ladakh, China, and Central Asia). As part of a wider cultural heritage support

programme in Baltistan, the long term sustainability is one of the prime objectives set by AKTC-AKCSP for this project. Working closely with the local community the project is contributing to the revival of traditional wood and building crafts, income generation activities and capacity building of locals.

Site surveys and documentation prior to any conservation and restoration works are now defined as the basic pre-requisite for understanding a historic building or site. This has been widely expressed in many national and international charters and conventions – from Athens Charter of 1933 to the Venice Charter of 1964 or the Burra of 1979. This discipline needs proper training, human resources and equipment. In the absence of any previous documentation efforts, the current documentation programme with EDM equipment was experimental in its own nature, its main objectives being:

- Disseminate and build capacity in recording techniques with REDM.
- Gather detailed information about a vernacular monument and site in the form of base drawings.
- Detailed documentation of the as-found state of the monument, which ultimately allows us to propose conservation and re-use plans.
- Set an example of architectural surveying which would be available for researchers and experts for future studies.
- After conservation, this documentation will provide us the basis for management, monitoring and maintenance of the site and monument.

In a remote situation where documentation of heritage faces huge challenges including the lack of experts, communication, dissemination and standard guidelines, the basic aim of this documentation campaign was to address the cited challenges. Documentation is a process which continues during the conservation of any monument and is the only accurate tool for recording information in order to understand the structure, ultimately leading to the management of cultural heritage.

The field survey, as a training process, was initiated in late 2005 primarily to cover the topographical features of this historic vernacular site. Initially, the field data was gathered with one total station and then downloaded on a computer and converted to vector form into the CAD software. Later, the more comprehensive stage of documentation of the historic buildings was initiated

¹ AKCSP is the Pakistani arm of Geneva based Historic Cities Programme of Aga Khan Trust for Culture (AKTC)

in first half of 2006 with the aim to document the monuments for the practical conservation works. The conservation activities running simultaneously made this documentation campaign more challenging as we needed to record the as-found state of the monument and site. Therefore, more practical solutions were worked out to fit the time constraints and conservation activities. The inevitable combination of EDM survey and rectified photography was used. A combination of a field laptop with CAD and image rectification software was practiced.

DOCUMENTATION AND INTERPRETATION

In this project EDM (Electromagnetic Distance Measurement) survey provided us an opportunity to interpret the obtained data in a variety of ways. Most of the team members knew the technique of architectural documentation using conventional manual measurement and drawing methods. The new EDM survey technique, therefore, was never going to be easy to understand and initially it was critical that I provided them common and easy examples. For this we initiated introductory lessons about the instruments and the future interpretation of collected data in the form of drawings. In a remote environment this was not an easy job to do and it was therefore important

for us to overcome the limitations of our survey with new technology. Soon the team realised that this technique substantially reduced the amount of time and human resource required for the documentation in comparison to conventional and manual methods, and above all that the results are very precise and accurate.

The team were also aware of the limitations of manual documentation methods. The inaccuracies in the manual documentation process due to the manual sketches, hand measurements and the conversion of manually drawn scaled drawings into vector drawing through a laborious scanning and the drafting process were easily mitigated with this combination of EDM and rectified photography surveys.

Since 2006, most of the architectural documentation has been completed in the form of floor plans, reflected ceiling plans, structural drawings, detail elevations of each room, cross sectional drawings, building elevations and a complete 3D wire frame model. Most of the major elevations and elevation features in the cross sectional drawings were completed with the help of image rectification software combined with EDM

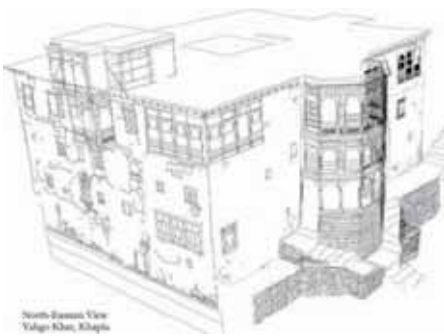


Fig. 1. A complete 3D wire-frame model of the Khaplu Palace.



Fig. 2. North view of Khaplu Palace with main entrance wooden loggia under restoration



Fig. 3. Floor plan of Khaplu Palace at level 1.



Fig. 4. Rectified photography of western elevation of the 100 year old Darbar Khang

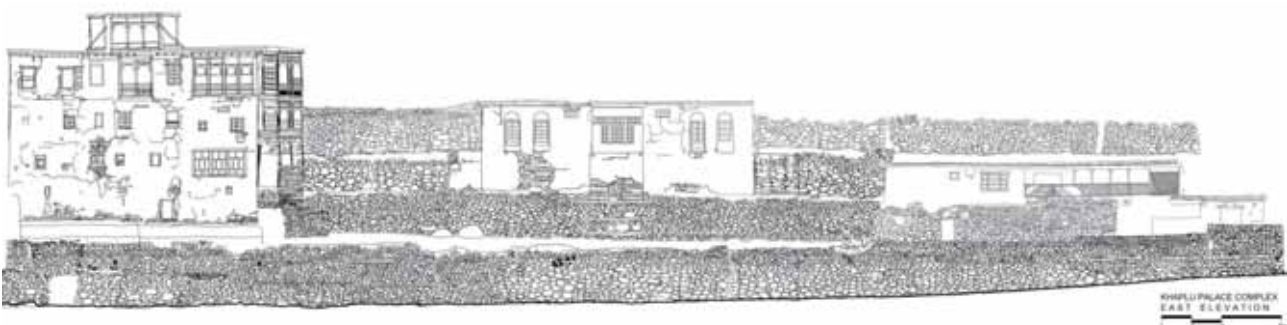


Fig. 5. East elevation of Khaplu Palace site. Hundreds of years old historic agricultural walls and buildings are documented using EDM (total station) survey and rectified photography techniques. This drawing is a 3D wire-frame CAD model.

survey. Rectified photography has been used to map the condition of external and internal elevations of the monument and was later converted into vector form.

INVESTIGATIONS AND CONSERVATION OF MAIN ENTRANCE LOGGIA

Primarily, the data in form of CAD drawings produced with the help of EDM survey has been used as base drawings which lead us to study the monument in depth and later its restoration and adaptation for reuse. Secondly, the data was key to identifying and studying the dilapidated parts of the monument. Total station has been extensively used during the investigations of the structure of the main entrance loggia of the palace. The abnormal tilt and the subsidence recorded with the help of EDM survey of the loggia at the floor level of level 1 revealed that this part of loggia was not structurally connected with the main building of the palace. The investigations showed a tilt of 14 cm and subsidence of 8 cm in the structure. Based on other such structural connections in the palace, the intervention proposal was implemented. A new connection and additional wooden beams were proposed. In order to remove the tilt and subsidence in the structure, hydraulic jacks and turning buckles were used. The process of lifting and pulling back of the structure to a satisfactory position was

closely monitored with the help of total station and allied software. The project is now in its advanced stage of completion and will be partially operational as “Heritage Residence and Museum” by the end of this year.

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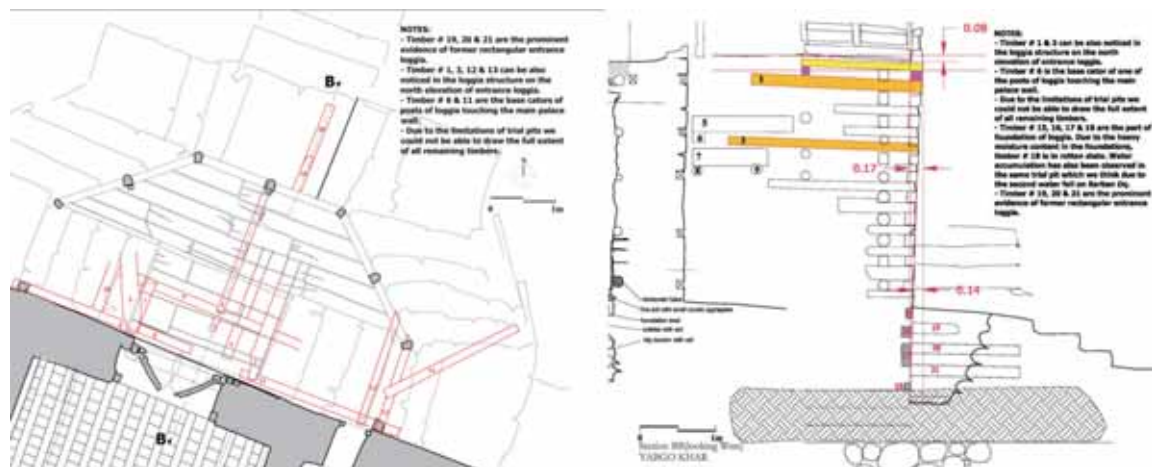


Fig. 6 & 7. This set of drawings shows the structure and location of timber elements in the plan and section drawings. Additionally, the sectional drawing shows the total extent of subsidence and bulge in the structure

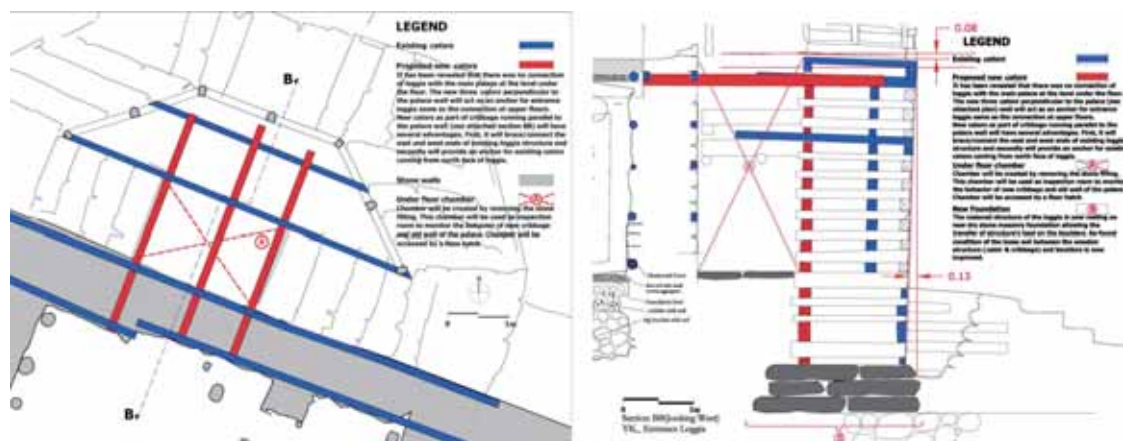


Fig. 8 & 9. This set of drawings shows the proposed interventions to restore the loggia structure



Fig. 10. Traditional construction techniques are being implemented during the restoration of loggia



Fig. 11. Lifting and pulling back the loggia to a stable state is being closely monitored with total station



Fig. 12. Lifting of loggia to a stable state with the help of hydraulic jacks



Fig. 13. Turning buckles are being used to pull back the tilted loggia

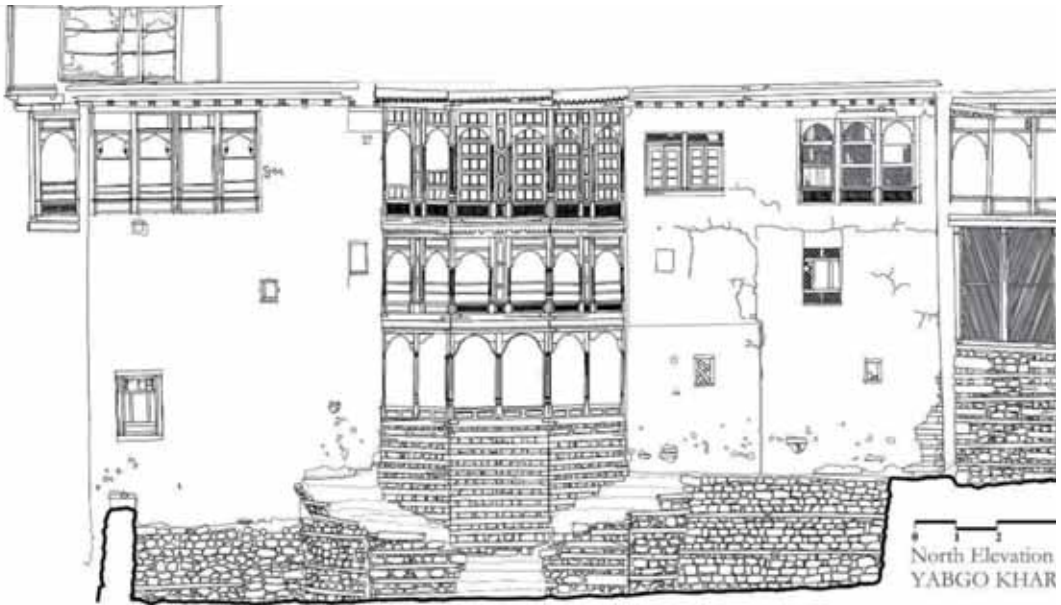


Fig. 14. North façade of Khaplu Palace. The wooden entrance loggia at the centre was the subject of major conservation activity in 2008. This restoration is very closely monitored with total station.

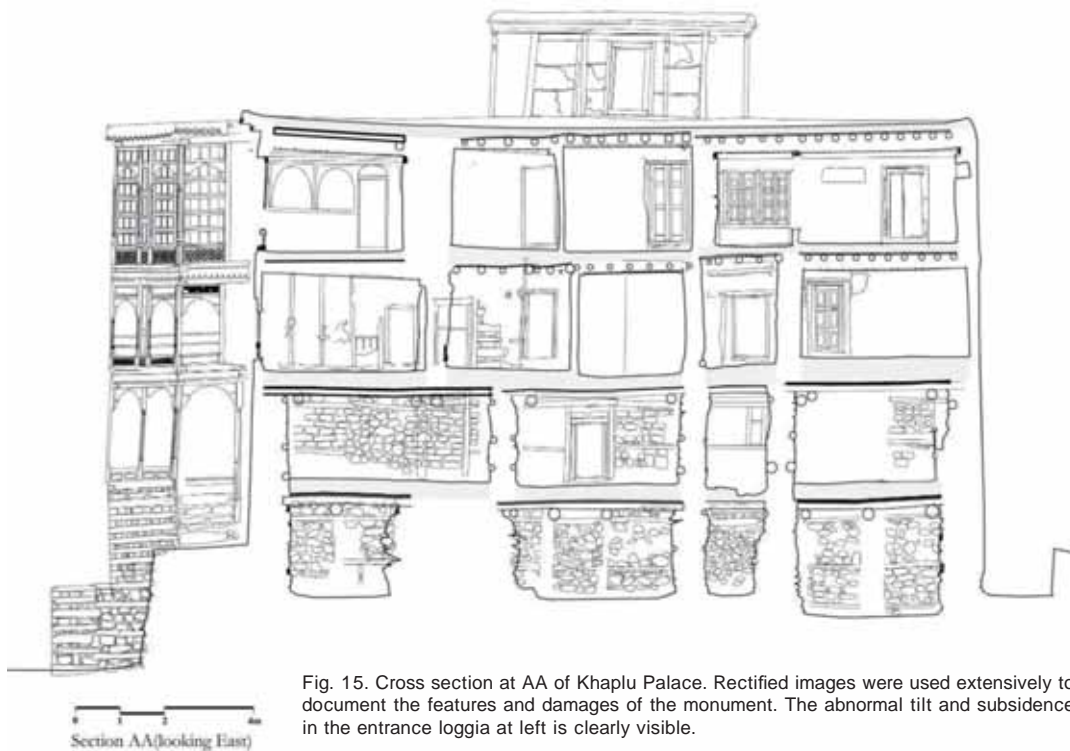


Fig. 15. Cross section at AA of Khaplu Palace. Rectified images were used extensively to document the features and damages of the monument. The abnormal tilt and subsidence in the entrance loggia at left is clearly visible.

Papua New Guinea

ACCU
REPORT



The Revival and Maintenance of the Eharo Masks in Papua New Guinea

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Mask cultures in Papua New Guinea (PNG) continue to gain recognition for their role in preserving and maintaining a society's cultural heritage. The intangible and tangible forms of masks depict the oral history and beliefs of a particular clan or tribe.

In the Gulf province of PNG, the Eharo masks were revived in 2005 after so many years of non appearance. This was the result of the masks being destroyed by early missionaries in the 1900's. Although this situation hindered the status of these masks, the knowledge still remained in the minds of the elderly people. Given this scenario, the PNG Government through the National Cultural Commission carried out preliminary research on the eharo masks in 2004 in Toare and the neighboring villages thus initiated the first Toare Mini-mask festival in 2005. The aim of the festival was solely to revive the eharo masks which was a success at the end. Following this, the festival has been marked an annual event and has been staged for six years now since its inception in 2004.

The Institute of Papua New Guinea Studies (IPNGS) as part of its main function to record and document the diverse traditions of PNG also carried out research on the type of dances associated with these masks. This study was conducted in 2005 during the first staging of the Toare Mini-mask festival. During the course of the study, it was discovered that although dance performances is concerned with the intangible cultural heritage of the local people, the eharo masks are the tangible forms that encompasses a society's beliefs and traditional knowledge systems. For instance, in 2008 IPNGS staff returned to Toare village to carry out in-depth research on eleven traditional dance groups associated with the eharo masks. These dance groups were part of the 4th Mini-Mask festival staged in Toare village. Performances

of these dance groups were captured on video, audio tapes and still cameras. Documentation of the dances also focused on the costumes, masks, body decoration, and traditional musical instruments. Other information included name of the dance, dance movement, category/genre, choreographer, composer, owner, culture/language group and brief history. These are the basic information required to document a particular dance associated with the eharo mask. Comparing this information to the initial findings in 2005, it was discovered that the local people were much aware of the importance of maintaining these eharo masks for their future generations. The 6th Mini-mask festival was another success event which attracted eleven exquisite masks associated with songs and dances. The festival featured participants from thirteen villages along the eastern coastline of PNG.

The government of PNG through the National Cultural Commission continues to assist these cultural festivals to enable sustainability and continuity of these intangible and tangible cultural forms. Festivals associated with mask cultures are currently promoted in the country with increasing interest from performing groups and the general public alike. The challenge faced now is the constant change with time and space on these cultural forms.



The Eharo mask performance during the 4th Mini-mask festival in Toare village in 2008, Gulf province of Papua New Guinea.



Wayamba Quadrangle Project in the North Western Province of the island is initiated by the Central Cultural Fund to conserve and present the long forgotten historic structures within the area bounded by four ancient kingdoms; Yapahuwa, Dambadeniya, Kurunegala and Panduvasnuwara.

North Western Province of Sri Lanka mainly comprises of low plains and isolated hillocks with dry climate. The region has a long history and it is believed that the first Aryans from India – Prince Vijaya and his troop, arrived at Tammenna on North Western coast on the day of Buddha's Parinirvana [death] in the 6th century B.C. Hence this region could be considered as the cradle of Sinhalese civilization that fostered it to be one of the oldest in the South Asian region. Two kings, King Vijaya (550-512 B.C.) and King Panduvasdev (514-474 B.C.), reigned the region until the 4th century and King Pandukabhya shifted the kingdom to Anuradhapura. Since then Anuradhapura outshone Tammenna and became the most significant area for development and the focal point of Island's history till its downfall in the middle of the 10th century.

With shifting of kingdoms towards the west of the island after medieval period the region again came into

limelight with Panduvasnuwara becoming the capital of the island for a very short period during 12th century. King Parakramabahu setup this capital as an alternative to Polonnaruwa and fought with Indians and brought back the Sacred Tooth Relic from India. Most visible ruin within this 20 hectare un-explored ancient site is the 6 meter wide moat, rampart walls that remain here and there and some ancient ruined temple buildings. Then Dambadeniya was selected as the capital in the mid 13th century (A.D.1230-1270) by King Vijayabahu III because Polonnaruwa was beleaguered with repeated invasions. Dambadeniya was built on a hillock with fortifications secured by a moat. During the reign of King Parakramabahu (A.D.1236-1270), it reached zenith of glory. King Buvanekabahu I (A.D.1272-1284) selected Yapahuwa as the capital in A.D.1273, building a palace and a temple which housed the famous tooth relic for 11 years. Yapahuwa like Sigiriya, is a massive granite outcrop, set in a shady location, and rising 100 m above the plains below. Remnants of this palace, fortress and ancient battle defenses can still be seen, while an ornamental stair way is its biggest showpiece. It is believed that this site might have been a Buddhist monastery like Sigiriya before it became the capital. Remains of a stupa, a Buddha tree enclosure, and a rock shelter/cave provide evidences for this assumption. There have been subsequent developments even after it ceased to be the capital. The last of the North Western capitals is Kurunegala, which became the capital in A.D.1293 during the reign of King Buvaknekabahu II and lasted for 50 years.

When considering archaeological research, excavation and conservation of monuments and sites, North Western Province of Sri Lanka was rather neglected till recently. This is mainly because the presence of more historically and architecturally important monuments in the ancient cities in North Central and Central Provinces. Anuradhapura, Polonnaruwa, Sigiriya, Dambulla and Kandy had drawn attention of every major conservation drive carried out until now. These ancient and medieval cities were also the focus of famous "UNESCO – Sri Lanka Cultural Triangle", which completed in 1997.

The significance of ancient structures within the North Western Province ["Wayamba" in Sinhalese] was beginning to grow recently as the conservation and restoration of monuments and sites within ancient cities were nearing completion. The project period is eight years divided into two phases. Total estimated cost of carrying out exploration, archaeological research excavation, conservation, landscaping, improving tourist facilities and preserving intangible cultural assets within



the area Rs. 2,151.36 million (Rs. 908.79million for the Phase I and Rs. 1,242.57 million for Phase II).

Through long neglect and ignorance, the region has lost most of its historic structures and few scattered remains of four royal enclosures were also poorly treated. Few major structures like the famous stair way of Yapahuwa were conserved by the Department of Archaeology during the 1970's. Apart from these main centres, large number of ancient temples, settlements and irrigation schemes were also present. Most temples had mural paintings with vibrant colours, which was a strong evidence of the Kandyan Period. Technology, form and construction materials of these structures mainly depended upon the environmental conditions of the area and the social status of the patrons. If they were influential and rich, the

structures were more elaborate, built with more durable materials like granite or limestone but mostly the story was otherwise. After decline of royal patronage these temples also lost their importance and so slowly slipped into neglect.

Through the Wayamba Quarangle Project, the Central Cultural Fund is looking forward to restore the ancient glory of these historic structures and ancient sites opening another forgotten vista of the Sri Lankan history and to build awareness against the impact of negligence on historic structures. Another scope is to develop infrastructure facilities in the sites, establish information centres and museums to disseminate new information and encourage researchers and scholars to study the region and its historicity to bring back its due respect.



Ancient walls at Panduvasnuvara



Dambadeniya rock



Gomadiyagala temple, Yapahuwa zone



Image House, Pandurasnuvara Vihara



Image House, Wadakahagala temple, Yapahuwa zone



Yapahuwa stairway

Thailand

ACCU
REPORT



Technical Workshop on the Preparation of the World Cultural Heritage Nomination and Periodic Reporting

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In early 2010, the Asia-Pacific member states of UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage periodically reported on the world cultural heritage to the World Heritage Centre for the second period. For the first period, the Asia-Pacific report focused on conservation of the world cultural heritage and an understanding of Outstanding Universal Values as well as the assessment of conditions and conservation. The World Cultural Heritage Center thereafter campaigned with the members in Asia-Pacific region to conduct the national preparation of World Cultural Heritage nomination and periodic reporting. The Centre also requested the members to update their tentative lists of world cultural heritage.

In June 2010, Fine Arts Department's Office of Archaeology in collaboration with UNESCO Bangkok successfully organized a five-day technical workshop on "the Preparation of the World Cultural Heritage Nomination and Periodic Reporting" for Thai staff of the Archaeology Office and participants from Lao P.D.R., Burma and Malaysia. The workshop anticipated the state members' readiness in preparing the world cultural heritage nomination and periodic reporting. Furthermore, workshop participants can develop and enhance their skills and knowledge on the Convention Concerning Protection of

the World Cultural and Natural Heritage Principles and procedures for nomination and periodic reporting. It was also a learning opportunity for participants from different countries to exchange knowledge and experiences on the world cultural heritage management.

Several experts including Dr Richard A. Engelhardt, Charge de Mission and Senior Advisor of UNESCO; Dr. Gamini Wijesuriya from ICCROM; Mr Ricacado Favis, and Ms Montira Horayangura from UNESCO Bangkok; and Mr Yongtanit Pimonsathean from ICOMOS Thailand, made presentations at the workshop on the following specific issues:

- *The World Heritage Convention: Purpose and Process of the World Heritage List;*
- *Identifying and Safeguarding Outstanding Universal Value;*
- *Constructing Values-Based Management Plans and their Implementation;*
- *Public Participation in World Heritage;*
- *Periodic Reporting (PR) Process; and,*
- *Retrospective inventories, timetable for submission of all required documents, and action plan by each country for follow up step.*



Group Photo, Phuphrabat historical park



Group work participation of Bangkok Metropolitan Administration



Lecture session



Baan Chiang pottery at Baan Chiang National Museum



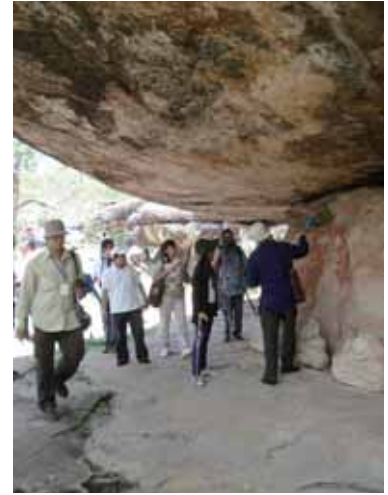
Group work participation

The workshop facilitated discussions on case studies of World Heritage sites of the four Southeast Asian countries, namely Thailand, Lao P.D.R., Burma and Malaysia. Site visits to Phuphrabat historical park and Baan Chiang National Museum was good for better understanding and

strengthening knowledge on the World Cultural Heritage shown in the case studies. The group work was also interesting in which experiences from different countries were shared and consolidated.



Baan Chiang Archaeological Site



Site Visits to Phuphrabat historical park, Rock shelters



Group work participation of Malaysia



Group discussion of Burma



Mr Ricacado Favis, and Ms.Montira Horayangura from UNESCO Bangkok
Lecture on " *Retrospective inventories, timetable for submission of all required documents* "



Participants from Malaysia and Burma at site visits to Baan Chiang



Site visits to Phuphrabat historical park



Malaysia group work with Dr. Richard A. Engelhardt from UNESCO



Site Visits to Phuphrabat historical park, Sema stones



Lao P.D.R. group work with Ms. Montira Horayangura from UNESCO Bangkok



Group photo, Baan Chiang National Museum



Introduction

Restoration of archaeological artefacts is important so as to reconstruct the original forms of the objects, whereas measured drawing is useful for documentation and publications and first of all, both of them help to understand characteristic features in detail, not obtainable from photography. Restoration methods are numerous and various in practice. Although there are many restoration methods and drawing methods for tangible cultural properties, we are only familiar with methods commonly utilized in our working process.

1. Restoration of glazed objects

The short description of objects and visual research

During the visual observation, all defects in given objects were revealed and recorded. The first object was a glazed bowl¹ (size: 7.5 cm in height and 22 cm in diameter), decorated with the primitive pattern similar to those on Arabian manuscript and a double thin strip of black colour. The bowl remained only one-fourth of the original form: a part of wall with a nimbus and the whole bottom. It seemed possible to restore the whole object from those sherds. On the internal surface and along the edges of seams, the glazed parts exfoliated. On the external surface, dust pollution was observed (fig. 1).

The second object was a glazed jug (size: 15.5 cm in height and 7 cm in diameter); a spherical body with a long neck, slightly bent rim and a massive bottom (fig. 2). On the light yellow-green background, imaged frames from two wide strips on the blue-emerald colour (on the neck and in the middle of jug) were drawn and vertical leaf-form patterns were painted in black colour. The rim (nimbus) and the handle only partially remained and one-third of a body was missing which has been stuck together from several fragments. But, it is necessary to notice that past repair work wasn't made professionally and fragments had not been joined properly to produce open cracks on the surface.

Last object was a miniature pedestal (size: 7 cm in height; 12.5 cm in width; 17.5 cm in length), which was similar to the form of a national local table, "Hontakhta" (fig. 3). The top of the object was painted with the vegetative ornament, a tulip growing from a massive vase with numerous petals. On the side legs, big tulips were painted in dark blue colour. The object consisted of two fragments, and one-fourth parts had not remained.

Restoration process of objects

Based on visual observation research, restoration methods were chosen depending on the sizes of losses and character of damage. The traditional mask material,

sculptural plastic (plasticine²), was used to mould the missing parts, which was more elastic and held the form well than plaster or wax. However, now in foreign countries, synthetic polymers such as Vekcent, Cealast and Tiodent, are widely applied as forming paste (solution), which is beyond our reach.

Filling in the the lost fragments and absent parts was carried by using plaster-gesso ($\text{CaSo}_4+2\text{H}_2\text{O}$), an accessible and durable material. To increase mechanical durability and moisture resistance, polymeric water dispersions were add in it. The most accessible and widely used in restoration is PVA (polyvinyl acetate), which is called as gesso-polymer.

On the first object (the glazed bowl), restoration was made by a usual method. After moulding (in uzbek. kolip) with forming paste of soft plasticity, a liquid plaster solution was filled into the missing parts or where fragments were lost. Then, it was dried under natural conditions and the mould was removed. The restoration process was carried out stage by stage and by parts..

The second object (the jug) had lost the top part and the handle, so another restoration method was applied. At first, a rim and the whole handle was made from ceramic moulding clay and joined to the jug. After drying, plasticine was applied.

On the last object (the pedestal), the shape was moulded from both parts (outside and inside) and the missing parts were filled with plaster liquid solution. After the plaster dried, a surface of the pedestal was levelled and smoothed with an emery paper.

The final stage of restoration work was drawing decoratively on the filled parts. In practice this method more often is called "toning" (painting). Drawing a decorative covering on the restored surface was made in two ways: toning by water-soluble paints and in priming paste (solution).

Toning (painting) by water-soluble paints

The water-soluble paints include a water colour, a distemper, acrylic paint, etc. They basically are used for the painted subjects. They are easy to choose proper colours and can be easily removed from a surface in case of ageing or not appropriate.

¹ Objects are stored in a collection of Fine Arts Institute of Academy of Sciences of Uzbekistan

² Plasticine (ital. plastilina, from Greece. plastos - modelled) is a material for moulding. It is produced from the cleared and crushed powder of clay with addition of wax, fat and other substances interfering drying. It is painted in various colours and used for sketches, small models and products of small forms.

Toning in priming pastes

These pastes are waterproof, which provide good affinity with a surface of the filled fragment. Quality extender can be used: dry titanite whitewash, talc, marble and porcelain powder, a ceramic crumb, etc. For colouring, the dry crushed pigments are used to add various shades in pastes. With all these additives, the object appears to imitate the original in colour and in material.

2. Drawing of restored objects

Drawing of archaeological artefacts is difficult because they are different in material (clay, metal, a bone or etc.), condition and age. For example, stone objects are usually drawn by “linear” (the conditional name) while iron objects and terracotta figurines are drawn in “dotting” ways. For pottery, “outline” style is basically used. Linear and dotting style transfers volume and the material subject, while the outline style displays necessary lines well which are important for showing traces of manufacturing techniques of subject, ornaments, stamps, masks and so on. Sometimes, it is difficult to understand those characteristics by photographs, because of several factors such as distortion at photographing. In any case, the measured drawing is an useful measure for representation of those characteristic features which are inherent to artefacts.



A glazed bowl (Middle Ages)

a) view from up (before restoration) b) view from up (after restoration)
c) Section (left half-outside, right half-in side) d) Axonometric projection. Measure 1:1.



A miniature pedestal

Without listing all drawing styles, we will stop on one of the methods which are used in educational process of subject “Drawing” to the artist-restorer.

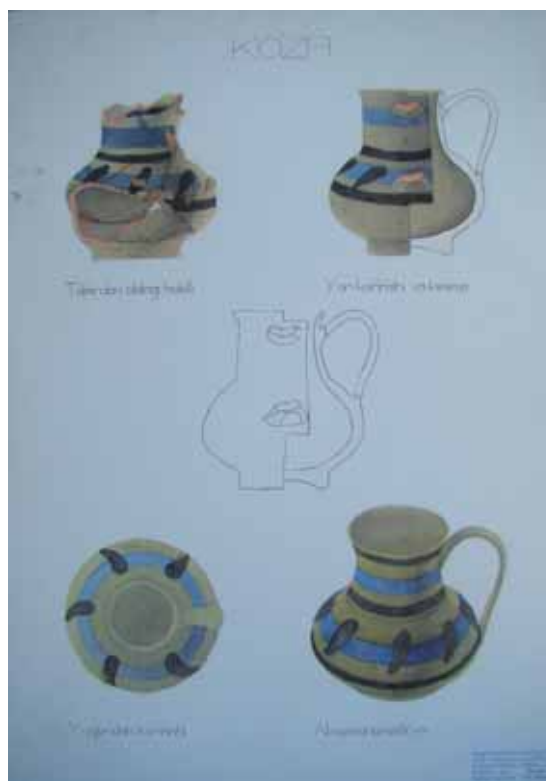
At first, the object is drawn on a special graph paper with views of different sides: the “top view” or “projective method” (it is shown conditions of object before restoration); “section” (the object is divided into two parts: the external part is shown at the left and right and an internal part with a section) and an “axonometric projection” (fig. 1 a, b, c, d.). The scale of 1:1 is desirable, but the scale can be reduced for the bigger sized object;

The drawing is copied on a transparent paper (tracing paper) and transferred on tablet in the size of 50 70 cm (with the stretched paper). Thus it is necessary to consider correct arrangement of the drawing with views from the different sides.

The transferred drawings “are washed” by solution made of the black hulk with water (in various concentration). Washings up are made stage by stage before revealing of the form and subject volume. Therefore, it is necessary to ensure that light falls on object 45 ° at the left from above at washing up.

After washing up the drawing, the paint with the same way is made as “washings up”. Removing the material from the glazed surface of an object, it will be painted by paint with sugar added to give glossy shine to the drawing.

A view of “section” is in left on graphic, only lines are led round black by ink;



A glazed jug

At the last stage for the project, the data is recorded: the name (from above in the middle), a site and a date (below at the left), and an explication and about the author of the drawing (the lower right corner).

Conclusion

As mentioned before, restoration and drawing are important to document artefacts. If the restored subjects are given durability and the second life in expositions, they can serve for the public. After restoration works, all objects have been displayed in an exposition.

There are various restoration methods in the world depending on characters and situation of objects. We have only acquainted with one of methods used in our educational process, which should be developed and improved further in the future. We would like to share your experiences in the field of restoration and drawing of artefacts, and wait for your comments and suggestions sent to my e-mail address at a_ulmasov@yahoo.com.

Note:

- Photographs by Akmaljon Ulmasov
- Restoration and drawing of artifacts were done by students of “Restoration Department” of National Institute of Art & Design under the guidance of an author of this report.

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Fig.1. Process of restoration (glazed bowl of middle ages from South Uzbekistan)



Fig.2. Process of Restoration (glazed jug of middle ages)



Fig.3. Glazed miniature pedestal of X-XI centuries.



A Life Story of a Pottery* (or How the Archaeologists Repair a Pottery)

Nguyen Khanh Trung Kien, *Laboratory Officer*
Center for Archaeological Studies, Southern Institute of Social Sciences

1. Introduction

I am just a vase and the archaeologists assigned me with a serial number 2010.HD.H3M5, which means I belong to Hoa Diem site, H3 pit and burial number 5 in 2010 excavation. They found me at Hoa Diem site (Khanh Hoa Province, Central Vietnam), and for two thousand years I had been covered by a thick layer of soil in the seashore of Central Vietnam.

In the past, I was a beautiful vase with the smoothly curves and shell impressed decoration on the surface of my body. After my owner's death, the other people buried me as one of grave goods near the jar burial of him. I could not see the sun shine from that time. Day by day, my body cracked slowly because of the high temperature and humidity of seaside environment and the weight of the soil layer upper. One day, I heard a sound of a pottery break and I felt my body broken and knew my death was coming, thinking that I would never see the sun light again.

For a very long time buried underground, I suddenly woke up with many of human voices. They were happy and excited when they discovered me, and they cleaned up my body carefully with brushes. My friends and I were now exposed in the sunlight of the spring, and were confronted face to face with the blue sky, smiling and thinking about the new life coming to us. But the archaeologists were talking about their plans and the treatment solutions to me and my friends. I realized that this was the first step of my rebirth I was waiting for a long time.

2. The restoration work

They collected me carefully, removed all of my pieces from the site into a box and stored me at the Khanh Hoa Museum where I was kept for a few months in cool temperature. It was the necessary time for my body's material to be dry and to recover the hardness before.

One morning, I waked up and felt someone bringing me out. I understood that they were doing their post-

excavation treatment. They opened my box, classified the part of my body and wrote the serial number on each piece. Someone tried to fix me one by one potsherd with glue. For a few days of restoration work, I felt my body with some parts fixed. They reinforced inside of my body with a mesh tape and a thin layer of glue.

A half of the rim and some places were lost and it made some gaps in my bottom, my shoulder, my neck... In order to stabilize me for a long time display at the museum in future, the archaeologist filled in my gaps with plaster (a white powder mixed with water in use). A paper frame was made as a molding inside for the plaster layer. They used a small spool and some tools of dentist to fill plaster. They repaired my rim with the round shape and the gaps on my body by filling in with plaster.

After a half of a day, when the plaster fully dried, they used the scraper tool to trim my body. I became a beautiful vase again. An archaeologist made documentation on me with measured drawing, taking photographs and writing information about me, so I had a completed profile with all information.

3. A new life

After the restoration work of the archaeologist finished, I have a new life in the museum. My place will be in exhibition room, near my friends. Visitors can see me; researchers can make their documentation on me; and students can learn about the history of me and feel the glory of an ancient culture around 2,000 years ago in Viet Nam. I spent a long time of my first life underground and I hope my second life in this museum will be longer and safer than before.

Note:

** written by Nguyen Khanh Trung Kien, an archaeologist, who is a member of Vietnam –Japan team excavated the Hoa Diem site. He also did the restoration work for this artifact and trying to put himself into the life of that vase and tell the other people about its story.*





Many pieces of potsherd became one.



Measured drawing for documentation



Reinforced with a mesh tape and glue



Filling in the gaps with plaster



Ready for display in the museum



Other members of my family after restoration



Special Report



**ACCU
REPORT**



The Incentive Award of Ikuo Hirayama in Archaeology

– Young Specialists Who Made Noteworthy Achievements Have Been Awarded –

Akmaljon Ulmasov, Researcher

Fine Arts Scientific Research Institute, Academy of Arts of Uzbekistan

On 15 June 2010, the Academy of Arts of Uzbekistan has hosted the ceremony of awarding an incentive prize of Ikuo Hirayama* in the field of archeology at the International Caravanserai of Culture (ICC).

Among those awarded were a group of young Japanese scientists/archeologists of Soka University (Tokyo) under the direction of professor Mitsuru Koyama who participated the excavation of a world famous site of ancient settlement of Dalvarzintepa (in the south of Uzbekistan), the first capital of Kushan Empire; a French researcher of College de France (Paris), Katia Juhel who participated in excavation of an ancient monument of Chingiztepa in Old Termez, under the direction of the well-known scientist, Dr. Pierre Lerisha; and two their Uzbek colleagues Otabek Aripdzhanov from the Museum of History of Uzbekistan and Bahodir Madaminov from ICC (Tashkent).

The awarding ceremony was attended by Tsutomu Hiraoka, Plenipotentiary Ambassador of Japan in Uzbekistan, Tursunali Kuziev, Chairman of Academy of Arts of Uzbekistan, scientists, creative public and the press.

The prize aimed at encouraging young archeologists and historians to study, revive and popularize centuries-old traditions of the Great Silk Road. That can be the way of inducing new generation of specialists to more profound research of unique aspects of the rich cultural heritage of the world civilization and new scientific discoveries. Young specialists from various countries actively participated in archeological explorations, restoration and conservation of cultural heritage of the countries of the Great Silk Road have been annually awarded with this prize.

This award including a medal with a portrait of Ikuo

Hirayama; a thick rectangular glass plate, a part of a picture of this artist with the image of a camel against sandy barchans (барханы); and the card of the Great Silk Road strengthened on a pedestal from a natural ornamental stone of dark color; and the diploma with a valuable prize, was awarded to the young experts who have brought great contribution to development of archeology in its scientific, theoretical and practical spheres.

Note:

Ikuo Hirayama* (15 June 1930 - 2 December 2009)

A world-known artist, an outstanding researcher, the founder of the Great Silk Road Fund, Museum of Eastern Cultures in Tokyo, and the Fund for Protect Monuments of Culture and History in Afghanistan.

Credits for Photographs: Mr S. Kurbanov

Reference materials:

<http://www.ut.uz>

<http://caravanserai.uz/index.html>



International Caravanserai of Culture (Photograph by ACCU Nara)



T.Kuziev, Chairman of Academy of Arts of Uzbekistan, hands over Award of Ikuo Hirayama to Soka University through Ambassador of Japan in Uzbekistan Mr. Hiraoka.



The moment of award acceptance



The young specialist B. Madaminov receives Award of Ikuo Hirayama.

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REPORT



Visakh Bochea Day Celebration and the Royal Ploughing Ceremony

Srun Teck, *Archaeologist*, Archaeological Preventive Unit, Department of Conservation of Monuments in the Angkor Park and Preventive Archaeology, APSARA Authority

1 . A Great Buddhistic event was taken place in Angkor Archaeological Park, Visakh Bochea Day

Visakh Bochea Day has been celebrated in many Buddhist countries in order to commemorate and remember the biography of Buddha, from his birth through achieving enlightenment to attaining nirvana.

In Cambodia, we always celebrate this ceremony every year in all Buddhist monasteries especially at udong mountain, located in Kandal province, where the bone of Buddha is kept in the huge stupa. Last three years from 2007 to 2009, Visakh Bochea Day was celebrated at Borobudur temple, Indonesia. This year was the fourth year of that big event; the Kingdom of Cambodia hosted Visakh Bochea Day on 27 to 29 April at Bayon temple, Siem Reap province. There participated 14 countries: Lao P.D.R., Myanmar, Thailand, Japan, Vietnam, Brunei Darussalam, Malaysia, Indonesia, Philippines, Singapore, India, China, South Korea and Czech Republic.

It was a full moon day on 28 April 2010 in lunar calendar and also the same day of Buddha’s birthday, achieving enlightenment and attaining nirvana. In the morning of 28 April, crowds of people prepared food, water and money for offering to 2,554 Buddhist monks (2,554 in Buddhist Era equals to A.D.2010). The significant celebration events were performed by artistic performance groups from Cambodia, Lao P.D.R., Thai, Myanmar, Indonesia and India in every evening of three days.

2 . The Royal Ploughing Ceremony was taken place at the Royal Plaza, Angkor Thom City

The Royal Ploughing Ceremony is one of the important royal traditions of annual royal ceremonies. Each king has always led the celebration from ancient times until now.

The ceremony is celebrated to encourage power and

happiness in the planting of the rice-crop and to pray to mighty spirits for sufficient seasonal rainfall, which can help all agricultural sectors to achieve high yields. This year the Royal Ploughing Ceremony was held on May 02, 2010 and officially presided over by His Majesty Samdech Preah Borom Neath Norodom Sihamoni, King of the Kingdom of Cambodia.

The agriculture season commences after the Royal Ploughing Ceremony, which is conducted by the King or his representative. In the ceremony, his representative “Sdech Meak” is responsible for operating the plow and his representative’s wife “Preah Mehuo”, assigned as the wife of Sdech Meak, is responsible for sowing the rice seed.

The royal oxen are the king’s royal domestic animals, which are in dark brown color and there are cattle-raisers who take care of and keep them for this purpose every year. The royal oxen that are hitched to a wooden plow are offered food and drink. There are seven types of food that have been prepared on the large silver plates in front of the royal tent: a tray of rice seed, beans, corn, sesame, fresh-cut grass, water and wine.

After chanting, the Brahman royal master brings holy water to spray on the heads of the two royal oxen and an official, who holds the plow of Sdech Meak, and guides the two royal oxen to eat and drink those seven types of food. He guides them near those seven types of food and lets the royal oxen eat and drink whatever they wish; they are not force to any of the foods. If the royal oxen eat one or two types, the soothsayer foretells the future accordingly and the prediction is not really accurate. If the royal oxen eat a particular food, the prediction says that this type of thing will be bountiful. If the fresh-cut grass is eaten, it predicts the outbreak of cattle diseases. If



General view of Visakh Bochea Day in the morning on 28 April



Local villagers and national guests, offering food and money to Buddhist monks

the wine is drunk, there will be many bad people, thieves and robbers.

After that Sdech Meak and Mehuo pray to the statue in the east center booth, the “Preah Kachayanak Statue”, the wise persons come to blow the conch, and the royal master brings holy water to pray on both persons, then blesses them and everyone good wishes, happiness and prosperity and the royal ploughing ceremony comes to conclusion.



Pilgrim s journey of Buddhist monks surrounding Bayon temple in the evening of 28 April



General view to the delegation platform



Sdech Meak operated the plow.



Preah Mehuo sowed the rice seed.



The two loyal oxen were eating food.

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