

**Training Course on Cultural Heritage Protection  
in the Asia - Pacific Region 2008**

**Research, Analysis and Preservation of  
Archaeological Sites and Remains**

9 September – 9 October, 2008, Nara, Japan



Cultural Heritage Protection Cooperation Office,  
Asia/Pacific Cultural Centre for UNESCO (ACCU)

Agency for Cultural Affairs, Japan

National Institutes for Cultural Properties,  
National Research Institute for Cultural Properties, Tokyo  
Nara National Institute for Cultural Properties

International Centre for the Study of the Preservation  
and Restoration of Cultural Property (ICCROM)



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The opening ceremony at the Kasugano-so Hotel with guests and ACCU staff



Observing unearthed artefacts at the Preservation Office of Yoshinogari Site



Visiting the Conservation Laboratory at Kyushu National Museum



The closing ceremony at Kasugano-so Hotel

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## *Preface*

The Cultural Heritage Protection Cooperation Office, Asia/Pacific Cultural Centre for UNESCO (ACCU) was established in August 1999 with the purpose of serving as a domestic centre for promoting cooperation in cultural heritage protection in the Asia-Pacific region, and will celebrate its 10th anniversary this year. Since its inception, our office has been implementing a variety of programmes to help promote cultural heritage protection activities, promoting close cooperation with the Agency for Cultural Affairs, Japan (*Bunkacho*); National Institutes for Cultural Heritage, National Research Institute for Cultural Properties; the Nara Prefectural Government; the Nara Municipal Government; universities; and museums.

The ACCU Nara's activities include, training programmes for the human resources development, international conferences and symposia, the training of young leaders in cultural heritage protection supported by the UNESCO/Japan Funds-in-Trust, the website for the dissemination of information relating to cultural heritage protection, and the world heritage lectures in high schools. In addition to those, ACCU Nara Office has begun offering "the Local Training Workshop" which dispatches a group of lecturers from Japan and implements the practical training on cultural heritage protection on sites. We have also set up the system of "International Correspondents" for the purpose of establishing closer ties with the countries in the Asia-Pacific region, and appointed the correspondents from each country, who will periodically send reports on cultural heritage protection in their country.

The training courses on cultural heritage protection in the Asia-Pacific region have comprised a significant part of our activities for heritage protection, with two themes on alternate year: "Preservation and Restoration of Wooden Structures" and "Research, Analysis, and Preservation of Archaeological Sites and Remains." This was the ninth training course on "sites and remains" and 16 participants from across the Asia-Pacific region gathered in Nara to join the course with high expectation. Main objectives of the course are to provide participants with latest methodologies of research and investigation on the excavation; the subsequent organization and classification of artefacts; Japanese

methods and principles relating to preservation and utilization of archaeological sites and historic places. Especially, this training course offered the lecture on risk management and opportunities for extensive discussion.

I believe the participants were able to learn not only practical techniques and latest knowledge on conservation and restoration of archaeological remains but also the importance of local community by visiting the cultural heritage on-site: the way how local people cared for the cultural heritage; their views; their willingness to protect heritage and hand it down to posterity; their daily society-wide efforts. Cultural heritage cannot be protected solely by the efforts of experts or specialist. I am sure the participants understood the need and importance of respecting the views and initiative of the local community as well as joining hands with them in the conservation activities.

Finally, I would like to express my profound appreciation again to ICCROM, the Agency for Cultural Affairs, Japan (*Bunkacho*), National Research Institutes for Cultural Properties, the Nara Prefectural Government, and the Nara Municipal Government for their continuous supports and cooperation for the successful completion of the training course 2008.

*NISHIMURA Yasushi*

*Director*

*The Cultural Heritage Protection Cooperation Office,  
Asia/Pacific Cultural Centre for UNESCO (ACCU)*



## **Introduction**

1. General Information
2. Programme Schedule



## **1. General Information**

### **Training Course on Cultural Heritage Protection in the Asia - Pacific Region 2008 - Research, Analysis and Preservation of Archaeological Sites and Remains- (9 September – 9 October 2008, Nara, Japan)**

#### **1. Organisers**

This course is jointly organized by *Bunkacho* (Agency for Cultural Affairs in Japan); the Asia/Pacific Cultural Centre for UNESCO (ACCU); the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM); and Independent Administrative Institution, Nara National Research Institute for Cultural Properties.

In cooperation with Japan Consortium for International Cooperation in Cultural Heritage; the Ministry of Foreign Affairs of Japan; the Japanese National Commission for UNESCO; Nara Prefectural Government; and Nara Municipal Government.

#### **2. Background**

In Asia and the Pacific region, there are various forms of cultural heritage which are of great value from a global point of view. Proper investigation, analysis, preservation and development of these sites and remains are required of heritage professionals, in order to ensure that this important cultural heritage is safeguarded for future generations. ACCU Nara in partnership with ICCROM and *Bunkacho* has been organizing training courses since 2000 on this topic with a view to building the capacities of professionals who have been working on cultural heritage protection in the region. This training course aims to provide participants with latest methodology and technology on investigation, conservation and management for utilization of archaeological sites.

#### **3. Dates and Venues**

Course dates: From 9 September (Tuesday) to 9 October (Thursday) 2008

Venues: Cultural Heritage Protection Cooperation Office, Asia/Pacific Cultural Centre for UNESCO [Nara Prefectural Government “Horen” Office, 757 Horen-cho, Nara, Japan]

Additional venues: Facilities of cooperating organizations and museums; Sites in Japan such as the World Heritage sites, the historic places and archaeological sites.

#### **4. Objectives of the Training Course**

The objectives of the training course are:

- to provide participants with knowledge of principles and methodologies for protection of archaeological sites;
- to provide participants with knowledge of the principles, methodologies and techniques concerning to development and utilization of archaeological sites;
- to provide participants with knowledge and related techniques of recording and analytical methods for archaeological sites;

- to provide participants with an opportunity to network with colleagues from the region and share experiences.

## 5. Training Curriculum

### ● Lectures

- Global Trends in Sites Preservation
- The Japanese System for Protecting Cultural Properties
- Conservation and Utilization of Cultural Heritage Resources in Japan
- Introduction to Archaeological Prospection
- Introduction to Environmental Archaeology
- Introduction to Scientific Dating Methods
- Introduction to Dendrochronology
- Introduction to Conservation Science

### ● Practical Training and On-site Lectures

- Workshops: Recording of Archaeological Features and Artefacts; Conservation Treatment of Artefacts etc.
- A Study Tour on Preservation, Development and Utilization of Archaeological Sites

### ● Presentation and Discussion

- Presentation of the Current Status of Each Country on Cultural Heritage Protection and Exchange of Views
- Discussion of Future Issues on the Preservation of Cultural Heritage
- Recapitulation of the Training Sessions

## 6. Participants in the Training Course

(1) The training course is offered to the following 38 signatory countries listed on the UNESCO World Heritage Convention (see below). For application, UNESCO National Commissions or UNESCO liaison offices need to submit the following documents required for those individuals nominated no later than 20 June 2008: letters of recommendation written by the head of the organization to which a nominee belongs; an application form; a report on his/her major achievements. Provided, however, that Japan Consortium for International Cooperation in Cultural Heritage can also recommend a few applicants who failed to have NATCOM recommendation for some reason, through its members to ACCU Nara. Only in that case, the applicant can substitute NATCOM recommendation with Consortium recommendation.

\*A total of 16 people, one from each country in principle, will be selected from the nominees as participants in the training course.

*Afghanistan, Australia, Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Iran, Kazakhstan, Kiribati, Kyrgyz, Lao P.D.R., Malaysia, Maldives, Marshall Islands, Micronesia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Palau, Papua New Guinea, Philippines, Rep. of Korea, Samoa, Singapore, Solomon Islands, Sri Lanka, Tajikistan, Thailand, Tonga, Turkmenistan, Uzbekistan, Vanuatu, and Vietnam*

## (2) Qualification Requirements

Applicants should be:

- 1) those who are experts or equivalent and 45 years old or younger, who are engaged in the preservation, restoration or management of archaeological sites and who can make effective use of the results of the training course upon returning to his or her home country;
- 2) those who have a good command of English, the working language for all lectures, so that they can deliver presentations and write reports from the training session (ACCU Nara Office and ICCROM shall be allowed to utilize all contents of presentations and reports, including drawings and photographs, for future publication and cultural heritage protection programmes);
- 3) those who can attend the entire training programme;
- 4) those who submit all of the required documents (listed on item 10. Documents for Application) within the deadlines outlined;
- 5) those who will most likely continue exchanging information and interacting with ACCU after returning to their home countries;
- 6) those who were not previous participants in training courses organized by ACCU Nara Office (however those who have participated in the International Youth Exchange Programs can apply for this programme).

## 7. Notification of Screening Results

After consideration with other organizers, ACCU Nara will select 16 people (one participant per nation in principle) from among all applicants around the end of July. Each National Commission for UNESCO, Japan Consortium for International Cooperation in Cultural Heritage and successful applicants will be informed of the screening results.

## 8. Certificate of Completion

Each participant will be awarded a certificate upon completion of the course.

## 9. Language of the Training Session

English will be the working language throughout the course.

## 10. Documents for Application

Only complete application with necessary documents will be considered.

### (1) Application Form (Form 1)

Please attach a copy of the passport, if an applicant has a valid passport.

### (2) Report Relating to Cultural Heritage Preservation.

The achievement report should be written by the applicant and should be a brief summary of present and previous work related to the theme of the course, cultural heritage protection. This report will be heavily weighted in selection of the participants.

### (3) Letter of Recommendation by NATCOM (or by Japan Consortium)

(4) **Letter of Recommendation by the Attending Chief Official** (Annex 1)

(5) Documentation Indicating English Proficiency (if obtained)

## **11. Expenses**

Expenses during the Training Course shall be borne by ACCU Nara, as follows:

(1) Travelling expenses:

Each of the participants (except those from Australia, Republic of Korea, New Zealand, and Singapore) shall be provided with an economy class return air ticket from the nearest international airport from their residence to Kansai International Airport, and transportation fees between Kansai International Airport and Nara.

(2) Living expenses:

Participants shall be provided the basic living expenses incurred during the training course from 8 September (Monday) to 10 October (Friday) 2008. Arrangements for accommodations (a room for single occupancy) will be made by ACCU Nara

## **12. Secretariat**

Cultural Heritage Protection Cooperation Office,  
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## 2. Programme Schedule

			<b>Morning (9:30-12:30)</b> (Lecturer / Venue)	<b>Afternoon(13:30-16:30)</b> (Lecturer/ Venue)	
September	9	Tue.	Opening Ceremony: Orientation Session	Introduction to World Heritage in the Nara Area	
	10	Wed.	Global Trends in Conservation of Archaeological Sites	(Ms Smith / ACCU Nara)	
	11	Thu.	Presentation and Discussion: Country Reports by Participants I	(Ms Inaba & Ms Smith / ACCU Nara)	
	12	Fri.	Presentation and Discussion: Country Reports by Participants II	(Ms Inaba & Ms Smith / ACCU Nara)	
	13	Sat.			
	14	Sun.			
	15	Mon.	National Holiday		
	16	Tue.	The Cultural Property Protection System in Japan (Mr Ichihara/ ACCU Nara)	Conservation and Utilization of Cultural Heritage Resources (Cases in Japan) (Mr Ichihara/ ACCU Nara)	
	17	Wed.	Maintenance and Management of Archaeological Sites in Practice I: Nara Heijo Palace Site	(Mr Shimada / NNRICP)	
	18	Thu.	Maintenance and Management of Archaeological Sites in Practice II: Imperial Palace Sites at Asuka and Fujiwara	(Mr Kurosaka / NNRICP)	
	19	Fri.	Introduction to Scientific Dating Methods (Mr Nagatomo / Nara University of Education)	Introduction to Environmental Archaeology (Mr Kanehara / Nara University of Education)	
	20	Sat.			
	21	Sun.			
	22	Mon.	Lecture and Workshop: Conservation Science of Archaeological Sites and Remains	(Mr Kohdzuma / NNRICP)	
	23	Tue.	Visit: The World Heritage in Kyoto (Mr Sugimoto / Byodoin Temple, Ujigami Shrine and Manpuku-ji Temple)		
	24	Wed.	Lecture and Workshop: Documentation of Archaeological Artefacts	(Mr Namba / NNRICP)	
25	Thu.	Lecture and Workshop: Documentation of Archaeological Artefacts	(Mr Baba and Mr Imai / NNRICP)		
26	Fri.	Lecture and Workshop: Photographic Documentation of Sites and Remains	(Mr Nakamura / NNRICP)		

	27	Sat.		
	28	Sun.		
	29	Mon.	Introduction to Archaeological Prospection of Sites (Mr Nishimura / NNRICP)	Introduction to Dendrochronology (Mr Okochi / NNRICP)
	30	Tue.	A Study Tour: Himeji Castle (World Heritage Site) <i>&lt;Travel from Nara to Himeji, and to Fukuoka&gt;</i> (Mr Otani / Himeji City)	
October	1	Wed.	A Study Tour: Kyushu National Museum; Maintenance and Utilization of Sites in Practice (Mr Akashi / Dazaifu Site / Fukuoka Pref.)	
	2	Thu.	A Study Tour: Maintenance and Utilization of Sites in Practice (Mr Shichida / Yoshinogari Site / Saga Pref.)	
	3	Fri.	A Study Tour: Maintenance and Utilization of Sites in Practice (Mr Yoshitake / Korokan Site / Fukuoka City) <i>&lt;Travel from Fukuoka to Nara&gt;</i>	
	4	Sat.		
	5	Sun.		
	6	Mon.	Lecture and Discussion: Future Issues on the Preservation of Sites and Remains I (Risk Management) (Mr Gamini Wijesuriya / ACCU Nara)	
	7	Tue.	Lecture and Discussion: Future Issues on the Preservation of Sites and Remains II (Utilization for the Public) (Mr Gamini Wijesuriya / ACCU Nara)	
	8	Wed.	Writing Final Reports	
	9	Thu.	Submission of Final Reports	Closing Ceremony

ACCU Nara: Cultural Heritage Protection Cooperation Office, Asia/Pacific Cultural Centre for UNESCO

ICCROM: International Centre for the Study of Preservation and Restoration of Cultural Property

NNRICP: Nara National Research Institute for Cultural Properties



## **Proceedings**

1. Opening Ceremony
2. Summary of Training Course



## 1. Opening Ceremony

The opening ceremony of the 2008 training course was held on 9 September 2008 at the Kasugano-so reception hall in Nara City, with sixteen course participants and honourable guests from the Agency for Cultural Affairs, Japan (*Bunkacho*), Nara National Research Institute for Cultural Properties, Nara Prefectural Government and Nara Municipal Government.

The opening addresses were given by Mr. SUZUKI Yoshimori, Director, Programme Department of ACCU; Mr. NISHIMURA Yasushi, Director, ACCU Nara Office; Mr. YAGI Kazuhiro, Head, Office for International Cooperation on Cultural Properties, Cultural Properties Department, *Bunkacho* (Agency for Cultural Affairs, Japan); Mr. KOBAYASHI Ken-ichi, Head, Planning & Coordination Section Nara National Research Institute for Cultural Properties; Ms INAMURA Kazuko, Chief, Culture Division, Department of Culture and Tourism, Nara Prefectural Government; and Mr. KIRIKI Takayoshi, Associate Director, Cultural Assets Division, Board of Education, Nara City. In the above mentioned speeches, organisers and guests extended warm greetings to all participants and stressed the importance of mutual understanding and international network in the field of cultural heritage protection and wished the success of the training course. At the end of the ceremony, the participants introduced themselves and a group photo was taken with staff and guests.

After the ceremony, the participants proceeded to the Nara Prefectural Office, where they were welcomed by the Deputy Governor of Nara Prefecture, Mr. HASHIMOTO Hirotaka. He greeted them and gave brief overview of Nara Prefecture, and the participants also asked him about the prefecture. Then, they were ushered to the roof floor of the government building, where many historical monuments designated World Heritage can be observed with fine views. In the



Mr. Suzuki, Director of Programme Dep. of ACCU



Mr. Nishimura, Director of ACCU Nara Office



Mr. Yagi, from *Bunkacho*, Agency for Cultural Affairs, Japan



Mr. Kobayashi, from Nara National Research Institute for Cultural Properties



Ms Inamura from Nara Prefectural Government

afternoon, the participants visited Todai-ji Temple (one of World Heritage sites in Nara) and observed the South Great Gate and the Great Buddha with keen interest.

After that, an introduction to the training course was given regarding the course theme, objectives, logistics, and requirements. Following this, presentation about daily life in Japan for visitors was made, followed by an open question period.



Mr Kiriki from Nara Municipal Government



Meeting with the Deputy Governor of Nara Prefecture, Mr Hashimoto

## 2. Summary of Training Course

Various experts delivered a series of lectures during this Training Course. The following is a complete list of the lectures with a brief description of their contents.

### ■ Global Trends in Conservation of Archaeological Sites (10 Sept.)

Clair SMITH (Flinders University)

Participants were named arbitrarily to present a brief account of problems in their countries relating to the conservation of cultural heritage. Accordingly, Prof. Smith pointed out that each country had different requirements for conservation of cultural heritage. Extensive and lively discussions among the lecturer and participants took place on the wide range of issues:

- Conservation of movable heritage in museums
- International and interethnic differences in the significance of authenticity
- The role of folk museums
- Cultural heritage which has been moved and repaired
- The problem of looting of cultural properties: the situation of looting and its preventive measures in Iraq; the situation of looting and producing forgeries in Africa cited as examples
- The significance of understanding the symbolism and significance of the cultural heritage when undertaking the conservation of it.

The lecturer emphasized the significance of accurately grasping the complex social structure, the world view and landscapes, and the customs and tradition generated in the region and remaining in the area. She also asked participants about challenges facing their countries in regard to archaeological survey and protection of cultural properties. As the session progressed, each participant lively exchanged opinions because everyone in the class was given a chance to speak their views.



Prof. Smith facilitated the discussion in the class



■ **Country Reports by Participants / Discussions** (11-12 Sept.)

Clair SMITH (Flinders University, Australia) / INABA Nobuko (Tsukuba University, Japan)



Prof. Smith and Prof. Inaba

- Each participant gave a presentation of a country report: An introduction of basic information and cultural heritage in their countries, and mainly on the problems relating to cultural heritage sites they were involved in as well as present and future issues.
- The key issues on cultural heritage protection are almost the same in spite of the difference of the domestic situation.
- The participants deepened their understanding on the present situation of cultural protection in one another's country and the Asia/Pacific region.



■ **The Cultural Property Protection System in Japan / Conservation and Utilisation of Cultural Heritage Resources (Cases in Japan)** (16 Sept.)

ICHIHARA Fujio (Agency for Cultural Affairs, Japan)



Mr Ichihara from the Agency for Cultural Affairs, Japan

Each participant is requested to read out the passage in the hand out text and deepened their knowledge on the cultural property protection system in Japan.

- The overview of Japanese cultural properties and their conservation strategies was lectured.
- A detailed explanation was given on the Japanese legal system in the cultural property protection: Specific methods for conservation such as establishing organisations for the



protection of cultural heritage.

- Introduction of concrete examples of utilisation of the archaeological sites in Japan.
- Mr Ichihara suggested several plans while mentioning the difference between the city planning by the government and the revitalization plan by local communities.
- Most of the participants were interested in the practical procedures for the protection of sites, and asked many questions on specific methods for on-site display of the sites.



■ **On-site Lecture: Nara Heijo Palace Site (17 Sep.)**  
SHIMADA Toshio (NNRICP)

- A lecture on the overview of the master plan for the conservation of Heijo Palace sites; issues on the maintenance and utilisation of the sites in practice; and future challenges for further restoration and utilisation.
- Observation tour of the Heijo Palace site under the guidance of Mr Shimada
  - ▶ The First Imperial Audience Hall (*Daigokuden*) under re-construction
  - ▶ The reconstructed earthen platform of the Eastern Imperial Audience Hall
  - ▶ The site of governmental offices which was restored first in the Palace sites
  - ▶ Sites which were restored or reconstructed with different methods in the Palace sites
  - ▶ Archaeological Features Exhibition Hall; display of excavated remains as it was
  - ▶ Eastern Palace Garden, reconstructed in 1998.



At the *Daigokuden* reconstruction site: Observation of the seismic isolation system in the basement (right)

■ **On-site Lecture: Imperial Palace Sites at Asuka and Fujiwara (18 Sep.)**  
KUROSAKA Takahiro (NNRICP)

An observation tour guided by Mr Kurosaka:

- A lecture was given on an introduction of Fujiwara Palace Sites
- Participants visited:
  - ▶ the excavation site, work on progress, at the Fujiwara Palace Sites
  - ▶ Moto-Yakushiji Temple: Viewing some of the un-restored



Mr Kurosawa explained the outline of Fujiwara Palace Sites



Participants observed the ancient conduit at Fujiwara Palace Sites.

temple sites and their surrounding landscapes

- ▶ Department of Imperial Palace Sites Investigations (Asuka/Fujiwara)
- ▶ Ancient burial mounds representing Asuka area such as Ishibutai and Takamatsuzuka Burial Mound in Asuka-mura Village
- ▶ Kawara-dera Temple: Restored archaeological sites based on unearthed architectural features after the excavation investigation
- ▶ Asuka-dera Temple

- ▶ Asuka Historical Museum: Exhibition of cultural properties in the Asuka region

## ■ Introduction to Scientific Dating Methods (19 Sep.)

NAGATOMO Tsuneto (Nara University of Education)



Lecture by Mr Nagatomo

- Explanation of principles of scientific dating in archaeology and introduction of various methods
- An Overview of Isotopes, radiocarbon dating (C-14), archaeomagnetism, and luminescence dating: their mechanisms, required equipment and most appropriate sampling procedures
- Careful considerations are needed to the samples of the archaeological artefacts and the range of age covered by each dating method
- Prof. Nagatomo introduced the research examples of these methods and recommended to do a cross-check by using at least more than two methods to determine the age of archaeological remains.

## ■ Introduction to Environmental Archaeology (19 Sep.)

KANEHARA Masa-aki (Nara University of Education)



Lecture by Mr Kanehara

- Explanation of pollen analysis at excavation sites and diatom analysis
- While referring to the investigation report, Prof. Kanehara lectured on the environmental changes (such as a climate and the sea level) in one region influenced the distant locations at the same period.
- The pollen analysis of the safflower can reveal that it was used for dyes, medicine for parasite removal, and also used for festivals.
- An introduction of Toilet Archaeology: Identification of parasite eggs and fruit seeds, excavated from toilet sites, can illuminate the lifestyles of people of the time: their dietary habit and the usage of ancient toilet.

■ **Workshop: Conservation Science of Archaeological Sites and Remains (22 Sep.)**  
KOHZUMA Yohsei (NNRICP)

- An overview of the principle of conservation science and a lecture of conservation treatment suitable for each archaeological artefact (both organic and inorganic materials) in detail
- Hands-on sessions on archaeological artefacts preservation by utilizing urethane foam
- A lecture on how to diagnosis the deterioration degree of stones
- Facility tours of Nara National Research Institute for Cultural Properties guided by Mr Kohdzuma



Showing how to handle urethane foam, used to protect artefacts



Participants observed wooden artefacts kept in water



Mr Kohdzuma explained how to detect the deterioration of stones



Mr Phin showed a bag, made of special film with extremely low permeability for storage of artefacts

■ **On-site Lecture: Visiting the World Heritage Sites in Kyoto (23 Sep.)**

SUGIMOTO Hiroshi (Uji Museum of Historical Materials)

- An Observation tour of World Heritage sites in Uji, Kyoto Prefecture: Manpuku-ji Temple, Byodoin Temple, and Ujigami-jinja Shrine
- Mr Sugimoto lectured in detail on restoration work of gardens of Byodoin Temple based on the excavation and investigation of the site which he was involved in.



On-site lecture at Obakusan Manpukuji Temple, which was established in 1666 by the Chinese Zen priest, INGEN

### ■ Workshop: Documentation of Archaeological Artefacts (24 Sep.)



A lecture by Mr Namba

NAMBA Yozo (NNRICP)

- Observation of the sorting process of archaeological artefacts at the research laboratory for wooden and iron objects
- A lecture on the pottery of *Yayoi* Period (ca.350 BC - AD 300)
- Practical training on documentation: measured drawing of archaeological artefacts



A hands-on session of measured drawing of various earthenware using set squares, rulers, callipers etc.

### ■ Workshop: Documentation of Archaeological Artefacts (25 Sep.)

BABA Hajime / IMAI Koki (NNRICP)

- Methods for conservation of *Mokkan*, a wooden writing tablet, and how to decipher written sources on *Mokkan*
- Participants observed how *Mokkan* were classified by types and stored at the reference rooms and *Mokkan* storage rooms in NNRICP.
- A lecture was given on Japanese roof tiles:

- ▶ How roof tiles were manufactured back in those days.
- ▶ Chronological changes of imprinted patterns on roof tiles
- ▶ How to determine where in the building the excavated tiles in question had been used.
- Practical training on ink rubbings by using Marugawara (round tiles) and Hiragawara (flat tiles)



A hands-on session of taking ink rubbings of Japanese roof tiles

An ink rubbing of *Marugawara*.

■ **Workshop: Photographic Documentation of Remains** (26 Oct.) NAKAMURA Ichiro (NNRICP)

- Each participant was asked to present the current status of “photography of cultural properties” and its management methods in their countries.
- After the discussion on photography in each country, Mr Nakamura lectured on Japanese situation of photographs of cultural properties used as an archaeological record and pointed the importance of photographs for conservation of cultural properties.
- Basic mechanisms of cameras and storage environment of photographs and data were also lectured.
- A hands-on session of taking a portrait of each by using the large-sized camera





A lecture by Mr Nishimura at NNRICP

## ■ Introduction to Archaeological Prospection of Sites (29 Sep.)

NISHIMURA Yasushi (ACCU Nara)

Mr Nishimura introduced main reference books, from past to present, on archaeological prospection for further study.

- A lecture on methods and techniques of archaeological prospection: Photo-interpretation of aerial photography; Magnemetry; Ground Penetrating Radar (GPR); Electromagnetic Method (EM), Observing Seismic Wave, etc.
- While referring to a number of case studies, the lecturer illustrated the principles of each method, necessary equipment, and the suitable matching of the method and the site to be prospected.
- Before formulating the archaeological prospection plan of the site, researchers should gather full information about the site to be prospected: the area, the nature, the allowed period of prospection, and the historical materials relating to the region.
- The need for cross-checking by using more than two methods was emphasized.



Demonstration of GPR equipment



Mr Okochi lectured based on the case study of dendrochronological investigation

## ■ Introduction to Dendrochronology (29 Sep.)

OKOCHI Takayuki (NNRICP)

- An overview of Dendrochronology, one of the scientific dating methods based on the analysis of tree-ring patterns, and the history of its development, from its foundation as a discipline to the present, were lectured.
- Dendrochronology is applicable not only to the field of history and archaeology but also to other disciplines, and requires broad knowledge in the field of various learning.
- An explanation was given on how to identify the date of logging of the wooden materials and what wood species were suitable for the analysis.
- Identification of the logging year of the wooden materials is useful for better understanding of the archaeological sites and wooden structures in question.

■ **A Study Tour (1): Himeji-jo Castle** (30 Sep.)  
OTANI Teruhiko (Himeji Municipal Board of Education)

Himeji-jo Castle was inscribed on the UNESCO World Heritage List in 1993. Under Mr Otani's guidance, participants toured and observed the major buildings of Himeji Castle: *Otemon*, the main gate, *Nishinomaru*, western parts of the castle, and *Tenshykaku*, the main castle keep. Participants experienced the confusing maze of paths and defensive devices leading to the main keep by walking around the castle buildings.



On-site lecture by Mr Otani

■ **A Study Tour (2): Kyushu National Museum; Maintenance and Utilisation of Sites in Practice** (1 Oct.)

AKASHI Yoshihiko / IMAZU Setsuo (Kyushu National Museum)

- A presentation on an outline of Kyushu National Museum: its role and exhibition principles
- A facility tour of the museum: the repository of a collection and laboratories for conservation treatment of cultural properties
- A lecture on the conservation treatment of cultural properties and how to use various equipment for conservation
- At the site of Dazaifu Governmental Office, participants were given lectures on the brief history of Dazaifu and architectural remains unearthed at the site.
- At the Mizuki site, they were also given lectures on historical background of the site and archaeological remains: Mizuki consisted of moats and earthworks as a fortification in 7th century to defend the county from the invasion of China and Korea.



Mr Akashi lectured at the laboratory



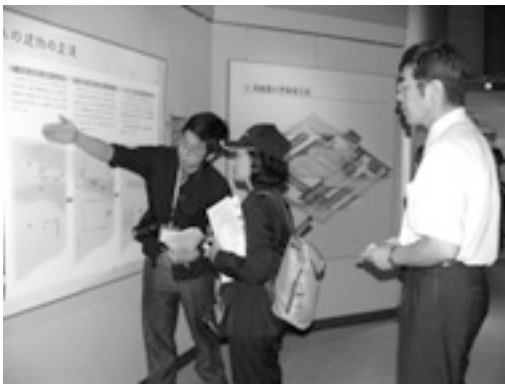
Observing the Mizuki site



Observing the artefacts stored at the Office



At the entrance of Yoshinogari Historical Park



Mr Yoshitake explained the conservation of Korokan site



■ **A Study Tour (3): Yoshinogari Sites (2 Oct.)**

SHICHIDA Tada-aki / MATSUMOTO Katsumi / NAGASAKI Hiroshi (Saga Prefectural Board of Education)

- Mr Sachida and Mr Matsumoto gave an overview of the Yoshinogari Historical Park: the discovery and subsequent excavation of the site since 1980s, and the process of conservation as a national historical park.
- Under Mr Matsumoto's guidance, participants visited the Preservation Office of Yoshinogari Site and inspected how excavated artefacts of Yayoi period were organised at the workshop.
- Afterwards, they visited restored Yoshinogari Historical Park and looked around to learn the practical techniques for restoring structural remains.

■ **A Study Tour (4): Korokan Site (3 Oct.)**

YOSHITAKE Manabu (Fukuoka Municipal Board of Education)

Participants visited and observed Korokan site, the National Historic Site.

- A lecture on the conservation history of Korokan site from its discovery to the process of excavation, conservation and restoration; the difficulties in management of the archaeological site and exhibition facilities; and further restoration planning.
- Observation of *Otemon* (Main gate) of Fukuoka Castle in the process of restoration while listening to the explanation of restoration work and design.

■ **Future Issues on the Preservation of Sites and Remains I (Risk Management) (6 Oct.)**

Gamini WIJESURIYA (ICCROM)

Mr Wijesuriya gave an overview of ICCOM, its organisation and the role in the cultural heritage protection and lectured on the concept of heritage protection and the role of archaeologist while referring



various case studies.

- Cultural heritage is not the product of the past but to be safeguarded along with living tradition and religion for future generations.
- Participants were invited to share urgent issues in each country of the cultural heritage protection and their countermeasures.
- Archaeologists should be fully aware of the contradictions in the idea of excavation, protection and management of sites; the work of excavation and investigation sometimes deteriorates the sites.
- The work of archaeologist also includes management of the sites and having good communication with stakeholders and people in other disciplines.
- The management system of the archaeological sites in Sri Lanka was illustrated by examples, from its establishment and following development process to the present as well as its characteristics and problematic points.



A lecture by Mr Wijesuriya from ICCROM and discussion in the class

■ **Future Issues on the Preservation of Sites and Remains II** (Utilisation for the Public) (7 Oct.) Gamini WIJESURIYA (ICCROM)

Discussions continued and views were lively exchanged on many issues in the class:

- How to protect the living cultural heritage?
- The need to raise public awareness of the importance of preserving cultural heritage; the need for heritage education in local communities
- The work environment of archaeologists for protecting cultural heritage in reality
- Difficulties in fund raising for protection and investigation of cultural heritage



Engaging in a frank and active exchange of views among all participants

■ **Writing Final Reports** (8 Oct.)

Participants wrote final reports of the training course.

■ **Submission of Final Report / Closing Ceremony (9 Oct.)**



The closing address by Mr Nishimura

The closing ceremony was held at Kasugano-so Hotel in the afternoon. Mr Nishimura, Director of ACCU Nara Office, made the closing address and wished this newfound international friendship among participants in the training programme 2008 would develop to the steady one. Mr Kobayashi, Head of Planning & Coordination Section, Nara National Research Institute for Cultural Properties, congratulated the completion of the training programme and wished the best of luck for all the participants in the future

back into their own countries. Then, Mr Nishimura awarded a certificate of completion to each participant with words of appreciation of their efforts. Ms Babakhani and Mr Ilyasov made speeches and expressed their acknowledgements and gratitude for the organisers and lectures on behalf of all participants.



Ms Aileen Babakhani from Iran



Mr Djangar Ilyasov from Uzbekistan



## Country Reports by Participants



## **Bangladesh**

**Mst. Naheed SULTANA**

*Custodian*

Department of Archaeology

Ministry of Cultural Affairs

### **Problems and Needs for Cultural Heritage Protection and Restoration Activities in Bangladesh (Mainly on archaeological sites and remains)”**

Bangladesh is the largest delta in the world, stretching between the subcontinent regions of the mighty Himalayas on the north and the Bay of Bengal on the south. It is, so to say, the gift of the mightiest rivers like the Brahmaputra, Padma, Meghna, and their numerous tributaries. The natural fertility of the soil of this region, its kind and generous climate, and fabled riches have attracted people from all over the world, especially from the west. On the one hand, the region is bestowed with alluvial plains stretching for miles and miles with bountiful crops of different kinds, and on the other, hills and woods have made the land extraordinary in the history of the world. The factors of climate and geography have profoundly influenced the extraordinary personality, art and culture, architecture, dress, tradition, and way of life of this region.

Bangladesh is heir to a rich cultural legacy despite the various destructive tendencies of nature and man. If we look back two thousand years ago in the flow of history, we find many splendid cities, magnificent palaces and buildings, temples, stupas, mosques, and mausolea erected by various rulers and settlers of this country. But most of these have now perished with the passage of time and tide. These are now the most precious hidden treasures of poor but culturally rich Bangladesh that are yet to be explored.

Whatever small number of monuments still survive proudly speak for their glory and splendour. In connection with this lost heritage, we can mention the two distinguished archaeological sites of Paharpur and the mosque city of Bagerhat. The former is the grandest and the largest ancient Buddhist monastery, and the latter consists of mediaeval Muslim monuments of Khalifatabad. The causes that played a main role in their destruction are serious waterlogging, salinity, earthquakes, and long centuries of age. The limited resources of the government of Bangladesh at different times could not cope with the attacks of time, tide, and other calamities.

Bangladesh is remarkably rich in its cultural heritage. She is truly fortunate for her proud cultural heritage in comparison to many other countries of the world. The history of its cultural heritage is



Map of Bangladesh

about two thousand five hundred years long. There are thousands and thousands of archaeological objects, archaeological sites and antiquities, here and there throughout the country of 147,570 sq. km. These archaeological remains of Bangladesh may be divided broadly into two categories: (1) the remains that were constructed during the Buddhist-Hindu regimes (from 4<sup>th</sup> century BC – 12<sup>th</sup> century AD), and (2) those constructed during the Muslim and British regimes (13<sup>th</sup> century AD – 19<sup>th</sup> century AD). The former category of Buddhist-Hindu regimes may be divided into three more categories, i.e. Mauryan, Gupta and Pala periods and the later may be divided into Muslim and British periods.

The archaeological sites and remains found so far for the Buddhist-Hindu regimes are mainly varieties of antiquities and remains of buildings. The antiquities worth noting that have so far been discovered are punch mark coins, N.B.P ware, inscriptions, stone beads, terra cotta plaques of Sunga age, various artifacts of Gupta age such as terracotta plaques, terracotta images, terracotta balls, stone beads, gold coins, copper plates, stone images, varieties of ordinary earthenware pieces, and many other articles of daily use. Through excavation, ruins of buildings of Mauryan and Gupta regimes have been discovered. The principal items obtained from the ruins of the Pala dynasty are terracotta plaques, various terracotta objects, ordinary potshards, black stone images, etc. Besides these, ruins of many big buildings have also been discovered.



Mauryan seal



Gupta image

Ruins of buildings constructed during the Gupta and Pala periods include Buddhist monasteries, Buddhist temples, Hindu temples, stupas, castles, etc. Most of the remains from the Gupta and Pala dynasties have become dilapidated and buried, or turned into cultural mounds due to the wear and tear of centuries. Thousands of such archaeological sites are lying scattered all over Bangladesh. The real statistics for these remains and sites have not yet been ascertained.

Among the building structures of the Muslim and post-Muslim periods are Hindu temples, mosques, madrasas, forts, roads, bridges, Jamindar houses and Kacharies, etc. Many, though not all, of the structures are nearly ruined or about to fall into ruin, although some are yet standing as evidence of former times. The responsibility for preserving and reforming the above-stated archaeological sites and objects rests with the Department of Archaeology under the control of the Ministry of Cultural Affairs of the government of Bangladesh. Among these countless archaeological sites and remains, only 395 have been selected as protected sites and monuments in consideration of their importance. These sites and remains have been protected since 1968, under the care of the Department of Archaeology. Next, to ascertain the problems and needs for cultural heritage protection and restoration activities in my country, Bangladesh, I would like to describe some problematic sites of Bangladesh one by one, along with their specific problems and possible solutions, as follows.

### **Mahasthan Garh**

The extensive ruins of Mahasthan Garh, situated on the western bank of River Karotoa in the district of Bogra, have been identified as the earliest urban site in Bengal. Spreading beyond a fortified area, other ancient ruins covering an extensive area of 8-km radius are deemed to be the suburbs of the ancient city of Pundranagar, familiar in Mauryan, Gupta, Pala and Sen literary and other epigraphic records. In and around this city, many other important establishments have been discovered by

Bangladesh and foreign archaeologists through numerous excavations from 1928 until the present day. These sites include: Khodarpalthar Vita, Mankalir Kunda, Jiyat Kunda, Bairagir Vita, Parshu Ram's palace, Gobinda Vita, Yogineer Dhap, Sur Dighir Dhap, Vasu Bihar, Bihar Dhap, Khulnar Dhap, Godaibari Dhap, and several other mounds under private occupation.

The specific problems involved for this site are as follows.

1. Lack of public awareness of the importance of the site. For want of awareness of the importance of archaeological sites and artifacts therefrom, it sometimes becomes difficult to launch excavations in the face of opposition.
2. Most of the archaeological sites of Mahasthan Garh and its adjoining area belong to private landowners.
3. There are no specific laws and regulations for the protection and preservation of archaeological sites.
4. Land development projects are needed for combating waterlogging, erosion, and floods.
5. Insufficient provision of funding and manpower.
6. Popular pathways are a great problem in this area. People use shortcut pathways instead of the main road.



#### **Paharpur (Somapura Maha Vihara) World Cultural Heritage Site**





This is the second biggest Buddhist vihara among the old monasteries known so far for the entire land mass lying south of the Himalayas. According to epigraphic evidence recovered from excavations of the extensive remains in the Paharpur vihara, the monastery was named Somapura Vihara. The second emperor of the Pala dynasty, Dharmapala, erected this vihara during the 8<sup>th</sup> century AD, located in the Naogaon district in the northeastern part of Bangladesh. The importance of this ancient Buddhist site was recognized in 1985, when it was placed on the World Cultural Heritage list. This spectacular Buddhist monument has been revealed through excavation to be centered on a gigantic cruciform temple, arranged in four wings around the large shrine, within an approximately 280-m square monastery containing 177 cells.

Since the main fabric of the temple and monastery was exposed by excavation in 1934, it has progressively deteriorated for nearly 75 years. The problems of this World Cultural Heritage site are presented below.

1. Waterlogging remains very much an issue of concern for proper conservation of this archaeological site. Waterlogging in the vast courtyard, from June to November each year, causes enormous damage to the foundations of the buildings and to their decorative elements.
2. One of the major problems of visible degradation of the brick work of the central shrine is the rapid deterioration caused by sulphate attack.
3. Due to heavy rainfall lasting almost six months, the large monastery and central temple and other structures have become covered by moss, algae, fungi, insects, etc.
4. Another important problem concerning the site itself is drainage. It is very delicate and difficult to solve, because the vihara area lies below the surrounding area.
5. As many as 63 stone images and about 2500 terracotta plaques are badly damaged. The problem's causes include environmental factors such as dampness, rainwater penetration, salt evaporation, and biological growth, etc., as well as vandalism by visitors and local people.
6. The tendency of smugglers to take valuable antiquities with the help of local people.
7. Loss of authenticity and integrity of the brick structures of monuments.

**Mainamati (Comilla District):**



The greatest assemblage of ancient Buddhist remains lies in Lalmai-Mainamati, a 16-km-long hill range near the town of Comilla. The northern part of the range is locally known as Mainamati, which simply echoes the memory of King Govinda Chandra's mother, Mainamati. Exploration of this range has revealed over 50 ancient sites containing various types of Buddhist remains of the 6<sup>th</sup> to 13<sup>th</sup> centuries AD. Excavations have been conducted at a number of sites, locally named as Salban Vihara, Kutila Mura, Ananda Rajar Bari, Charpatra Mura, Mainamati Ranir Bari, and Vozz Rajar Bari, from 1955 to the present day.

A large collection of gold and silver coins, stone and bronze sculptures of various gods and goddesses, royal copper plate grants, terracotta plaques, jewelery, pots and miscellaneous objects of daily use have been recovered from these excavations. Problems attending these sites are as follows.

1. Skyscrapers are a new problem in this area. Landowners are building these as there are no strong regulations regarding them.
2. There is a shortage of specialists in archaeology and conservation.
3. Regarding environmental damage and vandalism, the architectural remains are sustaining a loss of their original variation, leading to anomalies in their unique features and a loss of part of their historical meaning.
4. Insufficient manpower in the Department of Archaeology.



Sixty-Domed Mosque

### **Shait Gumbad Mosque, Bagerhat**

In the mid-15<sup>th</sup> century a Muslim colony was founded in the hospitable mangrove forest of the Sundarbans near the seacoast in the Bagerhat district by an obscure saint and general named Ulugh Khan Jahan. He was a contemporary of the independent Bengal Sultan Nasiruddin Muhammad Shah (1442-59). Ulugh Khan Jahan ruled over an extensive jungle territory in and around Khalifatabad (present Bagerhat). Khan Jahan adorned his capital city with numerous mosques, traditionally 360 in number, plus bridges, water reservoirs, roads, palaces, mausolea, and the largest multi-domed mosque in Bangladesh, known as the Shait Gumbad Mosjid. Other monuments of Khan Jahan precariously surviving the ravages of time, within the area ruled from the city for miles around, include the massively built Ronvijoypur Mosque, Bibi Begums Mosque, Chunakhola Mosque, Singar Mosque, Nine-Domed Mosque, Sonatola Mosque, Reza Khoda Mosque, and Zinda pir Mosque. Among the many surviving monuments of the Khan Jahan style, the largest and most magnificent Shait Gumbad Mosque is among the heritage of Bagerhat listed as World Cultural Heritage in 1985.

Problems involved with these monuments are as follows:

1. These monuments are situated close to the seacoast and are subject to regular seawater inundation at high tide, and therefore suffer badly from dampness, salinity, and waterlogging of the area.
2. Some monuments are situated beside a highway which is one of the busiest motor ways in Bangladesh. The vibration from the vehicles harms the foundations all day and night.
3. Major problems identified by the UNESCO experts are:
  - a) The presence of deleterious salts in the ground has caused considerable damage to the brick wall and fabric of all the monuments.
  - b) As a result of excessive salt action, external brick facades have become totally disfigured.
  - c) The wall faces are covered by lichen and moss.
4. Vandalism by the visitors and local people of the monuments.
5. Lack of skilled manpower.

### **Lalbagh Fort**

Dhaka city is about a thousand years old and has a very glorious past. It is heir to a very old and rich heritage of human civilization and culture. The Lalbagh fort and its ancillary structures such as fortification walls, gateways, Diwan-i-Am (public audience hall), *hammam* (steam bath), the tomb of Pari Bibi, mosque, masonry reservoir, and well-planned garden are situated in the heart of Dhaka. This fort, built in 1678, is the most dominant architectural creation of the Mughal period in Bangladesh. The fort was declared protected in 1910.



Problems involved with these monuments are as follows:

1. The Lalbagh fort is confronted with various problems everyday stemming from its situation in the busiest and most commercially crowded area.
2. In the areas surrounding the Lalbagh fort there has been a massive growth of industry that causes immense harm to the original colour and beauty of the fort on a daily basis.
3. The monuments being situated within a very thickly populated area, the internal and external environments of the monuments are becoming polluted in various ways. Sometimes illiterate mobs try to harm the magnificence of the monuments due to ignorance. Criminal elements sometimes enter into the protected areas in groups.
4. Above all, the monuments being surrounded by busy roads used by so many heavy vehicles, vibrations harm the foundations all through the day and night, threatening the longevity of the whole structure.

### **Gaur**

The main precinct of the medieval Muslim capital of Bengal called Gaur or Likuta lies in West Bengal, a state of India. Bangladesh has only suburbs of the city, with some important monuments of the sultanate and Mughal periods, namely Darasbari Mosque, Choto Sona Mosque (Small Golden Mosque), Kania Dighi Mosque, Dhani Chak Mosque, Shah Nimatullah Wali's mosque and mausoleum, and the attached summer resort with a *hammam*.

The architectural features were studied carefully on the basis of these monument's surviving elements, and restoration works have been carried out. At present, the monuments are restored.



Small Gold Mosque

The problems at Gaur are the same as those stated for the various monuments above, and are accordingly not discussed separately here.

#### **Some recommendations for cultural heritage protection and restoration**

As Bangladesh is a small country, the main problems for archaeological sites and remains are everywhere the same, such as weather, waterlogging, etc. Some sites have unique problems, though they are few. Here I have tried to figure out some recommendation for solving the common problems.

1. In a considerable number of districts in Bangladesh, archaeological surveys have been conducted by the government of Bangladesh. Many of the country's 64 districts are still not included in the archaeological survey, and it is highly necessary for them to be surveyed soon.
2. With a view to enhancing archaeological activities, it is essential to develop the necessary skilled manpower, create training facilities, collect necessary equipment including vehicles, and sufficient funds should be arranged.
3. The archaeological laws enacted in 1968 (reformed in 1976) are not adequately effective for the protection and preservation of archaeological assets. New laws incorporating new perspectives of the world today should be enacted for this purpose.
4. Effective steps should be taken by the government to check the criminals involved in

handing over valuable antiquities to others or other countries unlawfully, with bricks from archaeological sites often reported as being stolen by groups of people who collect bricks and sell them, causing damage to the ancient architectural mounds. It is highly necessary to put an end to this harmful practice.

5. Religious sentiments are playing a harmful role in the field of protection and preservation of the temples, mosques and mazars. People guided by religious sentiments want to use the monuments according to their own will by colouring, overlapping, enlarging, reforming, and decorating, thereby destroying the real value, meaning, and nature of the architectural evidence. It is very essential to put an end to this intolerable practice.
6. Alleviate the insufficiency of manpower in the Department of Archaeology.
7. Alleviate the lack of trained and skilled manpower.
8. Promote closer coordination between different organizations of the government and the Department of Archaeology.
9. Create links between the Department of Archaeology and the universities to boost the work of research, reform, and conservation through close communication.
10. Make higher training from foreign countries available for Bangladeshi archaeologists and conservators.
11. Insufficient allocation of funds from the national budget is an obstacle to implementing development projects. It is necessary to enhance budgetary allocations sufficiently to cope with the Herculean task of reforming, restoring, and developing the archaeological sites.
12. Due to heavy rainfall lasting almost six months of the year in Bangladesh, the monuments face problems from the biological growth covering them, so effective and timely measures are necessary to eradicate these.
13. The Buddhist monastery at Paharpur and the Muslim monuments at Bagerhat, the spectacular ancient remains of the country have faced serious conservation problems. These should be rethought before the next steps of conservation. In addition, the problems of drainage of the central monument and the courtyard should be solved in the near future.
14. A good number of monuments need more than the usual routine care. Moreover, because of the vastness of some of the monuments, and the advanced stage of their deterioration, there is need for specialized and scientific conservation work.
15. Maintain conservation records and proper monitoring after conservation.
16. Proper documentation work should include photography and drawing, and collecting materials on the history and architectural characteristics before restoration work.

## **Conclusion**

Despite many problems and shortcomings relating to archaeology in Bangladesh, the government and the Department of Archaeology are doing a lot in developing, restoring, and preserving the archaeological sites of Bangladesh including the Buddhist monastery of Paharpur, the Shat

Gumbad Mosque in Bagerhat, and many other viharas, temples, mosques, forts, ancient cities, and archaeological sites are being preserved successfully, thereby gaining world-wide attention and reputation.

### **Reference works**

1. Discover the monuments of Bangladesh  
Dr. Nazimuddin Ahmed-UNESCO, 1984
2. Safeguarding of the monuments of Paharpur and Bagherhat  
An appeal by the Government of the people's Republic of Bangladesh, 1986
3. Paharpur and Bagherhat—two world cultural heritage sites of Bangladesh  
Department of Archaeology, Ministry of Cultural Affairs and UNESCO-Dhaka, 2004
4. Proceedings of the international seminar on elaboration of an archaeological research strategy for Paharpur world heritage site and its environment (Bangladesh)  
Department of Archaeology, Ministry of Cultural Affairs and UNESCO-Dhaka, 2004
5. Project review on drainage and maintenance programme of Paharpur and Bagerhat  
James Hoodman—Consultant Engineer, Jon Sanday—Conservation Architect, UNESCO, 2008
6. Nomination of Mohasthan and its environments for inclusion on the UNESCO world heritage list.
7. Fourth Seminar on the conservation of Asian cultural heritage held in NARA. 1993
8. Architectural conservation Bangladesh  
Asiatic Society of Bangladesh 1993

## Cambodia

### LUN Votey

*Archaeological Expert*

Japan-Apsara Safeguarding Angkor (JASA)

## Conservation and Restoration Works in the Bayon Complex

### 1. Introduction

Angkor, the great medieval settlement of the ancient Khmer Empire, comprised many temples and hydraulic works. In 802 AD, the Angkor Dynasty was established by the great King Jayavarman II. He built his first capital city at Mahendraparvata (Kulen Mountain), and later moved to Hariharalaya (Rolous). In the reign of King Yasovarman I, the capital city was transferred from Hariharalaya to Yasodharapura I (Angkor area). Other great kings such as Suryavarman I, Udayadityavarman I, Suryavarman II, and Jayavarman VII continued to use the Angkor area as the capital city, and continued the temple-building tradition.

The Bayon complex (Fig. 1) was constructed under the reign of Jayavarman VII (r. 1181-1220 AD), in the later half of the 12<sup>th</sup> century, and dedicated to Mahayana Buddhism. It is located in the center of the royal capital of Angkor Thom and was called Yasodharapura III. Angkor Thom was encircled with a high wall having five gates. The Bayon consisted of a central tower 40 meters high surround by towers of various heights. Due to time and changes of the capital city from Angkor to other places in the latter period, the Bayon and other temples in this area deteriorated and were in serious danger of collapse.

From the early part of 19<sup>th</sup> century until the outbreak of internal conflict in Cambodia, the École Française d'Extrême-Orient (EFEO) conducted conservation and restoration activities at the Bayon complex. These activities are recorded in their journal, *Rapports d'Angkor*.

Following Cambodia's civil war, conservation and restoration efforts at the Bayon resumed immediately with the Ateliers for Conservation of Cultural Property (PKZ). From 1989 to 1990, a five-year plan was formulated for archaeological survey and restoration of the Bayon complex. The archaeological survey was conducted in 1990 and the restoration plan submitted the same year for the Southern and Northern Libraries, and the East Tower of the Outer Gallery. Unfortunately, this project did not lead to any actual restoration work.

In 1992, the Angkor area was registered as a Cultural World Heritage Site by UNESCO. Many international researchers from various countries have started research in this area under APSARA authority control. Countries such as France, Germany, Italy, India, and Japan have been very active.

Among these countries, Japan has selected the Bayon complex to survey for the possibilities of conservation and restoration works. A project was created called the Japanese Government Team for

<sup>1</sup>PKZ, ed., *The Bayon Temple, the Report of the Polish-Cambodian Archaeological and Preservation Mission 1990*, Vol. I. Warsaw, 1991.



Safeguarding Angkor (JSA). This project was conducted from 1994 to 2005. After the JSA project was finished, the Bayon Master Plan was prepared for conservation and restoration works in the Bayon complex. After the Bayon Master Plan document was drawn up, a new project of cooperative effort between Japan (JSA) and the APSARA Authority was initiated. The financing came from UNESCO/Japanese Funds-in-Trust for the Preservation of the World Cultural Heritage. The new joint effort was called JAPAN-APSARA Safeguarding Angkor (JASA), created to continue the conservation and restoration works in the Bayon complex for 5 years (2005-2010). The following are the conservation and restoration works that have been conducted in the Bayon complex under the JASA structure.

## **2. The Present Condition and Deterioration of Bayon**

Structurally, Khmer architecture can generally be divided into two categories: the sub-base, and the upper structure. The Bayon complex, built nearly 800 years ago, has suffered from the passage of the time, changes in weather, changes in the city, and wars, to name a few. The condition of the Bayon complex has become deteriorated and it is in danger of collapse.

### **2.1. The Sub-Base**

The sub-base consists of the ground, the base foundation, and the platform. It is designed to stabilize the upper structure. Nowadays, the deterioration of the sub-base is the most important problem. It is because of the deterioration of foundation that parts of the upper structure have collapsed. The deterioration of the sub-base is caused by decay of the stone elements inside the foundation, and the movement and disturbance of the foundation soil. Deformations of these elements are caused by ground water, rainwater, plant roots, and insect infestation.

### **2.2. The Upper Structure**

The upper structure consists of many components such as roofs, walls, pillars, and internal spaces. The upper structure is for creating internal space. The upper structure can be said to be the significant part of the building, stabilized by the sub-base. Nowadays, the condition of the upper structure is seriously damaged as evidenced by collapse, cracking, breakage, decay of the sandstone elements, fallen stone elements, and plant organisms.

Below are examples of deterioration of components of the upper structure.

#### *Four-faced Towers*

The Bayon consists of fifty towers, with four faces in each tower, except the central tower. There are three different types of faces: the Devata type (goddess), the Deva type (male god), and the Asura type (fierce god). Only forty towers remain in Bayon complex, and some towers are in a state of collapse (Pl. 2). We can recognize them as four-faced towers from the fallen stones with tower face fragments scattered around Bayon complex. In addition, most of the stone elements are decayed and weathered.

### *Outer/Inner Galleries and Bas-reliefs*

There were two galleries constructed in the Bayon complex, called the Outer and Inner Galleries. On the walls of both galleries are bas-reliefs that have been carved as historical stories, depictions of daily life, iconographical stories, and religious stories.

The structure of the Outer Gallery has been seriously damaged (Pl. 3). Crumbling and collapse of the roof and some parts of the walls, weathering of sandstone elements, and plants, lichens and algae are all contributing factors. At the Inner Gallery (Pl. 4) the structure of the building is stronger, but the surface of the sandstone elements is more seriously damaged than at the Outer Gallery. There are plants on the roofs, and lichens and algae on the surfaces of the structural body, especially the bas-reliefs due to wet conditions caused by rainwater absorption.

### *The Northern and Southern Libraries*

There are two libraries at the Bayon, called Northern and Southern Libraries. These libraries stand on the terrace of the Outer Gallery, located at the northeast and southeast corners. The Northern Library was restored by the JSA project in its second phase (Pl. 5), and the Southern Library is in the process of restoration by the JASA project (Pl. 6).

Before restoration, both libraries were seriously ruined. The pavement became uneven due to subsidence and the walls have inclined inward and are somewhat twisted. Major gaps are also found between blocks that constitute the wall. There is no roof remaining over the nave.

### *Scattered Stones in the Bayon Complex*

Many sandstone blocks have fallen from different parts of the Bayon (Pl. 7). Most of the stones were piled inside the wall of Outer Gallery or assembled around the Outer Gallery by EFEO in the early part of the 20<sup>th</sup> century. There is no record to confirm their original locations. Recently, these scattered stones are being studied by JASA.

## **3. Risks of Deterioration**

Regarding the problems that have been mentioned above, risks of deterioration can be divided into two main classes of factors: natural and human.

### **3.1. Natural Factors**

Deterioration caused by nature is the most important set of factors affecting these monuments. These factors have caused the Bayon monument to fall into a seriously damaged state. Natural factors include rainwater, temperature, strong wind, plants, lichens and algae.

#### *Rainwater*

The foundation soil is very well compacted. When rain falls, however, water penetrates into the compacted soil by way of the gaps between stone blocks. The compacted soil weakens from its wet

condition and some of it gets washed away. Additionally, the foundation soil is disturbed by ants and other insects, weakening the soil and making it more easily washed away. This can cause the sub-base or upper structure and stone elements to collapse, break, and crack.

#### *Temperature*

Cambodia is located in the tropical area; the weather is dry and wet. Changes in temperature are a cause of decay of the stone components.

#### *Strong Winds*

Wind is a cause of deterioration. Strong winds have caused the sandstone to fall, and have contributed to the cracking. Moreover, winds can knock down big trees nearby, which strike the temple.

#### *Plants (Pl. 8), Lichens and Algae (Pl. 9)*

Due to favorable weather, plants, lichens and algae grow easily. Plants are visible on the roofs and on top of towers; their root invade joints between stones, widening them until the stones fail as supports. Lichens and algae grow on the surfaces of stones, especially on the bas-relief of gallery walls, and they have an adverse effect on sandstone.

### **3.2. Human Factors**

Deterioration caused by human factors is also important. Human factors include war, theft and illegal carving out of statues or bas-relief, activities of tourists, and religious ceremonies inside the complex.

Since the ancient period, war has always been started by the outbreak of internal conflict in Cambodia, or by the aggression of neighboring countries. Because of warfare, the temple has been destroyed and abandoned by the people who move to settle in other places. Some sculptures were taken out by foreign forces during their control or by organized theft.

An example, after the reign of the King Jayavarman VII, there was a great change of religion from Mahayana Buddhism to Hinduism. All of the sculptures and bas-reliefs which were related to Buddhism were destroyed or carved out, or changed to Hindu subjects (Pl. 10). This activity was done at all of King Jayavarman VII's temples.

Nowadays, in the Bayon complex and also at other temples in the Angkor area, many local and international visitors visit everyday (Pl. 11). The number of tourists is more than one million people in 2007, according to data from the Ministry of Tourism. The increase of tourists has had adverse effects on the temple. For example, stones are being worn out from shoes, the noisy sounds of tourists have caused the sub-base and upper structure to tremble, and there have also been an increase in weight from the tourists on the sub-base, and destruction of the environment surrounding the temple. Religious activities (Pl. 12) inside the temple are also a problem. Smoke from burning candles and incense sticks has left residue on the sandstone elements. With time this will have adverse effects on the sandstone elements.

#### **4. Conservation Measures**

In the Angkor area, APSARA is the only authority responsible for conservation in cooperation with international agencies. This authority has created many departments for conservation within the Angkor area. Inside APSARA, the guardian and cleaning teams were created for maintenance of the temple, including cleaning, removing plants from the roofs and around the temple, as well as for assisting visiting tourists. Explanation teams were created with the aim of educating the local people about the cultural heritage value.

In the Bayon complex, the JASA project is responsible for conservation and restoration. Nowadays, this project is conducting the conservation and restoration of the Southern Library,<sup>2</sup> studying conservation methods for bas-reliefs of the inner gallery (caused by lichens and algae) and for the central tower, surveying the condition of Bayon, and conducting other research. These activities will continue until 2010.

Reinforcing dangerous components is very important in the Bayon complex. In the previous conservation work of EFEO, concrete cement (Pl. 13) and crampons were used. In the JSA project, dangerous parts were reinforced with wooden support, wire wrapping (Pl. 14 and 15), and steel pipes inserted to prevent further crumbling and collapse. This work is being continued by the JASA project. APSARA Authority has also used the wooden shoring to support some dangerous places (Fig. 2).

#### **5. Archaeological Survey and Restoration of the Southern Library**

Before starting the current archeological survey and restoration work at the Southern Library, similar work was conducted for the Northern Library by the JSA project in its second phase.

In this section, I would like to report only on the current archaeological survey and restoration work at the Southern Library of the Bayon complex.

##### **5.1. Archaeological Survey**

From 2007 up to the present, we have conducted archaeological excavation and investigation at the Southern Library of the Bayon complex and its surroundings. JASA excavated the following three areas (Fig. 3): the dismantled areas at southwest and northwest corners of the Southern Library, the central part of the Southern Library, and Passage C and its lower structures. This report summarizes the first and third of these areas. The aim of the survey was to gather data on construction techniques and processes, and on the present condition of the Southern Library, and to compare these with data from the previous survey of the Northern Library.<sup>3</sup>

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<sup>2</sup>Details of the archaeological and restoration works for the Southern Library are given in section 5.1.1, below.

<sup>3</sup>See the following reports on the conservation of the Northern Library: JSA, *Annual report on the Technical survey of Angkor Monument, 1996, 1997, 1998*; *Report on the Conservation and Restoration Work of the Northern Library of Bayon, Angkor Thom, 2002*; *The Bayon Master Plan: The Master Plan for the Conservation and Restoration of the Bayon Complex, 2005*.

### **5.1.1. Dismantled Area at the Southwest and Northwest Corners of the Southern Library**

#### **5.1.1.1. Excavation Procedure**

The excavation at the southwest corner was carried out from June to September 2007. This survey examined the entire platform, from the upper to lower parts, and ultimately down to the lower laterite pavement under the platform. The excavation at the northwest corner started May 2008 and continues to the present. It was excavated from the upper to the lower platform.

Prior to the excavation, the main structure of the library was dismantled. The excavation work was started after the architectural unit had dismantled three tiers of the upper platform and reached the artificially laid soil (inner compacted soil) inside the platform. The southwest corner trench is approximately 1.7 m (E-W) x 1.6 m (N-S), and the northwest corner trench is approximately 2.4 m (E-W) x 2.2 m (N-S). Its shape was found to be irregular due to the intricate assembly of the stone blocks. For this reason, the dismantling work and excavation work were conducted simultaneously.

The foundation soil was excavated in layers of 30 cm in depth. In every 30 cm thickness, the architectural unit normally made soil tests including a penetration test, permeability test, and the Yamanaka test for hardness of the foundation's compacted soil.

#### **5.1.1.2. Platform**

As is common to most Khmer architecture, the whole structure is constructed of sandstone blocks, laterite blocks, and artificially laid soil. Sandstone blocks were used for the floor (platform surface) and the exterior elements, while laterite blocks were used as material for the interior behind the sandstone facing. The main platform of the Southern Library is composed of three layers: upper platform, middle platform, and lower platform.

*Upper Platform.* The upper platform includes the surface of the platform, and is built with three tiers of masonry. The first or uppermost tier, comprising the platform surface, and pillar bases are made from sandstone blocks, while the second tier is made of both sandstone and laterite blocks, and the third is made of laterite blocks. The use of adjustment soil for filling the gaps between inner stone blocks was confirmed. Adjustment soil is a type of sticky soil mixed with sandstone and laterite particles, and is different from the artificially laid soil of the middle and lower platforms.

*Middle and Lower Platforms.* The middle and lower platforms are similarly composed of sandstone blocks on the exterior surface, backed with interior laterite blocks, and a core of artificially laid soil. There is basically a row of sandstone blocks on the outer surface and a row of inner laterite blocks per tier, although some tiers are composed of two or three rows. The use of adjustment soil, of the kind mentioned for the upper platform, was not confirmed between the gaps of exterior sandstone blocks. The vertical joint between the sandstone and laterite blocks, and the bed and vertical joints between laterite blocks on the inside were filled with adjustment soil.

The artificially laid soil inside the laterite blocks can be divided basically into three types of soil. One is soil that has been compacted on the inner side of the laterite blocks as backfilling soil

(cohesive soil). Another is artificially laid soil that has been laid farther inside the backfilling soil, and contains rubble of natural stone block. The last is soil compacted into thin layers (sandy clay with sandstone and laterite particles), which has been laid between the artificially laid soil layers. Inside the artificially laid soil, there is a row of laterite wall structure (Fig. 4) that appeared in the east wall of each trench, and runs in a north-south direction of both trenches. In the east wall in the northwest corner this laterite structure is composed of seven tiers (Pl. 17), and in the southwest corner, it is composed of six tiers. Both examples are almost the same level, approximately 1.6 m high and 3.5 m length. This detected laterite structure is still under study.

The backfilling soil had been made according to two methods. In one method, the soil was piled up as artificially laid soil, and cohesive soil was then laid and compacted as backfilling soil. In the other method, cohesive soil was first filled up as a backfilling soil, and the sandy soil was then laid and compacted as artificially laid soil. The former type is mainly found in the upper platform, and the latter is mainly found in the lower platform. Other parts contained no backfilling.

#### **5.1.1.3. State of Deterioration**

Deterioration is particularly noticeable in the upper platform and the upper part of the middle platform. Significant uneven subsidence has occurred in places where rainwater penetrated in to the foundation mass of the building and washed away the inner artificially laid soil and adjustment soil through open gaps in the stones. This caused the upper layers of artificially laid soil and adjustment soil to become discolored. Moreover, there were traces of ant holes appearing near these elements. In this way, the upper platform is especially susceptible to influences of rainwater from the upper surface. The inner soil has begun to flow out and the stone blocks have subsided unevenly, especially at the southwest corner, because there are big opening gaps and ant holes.

#### **5.1.1.4. Comparison between the Southern and Northern Libraries**

The sectional construction of the Southern Library is roughly the same as that of the Northern Library, which we investigated previously. In other words, the platform is composed of sandstone blocks on the exterior surface, laterite blocks inside, and artificially laid soil behind these. The composition of inner artificially laid soil is basically similar to that of the Northern Library, and can be divided into three types. However, there appears to be a slight difference in the process of arranging the backfilling soil. In the case of Southern Library, the two above-mentioned methods were used, but in the case of Northern Library, only one method was used. Backfilling soil was laid first, and then a sand layer was compacted on top of it. This difference, however, is simply a difference in process, and we assume it has no influence on the construction plan as a whole.

Compared to the compacted soil layer under the Upper Pavement, which will be described later, the compacted layers inside the platform of Southern Library are clearly the product of crude work. This difference is interesting in that it is one of the factors that showing the difference in construction date between the Southern Library and the lower part of the Upper Pavement. The detected laterite

structure wall inside the artificially laid soil of the Southern Library did not appear during the excavation survey at the Northern Library.<sup>4</sup>

### **5.1.2. The Survey at Passage C and Its Lower Platform**

This survey was carried out from April to September 2007 at the eastern half of Passage C, also examining the structures below it such as the Upper and Lower Pavements of the eastern half of Passage C.

#### **5.1.2.1. Passage C**

Currently, the inside of Passage C is paved with laterite blocks. We found that only one tier of laterite blocks was paved on artificially laid soil layer (not compacted) approximately 20-30 cm thick. The north side of Passage C is paved with two tiers each of interior laterite blocks and exterior sandstone blocks. The artificially laid soil layer becomes thicker toward the north side. The laterite surface on the north side is also about 10 cm higher. The artificially laid soil can be divided into two layers, neither of which has been compacted.

The edging stone around Passage C is sandstone blocks. The row of edging stone on the eastern side has some moldings on the surface, but there are no moldings on the western side. Moreover, two tiers of laterite blocks are piled immediately inside the row of sandstone blocks (edging stone) on the eastern side for reinforcement. This indicates that both Passage C and the Upper Pavement were planned to be built at the same time. This probably indicates why the lower inside portion of Passage C does not have a sandstone Upper Pavement, but instead is paved with laterite.

#### **5.1.2.2. Upper Pavement**

The Upper Pavement is the present pavement floor, and it shows sandstone (upper) and laterite (lower) layers at the surface between the Inner and Outer Galleries.

#### **5.1.2.3. Lower Pavement, SF015 and SF020 (Fig. 5)**

*Structure SF015.* The laterite Lower Pavement was found approximately 1.4 m below the upper surface of the sandstone Upper Pavement, and approximately 1.2 m below the upper surface of the laterite Upper Pavement. SF015 is the higher tier that extends in an east-west direction at the south end of the Lower Pavement. The southern extremity has a deep vertical drop, consisting of eight tiers of laterite blocks arranged in vertical orientation approximately 1.9 m in depth. At the north end, a tier composed of three stone rows is set on the laterite pavement. Excluding the northern extremity, which is composed of sandstone, the row of stone blocks is made of laterite. The sandstone is the remainder of the sandstone Lower Pavement. As the surface of the sandstone becomes lower to the south and there is a tier that had been cut out, it appears that sandstone was piled on the part that was cut out.

<sup>4</sup>The trench for each corner of Northern Library was small, and may have missed the location of a laterite structure wall.

The platform from the south end of the laterite wall to the cut out portion is approximately 3.2 m wide, and had been built preceding the present Outer Gallery. The main platform is about 5 m narrower than the width of Outer Gallery, and may have been a simple structure, such as a stone wall. However, it is difficult to be certain because the upper part has been modified by SF020, as will be described below.

SF015 and the Lower Pavement were made by leveling soil to a thickness of approximately 1.1 m on the natural soil occurring about 0.25 m below them, and further soil compacted to a thickness about 1.4 m was piled on it. SF015 is the same structure as the two rows of laterite walls that EFEO and JSA surveys have found on the inside of the north face of the Outer Gallery. The previous surveys had not considered the two rows as a single platform.

*Structure SF020.* The area on the outside of SF015 south wall (about 1.9 m high) is filled with sandy soil, and paved with SF020 laterite. SF020 laterite connects with the foundation of the Outer Gallery. It is believed that there had been sandstone paving on the SF020 laterite pavement, because we confirmed traces of scraping that have been made when the stone blocks were piled on the laterite surface.

### **5.1.3. Other Structures**

Traces of nine postholes aligned in a N-S direction have been found on the Upper Pavement. These postholes were numbered SB009a to SB009i (Fig. 3). SB009a was found under the southwest corner of the platform of the Southern Library, and therefore is considerably older than the Southern Library. We also found a relatively large posthole under the lower platform in the southwest corner of Southern Library (numbered SB011). It was made after construction of Upper Pavement. It is apparent that there had been wooden structures around this area before the Southern Library was constructed.

At the northwest corner, traces of surface cutting into the carvings of the southeast platform of Inner Gallery were found (Pl. 19). This was cut to join the platform of the Inner Gallery and the lower platform of the Southern Library.

These traces show that the southeast platform of Inner Gallery is older than the Southern Library.

### **5.1.4. Recovered Artifacts**

Artifacts such as Chinese and Khmer ceramics, and iron objects, were found in excavations of the southwest corner trench, Passage C, and its underlying structures. All the ceramics are small potsherds. At the northwest corner trench we also found Chinese ceramics and Khmer potsherds<sup>5</sup>, but the amount is less than that found in the southwest corner.

In total, there were 712<sup>6</sup> pieces of ceramics found. These ceramics included rims, bodies, bases, covers, and unknown pieces.

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<sup>5</sup>In this report, I do not show the potsherds that were found at the northwest corner because they have not been processed.

<sup>6</sup>Please see the Table with the list of ceramics counts, below.



*Khmer Ceramics (Pl. 20).* The Khmer ceramics found in these trenches are stoneware and earthenware. It is difficult to recognize the types or vessel shapes because the shards are small. However, we can give a date to stoneware that was produced in the Angkor period, between 9<sup>th</sup> to 12<sup>th</sup> centuries, because of the decoration, the ash glaze, and the brown glaze that covers them.

*Chinese Ceramics.* There were few Chinese ceramic shards found.

*Iron Objects.* There were two iron chisels found. One iron chisel was found in the south side of the Southern Library. Another chisel was found at the southwest corner of the lower platform (Pl. 21). Both chisels are similar to the iron chisel that had been found at the northeast corner of Northern Library.<sup>7</sup>

At present, all of these artifacts are being cleaned and stored at the JASA office. After the archaeological excavation is finished, we will start to process them.

#### **5.1.5. Results of the Archaeological Investigation**

The archaeological survey through excavation shows that the upper platform and upper part of middle platform have deteriorated, because rainwater has washed away the inner artificially laid soil and adjustment soil through the open gaps between stones, and that the upper platform is especially susceptible to influences of rainwater from the floor. As a result, the inner soil has flowed out and the stone blocks have subsided unevenly.

For the construction process of the Southern Library and its related structures, we can conclude that the Bayon complex was constructed in the following stages:

*Stage I: Leveling of the Natural Soil and Construction of the Lower Pavement and SF015.* Sandy soil was compacted to a thickness of about 1.4 m to build SF015 and the Lower Pavement on the natural soil. SF015 is slightly higher, so the compacted soil is 0.5 m thicker. The Lower Pavement was originally paved with sandstone, but the sandstone was later removed.

*Stage II: Modification of SF015 and Construction of SF020 and the Outer Gallery.* The preparation of the Outer Gallery and SF020 foundations elsewhere preceded all other structures; it would be natural to consider that the upper part of the gallery was completed after SF020. It appears that only the south side of the Lower Pavement was modified before constructing the outer side of the gallery.

*Stage III: Construction of the Upper Pavement and Passage C.* The inner courtyard side of the Outer Gallery was raised and leveled with a 1-m-thick compacted soil layer on the laterite Lower Pavement, and was paved with sandstone and laterite. Passage C was planned at the same time as the Upper

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<sup>7</sup>JSA, "4.1.2 Platform", "Appendix 3 Artifacts- Metal tools", Report on the Conservation and Restoration Work of the Northern Library of Bayon, Angkor Thom, Kingdom of Cambodia, p.110 and 363, 2000.

Pavement, which may have been made using sandstone that was used in the Lower Pavement. Further studies are needed to determine the degree to which the Outer Gallery has been modified after Stage II.

*Stage IV: Construction of the southwest platform of the Inner Gallery.* After the construction of Upper Pavement and Passage C, the platform of the Inner Gallery was constructed. It might have been built before or after SB009 and SB011, but recent study confirms that it was constructed before the Southern Library building.

*Stage V: Construction of wooden structures SB009 and SB011.* In this stage, wooden structures SB009 and BS011 were built. They were constructed after the Upper Pavement and before the construction of the Southern Library. Recent research shows that a wooden building had existed before the Southern Library.

*Stage VI: Construction of the Southern Library on the Upper Pavement.* Among the above-mentioned stages, the difference in the construction dates between Passage C and the Southern Library have already been pointed out, but further studies are needed to elucidate the dismantlement period of Passage C, changes in its function accompanying the dismantlement, as well as the roles of other structures surrounding the Southern Library.

## **5.2. Restoration work at the Southern Library**

In this project, restoration work is still underway at the Southern Library, following the restoration work that was done at the Northern Library in the second phase of JSA project.

The following is a brief description of the activities of the restoration work.

### **5.2.1. Dismantling**

Dismantling at the Southern Library began in January 2007 with the dismantling of the upper structure and its four corners, but at present only two corners have been completed (the southwest and northwest corners).

Below are the process and methods of the dismantling work.

*Dismantling Process (Pl. 22).* Following the structural order, dismantling work began from the upper toward the lower platform. First, sandstone blocks were slid slightly aside using steel rods, temporarily hanging each with a stone grip, tying the stone into a nylon sling and moving it to the temporary storage area. Second, for the laterite blocks, which vary individually in terms of size and condition, a wire net was used to unload stones to the storing area.

*Recording and Numbering System.* Data records are very important for documenting work, such as the

drawing of plans for each layer, drawings in elevation, leveling, measurement, and photo recording.

A numbering system is necessary to identify stone elements in their original condition and location before starting dismantling work. These numbers help keep track of dismantled sandstone and laterite blocks as they are moved from place to place during the restoration works. The basic method of using the numbers is the same as that applied at the Northern Library.

*Dismantling Tools, Heavy Operating Machinery and Storage.* Various equipment has been used to remove the stone blocks from their original positions, such as a 3-ton – 5-ton nylon sling procured in Japan, steel rods, pivoted stone grips, and chain blocks. A 25-ton rough-terrain crane has been used for lifting the stone elements.

After dismantling the stones at their original location at the Southern Library, a 4-ton cargo truck with a crane was used for transporting them from the temporary storage places at the both sides of the ramp to the storing yard for the repair process.

#### **5.2.2. Repairing the Stones (Pl. 23)**

The work of repairing the stones is aimed at reusing the original stone elements as much as possible, and to strengthen their structure. The repair method follows the form of the previous operations conducted by the JSA. New stone elements composed of the same quality, material, and texture of the original stone were used to replace the missing parts for structural reasons.

#### **5.2.3. Documentation of Restoration of Stone Elements**

A database on the restoration of the stone elements has been created to convey an accurate account of the conservation and restoration work, and to provide data that may be useful for future restoration work. This database includes details of measures employed for the restoration of elements, pre- and post-restoration drawings, photographic records, and information on their positions.

#### **5.2.4. Trial Assembly (Pl. 24)**

After finishing repair work of the laterite and sandstone blocks, the repaired stone elements were transported to the trial assembly place for conducting trial assembly with the aim of determining the exact location of each element in the entire structure, before actual restoration work at the original location of the Southern Library.

### **6. Conclusion**

According to the results of the research stated above, the recent condition of the Bayon complex is very seriously damaged. The deterioration of the building is caused by deformation of the sub-base and the upper structure, such as movement and disturbance of the foundation soil, decay of the stone elements, collapse, breakage, cracking, fallen stones, and damage by plants, lichens and algae. All of

the threats presented by this deterioration are caused by two sets of factors, natural and human. The natural factors are rainwater, temperature, strong winds, plants, lichens, algae, and insects. The human factors are war, theft and illegal destruction of temple elements, the activities of tourists, and religious activities.

JASA project is studying conservation methods for the bas-reliefs and central tower, and restoring the Southern Library. Dangerous parts of the structure are being reinforced with wooden shoring, and steel pipes inserted to prevent crumbling and collapse. Some of this reinforcing and maintenance work was done by APSARA authority; however, all of this work is not enough for the needs of conservation because finances are still inadequate.

Moreover, the participation of local people is very important for conservation work.

## References

J. Dumarçay. *Le Bayon, Histoire architecturale du temple*, Mémoire archéologiques III-2, PEFEQ, Paris, 1973.

JSA. *Annual report on the Technical survey of Angkor Monument*, JICE-TOKYO, 1996-1998.

*Report on the Conservation and Restoration Work of the Northern Library of Bayon, Angkor Thom*, Kingdom of Cambodia, JICE-TOYKO, 2000.

*The Bayon Master Plan: Master Plan for the Conservation and Restoration of the Bayon Complex*, JICE-TOKYO, 2005.

PKZ, ed. *The Bayon Temple, The Report of the Polish-Cambodian Archaeological and Preservation Mission*, 1990, Vol. I. Warsaw, 1991.

List of the Ceramics counting from the excavation survey of Bayon in 2007

Area		Khmer Ceramic																		Chinese Ceramics					Subtotal		
		Earthenware					Stoneware																				
		Rim	Body	Base	Cover	Tile	Ash Glaze			Brown Glaze			Unglazed														
Rim	Body						Base	Cover	Tile	Rim	Body	Base	Cover	Tile	Rim	Body	Base	Cover	Tile								
SL-SW	Platform	11	227	0	0	0	4	32	0	0	0	1	27	0	0	0	3	76	0	0	0	6	13	1	0	0	401
	SB011	1	2	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	2	0	0	0	8
Passage C	Area A	3	21	2	0	2	1	0	0	0	1	0	3	33	0	0	0	5	0	0	0	0	0	0	0	0	38
	Area B	2	34	0	0	17	2	6	0	1	1	0	4	0	0	0	0	3	0	0	1	0	0	0	0	71	
	Area B-C	2	14	0	0	1	1	2	0	0	0	0	3	0	0	0	0	7	0	0	2	1	1	0	1	0	35
	Area C	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	Area F	1	11	0	0	3	5	5	1	0	1	0	5	0	0	0	0	4	0	0	12	0	2	0	0	0	50
	Area G	8	42	0	0	17	2	10	3	0	1	8	1	0	2	0	7	0	0	1	0	4	0	0	0	106	
	Subtotal	28	354	2	0	40	15	55	4	1	3	2	50	34	0	2	4	102	0	0	16	8	22	1	1	0	
	In total																									712	

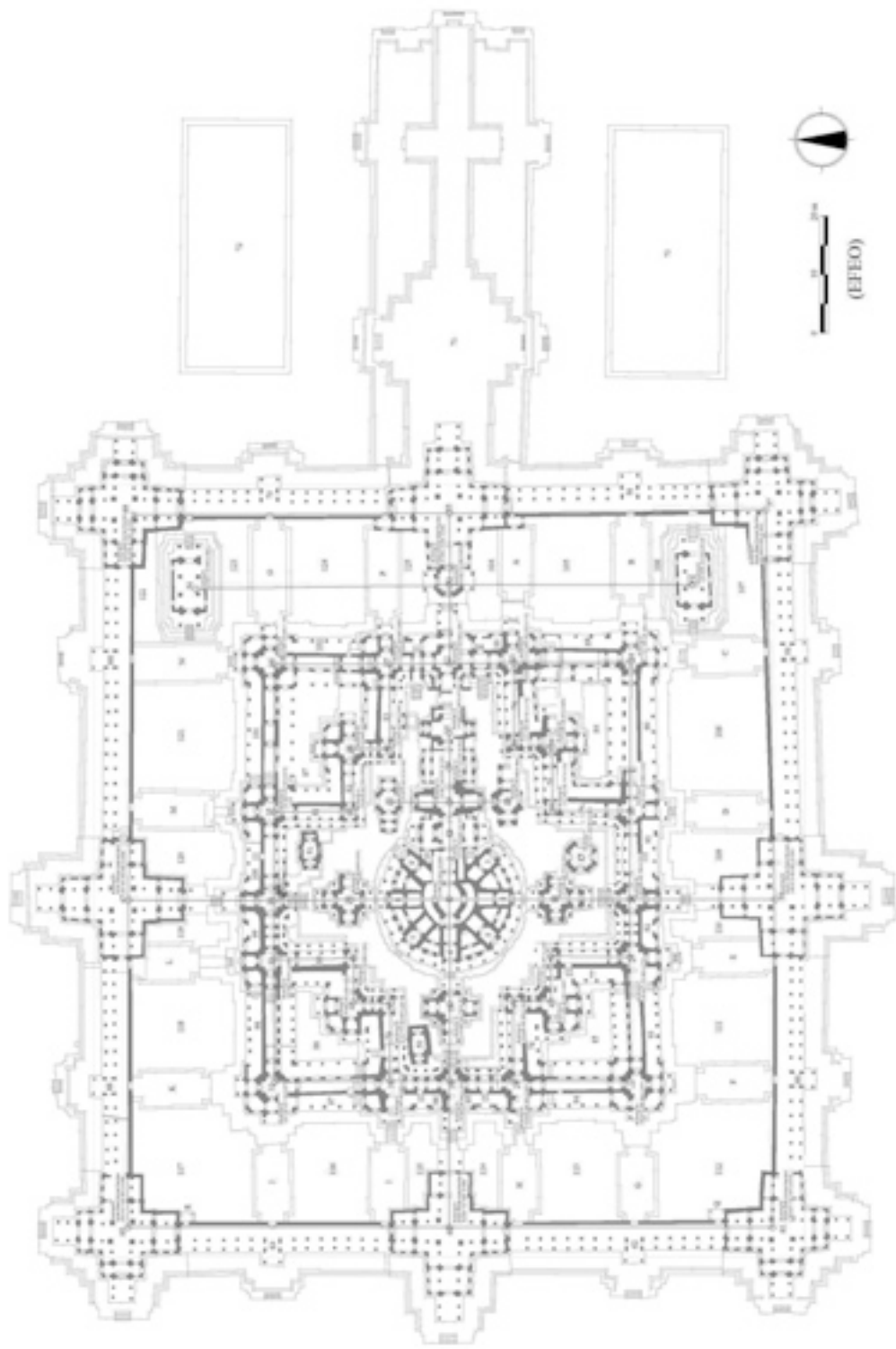


Fig.1 General Plan of Bayon Complex

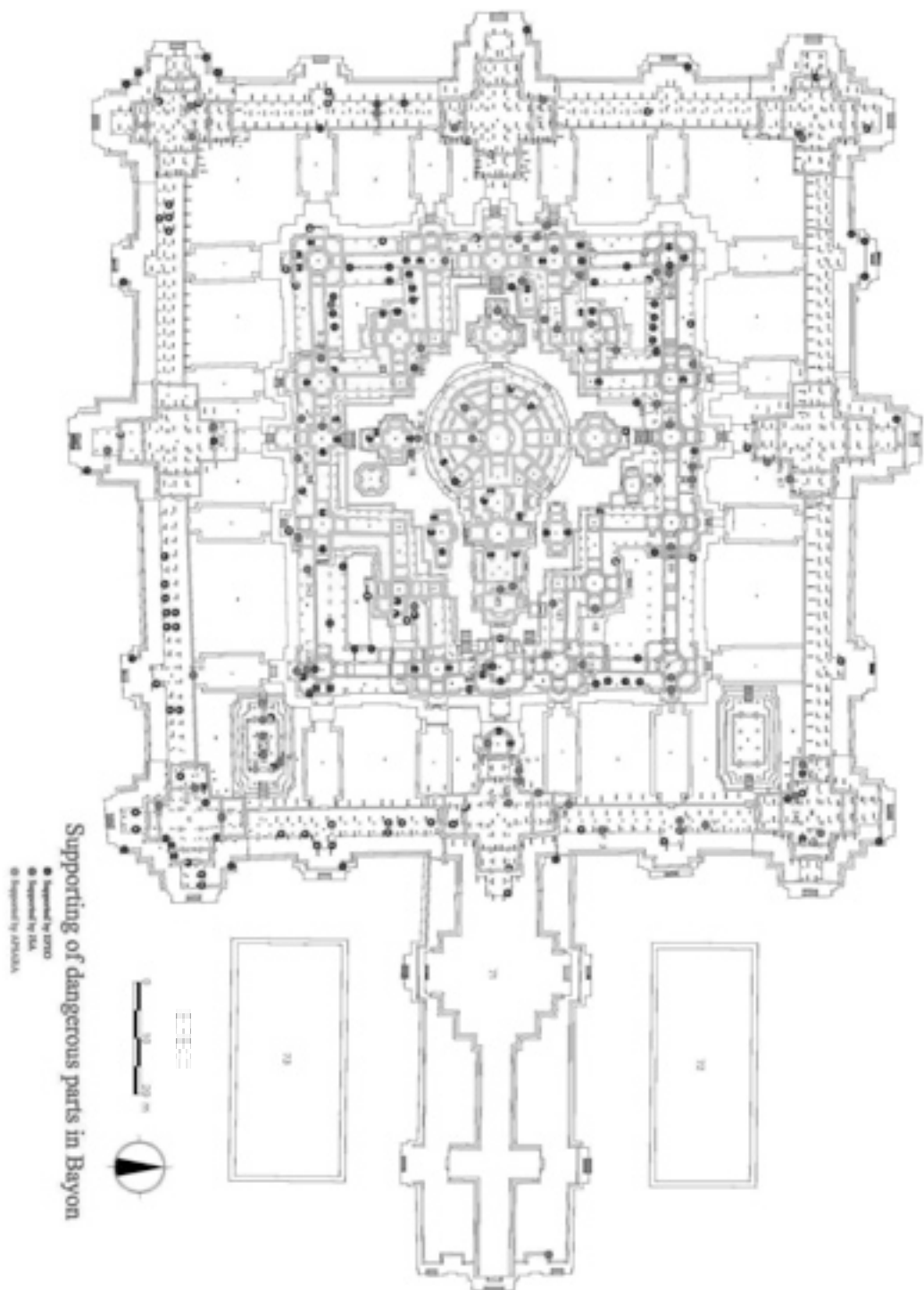


Fig.2 Plan of Dangerous part's supporting in Bayon Complex (Cheam Pross, JSA, 1999)

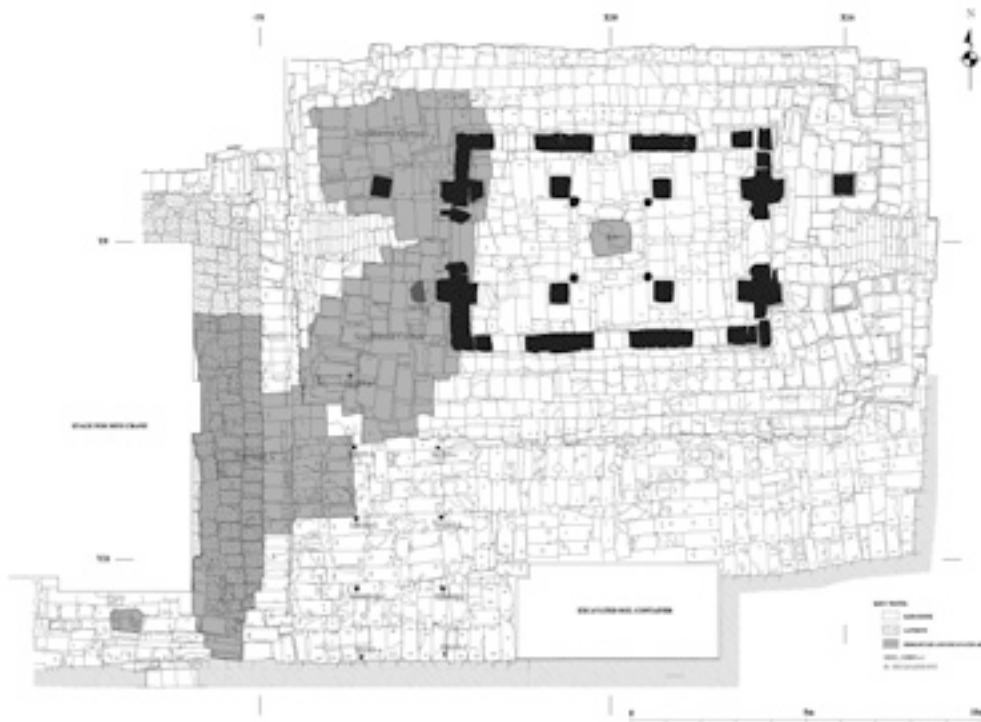


Fig. 3 Location of excavated trenches and dismantled area at the Southern Library



Fig.4 Eastern section of the northwest and southwest corner trenches, and the detected laterite structure

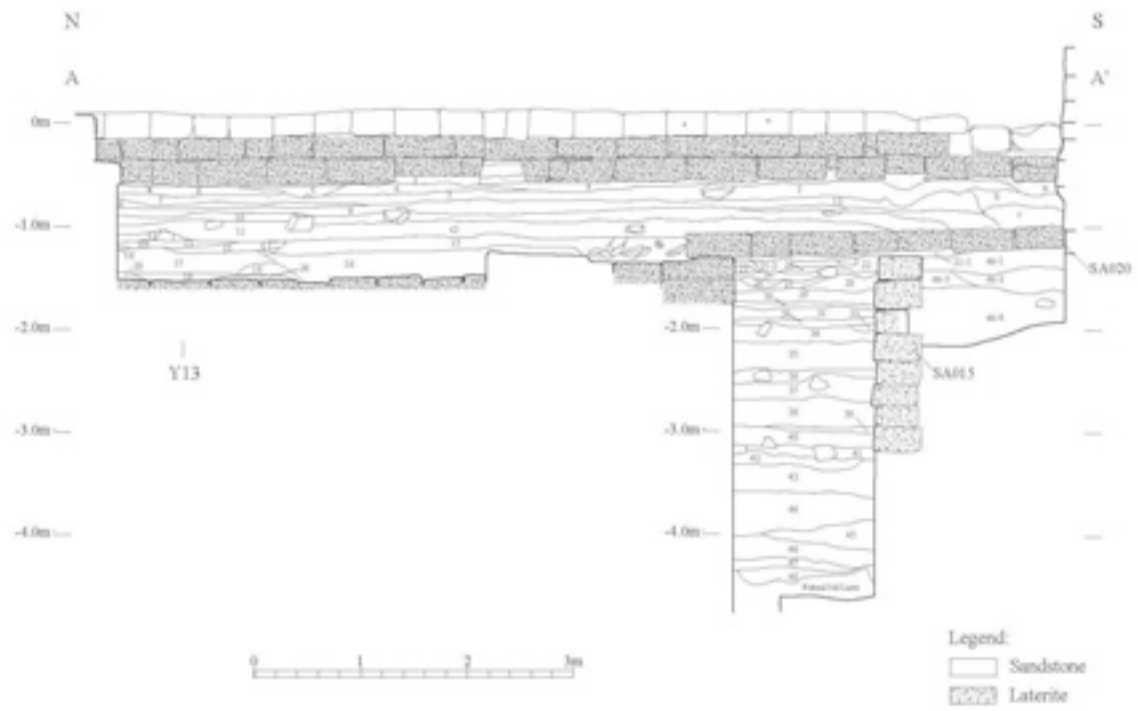


Fig. 5 Eastern section of Passage C and its underlying features





Pl. 1 General view of the Bayon complex



Pl. 2 Deformation of the four-faced towers



Pl. 3 Recent condition of the Outer Gallery



Pl. 4 Recent condition of the Inner Gallery



Pl. 5 Northern Library after restoration



Pl. 6 Southern Library before restoration



Pl. 7 Scattered stones inside the Outer Gallery wall



Pl. 8 Plants on the four-faced towers



Pl.9 Lichens and algae on the bas-relief of Inner Gallery



Pl. 10 Alteration of Buddhist into Hindu carving



Pl. 11 Activities of visitors at the Bayon complex



Pl. 12 Buddhist statue inside the central tower



Pl. 13 EFO's reinforcement (concrete cement)



Pl. 14 JSA's reinforcement (wire wrap)



Pl. 15 JSA's reinforcement (wooden truss)



Pl. 16 Overview of the southwest and northwest coners (after excavation)



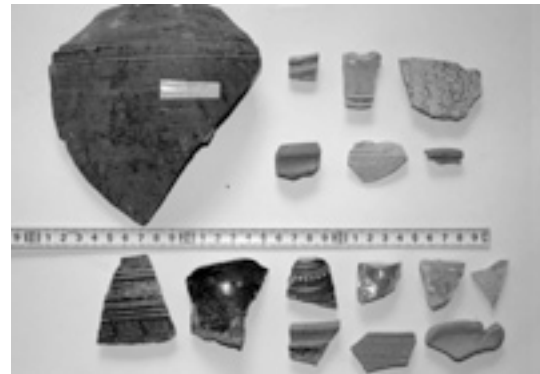
Pl.17 Detected laterite structure at northwest corner



Pl. 18 Excavation area of Passage C



Pl. 19 Cutting traces of Inner Gallery Platform,



Pl. 20 Khmer ceramic fragments from southwest corner and Passage C



Pl. 21 Iron chisel found from the lower platform corner



Pl. 22 Dismantling activities of southwest



Pl. 23 Repairing sandstone components



Pl. 24 Trial assembly

## **Cambodia**

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## **Relationships: Temples, Ancient Mounds and Local People (A case study centred on Baset temple, Battambang province)**

### **I. Introduction**

First, I would like to thank Prof. Yoshiaki Ishizawa, President of Sophia University in Japan, and Prof. Masako Marui, who gave me a chance to show the results of my research in Battambang province to the ACCU program.

On 23 December 2005, our research team commenced a study funded by the Toyota Foundation for one year. There were 16 volunteer students from the Royal University of Fine Arts (RUFA) who participated in this project, and they were organized by Mr. Keo Kinal, a professor at RUFA, Miss Yoko Kojima, an expert in Japanese architecture, and Mr. Chhean Ratha, an expert on Cambodian architecture who has studied in Japan. For two or three days over weekends or national holidays in each month, we met to prepare data or go to the sites in Battambang province.

The main purpose of this research is as follows:

- To make a database of religious architecture in Battambang province.
- To conduct research on the characteristics of the region's architecture through technical studies, in addition to art history.
- To make a presentation of the results of our research to interested scholars and others, and especially, to form an association for the purpose of education for local people to understand the value of cultural properties and the need for their protection.

Battambang province has many important cultural properties and ancient sites, such as prehistoric and historic sites suited for research, but which have suffered through lack of interest; consequently, these sites have not been involved in conservation work and the local Cambodian people who live nearby are not well-educated and lack knowledge of conservation, so the sites have been damaged by their desire to find cultural properties to sell to help improve their daily lives.

Nearly all sites in Battambang province have been damaged, but in this presentation, I would like to describe Baset temple and the ancient mounds which stand around this temple, as this site is more damaged than other sites in the province.

## **II. Research history of Battambang province**

Zhou Daguan, a Chinese envoy who visited Cambodia in 1296-97, described the Khmer people and some of their provinces, including Battambang, which at that time was referred to as Mo Leang in the Chinese language.

In 1790, Mr. Henri Langenois was the first researcher who came to conduct research in Battambang province and at other sites.

In 1858, Mr. Henri Mouhot visited and described Baset temple, Banon temple and Vat Ek temple.

In addition, Mr. Bouillevaux, Mr. A. Bastian, Mr. Jean Moura, and Mr. E. Aymonier have also visited Battambang province.

### **1. Location of Battambang province**

Battambang province is located in the northwest part of Cambodia. Portions of the western side of this province are on the Thai border, the southern and eastern sides border Pursat province and the Tonle Sap lake, and to the northeast is Siem Reap province. In this province there are 10 districts, 101 communes and 1,384 villages.

Battambang province has many prehistoric and historic sites similar to the Angkor complex, according to Mourer, who discovered the northwestern prehistoric site of Laang Spean in 1965 (Mourer, Cécile, and Roland Mourer. *The Prehistoric Industry of Laang Spean, Province of Battambang, Cambodia*. Sydney: Australasian Medical Pub, 1970, pp. 128-46). There are also many temples and ancient mounds in Battambang province, such as Baset temple, Banan temple, Sneng temple and others. These temples were constructed by famous kings during the Angkor period.

There are three rivers that have water sources on Kravan mountain and one of these, the Sangker, crosses Battambang province. As these three rivers provide water necessary for agriculture from June to November every year, and the condition of land is extremely good for agricultural produce, especially rice, this province is known as the first province for agriculture.

### **2. Location of Baset temple**

Baset temple is located 14 km east of Battambang town, in Baset village, Tapun commune, in the Sangker district near the Steng Chas river. There are also many ancient mounds around this temple. Two ancient roads were found indicating a relationship between the temple and the ancient mounds.

### **3. Daily life of local people who live around the temple**

Local people, who have been living around this temple for a long period of time, come from a variety of national groups: there are Khmer, Islamic, and Javanese peoples. Ninety percent of local people are farmers, who produce rice in the rainy season from July to October. The local economy is not stable or strong but the people still protect their ancient traditions and culture, and also participate in traditional ceremonies, weddings, and the beliefs of Neak Ta (local spirits), etc.

Ordinarily, they celebrate ceremonies at temples or on the ancient mounds to pray for happiness, good luck, and success in their work to produce rice crops every year.

### **III. Collecting data at the sites (Baset temple and ancient mounds)**

First, we checked the sites on aerial photos of the area in Battambang province chosen for research and data collection, obtaining the names of temples or ancient mounds from the Ministry of Culture and Fine Arts (MCFA).

Research was then conducted directly at the temples and ancient mounds, interviewing the local people who have been living in the area surrounding these sites about their history, asking for names of temples or ancient mounds to compare with the data we collected from the MCFA.

New photos of the area were taken, along with GPS data.

Using archaeological methods, the sites or artifacts which remain at the temples or on the ancient mounds were measured and recorded, and ceramics collected from the surface for study at a laboratory in RUFA.

Photographs and general observations were made of places that have been damaged or destroyed.

#### **1. Baset temple**

Baset temple was constructed by King Jayavarman VII (who reigned from the late 12th to early 13th centuries). According to previous researchers and an inscription which was found there, this temple was constructed on an old site of the pre-Angkor period, consisting of a temple which was built by Suriyavarman I (11th century), located in the northern part of the area surrounding the temple. After collecting some data at the site, we found a lintel of an old temple (from around the pre-Angkor period, in the late 8th to early 9th centuries). This older temple was badly damaged by natural and human forces. The condition of Baset temple is very poor. It has collapsed because of its weak foundations, and has been damaged by rain and insects. Because of warfare in Cambodia during the past, damage has occurred to many temples including Baset temple. It has been partially destroyed due to bombing. We found many artifacts in people's houses. They have been using the artifacts for tools because they do not understand their value and the need for conservation. Some local people have constructed houses and live in the area surrounding the temple, throwing out garbage near the temple and spoiling the environment.

Area surrounding Baset temple



## **2. The ancient mounds**

### **Toul Sangker**

The condition of this mound has been damaged on a daily basis by local people who live nearby and farm on it. On the surface of this mound we found many pieces of brick. According to one local person aged seventy, when he was young the shape of this temple was visible; it was tall but lacked its top. Another person said that later on, the temple was destroyed by robbers who dug down to the foundations in search of valuable items such as gold or ancient artifacts.

No.	BBS02 13500	Name	Toul Sang Ker			Khaet	Battambang
Srok	Sangke	Khum	Tapon		Phum	Baset	
GPS	N)13°09.455'	E)103°19.604'	Elev	10.4m	Accur	40.2m	
Size	N 45m	E 46m	Moat	Yes	Baray	Yes	



Baset 02



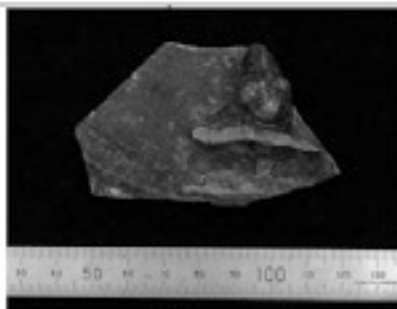
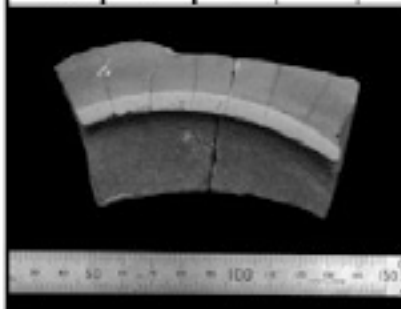
Toul Sangke



Baray

Artifact

Earthenware				Stoneware										
				Glazed										
Oven	port	jars	Othe/Unk	R.tile	Under glazed	Green Bottle	Bottles	Jars	Bowls	Covered	Othe/Unk	Porcelain		Metal
4	26	17	15		4U		5A/7B	1A/9B	2		3A/12B			
				Stoneware						Unglazed			Metal	
										Celadon	Whi ware	B & w wa	Obj	
R.tile	F.tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Othe/Unk	6	4	1		
						3			2					
brick	sand slo	othe slo	Lateril	note										
Most	2	1												










Date of Research	21/01/2006	No. of Research	B0210
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**Toul Kabor**

This mound is located about 1 km to the northwest of Baset temple, but the appearance of this mound has been altered by a later Javanese tomb. Artifacts remain such as pieces of columns, sandstone, and laterite. We could not gather much information concerning this mound from local people as to whether in the past there was a temple or not, but we did get some new information from one person. He said that perhaps three years ago, a statue was found after digging, and that it had been sold. We believe this is the mound of a temple, as evidenced by artifacts, moat, and a baray (reservoir).

No.	BBS02 12401		Name			Toul Kabor		Khaet	Battambang						
Srok	Sangke		Khum		Baset		Phum	Baset							
GPS	N)13°07.098'	E)103°17.885'		Elev	15m		Accur	12.5m							
Size	N 45m	E 45m		Moat	yes		Baray	yes							
															
Baset 02						Toul Kabor									
															
Toul Kabor						Baray									
Artifact															
Earthenware				Stoneware											
				Glazed											
Oven	port	jars	Other/Unk	R. tile	F. tile	Finial	Eaves	Unk tiles	Bottles	Jars	Bowls	Covered	Other/Unk		
2	4		9										1A/2B		
Stoneware										Porcelain		Metal			
Unglazed										Celadon	Whi ware	B&w wa	Obj		
R. tile	F. tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Other/Unk						
						3			2						
brick	sand sto	othe sto	Laterit	note											
most	2		2												
															
Date of Research				13/06/2006				No. of Research				B0603			





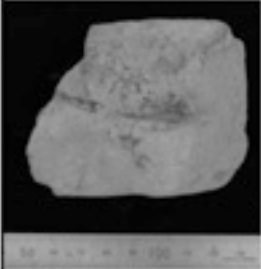
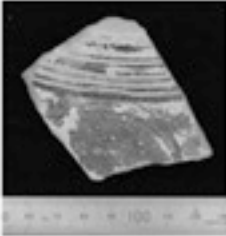
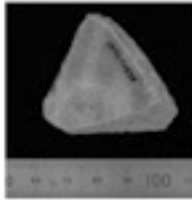
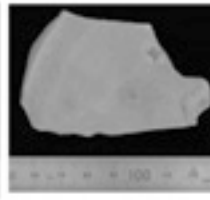
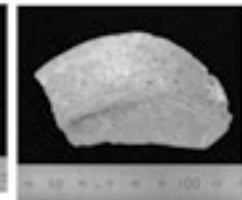
**Toul Thmor**

Toul Thmor is located around 4 km to the north of Baset temple along an ancient road. The condition of this mound suggests it has not been used. Many bricks and ceramics remain. We do not know its history, but we could see a moat and a baray to the east of the mound. We believe this mound is the remains of a former temple, but it has been damaged. Between the mound and the baray we investigated an ancient road that connected this site with Baset temple via another ancient road. Behind this mound there are several more mounds.

No	BKV01	16201	Name	Toul Thmor			Provin.	Battam Bang					
District	Sangke		Comu.	Prek Kpop		Village	Kvet						
GPS	N)13°08.889'	E)103°17.784'	Elev	16m		Accur	10.1m						
size	N 33m	E 52m	moat	Yes	Baray	Yes							
													
													
ឧបសគ្គ/ធាតុ:													
Earthenware				Stoneware									
				Glazed									
Oven	port	jars	Othe/Unk	R.tile	F.tile	Finial	Eaves	Unk tiles	Bottles	Jars	Bowls	Covered	Othe/Unk
2	18								10A				1B
Stoneware										Porcelain			Metal
Unglazed										Celadon	Whi ware	B & w wa	
R.tile	F.tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Othe/Unk	1		1	
brick	sand sto	othe sto	Laterit	note									
	2												
													
Date of Research			11/3/2006			No. of Research			B0410				


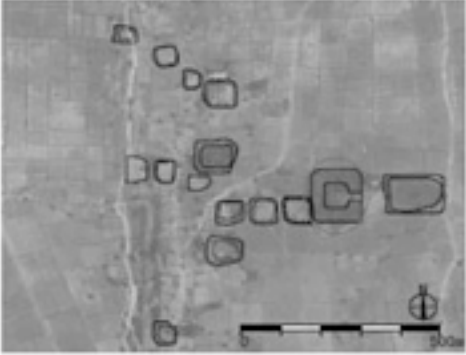


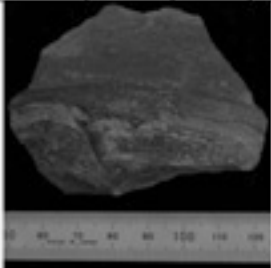
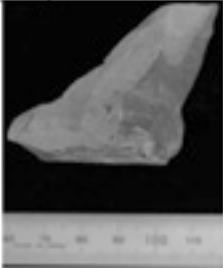
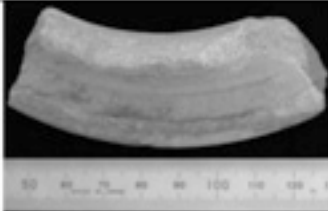
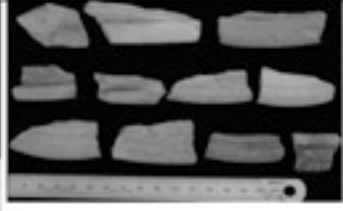
### Toul Lay

This mound is located around 1 km to the east of Toul Thmor and around 2 km north of Baset temple. It has a moat and a baray on the eastern side. This mound has not been used and laterite blocks and many bricks remain.

No.	BSD02 13601		Name	Toul Lay			Khaet	Battambang						
Srok	Sangke		Khum	Tapon		Phum	Samdach							
GPS	N)13°08.605'	E)103°19.604'		Elev	10.4m	Accur	40.2m							
Size	N 30m	E 36,3m		Moat	Yes	Baray								
														
Samdach 02														
														
Artifact														
Earthenware				Stoneware										
				Glazed										
Oven	port	jars	Othe/Unk	R.tile	F.tile	Finial	Eaves	Unk tiles	Bottles	Jars	Bowls	Covered	Othe/Unk	
	7		5							4				
				Stoneware					Porcelain		Metal			
				Unglazed					Celadon		Whi ware		B&w wa	Objc
R.tile	F.tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Othe/Unk	3	2			
brick	sand sto	othe sto	Laterit	note										
														
Date of Research				2/6/2012		No. of Research				B0310				
note: Located western Chas river and southern west Toul Ko. in front of 5m long this mound there is a Baray on eastern part and there is another mound on western part, it has 30m long and 36m width. We found foundation, laterite and some pieces of ceramic.														


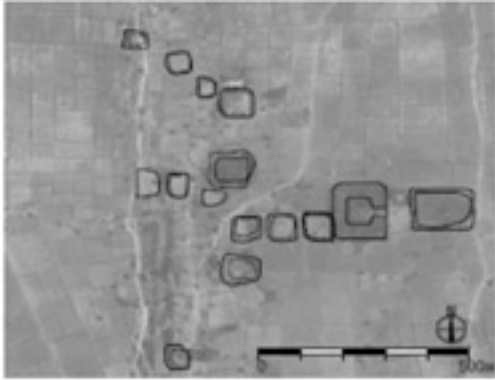


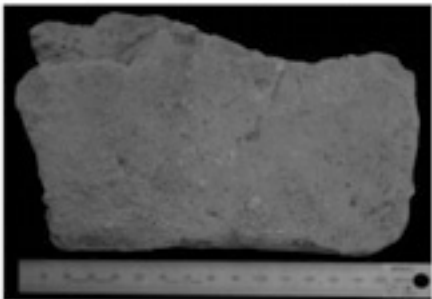
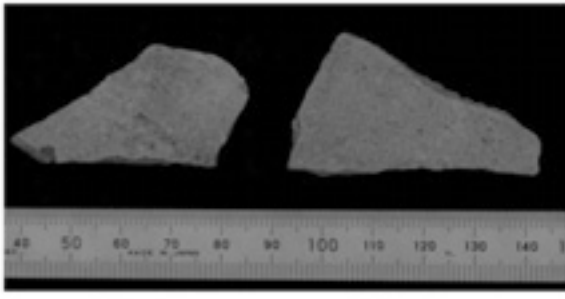
**Toul Kandal**

This is located around 2,500 m to the north of Baset temple. It has a moat and a baray on the eastern side. On the surface remain many pieces of brick and ceramics. Due to the shape of this mound and the plentiful ceramics, we believe this is the mound of a temple in the past. It has been damaged by human intervention; the foundations of this temple have been dug to search for the valuable objects. As illustrated below, a large hole has been dug, and according to local people, sand was taken from this hole to use for building. This mound has been used for habitation or farming.

No.	BSS01 14103		Name	Toul kandal			Khaet	Battambang					
Srok	Sangke		Khum	Tapon			Phum	Svay So					
GPS	N)13°09.455'	E)103°19.604'	Elev	10.4m			Accur	40.2m					
Size	N 36m	E 83.4m	Moat	Yes			Baray	Yes					
													
													
Earthenware				Stoneware									
				Glazed									
Oven	pot	jars	Other/Unk	R.tile	F.tile	Finial	Eaves	Unk tiles	Bottles	Jars	Bowls	pot	Other/Unk
6(1)	45(7)	4(1)	55(1),1M							5b	(3)	(1)	4b,(3),(1H),16(7)
Stoneware									Porcelain				
Unglazed												Other	
R.tile	F.tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Other/Unk	Celadon	Whi ware	B & w wa	Other
						(1)					1		1 S
brick	sand sto	othe sto	Laterit	note: M=earthen ware bowl, S=Staco .H=Blue and White , (*) = infront of Toul Kandal									
5	1	1											
													
Date of Research	24/12/05			No. of Research	B0106								


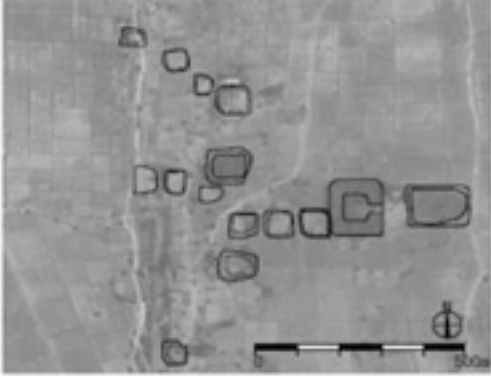


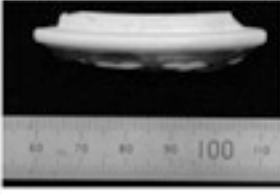
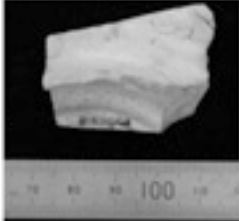

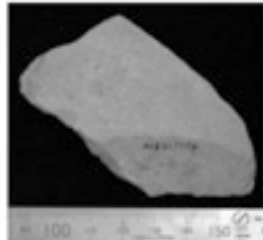
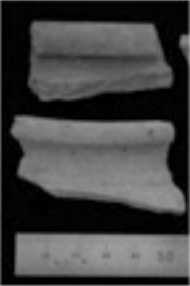
**Toul Boeung Thmor**

This mound is located to the northwest of Toul Kandal and has a moat. It is very difficult to enter as it is in thick forest, and has been used for habitation and farming. On the surface we could find many bricks and a few ceramics. This is also the ancient mound of a temple.

No.	BSS01 14105		Name	Toul Boeung Thmor			Khaet	Battambang					
Srok	Sangke		Khum	Tapon		Phum	Svay So						
GPS	N)13°09.455'	E)103°19.604'		Elev	10.4m	Accur	40.2m						
Size	μ	E 26m		Moat	Yes	Baray	Yes						
 <p>Svay So 01</p>													
													
Artifact													
Earthenware				Stoneware									
				Glazed									
Oven	port	jars	Othe/Unk	R.tile	F.tile	Finial	Eaves	Unk tiles	Bottles	Jars	Bowls	Covered	Othe/Unk
			8										
				Stoneware					Porcelain		Metal		
				Unglazed							Obj		
R.tile	F.tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Othe/Unk	Celadon	Whi ware	B & w wa	
									1				
brick	sand sto	othe sto	Laterit	note									
1			1										
													
Date of Research				21/01/06		No. of Research		B0220					

## Toul Ta Uy

Regarding the condition of this mound, we did not find any materials from structures but most of the ceramics we found were Chinese and Khmer ceramics. This mound was not used by local people for farming or habitation.

No.	BSS01 14108		Name	Toul Ta uy			Khaet	Battambang					
Srok	Sangke		Khum	Tapon		Phum	Svay So						
GPS	N)13°09.607"	E)103°19.447"	Elev	3.5m		Accur	11.2m						
Size	N 63m	E 68m	Moat	Yes		Baray	No						
													
Svay So 01													
													
Artifact													
Earthenware				Stoneware									
				Glazed									
Oven	port	jars	Othe/Unk	R.tile	F.tile	Finial	Eaves	Unk tiles	Bottles	Jars	Bowls	Covered	Othe/Unk
	39	4	24										11a, 2b
Stoneware										Porcelain			Metal
Unglazed										Celadon	Whi ware	B.&w wa	Obj
R.tile	F.tile	Finial	Eaves	Unk tiles	port	Jars	Bowls	Covered	Othe/Unk		3	5	
brick	sand sto	othe sto	Latent	note									
1	1												
													
Date of Research				10/03/06				No. of Research		80108			

#### **IV. Conclusions**

About 2 km to 4 km to the north of Baset, many ancient mounds were found surrounding this temple. According to the evidence of artifacts which remain on the ancient mounds, we can understand the relationships between the temple and the mounds. Two ancient roads were found in the photographed area (with remote sensing) by our cooperative effort, suggesting we propose a relationship between them. A few of the ancient mounds could be ancient kilns, as many pieces of ceramics were found on the surface of these when they were dug by local people to make a new road. According to the eldest local people interviewed, the ancient mounds were said to have been temples in the past because they could remember the presence of structures, and that later these temples were damaged during periods of civil strife. According to our surface data collection, those ancient mounds retained construction materials such as sandstone, laterite and brick. Some ceramic pieces were found on the surfaces of the ancient mounds. Based on the analysis and study of shapes and glazing methods of the ceramics found on these mounds, they appear similar to ceramics in the Angkor area.

After collecting data relating to the temples or ancient mounds, we found two types of damage.

- Damage from natural causes. The condition of Baset temple is very weak. It has collapsed because of problems with its foundations and damage by rain and insects. The ancient mounds were not damaged, however, by natural forces, but rather most were damaged from habitation by local people, as described below.
- Damage from human causes. Past fighting has brought damage to many temples in Cambodia, including Baset. It has partially collapsed due to bombing. But we also found many artifacts in people's houses. They have been using these artifacts as tools, because they do not understand their value and the need for conservation. Some local people constructed houses for living in the areas surrounding the temple, and throw out garbage and spoil the environment. The ancient mounds have thus been badly damaged by people living nearby. They always farm every year during the raining season. Many artifacts on the ancient mounds were destroyed and the shapes of the mounds themselves will disappear in the future. This temple and the ancient mounds are yet to be conserved. We are accordingly concerned about future damage and the danger of their total disappearance.

#### **V. Presentation of our research to local people**

After collecting and analyzing the data, and recorded them in documentary form, we conducted workshops in two areas with local people, who are farmers, as students. We showed them the history of Baset temple and the ancient mounds, and how we can conserve and protect the artifacts from the temple and those found on the ancient mounds. We also explained about the value of artifacts, and the need to protect them for future generations. After these workshops, we interviewed them again about any new information they may remember from the past to complete our data, and invited them to

display their feelings or interest in our research. These workshops were judged a success as they were attended by more than 300 local people. Some people asked us “how can we preserve artifacts on the ancient mounds if we still need to farm them every year?”

After this project was completed, all data and finds were sent to the local Office of Culture and Fine Arts in Battambang province for safe storage, and the ceramic shards were collected with their data to be kept at RUFA for further study.



## China

**WANG Renyu**

*Research Associate*

Institute of Archaeology, Chinese Academy of Social Sciences

### **Archaeological Site Management as a Way to Understand the Past: Archaeological Site Management in China, beyond Policy Making**

This paper shall not be presented purely as a statement of individual Chinese cultural heritage items, or a prolonged inventory of Chinese heritage conservation procedures undertaken either *in situ* or in the lab, nor will consolidants like Paraloid-B72 or other first-aid lifting methods be included; rather, what this paper will highlight are the several trends that we hope to achieve in the future in the field of heritage preservation and conservation in association with the reorientation of landscape archaeology. The discussion here will start with an introduction to several problematic issues we now confront. On the one hand, while conservation scientists to my mind will be more likely to focus on preservation conditions, consolidation and coating, and many other physical treatments, site managers on the other may be highly interested in the ways they can make the right decisions about balancing the interests of different stakeholders and seeking values for making a site more economically important. Yet, none of these are the concerns of this paper.

Value-led or values-based management usually starts with examination of values attributed to a site achieved through consultation with different stakeholders, including the public, politicians and policymakers, and professionals. Values, public benefit, understanding, respect and integrity are viewed as the five elements of such management. Values equate with significance, whether aesthetic (beauty, harmony), historic (connection with the past), social (connection with others, sense of identity), economic (revenue generation), spiritual (understanding, insight, enlightenment), symbolic (objects or sites as repositories or conveyors of meaning), or in matters of authenticity (integrity, uniqueness). Therefore, site management is the conservation of values/significance by means of policy and action. According to the Burra Charter, site management should include the following: identifying the stakeholders (all groups with an interest in the site), understanding the site, assessing its values, examining issues of vulnerability to its condition, identifying policies and strategy, and assessing impact. All these rules are important for decision or policy making, but when facing specific problems in archaeological site management, we still find that many of those problems directly or indirectly derive from failure to identify the site's values due to shortcomings of the field archaeology we conducted. It is therefore essential to reexamine the role of archaeology from the perspective of site management.

How can we evaluate the roles that archaeology can play in cultural heritage preservation? This question is very challenging. There has been a trend since the beginning of the twenty-first

century for heritage sites to be given relatively explicit site restoration under an architectural or urban designing institute's guidance. Similarly, the management of many archaeological and historical sites has indeed been subjected to urban planning-related institutions. In short, this unfortunately reflects a compaction and confusion of two completely separate yet interrelated domains, i.e., archaeological site management, and ancient buildings conservation. This also puts forward a stimulating question to Chinese archaeologists: How can we evaluate the roles that archaeology can play in cultural heritage preservation? As heritage frequently encompasses a broader array of questions than those essential to archaeology alone, it is usually considered an effective way to bridge the gap between the heritage sites/artifacts and the public. In fact, Chinese archaeologists are now confronted with many problems, but most of these are concerned with the effects of local development and/or urbanization.



Fig. 1 The features in the Erlitou site.



Fig. 2 Distribution map of the Erlitou site.

### 1. Rescue archaeology and rural heritage maintenance

Since “Planning Policy Guidance 16” came out, it seems that archaeology in relation to development has started to split into two halves, either leaving the remains *in situ* for future generations, or conducting rescue excavations, when inevitable, of sites for recording whatever we can obtain via the methodologies and field implements that are available. Since the 1980s archaeological field documentation systems began to be used as an effective and recognized means for heritage protection: to preserve the data at least on paper. The factor of expanded land use for urban construction can not be overestimated. According to our experience, based on investigation, some of the most significant multi-period city sites in northern China, such as the Han dynasty Chang’an city site, the Han and Wei dynasty Luoyang city site, the early Bronze Age Erlitou city site at Yanshi, and so forth, have been seriously affected by the sand-quarrying and brick-firing activities of the local people. Other major damaging factors involved are: construction of underground electricity networks, urban development, agricultural land expansion, and so on.

Erlitou is located in the Luoyang Basin, a large area with sufficient water resources from the Yi and Luo rivers to have always been ideal for human living (see the map below for settlement distribution analysis). Stratigraphy shows that the local social life can be traced back to the Peiligang culture (4 localities, Early Neolithic), Yangshao culture (105 localities, Middle Neolithic), Longshan culture (95 localities, Late Neolithic)

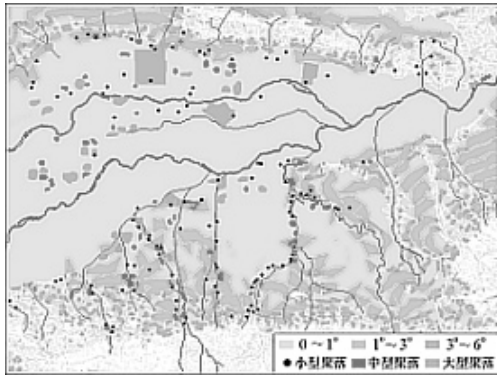


Fig. 3 Settlement distribution in the Luoyang Basin.

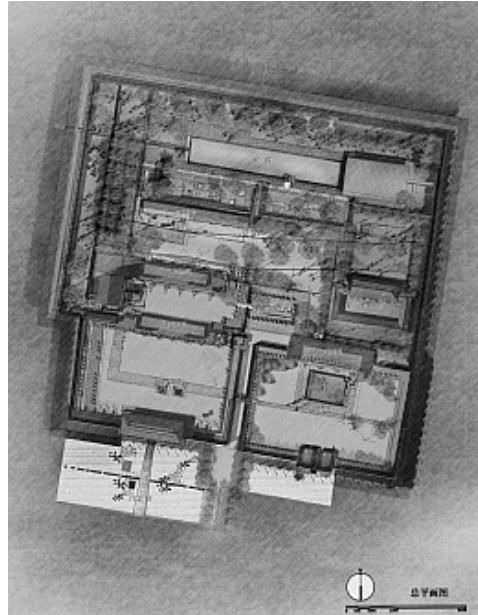


Fig. 4 (right) Palace management plan of the Shang dynasty city site at Yanshi.

through the Erlitou culture (125 localities, early Bronze Age, with the capital city located at Erlitou), and later, the early Shang culture (the well-known Yanshi Shang city site is located just 6 km east of the Erlitou city site). Sites from the Bronze Age are the focus of site management in this large area, which is now densely populated. Identified pressures on the site are from many sources, which are commonly seen in Chinese rural areas: land development for civilian or industrial use, deep plowing, soil exploitation, construction of networks of underground tunnels and lines, expansion of modern cemeteries, pollutants from local industries, and so on. Amongst all the sites we have so far investigated, the land-use factor plays the most decisive role in directly affecting the preservation of archaeological sites. According to the Erlitou site report and the *Overview 2008*, the known city site area is approximately three million square meters, and one million square meters of the site are nearly overlapped by large tracts of agricultural land belonging to the four nearby villages (*see* Institute of Archaeology, Chinese Academy of Social Sciences, *An Overview of China's Major City Sites*, 2008 series, unpublished), therefore it has been estimated that in the recent two decades or so at least one third of the Erlitou site area has been under high pressure due to local construction of high frequency and density, or many other land resource-related human activities, all of which have caused severe soil disturbance. This increased trend has revealed two facts: (a) for Chinese archaeologists the most intensive work still lies in rescue work for maintaining the underground remains, and (b) site damage or poor conditions primarily come from economic activities.

The *Overview's* statistics show quite explicitly that attacks from the major sources of pressure have occurred cumulatively and concentrate in just the past two decades, which corresponds to the time of high social development in China. Due to the lack of effective management and experience in heritage protection, most of these heritage sites are located especially in rural areas or the intersections of urban and rural areas where heritage protection was still a new concept, and thus physical protection of the sites was more often than not viewed as a barricade to economic development. The Erlitou site is undoubtedly one of the most significant centers of central plains archaeology, and

for this reason the China Cultural Heritage Administration and the local government have asked the Chinese Academy of Cultural Heritage and the Institute of Archaeology (CASS) to make a site management plan, including conservation, consolidation, landscape management, and exhibition. The management plan was approved in 2007.



Fig. 5 Restoration plan of the palace area in the Shang city site at Yanshi.



Fig. 6 The pond refilled with water.

However, when introducing such a huge social organism, there are primarily six aspects we need to examine further, and we think these considerations will at least generally enrich our understanding of the problems of archaeological site management in rural areas in China:

(a) *Renewability: Authenticity and the interaction between excavation and site management*

In the management of sites like Erlitou and Yanshi, managers have been used to reconstructing ancient buildings *in situ* or using irreversible materials to restore or mark the building foundations. Such *in situ* reconstruction is risky in that the restoration more often than not leaves less room for other alternatives, and therefore for early archaeological sites, it may not be a good idea to conduct any *in situ* reconstruction. A better way to do it is to leave the exposed part in its entirety and keep it in the original form under a shelter. The above pictures well illustrate the attempt of the site manager to ‘reconstruct’ the Shang dynasty city site at Yanshi, and though such a partial reconstruction may add more beauty to the whole landscape, it is still problematic for undermining the authenticity of the site. The reconstruction can be very controversial if more parts of the site are allowed to be rebuilt *in situ*; the treatment and refilling of the pond remains at the back of the Yanshi Shang city site is widely debated.

Although a compromise between landscape beauty for appreciation and authenticity in preservation is much preferred, it may be argued that if such additional construction can be moved outside the site, especially into the buffer zone of the landscape, this will divide a landscape into primarily three sections, i.e., the major site area, the buffer zone area, and the information center area between the two. Ideally, the information area can provide more chances for displaying the field research results, incorporating these into new exhibitions. This requirement has partially answered the question of the role that archaeology can play in the management of heritage sites, and the effect that we would like to achieve is an integration of ongoing field work, site management and display, and

archaeological research.

The interaction between site exhibition/interpretation and field archeology should be viewed as of key importance in the evaluation of site management. On the other hand, site management should also provide significant assistance to *in situ* preservation and conservation while exhibition and excavation might indeed be conducted simultaneously. That is to say that the site can also be viewed as a center for providing first-aid conservation for the finds and features, and coordinating the exhibitions and excavations. In short, its functions may change all the time. The renewability issue really deserves lengthy further discussion, as it is closely related to site interpretation and issues of authenticity which function as the basis for archaeological conservation and lie at the core of site management.



Fig. 7 Restoration of sacrificial pits at the Yin Ruins.



Fig. 8 A reconstruction of the Fuhao burial.

*(b) Reliability: Site management in line with archaeological data*

Archaeology plays a leading role in site interpretation as well as management, but the site's explanation may vary over time, and new data should be added to exhibits in timely fashion. This has caused problems in the management of the late Shang dynasty capital site at Anyang, historically known as the Yinxu site, or the Yin Ruins. Eighty years ago, the first fifteen excavations were conducted by the History and Language Institute of the Chinese Academy (which moved to Taiwan in 1949), and due to many limitations, the excavations indeed disturbed the soil features, and consequently the data reflecting the late Shang dynasty building foundations, exposed within the ceremonial-cum-religious temple area, cannot provide definitive evidence for guiding the restoration, conservation, and reconstruction. For many archaeological sites, identifying the functions of the features still remains a difficult problem.

Encompassing an area of nearly thirty square kilometers, the central area of the city site has been surrounded by a buffer band. Sites as large as the Yin Ruins are always difficult to read due to the vastness in area and the problems of identifying structurally complex features. This means that the problems we might be confronted with in the post-excavation process may basically originate from the complexities of underground assemblages and the order in which the excavations were undertaken. It should be said that up to the present, the most reliable way to assure site management is to conduct a very representative excavation, otherwise the vagueness of the relationships between archaeological



Fig. 9 *In situ* horse chariot pit preservation.



Fig. 10 (right) Management plan of the temple area of the Yin Ruins.

features will prevent any attempt at restoration from moving even a step forward. Site interpretation varies when ideas about the functions of the archaeological features change, and this may demand a more context-based overview of the whole landscape. The site of the Yin Ruins has been excavated for eighty years, but the layout of this late Shang dynasty capital within the larger basin landscape is still not that clear. It should be emphasized that complete interpretation of settlement patterns lies at the core of successful site management. For ancient city sites as large as this, some information might be lost forever due to deficiencies of past archaeological work, but new clues may be acquired for even a simple reorientation of the target of the fieldwork. Thus come the questions of how to integrate new findings into an old management plan, and how can new field data be used to further improve the site management? For city sites in particular, the management of the site is likely to be directly influenced by understandings of the processes of urbanization, and the formation processes of the site remains.

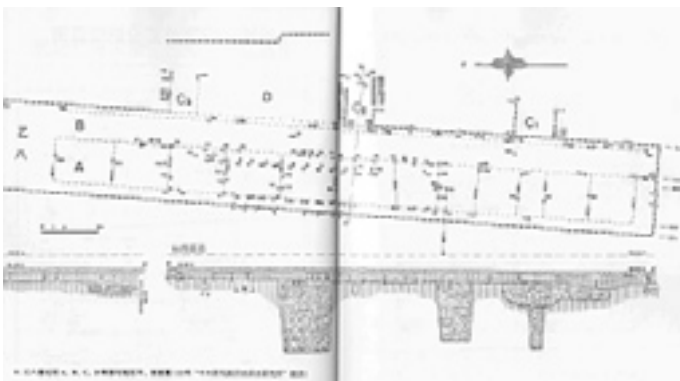


Fig. 11 Soil foundation plan.

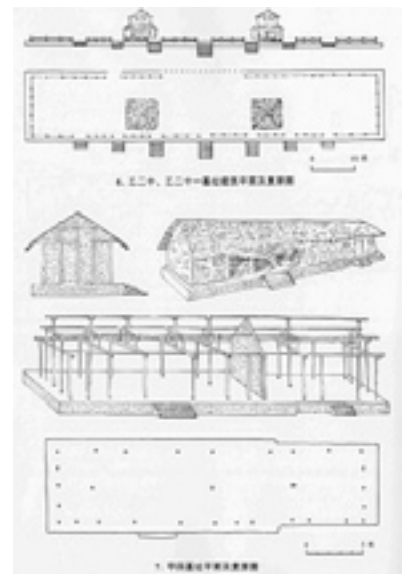


Fig. 12 (right) Reconstruction of a Shang dynasty building.



Fig. 13 Foundations under excavation.

(c) *Adaptability: Involvement with the local economy*

This is a biological term coined for describing the state of a living organism when it enters into a new environment. Maintenance of a new site area may be financially problematic in the same sense. Although the government has decided to support financially the whole site management process, there still remains a question: to what extent should the local people be involved with this

economic enterprise, and can this site support itself? This issue of self-support has become a focus of the forthcoming Ford Grant financed heritage investigations, conducted in Henan and Shaanxi provinces. Our expectation is to be successful in reaching equilibrium between the interests of various stakeholders in diverse rural settings. This investigation will also be deeply concerned with feedback from the local people, for evaluating the relationships between the site and the local society, and its possible contribution to the local economy.

More uncertainties come from the way in which a site as such can be further retained. According to the 2008 investigations to the several sites along the Silk Road, we have learned that as a site is opened to an increasing number of visitors, the *de facto* exposed areas increase in proportion with the visitors' numbers, finally resulting in much physical damage and complicated deterioration. As the *Annual Report on the Development of China's Cultural Heritage Management System 2008* has commented, there will always be a tension between the mysteriously enjoyable and economically pleasing outside, in visitors' eyes, and the problematic and risk-running inside, with its assortment of values in conservators' minds. In sum, although a site can be well managed with financial support from the Chinese government, it is not easy to solve the consequent occurrence of "foreign body reaction." Similarly, many Chinese intangible cultural heritage colleagues have argued that the maintenance of a past has to bring about a self-supporting economic system, so as not to make the preservation of a site become a burden on the local community. As mentioned above, self-



Fig. 14 Site management plan of the protected area.

financing has to be a continuing trend, since the increasing number of heritage sites will be very costly. The best example in dealing with this tension is the management of the Yin Ruins at Anyang. According to its website, before the site was inscribed into the World Heritage List, the site administration could make a profit at circa two million RMB per year, while during the first post-WHL year, the entrance fee alone made a clear-cut margin exceeding ten million RMB. The increase in income has become a stimulus to the local tourism economy, and more people have turned to work for the site. Still, in general, what we are much concerned about is

how this income will be spent in relation to the conservation and survival of this newly introduced social organism.

As the director of the Anyang archaeological station has argued, the site management of Anyang is not easily transplanted to other places. The reason is quite obvious, as the Yin Ruins are the starting point of Chinese field archaeology, and have thus enjoyed an eighty-year-long research history. Located at the intersection of Hebei and Henan provinces, the site enjoys very convenient transportation. All these elements have contributed to the successful management of the site. Yet, aside from all these factors, as far as I am concerned, the decisive cause lies in that the local economy has long relied, at least partially, upon the Shang dynasty site and museum tourism, therefore the newly built Museum of the Yin Ruins



Fig. 15 Management plan of the mausoleum area.

has not completely changed the scenario, rather, it just added another spot for site-seeing. The site has an eighty-year reputation for its clearly defined chronology, typology, stratigraphic order, showing a relatively reasonable and acceptable interpretation of the evolution of the entire site in the Anyang Basin setting, an interpretation which has been repeatedly supported by the historical framework and corroborating archaeological evidence. Thus, to some extent, the site itself has become a type of oral tradition, coexisting with the site remains. This is important as it greatly shortens the time for a person to feel involved with the archaeological locale, and therefore provides a psychological mechanism to familiarize visitors with the landscape. Statistics have not yet shown how many archaeological sites have *failed* to survive since the completion of their management. But this is of key importance in terms of post-management-plan monitoring of the sites. Another type of negative preservation is likely to be that although a site has been acceptably managed and maintained over a relatively long period, it exhibits a much poorer state of preservation and low frequency of conservation due to financial difficulties. This suggests that some sites are liable to receive poor maintenance, which may only lead to their exposure to more unstable human or natural influences.

*(d) Monitorability: Evaluation of preservation conditions and management*

From 2008 to 2013, an investigation will be coordinated by the Institute of Archaeology CASS and conducted in the province of Henan. This investigation will be focused upon the preservation and management of the potentially exposed sites along the major watercourse of the SWD water resource control project. Archeological survey by drilling and test excavation show that there might be over three hundred sites exposed during the course of the project. For many conventionally known reasons, although rescue archaeological work will briefly go through the finds and document whatever the excavators can do on site, there will still be a great number of multi-period sites that can only be recorded selectively due to the time limitations. We strongly suggest establishing a computer-based database system for conducting the documentation work in a consistent manner, and before these archaeological sites are treated by any means, a set of criteria should first be standardized in order to



evaluate the significance of a site and provide categories of physical conditions. After the computer-based system has been established, it will be used to provide data for the signifying indicators in the evaluation system. Besides the examination of physical conditions, it is also very essential to evaluate the effect that site management can bring about to the local society. So we now have two monitoring systems, one for physical conditions and the other for evaluating the influences on the local community.

The two systems will be carefully designed in order to integrate the pre-management, management and post-management elements into a consistent data analysis regime. Whatever processes the database may include, it has to provide corroboratory evidence regarding the following aspects: physically, past landscape information (stratigraphy, distribution, landform, geomorphology, alluvial conditions, watercourses, etc., from any available sources, like gazetteers, historical records, previous geological investigations, and so on and so forth), and sources of pressure relating to the preservation of the landscapes (excavation, survey or any other human factors that may have affected the landscape); socially, how many members of the local community have been involved, what major social influences have emerged during the course of site management, how can we evaluate the influence on the local people's ideas about their own past or the past of the State, to what extent has the site management helped or undermined the local economy, and so on. These inquiries are either preservation- and protection-oriented or concentrated on the sociological survey of the local people. We hope to quantify this information and transform these data into a series of indicators. To date, there has not been any single acceptable and universally usable archaeological landscape documentation- cum-monitoring system in China. Therefore, the Institute of Archaeology of Chinese Academy of Social Sciences, as the top research unit in China, will put great emphasis on establishing such a system, and try to put it into use in the Ford Grant supported field surveys and other site management practices from late 2008 onwards.

(e) *Restorability: Our ways of doing it*



Fig. 16 *In situ* exhibition in the Bampo Site Museum

For sites as large as Erlitou and many other rural localities, pressures for site preservation also come from the site management itself. For many reasons, in these rural and economically disadvantaged areas, archaeological practices can rarely reach beyond field excavations. Problems primarily come from the treatment of the finds while more often than not there seems to be insufficient time for the excavators to decide if the features are important enough to be restored *in situ* for use in site exhibition. It should be noted that Chinese archaeologists have tried in many ways to give a clear representation of the original settlements, burials of nobility, and even the whole landscapes since the 1950s. The first attempt at representing an archaeological site was made during the restoration of the Banpo

site. The whole settlement was excavated in the early 1950s and during the late 1950s a reconstruction of the site in line with the principles of Soviet settlement archaeology was conducted by some of the staff of the Institute of Archaeology of the Chinese Academy of Social Sciences and their coworkers from local institutions. Interestingly, though many people today still doubt the matrilineal nature of the representation made by archaeologists for this site at the middle period of the Neolithic Age, it is still a very important and challenging question as to how to reorient site management under different sets of archaeological theories.



Fig. 17 Burial exhibition in the Banpo Site Museum.

Many osteoarcheologists have tried to make strong links between population studies of human bones and the basic rules of social structure and organization, and especially of interest are the non-metric trait clustering analyses which focus strongly on the presence or absence of genetically transmitted bone features for each sex, and can therefore provide evidence for supporting either a patrilineal or matrilineal theory. The question remains as to whether such interpretations are important for site management, or rather, to what extent should these considerations be interrelated with managing an archaeological site? There is no doubt that all archaeological questions are by their nature of sociological significance, and from an archaeological perspective, although some of these are not matters of pure speculation, it is still difficult to represent them in a material way. It is in this sense that there can always be a big gap between the authenticity of the landscape and the management made by archaeologists under the influence of a social interpretation which can be sometimes be imposed upon the original site. Similarly, archaeology may sometimes stand at a point between the historical record and archaeological corroboration, and this is by no means a matter of black-or-white choice; an example of such problems also comes from the management of the Shang dynasty ruins at Anyang. To be more accurate, archaeology is by no means the sole way to understand the past. From this point of view, archaeological investigation of the landscape should only provide us with a more detailed material understanding of past society, in parallel with other interpretations of the site. For many reasons, an accurate identification can be problematic and therefore for early burials archaeologists may not like to make any attribution of the site remains to any clear identities in the historic record, and it can be said that for most early burials, archaeology comprises the major possible method to understand them. It is in this sense that archeological reconstruction of the past is very meaningful in its own right.

The abovementioned idea in terms of how to manage an archaeological site in line with its own characteristics is very essential to the management of archaeological heritage in China. Aside from the tendency to avoid imposing strong subjective theory upon the physical existence of the past, there is also another very important phenomenon, as Professor Du Jinpeng has argued, that many archaeological sites have been deliberately deprived of meanings. This is primarily due to the selectivity of site management, as the manager has to point out the remains from the period belonging

to the target of site management. It is in this sense that we hope to find a possible way to make trade-offs the other way round. This consideration is of importance in that most of the sites in the Central Plains area are multi-period and successively densely inhabited in antiquity. The immensity and chronological heterogeneity of the landscapes have brought about many problems in terms of site management and archaeological resource administration. Some scholars have suggested that a value-package is probably useful when dealing with such situations. This is believed by some Chinese archaeologists to be very effective in terms of categorizing the landscapes and sites into manageable classes according to their age and use.

*(f) Manageability: Interactions between humans and the environment as a permanent theme for archaeological sites*

There have been some criticisms of the country's archaeological resource management during recent years. Many people believe that problems occurring recently result primarily from the discrete administrative system and evenly allocated budget for site conservation and preservation. While this criticism appears to bring into relief the low efficiency of the administrative system, even if we know how many sites or landscapes there are, it may take ages to fulfill the task of managing these sites. There are two points that I would like to make in regard to this, as follows.

First, though archaeology is not the only way to evaluate a site or a landscape, the archaeological approach chosen frequently affects the way we preserve it, conserve it, and sometimes, display it. We believe the human-landscape interactions lie at the core of site management, and therefore, apart from considerations of the preservation and conservation of the site, we still need to present such relationships in their own right. The theory is quite clear, the house was not intended to be a house itself, rather, in a relatively broader context, and we may understand that the house is possibly built for guarding purposes. From environmental and bioarchaeological perspectives human culture plays the role of a buffer functioning against stressors from the outside. It is therefore very worthwhile to try to identify what these stressors are and correlate these factors with the site remains and archeological features. Although such interconnectedness varies from case to case, the aim of site management in theory is at least in part to reconstruct such an interaction. It is never easy to do such a reconstruction since it may be very controversial, which is usually the case throughout the world.

For prehistoric or early historic sites, it is never easy to restore the sites or landscapes back to their original social contexts or scenarios, or to interpret the whole processes of the site formation in the light of a clear social-political regime or structure. As some of the site managers from the Chinese Academy of Architecture have complained, they always have a dilemma in their planning practices, in terms of having to choose an appropriate archaeological interpretation of the landscapes from many usually opposing options provided by archaeologists. I suppose that this equivocality is also one of the reasons why site interpretation has to include a detailed introduction to the history of the excavations, which can to some degree give people an impression or an idea how archaeologists understand the site and the way they know it. The various interpretative perspectives are quite different in nature, and

many people have found a dilemma as to what extent we should rely on the textual record for clues for site management, or to what extent we should be more archaeological and materially based. Therefore, the management of archaeological resources as a discipline is still by no means limited by the contours of the site and the appropriate interpretations which archaeology can provide thus far.

Second, another barrier for site management may come from field archaeology itself. As we already know, an understanding of the past may never be that clear, and this can be due to many reasons. One of them is that the site remains might have been impossible to interpret due to loss of physical structure. This unfortunate result has primarily three causes: (a) historical processes, meaning the use and reuse of the landscapes, (b) looting and illicit trade, (c) damage caused by modern development or even careless excavation. All these factors can directly affect the physical preservation of a landscape and its interpretation. In its own right, archaeology sheds more light upon the living conditions of commoners in the past society, which are rarely known from the historic record. For that matter, in general, site management should be based on knowledge of a general past.

To be accurate, site management should be viewed as a method of conservation of the preserved past with many clues detectable only through an archaeological approach. It is for this reason that successful landscape management is an exhibition of the archaeological work itself. For many reasons, people may like to have a much clearer chronological timetable, but archaeology more often than not can only give a description of a trend. This gap may lie not only in terminology but in the ways people understand the past. Therefore, to manage an archaeological site is by no means a compromise between diverse views of the past, rather, it includes a very strict table of known and unknown social facts and a list of questions as well, and the site managers should directly or indirectly exhibit these questions to the site visitors. It is in this sense that good site management can be viewed as a sort of informative communication with different site visiting groups. And what is of particular significance is that such an exchange of information is by no means fixed, rather it changes all the time. What I believe is that a site under careful scientific and archaeological examination should be able to play a role as an information center, and provide information on the following matters: (a) burial conditions, (b) soil and sediment erosion and desiccation, (c) sources of pressures, (d) the expansion of excavated areas, (e) basic site information and updated information, (f) changes in people's ideas about the site and the living conditions of the people in the past, (g) values and status amongst contemporary related sites, and (h) indicators for the post-management site monitoring.

It should be mentioned here at least in passing that there are two big issues in the last several years in Chinese heritage management development, the site management of the Grand Canal and the historic sites along the Silk Road. Like the value-package proposed by Chinese archaeologists, site managers are determined to incorporate different values of the diverse sites along the two large linear heritage landscapes and integrate these into manageable heritage site categories. Although many principles and rules have been established in terms of planning and managing heritage sites of diverse categories, it is quite clear that even archaeological sites can be further divided into different subtypes, and consequently, archaeological site management itself can be viewed as a very special management

category, and should therefore be carefully examined from an archaeological perspective.

## 2. First aid for finds, data protection and physical treatment

To keep materials *in situ* untouched is sometimes a double-edged proposition. The problem is that there is a relatively wide range of possibilities for the preservation of each type of material. As we have seen in some pioneering studies carried out by north European scholars, preservation conditions can be modeled and tested. Comparison of the preservation state between the newly excavated bronze finds and the finds unearthed from the same site decades ago can give a persuasive argument for determining the exact status quo of underground burials, and help further foretell which environment is better for bronze artifacts, burial or museum, even without special treatment. Therefore, soil conditions are of great significance for the preservation of finds. In recent years, as heritage protection in China has become a very sensitive subject in relation to the preservation of archaeological finds in the field, the Cultural Heritage Administration determined to inhibit any excavation inside the heritage site areas under state-level protection, either prehistoric or historic. As a matter of fact, there are still many co-varying elements which may further influence the decision making, such as the assessment of the aforementioned deterioration process of the soil conditions. For the above reasons, site management should include not only the planning and managing processes of the site, but indeed a first aid system for rescuing the finds and information.

For many people, professional or not, artifacts are given a much higher status than the ecofacts. This perhaps derives from a more artifact-orientated tendency in terms of diffusionism or a Childe-style definition of archaeological cultures. However, it seems such a tendency has collided with the desire for more details in archaeology at the turn of the 21<sup>st</sup> century. Responding to such a trend, the Institute of Archaeology is now making an effort to improve first aid and lifting techniques in order to preserve more detailed information at the time of excavation.

## 3. Conclusions

This country report is by no means intended to provide a kaleidoscopic statement of all the trivial problems in site management and preservation we are now confronted with; rather, it is aimed at giving clear clues to the emphases and focuses to which high importance is attached, contemporaneous with the trend which has occurred in China, as evidenced in the practice of landscape and environmental archaeologies in recent years. This trend in archaeology has a very clear intention in terms of information processing. Since the restoration and exhibition of the Banpo Neolithic settlement in the 1950s, Chinese archaeological site management has been under rapid development over the past fifty-plus years. But due to many reasons, most of the sites managed by archaeologists belong to the category of either large mausoleums (the Yangling Mausoleum of the Han dynasty Emperor Jing, terra-cotta warrior burials, and the Han prince burial at Laoshan) or palaces (the Tang dynasty Daming palace). On the one hand, more scientific approaches are employed to provide more detailed information about the landscape, while on the other, people begin to pay more attention to

the integration of different sites both temporally and spatially. This trend will most likely enable us to redirect our attention to the general facts of archaeology, and sort out more information about the past society of commoners. Archaeological site management is now under pressure from environmental protection concerns, which are also very commonplace around the world, and another commonly seen trend is the ignoring of sites of small scale or those believed to be of only archaeological or academic value. As Professor Du has argued, what Chinese archaeologists usually do to these sites is rebury the archaeological features and use sands or other materials to make demarcations.

To some extent, there has not yet been any suitable way for archaeological site management as a special discipline to be clearly defined, and for sites to be further categorized and documented. People like to talk about the values of the sites and identify potential pressures the sites may have been suffering from for a long time, which are obviously relevant and indispensable components of successful site management. Yet when we are managing an archaeological site, we should first bear in mind that acceptable archaeological site management should at least try to answer some anthropologically or sociologically meaningful questions. We hereby suggest that archaeological site management should be clearly defined as an independent sub-discipline of archaeology and therefore differentially and separately studied from sites with the so-called common values. A series of detailed information for structuring this subject can be exactly identical with the indicators essential for field archaeology, but from the methodological point of view site management should involve as much as possible information that reflects the ways of living, subsistence strategies, environmental pressures, and the whole scenario of local human culture and social organizing as a buffer. Therefore, site management can be viewed to some extent as a continuously evolving interdisciplinary conclusion of work on the site.

It is correct that one site is quite different from another due to the nature it possesses and its functions in the past, and it is just in this sense that certain common basic rules must be identified for managing archaeological sites in order to make the practical work more efficient and manageable. What Chinese archaeological site management is now confronted with is the lack of a manageable system to guide and give a rationale for the entire managing process. As some archaeologists have argued, by now archaeological site management is full of trade-off-making and interest-balancing practices. But archaeological site management is surely an archaeologically-oriented work in the first place. Therefore, the following essential processes are needed.

At the very beginning, for financial and temporal resource reasons, we should determine whether or not a certain site deserves management. According to our knowledge, such principles which are important for conducting archaeological site management should at least include one or several of the following items so that we can make a decision to complete a management plan for the site; it should be emphasized here that though this consideration is not dissimilar to the evaluation of a site's significance, it sheds more light upon the connectedness of different parts within the landscape (which means it is essentially an archaeological work on the site), for as an archaeological work, functions of different cultural remains comprise the essentials of a site.

- (a) If the site under discussion can provide us with abundant geoscientific or stratigraphic data to determine the distribution and evolution of a landscape;
- (b) If the site under question can be of great value in revealing the primary functions of a landscape and can possibly give a clear indication of the interactions between humans and local environment;
- (c) If the site is composite in nature and the proposed manager can give relatively unequivocal evidence to corroborate the functions of different features;
- (d) If the site can play an unsurpassed role politically, culturally or economically amongst the contemporaneous sites, and its special leading position can provide guiding information to understand other sites.

Besides evaluating the significance of an archaeological site compared with other contemporaneous sites, another very important issue is to record essential field data for site conservation, physical maintenance and exhibition. And this process lies at the core of the whole technical treatment, incorporating a wide range of co-related data resources as mentioned above. This not only systematically documents the physical conditions but provides important data for further planning and monitoring.

In sum, archaeological site management in China will be systematically studied in the near future, and as a sub-discipline of archaeology, it will also gradually bridge the gap between the specialists and site visitors. This shall bring about another relevant issue of site management in terms of archaeological publication, which though not the topic of this paper, should be carefully examined in the future. The tension between heritage preservation and public use has always been a focus of heritage studies.

#### *Bibliography and Illustration Sources*

1. Institute of Archaeology, Chinese Academy of Social Sciences. 2008. *An Overview of China's Major City Sites*, unpublished.
2. *Blue book of Chinese Culture Heritage 2008*, Social Sciences Academic Press, 2008.
3. World Heritage List (*formal document for Yinxu nomination*). Cultural Relics Publishing House. 2005.
4. *1981 Burra Charter* – ICOMOS.
5. Clark, Kate. 2001. Preserving What Matters: Value-Led Planning for Cultural Heritage Sites. *The Getty Conservation Institute Newsletter*.
6. De la Torre, Marta. 2001. Values and Site Management: New Case Studies. *The Getty Conservation Institute Newsletter*.
7. *Site management and planning of the Shang dynasty city site at Yanshi*, unpublished.
8. *Site management and planning of the Erlitou site at Yanshi*, unpublished.
9. Scott, David. 2001. *Copper and bronze in art*. Getty Conservation Institute.

## **Indonesia**

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## **Preservation of Archaeological Remains and Sites in Indonesia: -A Case Study in Laweyan Traditional Settlement-**

### **I. Introduction**

Indonesia is very rich in archaeological remains, and sites that vary in shape, style, size, and distribution are spread across the landscape, such as caves, megalith remains, temples, mosques, palaces, tombs, churches, forts, traditional settlements, etc.

Archaeological remains and sites are preserved by the National Law Number 5 of 1992, concerning Cultural Property. Cultural property, as mentioned in the National Law Number 5 of 1992, is:

- a. Artifacts made by man, movable or immovable, individually or in groups, or parts thereof or remains thereof, which are at least fifty years of age, or represent a specific stylistic period of at least fifty years of age, and are considered to possess value of importance to history, science, and culture.
- b. Natural objects which are considered to possess important value for history, science, and culture.

In addition, the National Law also defines a site as meaning a location which contains or is presumed to contain items of cultural property, together with the surroundings which require safeguarding.

The Directorate of Archaeology, organizationally under the authority of Ministry of Culture and Tourism, is the institution which carries out preservation of archaeological or cultural property and sites. Under the authority of the Directorate of Archaeology, there are 10 units of the Office for Preservation of Archaeological Heritage which oversee the preservation of archaeological properties and sites throughout the country.

The main tasks of the Directorate of Archaeology are the registration, preservation, conservation, and restoration of archaeological or cultural properties and sites. This institution protects more than five thousand monuments/sites throughout the country, including three world heritage sites: Borobudur Temple, Prambanan Temple Complex, and Sangiran Early Man Site.

One of the preservation problems is how to designate a settlement area as a cultural preservation



area. It requires complex consideration to establish a settlement area as a cultural preservation area because of the various traditions that exist inside the settlement area.

The problem is usually related to changes in the ownership of buildings, in the function of buildings, or to the reconstruction of buildings that are architecturally different from the characteristics of settlement architecture in general.

Laweyan is a traditional settlement in Indonesia. Most people in Laweyan are known as batik entrepreneurs. Based on that fact, in 2004, the Mayor of Surakarta has proclaimed Laweyan as *Kampoeng Batik* or batik village.

Today, Laweyan needs to be protected, because there are a few families still actively engage in batik making. Their houses have not been in maxim utilization, so that the buildings have become damaged or have changed from their original functions. At the Laweyan settlement, there are new structures which function only for economic purposes. These newly built structures are different in character from their surroundings, and represent structures with no aesthetic value and which look strange compared with the older structures.

Nowadays, people in Laweyan have a desire to designate their settlement as a cultural preserve. For that purpose, it is necessary to set up limitations prevailing at the site which would be protected by legal status. Limitations will be established on the basis of a zoning study conducted in the area. In carrying out the study, investigation was required that needed to be done carefully, because the Laweyan settlement is a living monument.

## **II. Historical Background of Laweyan**

Laweyan has a long historical background. The name of Laweyan has been popular since the sixteenth century, when the Pajang Kingdom held power on the island of Java in Indonesia. Laweyan is a *perdikan* area that was empowered by the Moslem kingdom of Pajang. Since long ago, a *perdikan* country was an *imperium in imperio*, a state within a state under the ancient Javanese administration, whereby the small nations were fully empowered with heads who considered themselves as absolute kings and could run up their own debt over the years. Relationships between heads of *perdikan* with their *perdikan* areas was basically dependant upon hereditary principles (Schrieke, 1975: 38).

The traditional settlement of Laweyan is situated in Surakarta City, Province of Central Java. Laweyan is a settlement which has characteristic architecture. Several historical objects come from the Pajang Kingdom, such as Laweyan Mosque complete with a complex of graves of the king's family, the site of the Laweyan old market, the grave of Kyai Ageng Henies (founder of the Laweyan settlement), the old river port of Kabanaran which was the big trade port in the Pajang Kingdom period. There is an old prayer house named Merdiko that nowadays is referred to as the Merdeka prayer house, on whose tower is found the inscription "*didirikan tanggal 7 bulan Juli 1877*," meaning "built on the seventh of July 1877". To the south of Laweyan Mosque is the house of Kyai Haji Samanhudi, founder of Sarikat Dagang Islam, a league of Moslem traders in Indonesia. These buildings are legally protected by a governmental decree of Surakarta City.



Pl. 1. Laweyan Mosque



Pl. 2. Grave of Ki Ageng Henis



Pl. 3. Mardiko Mosque

On the other hand, Laweyan has played an important part in political matters, especially during the growth of nationalist movements, and is known as the place where the Sarikat Dagang Islam (SDI) formed around 1911.

The community of Laweyan is known as a producer of batik. Batik is a kind of Indonesian traditional textile which has become a social emblem or trademark for Indonesian people. Batik has been made in Indonesia since a long time ago. Many areas in Indonesia produce batik, such as Cirebon, Pekalongan, Yogyakarta, Surakarta, and Jambi. The process in making batik is not simple and usually it requires up to one month's time for one piece of batik.

Laweyan is very popular as center of batik entrepreneurship. Historically, through its status as a batik entrepreneurial center, Laweyan became famous. Even the name of Laweyan is presumed to derive from something related to the community's enterprise, as mentioned by Mlayadipura (1981) in his article entitled "History of Laweyan":

*...Asal nama Kampung Laweyan dikatakan berasal dari kata "Lawe" atau kapas yang dipintal kemudian diantih (ditenun) menjadi mori gedog (mori yang rupanya masih seperti lawe/belum diberi pemutih) dan kain baju lurik.... (Mlayadipura 1981:10).*

[The name of Laweyan comes from word of "lawe" or cotton which was spun and woven to become *mori gedog* (unbleached plain cloth without whitening) and *lurik* cloth.]

From the description above, it can be seen that *lawe* was sold in the market that is now known as Laweyan Market.

The batik industry grew rapidly in Laweyan after the development of the printed batik making technique. Because of this technique, *canting* – using a small dipper to apply wax in the process of batik making – would not be used again, as people instead used stamps made from copper plates with specific motifs. Thereafter, Laweyan became known as a producer of printed batik.

Printed batik technology is presumed have come from Semarang, a city in Central Java, and was adopted meticulously by the merchants in Laweyan in becoming a highly valuable industry. The business of printed batik making in Laweyan was started around the middle of the nineteenth century and expanded in the year 1870. In that period, batik entrepreneurs in Laweyan built their places of business on a large scale, grew stronger and became autonomous both socially and economically.

Laweyan has been used as a place for textile commerce since the period of the Pajang Kingdom, around the sixteenth century. Before the batik industry started and expanded, Laweyan was a center of commerce for traditional material (*lawe*) that was mostly supplied from Wedi and Tembayat in Klaten (Bahari, 2000: 2). Before the highway network and railway tracks were extended, to the south of Laweyan there was a river port in Kabanaran village that was used for loading and unloading cotton and yarn merchandise. Laweyan also became a center of traditional weaving before the batik industry grew. After Panembahan Senopati and his followers moved to Kota Gede, economic activities in Laweyan did not stop. Laweyan started to grow again when the printed batik industry shut out the importation of batik motif textiles that were cheaper.

In actuality, the merchants of Laweyan did not enjoy a respectable position culturally within feudal Javanese society. They had the same status as ordinary people, the difference being only that batik merchants had greater economic power and wealth than even nobles and officials. In the economic sector, Laweyan batik merchants were also known as pioneers for a cooperative movement named “Persatoean Peroesahaan Batik Boemipoetra Soerakarta” (PPBBS) or Association of Soerakarta Boemipoetra Batik Enterprises in 1935 (Bahari, 2000: 3).

The Laweyan community recognized special terms used to refer to different groups of people. Sarsono and Suyatno wrote that:

*. . . Masyarakat Laweyan mengenal kelompok-kelompok sosial yang disebut wong saudagar (orang saudagar atau pedagang), wong cilik (orang kecil atau kebanyakan), wong mutihan (orang putih atau Islam atau alim ulama) dan wong priyayi (orang priyayi atau bangsawan atau pejabat). Dikenal pula golongan saudagar sebagai juragan dengan wanita sebagai pemegang peran dalam perdagangan batik. Untuk itu, istilah mbok mase atau nyah nganten adalah menandai wanita sebagai pemeran utama dalam perdagangan batik, sedang untuk suami disebut Mas Nganten yang bertindak sebagai pelengkap utuhnya sebuah keluarga. . .*

[ . . Laweyan community recognized social groups called *wong saudagar* (merchants), *wong cilik* (ordinary people), *wong mutihan* (Moslem people or Moslem leaders or teachers) and *wong priyayi* (people belonging to the upper class, nobles, or officials). In merchant groups, recognition was also given to managerial families in which the women mainly took up roles in batik commerce. The term *mbok mase* or *nyah nganten* indicates a woman who had a main role in batik commerce, while her husband, called *Mas Nganten*, complemented the family. . . ] (Sarsono and Suyatno,1985:12).

They also sold batik and earned high profits. In the past, roles for men and women were clear and distinct. Women worked to make and sell textiles, while men only took the role of head of the family.

### III. Environmental conditions of Laweyan

Laweyan is located in Surakarta City, Central Java Province, at the coordinates of 110° 47' 36.60" east longitude and 67° 34' 07.75" south latitude.

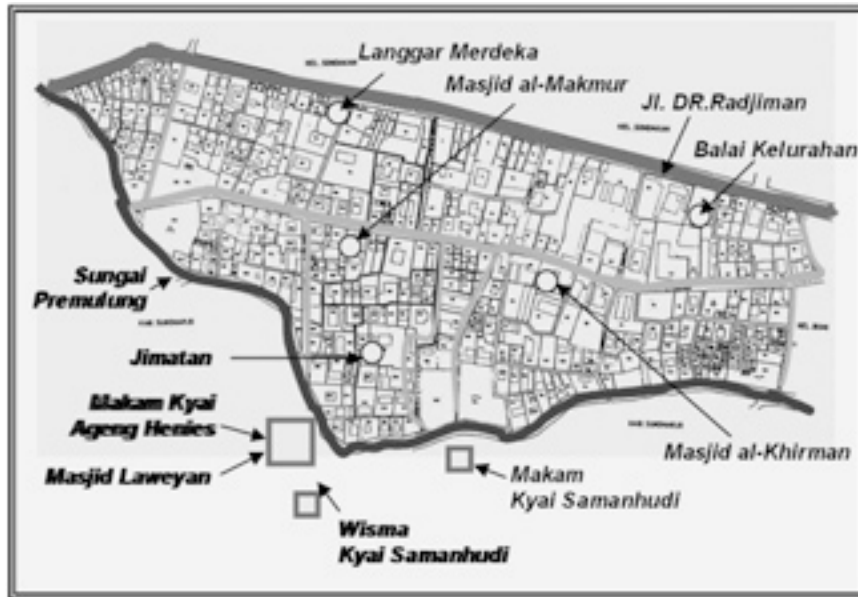


Pl. 4. Location Map of Surakarta City

The borders of the Laweyan area are as follows:

1. On the north it is bordered by Kelurahan Sondakan, along Dr. Radjiman Street which previously was a big street linking Kartasura palace with Kasunanan palace in Surakarta.
2. On the South it is bordered by the Jenes river. People in Surakarta previously called this the Kabanaran river. The river was the main access between Bengawan Solo river and the Pajang Kingdom. This river also borders Surakarta city with the Sukoharjo Regency.
3. On the west it is bordered by the district of Pajang. Pajang was the site of the Pajang Kingdom, but at present there are no remains to be found within the site.
4. On the east it is bordered by the district of Bumi.

Generally, the Laweyan area is dry land which is relatively flat, located on an alluvial plain. The main material of the alluvial plain comes from the Bengawan Solo river and other small rivers in Surakarta and its surroundings.



Pl. 5. Location of archaeological and historical structures

The area of Laweyan is 24.83 hectares, consisting of 20.56 hectares of yards and buildings, and 4.27 hectares of rivers, roads, graves, etc.

Generally, the climatic condition of Laweyan is the same as other areas in Central Java, with a rainy monsoon season from October to April and a dry season from May to September. The rainfall average is 24.25 cm per month and the air temperature average is 27.29 C. Hydrological conditions are good both in quality and quantity. In this area, water needs are easily met by ground water.

#### IV. Laweyan Settlement

In the settlement, there are many old houses and buildings which have high value from historical and archaeological perspectives. These houses have specific characteristics and architecture.

As a social group with a position at the same level as ordinary people, Batik merchants in Laweyan were not limited by custom. They had freedom to determine their own choice, including decisions in building houses. To build a house, they could diverge from traditional Javanese room settings, but the building process nevertheless observed existing customs (such as the standard custom of holding a *slametan*, or communal feast, and activities to express gratitude to God that are followed from the beginning of house building to its completion).

As a social group on the same status with ordinary people, batik merchants in this area looked up to other groups that had authority within the community. Initially, the batik merchants wished to compete with the nobles in terms of housing, and for that reason houses of batik merchants in Laweyan built before the twentieth century generally resembled aristocrats' houses with all their properties.

Merchants entering Laweyan in the twentieth century started to build artificial *loji* (small forts)

like European houses, but they also used some Javanese elements among the building components. Besides these, there are also houses such as *landhuis* with attributes unmatched to the area. Batik merchants in Laweyan built their houses not only to show their wealth, but also to mark their opposition in attitude to the owners of cultural authority, and also to those holding political and real economic power (Bahari, 2000: 4-5).

In addition, field data indicate that room settings and the numbers of rooms inside buildings in Laweyan varied. Laweyan has multifarious building designs, and most of them give a sturdy impression because the roof support structure is made not with a pillar frame but from the outer wall of the building. There are some buildings which have ornaments and decorative objects. The *regol* (gate) always faces toward the road while the house building faces north or south.



Pl. 6. A house in Laweyan

Based on field data, there are two ambiguities noted for Laweyan. The first is observed in the following aspects of the architecture:

- a) The status of Laweyan, as an area that was exempted from tax, was not accompanied by other changes in the context of the community in general. Thereby, the status and position of Laweyan community members was still assumed to be the same as ordinary people in general.

The logical consequence of this situation is that entrepreneurs realized they were not noble. Their awareness of this fact generated unwritten agreements among them, such as an avoidance of a *joglo* roof for their house (a *joglo* roof is a symbol of a prince or noble's house), and not having the verandah directed to the east (as in palace buildings).

If such agreements may be seen as signs of weakness in their social status, at the same time, they tried to show off their excesses, such as: building houses with a bearing-wall structure, thereby adopting architectural elements from the outside like those used in solid European architecture, while mixing them with Javanese style architecture; using ornaments, such as making luxuriant and beautiful *petanen* with various decorative objects like statues of Roro Blonyo, glass, betel vine bowls, *bokor* and other decorations, and tiling and porcelain brought from other areas.

An exclusive attitude had not actually been expressed through building styles and elements, because on one side they still realized that they were a part of Javanese culture, as expressed by a room in the house called *dalem*, and building two pillars to represent a main pillar. This pillar did not function structurally but only as a symbol of the Javanese house. Javanese cultural symbols were still maintained in their houses.

Their self-supporting position permitted them to easily interact with many foreign elements since former times. This was also promoted by the condition that entrepreneurs were always in contact with many nations, reflected in their not closely following traditional arrangements of the Javanese house, and the existence of variation in room settings. The opportunity to interact and build relationships with foreign cultures did not induce them to leave Javanese culture fully, which can be seen by their incorporation of the fundamental room setting of the Javanese system, such as the existence of a wide yard and a *dalem*, even though some of the other traditional rooms were not utilized. Thereby spatial arrangements still followed the Javanese pattern in part, while other areas were utilized according to new requirements (appropriated to function).

- b) Entrepreneurs or managers could pretend to be noble in the *perdikan* area of Laweyan, in that ordinary people worked as laborers who served faithfully and hereditarily to entrepreneurs in the manner of servants in the *dalem* area. There was a difference in function, however, as in noble residences they did housework and served their employers, but in Laweyan they did batik making.
- c) The existence of a feeling as a noble was expressed on their house walls. The house wall represented the boundary of their area of power and their ability to keep peace within that area. The *regol* was the main entrance which was placed facing the road or street in front of their house. The direction of house building was to the north or to the south, as according to the Javanese pattern.
- d) Living as batik entrepreneurs generated the consequence that the house was at the same time a residence and a factory or workplace. To support the business, then, there was a room added known as the pavilion or *lojen* (from the word *loji*, meaning big building). The *lojen* also functioned to separate the left or right side of the building from the *gandhok*. The *gandhok* in the Javanese house pattern is a space provided for any activities in the batik production process.
- e) The entrepreneurs, as holders of the highest status in the community structure of Laweyan, considered themselves as nobles in this area. As nobles, their houses have wide yards symbolizing their power and wealth, in addition to their function as a space for producing batik, in this case as place for spreading out batik to dry in the sun. The yard was bordered by a high wall (more or less 6 meters), symbolizing as their area of power where they protected their property from any kind of riot or robbery.

The fundamental spaces of houses in Laweyan were a wide yard, *dalem*, and factory, while the other areas functioned as supporting space. The hierarchy of permanent Javanese space was fully involved, being the existence of a difference in floor height starting from the yard and going to the *sentong*, a small inner room used for family ceremonies or as a storage. Accordingly, the *dalem* (main room) was positioned on the highest floor. This was not based on an assumption by the Laweyan community (especially entrepreneurs) that the *dalem* was still the most holy place.

The second ambiguity concerns the economic situation. The position of entrepreneurs in Javanese society was highly regarded in terms of social status and their wealth resulted in their feeling like nobles in Laweyan. With their wealth they could have everything they wanted. This fact strongly influenced their habits of marriage, through which couples came from within the same social group, but supported by their batik products, which could support the needs of royalty in the past and were subsequently developed to sell on the free market, the Laweyan community was connected with the outside society. They thus experienced an ambiguous or dualistic situation, in being very closed internally while in commerce they were a very extroverted community.

Good internal relationships and togetherness in matters of business within the Laweyan community strongly supported batik production. Batik entrepreneurs in Laweyan built their settlement not only for showing off their wealth but also through their separateness to avoid conflict, both with the owners of cultural authority, and also those holding political and real economic power.

Plots of land in Laweyan area are divided by size into: 1) plots of batik entrepreneurs, with a distinction between big entrepreneur having 1000–3000 m<sup>2</sup> and medium entrepreneurs with 300–1000 m<sup>2</sup>, and 2) plots of laborers, on the order of 25–100 m<sup>2</sup>.

Roads in Laweyan divide into three classes: 1) main roads, about 15 m wide, passing through the area and connecting with other cities, 2) internal roads about 6 m wide, connecting sub-areas, and 3) pathways located between houses, around 2–3 m wide, and generally positioned along the 6 m-high boundary walls.



Pl. 7. Situation of roads in Laweyan



The status as *perdikan* area obviously involves not only problems of rights and obligations for Laweyan. This status has the logical consequence for the Laweyan community that it is self-supporting and independent and does not rely on a ruler. This independent or self-supporting attitude is reflected in the community's ways to maintain the local area and in daily activities related to its means of livelihood. All of the profits of business could be absolutely owned by the community because of rights earned through their business management.

## **V. Concept of Zoning**

A "site" as an archaeological concept that means a location which contains or is presumed to contain archaeological remains, together with the surroundings which require safeguarding. A number of archaeological remains indicate activities of the community necessary to fulfill its living needs.

In archaeology, there is a problem related to deciding the limitations of a site. In making a determination, we could adopt geographical borders, site ownership borders, borders of eyewitness feasibility for normal views of the object, or borders of archaeological significance. A zoning system is implemented to give boundaries for an area's protection. One objective of zoning is to protect archaeological sites and remains from damage. Based on significance and protection management, zoning is divided into three zones, being the main, buffer, and facilities zones.

The main zone is for protection, based on the original borders, the significance of the archaeological remains, the contextual environment and eyewitness feasibility for the archaeological remains.

The buffer zone functions as protective land for the main zone. The buffer zone can serve as land for facility structures in limited amounts. The buffer zone is determined by the need for protection and degree of threat to archaeological remains and sites. The buffer zone is also known as an area for greenery and atmospheric balance, protection, and environmental beauty for tourists, and to protect the cultural heritage from natural factors such as rainfall, wind, or sunlight. As a greenery area, it is principally used as land for trees to provide shade. If necessary, a roof could be built for protection, along with simple facility structures.

The facilities zone provides for common tourism facilities. Determination of the facilities zone is based on accessibility, floor area ratio, and the facilities which are to be provided. The function of the facilities zone is for tourism service. In the facilities zone, there could be approved souvenir shops, parking areas, hotels or restaurants, toilets, an information office, or a ticket office.

Zoning methods can be divided into three systems, as follows.

1. Cell System. By this system, the site is divided into several spaces with archaeological remains protected in every space. This system is based on factors such as distance between one zone and another, the density of archaeological remains, the significance of archaeological remains, the benefits to the area for its safeguarding.
2. Block System. The block system is applied to safeguard thoroughly the archaeological

remains, which become an entire protected location or area. Limitation of fulfillment for the area is based on the density of archaeological remains, their distribution and other archaeological indications that have significant value for the protection of archaeological remains as a unit.

3. Cell and Block System. This is a system that joins features of the cell and block systems for the purpose of running a double system based on protection needs. This system is applied for sites which have large numbers of archaeological remains, which are protected over large areas, or have large distances among the remains.

## **VI. Method of Zoning**

Study for zoning consisted of collecting data from references and maps, plus a field survey and interviews. A topographic map with scale of 1:50 was used as a base map. During the study, we carried out surveys of old structures for mapping purposes. All data gained from the survey were used to analyze and to summarize the results of the study, and then decide the limits of zoning. In addition, for data quality and quantity, interviews were required with persons considered to have good knowledge about Laweyan, such as public figures or experts.

## **VII. Zoning of Laweyan**

Based on studies of historical and archaeological data, the scope of the Laweyan area are: Laweyan itself, plus Sondakan, Bumi, and Pajang.

For protection and safeguarding, the zoning of Laweyan adopted the cell and block system for the reason that Laweyan has a large number of archaeological remains. The block system had been applied in Kelurahan Laweyan, while the cell system had been applied in Kelurahan Sondakan, Bumi, and Pajang.

Determination of the main zone was based on the locations of batik houses and historical structures. The main zone is divided into three sub-zones, with the first being Kelurahan Laweyan. Kelurahan is local term to designate the smallest administrative area. The natural borders of Kelurahan Laweyan are the Jenes, Batangan, and Kabanaran rivers. The Premulung river lies south of the area, Kelurahan Bumi to the east, and Rajiman Street to the north. In this sub-zone, there are many batik houses which are still in their original condition as well those which are new in appearance. The batik house has these characteristics: it is surrounded by a high wall and a gate facing the street; it has a main house, a building for batik processing, and a wide yard. The area of the first sub-zone is 9.11 hectares.

The second sub-zone is an area with historical structures related to Laweyan but located outside of Kelurahan Laweyan. The structures are the grave of Kyai Ageng Henis – founder of Laweyan – and Laweyan Mosque.

The third sub-zone is the area with many houses of batik owners in Kelurahan Sondakan and Kelurahan Bumi. These areas are on the north and east of Kelurahan Laweyan. The architecture of

these houses is the same as the Laweyan houses, but this sub-zone has a smaller number of batik houses.

The scope of the buffer zone is the Sondakan, Bumi, and Pajang areas. The function of this area is for supporting the main zone. The area of this zone is suggested to be approximately 16.5 hectares.

The facilities zone or development zone surrounds the Sondakan, Bumi, and Pajang areas. This zone is suggested as 5.8 hectares.

There are some facilities already found in Laweyan, such as street lamps, information boards, streets, etc.



Pl. 8. Zoning of Laweyan

### **Recommendation**

Based on field survey and data analysis, these are the recommendations for implementing the protection of the Laweyan area:

1. It is necessary to minimize changes of architecture to Laweyan houses for preservation purposes.
2. It is necessary to disseminate information to the Laweyan community, its stakeholders, and the government regarding protection, development, and utilization of the Laweyan area, to increase the awareness of the need for preservation.

### **Bibliography**

Andri Satrio Pratomo, Antariksa dan Septiana Hariyani, "Pelestarian Kawasan Kampung Batik Laweyan Kota Surakarta". Naskah Penelitian, tidak diterbitkan, Malang: Universitas Brawijaya,

2006.

Badan Perencanaan Daerah Pemerintah Kota Surakarta, *Grand Design Kawasan Kampoeng Batik Laweyan Surakarta (Laporan akhir)*. Surakarta: Badan Perencanaan Daerah, 2006.

Heddy Lugito, dkk, "Monumen Kejayaan Juragan Batik", **Gatra**, edisi khusus, Oktober 2006, hal. 43-35.

Nanik Widayati, "Pemukiman Pengusaha Batik di Laweyan Surakarta". Disertasi. Jakarta: Program Pasca Sarjana Fakultas Sastra Universitas Indonesia 2002.

----- "Membuka Wacana Art Deco Pada Rumah Saudagar Batik di Laweyan", makalah pada Seminar Art Deco di Indonesia: A Live Style. Jakarta: Universitas Tarumanegara dan Pusat Dokumentasi Arsitektur, 2005.

Soedarmono, **Pengusaha Batik di Laweyan Solo Awal Abad 20**. Jakarta: Yayasan Warna Warni Indonesia, 2006.

## **Iran**

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### **A Case Study in Iranian Archeological Conservation Activities on Architectural Remains: The Takhteh-Soleiman Complex (World Heritage Site)**

#### **Abstract**

This report discusses the general methods of archeological conservation activities on architectural finds (exposed monuments) and the difficulties faced in Iran. The variety of conservation methods at the Takhteh-Soleiman complex (World Heritage Site) from 1959 will be discussed as a case of study.

#### **Introduction**

The plateau of Iran is one of the oldest civilization centers of ancient eras in Asia and has a significant value in archeological science.

The beginning of excavation in Iran was in 1849, by W. K. Loftus (a British archeologist) at Susa, the capital of ancient Elam civilization (1000 B.C.) in the south of Iran. After that time many ancient sites were excavated by foreign and Iranian archeologists, and in addition to the results in terms of the findings and the history of civilization regarding these sites, the preservation of the heritage found at these sites is an important theme in the current report.

A lack of cooperation between archeologists and conservation architects on excavation teams causes problems in conservation programs. However, legislation can solve the larger part of these difficulties.

The Takhteh-Soleiman complex, a unique set of monuments and remains in northwestern Iran, is located in an extremely beautiful mountainous area which is spotted with outstanding natural-historical attractions. The site includes the principal Zoroastrian sanctuary from the Sassanid era (6<sup>th</sup> century) and the remains of the only castle dating back to the Ilkhanid period (13<sup>th</sup> century).

Materials used in the buildings of this complex include cut stones and carved stones, large size bricks (from the Sassanid era), quarried stones, and bricks decorated with plaster-molding and tile work (from the Ilkhanid era).

It was inscribed on the World Heritage List in July 2003. Also, different types of conservation methods and studies, carried out on this site, can illustrate all the architectural conservation methods being taken all over Iran, which can be classified into five main methods.

Conservation and management of the historic complex of Takhteh-Soleiman dates back to

1958-59, when research and excavations started, but methodical conservation and fundamental restoration began in 1977-78.

### **The History of Archeological Activities in Iran**

Iran is an ancient land with nearly 10,000 years of history documented in the archaeological remains, which are scattered across this vast and high plateau. Thousands of archaeological sites date back to prehistoric and historic eras, there are in addition 500 living and active cities, most of which feature valuable urban centers and a historic fabric, plus thousands of valuable historic monuments, including houses, mosques, palaces, bazaars, and four million moveable cultural artifacts which are displayed and deposited in museums and storehouses. This entire physical heritage represents precious memories of the great and rich cultures and civilizations that have flourished in Iran.

Iran had been introduced as an ancient country with rich cultural heritage all over the world from the 15<sup>th</sup> century by foreign travelers, through narratives of their itineraries.

The arrival of foreign expeditions in Iran coincided with an increased desire to identify and locate the places mentioned in the Bible as well as in Greek and Roman sources. These expeditions pursued the early works and attempted primarily to explore the ancient architectural structures and cities. They were primarily French, but later on, British and Russian teams also arrived in Iran and followed their activities. Final reports of most of these activities are already available.

During the 17<sup>th</sup> and 18<sup>th</sup> centuries, European travelers took cuneiform tablets back to Europe, but since there was no proper key available to decipher their inscriptions, the tablets remained mysterious. The first real progress toward reading was made of the writing at Behistun by Carsten Niebuhr, a German member of a Danish scientific expedition to the Middle East from 1761 to 1767. He correctly thought the threefold Behistun inscription to be transcripts of the same text in three different kinds of unknown writing. In 1777, through an outstanding effort he published the first accurate copy of the Behistun inscriptions. This helped enable the subsequent deciphering of the Old Persian text, which paved the way for decoding the Elamite and Akkadian (Babylonian) inscriptions.

In 1810, James Mourier directed the first excavations of Persepolis to get at the carved reliefs, but the local governor prevented him from going through with this plundering. In 1851, Loftus carried out the first archaeological excavations in Iran of the Susa ruins. Publishing his investigations at Chaldeans and Susa, Loftus called the attention of French researchers towards this ancient city. Later on, in 1883 the French government entered into a contract with Naser al-din Shah, king of the Qajar dynasty. Accordingly, Marcel Diolafoa (1844-1920) arrived in Susa to carry out archaeological excavations. He excavated Apadana Tepe in Susa and sent most of the finds to Louvre Museum. This incurred the wrath of Naser al-din Shah and other Iranian officials, and hence the excavations stopped in 1886.

On the third trip of Naser al-din Shah to France, French officials induced him to sign another contract with the French government. The signed contract, however, was suspended soon after the Qajar king was assassinated. Eventually, Jacques de Morgan came to Iran to implement the contract.

But he was not welcome, and even the governor of Khuzestan snubbed him. Some years later, in his 1897 trip to France, Mozaffar al-din Shah agreed to collaborate with French expeditions. This agreement resulted in the well-known, notorious 1900 treaty between the two countries, known as the “de Morgan Treaty.” Through this treaty, the French gained a monopoly on carrying out any sort of archaeological investigations and excavations in Iran. In addition, it maintained all the finds from Susa would be the property of the French government, and the Iranian government would simply receive gold and silver equal to the weight of unearthed gold and silver materials. De Morgan’s excavations yielded precious materials from Elamite contexts in Susa, including the Code of Hammurabi and Naram-Sin, now in Louvre Museum.

In 1927, the abovementioned treaty was canceled conditionally, yet the French government gained the concession of establishing a museum and library in Iran, providing that a French national would take their presidency for three recurrent five-year terms. Accordingly, in 1929 André Godard arrived in Iran to design and establish the agreed to museum and library (now called Iran Bastan Museum and National Library). The year 1937 marked the official opening of these institutions.

The organization in charge of archaeology, that already existed as the “Office of Antiquities” affiliated to the Ministry of Maaref, was rendered a subsidiary to the “Central Office of Oqaff” under the title of “Department of Antiquities,” then for a short period in 1936 took the name of “Archaeology Office,” and was finally turned into the “Central Archaeology Office.” The “Office of Antiquities” was simply responsible for the antiquities dealings and their export, with no authority regarding excavations and archaeological field activities. At first, Iraj Mirza was the president of the Office, but Gadar replaced Iraj Mirza as he began his official activities in Iran.

Annulment of the treaty with the French government marked a new stage in Iranian archaeology: scholars from different countries, long waiting for such a great opportunity, flooded the country in 1940 and carried out widespread excavations. In spite of the persistent activities of foreign expeditions, archaeology was still new in Iran and there were few Iranian experts in the field. Hence, Iranians carried out little activities in this period. It is worthwhile to note that the first group of archaeology students in Iran graduated in 1941 from Tehran University. Independent investigations by Iranian scholars prior to 1941 were limited to 1934 excavations carried out by A. Hakemi in Hasanlu Tepe in Sulduz valley, West Azerbaijan, and the restoration of Persepolis excavations in 1939 by I. Behnam and A. Sammi. The years intervening between 1951 and 1964 marked the third stage of archaeology in Iran.

With the establishment of the Ministry of Culture and Art in 1964 and the affiliation of Iranian Archaeological Service to that ministry, the fourth stage of archaeology commenced in Iran and continued up to the instigation of the Islamic Revolution. Following the incorporation of the Public Culture Office and Archaeological Center, the “Archaeological and Public Culture Center” came into existence; however, in 1971 the Center was divided into two separate offices called the Archaeological Service and the Anthropological Service. In the wake of the creation of the Iranian Archaeological Service, substantial steps were made towards restricting the outflow of archaeological materials

from the country. Equally, the Archaeological Service held annual symposiums on archaeology, and directors of expeditions were required to give scientific reports about their findings.

In 1978, with the accomplishment of the Islamic Revolution, a revolution could similarly be seen in archaeological activities. The Archaeological Center, which had been a subsidiary of the Ministry of Culture and Art, became affiliated to the Ministry of Culture and Higher Education. This, despite certain impairments, ensured the continuance of archaeological activities.

During these years, Iranian archaeologists and scholars carried out some limited field activities. Organizational deficiency as well as decentralized archaeological administration led to the introduction of a proposal in the Islamic Consultative Assembly and cabinet, concerning the integration of different offices and organizations responsible for archaeology. Accordingly, a centralized organization called the Iranian Cultural Heritage Organization, affiliated to the Ministry of Higher Education, emerged in 1987. The organization later became a subsidiary to the Ministry of Culture and Islamic Guidance in 1992. Archaeological activities declined following the establishment of the Cultural Heritage Organization due to various reasons, then experienced a new situation during the 1990s, especially due to increased funds and advanced equipment, as well as a quantitative growth in its human force. While planning and implementing new and promising projects, the previous activities, which had been temporarily halted because of political developments in the country, were resumed, thereby demonstrating the competence of national experts in project planning, implementation, and management.

Finally the Center for Archeological Research is working under Iranian Cultural Heritage, Handicrafts & Tourism Organization.

During the 1980s and 1990s, Iranian archaeologists have experienced outstanding achievements. The field activities of Iranian archaeologists in these two decades are as follows.

1. Restoring some unfinished excavations and reinvestigating a number of important sites first excavated prior to World War II.
2. Implementing special excavations to reveal uncertainties regarding the archaeology of Iran.
3. Implementing emergency and salvage excavations at sites endangered due to various reasons, including urban development activities, and illegal excavations.
4. Carrying out extensive reconnaissance and survey projects to gain a real grasp of the actual realities, opportunities and challenges, thereby creating the archaeological map of country.
5. Exploiting students' competence and widening cooperation with scientific and academic centers of the country in archaeology and related scientific fields.
6. Making expanded use of scientific capacities of other disciplines, and employing the basic and experimental sciences to implement archaeological investigations in Iran.

### **History of Conservation at Archeological Sites in Iran**

Heritage is defined as anything of value from the past that provides identity to the present and inspires



the future generation. Traditionally, it is classified as intangible or tangible, movable or immovable, natural or cultural, personal or communal. Usually, heritage is perceived as something without use or practical value and has no return of investment.

The conservation of cultural property requires a knowledge of materials and structures and how these are affected by various environmental factors that individually, or in consort, tend to bring about their destruction (p. 124, *The conservation of cultural property*).

Conservation activities at archeological sites started with the first archeological excavation in 1849.

The destruction of Iranian cultural heritage is due to several factors. The most common deteriorating agents, including climatic factors like air pollution (mainly in major urban areas) and biological mechanisms, are constantly damaging cultural remains. However, there are other agents which have more critical and detrimental effects, including natural disasters and especially earthquakes and floods that are major elements of destruction. Even though climatically a large part of the country is arid, there are still instances of flooding. In fact, in our history and also quite recently, a number of towns have been partially or completely destroyed due to this natural factor.

Other factors causing deterioration include:

- Illicit excavations
- Smuggling of valuable objects
- The previous unlawful transfer abroad of archaeological finds unearthed by foreign archaeological teams who were active before the Islamic Revolution
- Rapid urbanization due to population growth
- Lack of proper planning and standards
- Non-implementation of existing norms and regulations

Conservation of this huge cultural wealth requires enormous effort and resources. Unlike other developing countries in the world, and despite numerous positive initiatives and good will, it is fair to say that due to the limited resources available for the conservation of cultural heritage, the present situation is far from being considered ideal.

The harsh situation imposed by war and other factors has resulted in national reorganization and planning for various short- and long-term programs in order to mitigate the potential risks of future disasters.

These initiatives can be summarized as follows.

- Construction of proper shelters for museum collections in various parts of the country
- Comprehensive surveys for the documentation of movable and immoveable heritage in order to plan a long-term strategy for protection against future intrusions
- Active implementation of the 1954 Hague Convention through a national committee, training

of armed forces, and the removal of several military barracks from the vicinities of historic sites and monuments

- Establishment and activation of national committees of ICOMOS and ICOM
- Strengthening scientific relations with overseas institutions, particularly ICCROM, and organizing joint training and field programs
- Organization of regular national conferences on the conservation and restoration of cultural heritage, as well as on the history of architecture and urbanization
- Promotion and development of academic education in the conservation of cultural heritage

### **Lack of Cooperation between Archeologists and Conservation Experts on Excavation Teams**

Conservation is a multi-disciplinary process that depends on teamwork. Each member of the team will bring to the team their own disciplinary knowledge as well as their specialist conservation expertise.

Why do archaeologists have to manage for conservation on the sites they excavate? This is a question that may be asked by any archeologist who is not responsible enough to take any action such as the prevention of his own digging!

Of course there have been past efforts to define the conservation of archeological sites. One of the first coordinated attempts to codify international principles and procedures of archaeological site conservation was formulated in the Athens Charter of 1931 where measures such as accurate documentation, protective backfilling, and international interdisciplinary collaboration were clearly articulated. In 1956 further advances were made at the General Conference on International Principles Applicable to Archaeological Excavations adopted by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in New Delhi, where the role of a centralized state administration in administering, coordinating, and protecting excavated and unexcavated archaeological sites was advocated.

Other charters such as the ICOMOS (Venice) Charter of 1964 extended these earlier recommendations through explicit recommendations that included the avoidance of reconstructions of archaeological features except for cases in which the original components were available but dismembered and the use of distinguishable modern techniques for the conservation of historic monuments. The Australia ICOMOS (Burra) Charter of 1979 expanded the definition of “archaeological site” to include the notion of place, challenging Eurocentric definitions of value, significance, authenticity, and integrity to include context and traditional use, an idea important for culturally affiliated indigenous groups.

Finally, in 1990 the ICOMOS (ICAHM) Charter for the Protection and Management of the Archaeological Heritage was adopted in Lausanne, Switzerland, formalizing the international recognition of many archaeological sites as living cultural landscapes and the responsibility of the archaeologist in the conservation process. In addition to these various international attempts to address the issues of archaeological site conservation through the creation of charters and other doctrine guidelines, a conference to discuss the realities of such standards was held in Cyprus in 1983

under the auspices of ICCROM and UNESCO.

In the context of the conference subject, that is, archaeological sites and finds, conservation was defined as traditionally concerned with the preservation of the physical fabric in a way that allows maximum information to be retrieved by further study and analysis, whereas restoration involves the representation of objects, structures, or sites so that they can be more visually “accessible” and therefore readily understood by both scholars and the public.

Therefore archaeologists have to be responsible for conservation on the sites they excavate, not only for collecting the removable objects, but also for leaving the physical fabric of the site (including architectural parts) in good condition. Iran is one of the countries that has accepted these charters. But what has happened at archeological sites to conserve remains before and after excavation in Iran, once this country joined UNESCO on September 1948 and accepted those goals mentioned above, and defined conservation as a UNESCO member?

There are four different approaches to conservation by archeologists for protecting architectural remains.

1. Archeologists can manage their excavation teams without the help of conservation architects, and try to carry out efforts to show how much they identify with conservation techniques. (The archeological sites are places for them to experience challenges.)
2. Archeologists can manage their excavation teamwork with the help of conservation architects, but the latter are not professional and just take part in the excavation as students to experience methods of conservation that archeologists introduce. So what methods the head of the team (an archeologist) offers for conservation activities will be followed.
3. When archeologists decide to work on historical sites, the Iranian Center for Archeological Research informs the Conservation and Restoration Office to cooperate with archeologists on project management before and after excavation. The architectural conservation experts (employees of this office) start to study the site and prepare accurate documents and designs for conservation.

This sort of cooperation usually continues for years. Therefore it may be inconvenient for archeologists to always have some researchers from another office interfering with their activities on the site.

4. There are no conservation architects involved in archeological teamwork before or after excavation. In this case when the digging activities are done and there is no more budget for ordinary conservation by archeologists, the Iranian Center for Archeological Research informs the Conservation and Restoration Office to perform any necessary conservation techniques on architectural remains. This means there is no responsibility for achieving any conservation results by the archeologists, who simply inform the Conservation and Restoration Office as to: where is the report of excavations, what was the necessity of excavation on the site, and where are the archeologists who excavated the site and took the

properties and removable remains for further studies.

Archeologists want to be the project manager and guide the teamwork, even that done by conservation architects and conservators, but they should have sufficient understanding of conservation principles and techniques and must assist them to manage the conservation of built heritage finds in sites to achieve successful cooperation.

So the main question is still remains unanswered: who is responsible for conservation of the built heritage found in archeological excavations?

You can easily find a lack of agreement on principles or norms between two the offices involved, and a lack of comprehension among archeologists about the need for protection of finds through sharing their studies with conservation experts, which destroys the built heritage and causes the principal damage especially in recent years.

Workshops, organized meetings, new norms, etc., can decrease these difficulties and we must keep it in mind that the cultural heritage does not belong to a particular group of people. In addition, the main concern of every conservation activity has to be working with integrity.

### **Current Methods of Conservation of Archeological Sites and Remains**

Heritage conservation is an action taken to sustain the value, meaning and significance of cultural resources from the past, for the use of present and inspiration of future generations. Heritage conservation performs protection and promotion of heritage significance or makes heritage meaningful to the community. (Australia ICOMOS, 1999)

It is as well to remember that the exposed monuments have the most urgent need for protection, especially from the infiltration of water.

Besides different sorts of cooperation for conservation between archeologists and conservation architects, there are five categorizations for conservation techniques on built heritage finds at excavated sites that have been developed in the last 100 years in Iran, as follows.

1. Reconstruction (anastylosis). Reconstruction is distinguished from restoration by the introduction of additional materials where loss has occurred. Reconstruction should not normally constitute the majority of a place. Generalized representations of typical features or structures should be avoided.

In this technique, most of the time archeologists remake the site using ancient materials scattered over the sites to build the built heritage and protect it.

The contribution of reconstruction to the conservation of monuments is fundamental, and it involves very important consideration while it is still possible by measurement and detailed study to recover the original form. New parts must be distinguishable, using other textures or materials from the original. **(figures 2, 3)**

When we do reconstruction, we must be sure about the correct shape and form of the

structure.

2. Reburial. Reburial is another technique, which archeologists rarely carry out for conservation of architectural remains in sites.
3. Protective shelters (artificial shelter or space frame). This is the only technique in which archeologists cooperate with conservation architects and also with other field experts. This technique may ignore the artistic/architectural values of the original remains when the shelter roofs cover large expanses without any formal spatial relationship to the protected remains.
4. Structural Protection (structural stabilization). Supporting with scaffolds is a familiar type of structural protection, with support provided by jacks and timbers. **(figure 8)**
5. Covering the top of architectural remains with material (plaster). In this technique the surface of architectural remains, especially the top, is covered with gypsum, plastic netting, mud-plaster, or mud brick.

Most of the time, mud will be washed down the wall by rain, and damp is the second essential danger which may occur due to this method. Also blocks of stone are used as protective elements to cover the top of stone walls. **(figure14)**

## **The Takhteh-Soleiman Complex**

### DESCRIPTION

The Takhteh-Soleiman complex is unique both in its artistic structure and in its role not only in the formation of pre-Islamic architecture in ancient Iran, but also as an image of the main religion (Zoroastrianism) in central and southwestern Asia. It is the only extant temple of the three principal fire temples of Zoroastrianism which dominated the religion in the pre-Islamic period in central and southwestern Asia.

### THE SITE

The site of Takhteh-Soleiman, 47° 14' 06" east and 36° 36' 14" north, is formed of a plain, surrounded by a mountain range, at an altitude of about 2,500 m above sea level, in the northwest of Iran about 45 km north/northeast of a town called Takab, and 750 km from Tehran. The nearest village to the site is Nosratabad which is located at about 1.5 km to the west of the main site of Takhteh-Soleiman.

It contains a volcano and an artesian lake as essential elements of the site. The fortified oval site of Takhteh-Soleiman covers an area of about 10 hectares. It is protected by its uniquely oval-shaped castle.

The complex of Takhteh-Soleiman, together with its landscape with over 2,000 years of history and its magnificent archaeological treasures, signify the cultural heritage of the ancient Iranian civilization, and was the first Persian heritage inscribed in UNESCO's list of World Heritage Sites after the Islamic revolution of 1979. **(figure 5)**

## HISTORICAL BACKGROUND

This heritage has remained from the Sassanid era (226-650 AD). Takhteh-Soleiman (Solomon's Throne) belongs to one of the three famous Sassanid fire temples. It is also where the kings of the Sassanid dynasty were crowned. This monument was probably built during the reign of King Pirooz (457- 484 AD), King Anoushirvan's grandfather.

Archeological excavations in the historic site of Takhteh-Soleiman have also revealed some remains of the Achaemenid and Median eras.

Takhteh-Soleiman and its archaeological artifacts, as one of the most notable and celebrated centers of Iranian civilization, has left behind its glorious days of prosperity, and is now lying in peace.

Historians believe the Mongol ruler, Abaqa Khan, great-grandson of Genghis Khan and Börte Ujin, converted to Islam after invading Iran and built a mosque on top of the castle, which was ruined in later times.

## ARCHITECTURAL REMAINS

All of the structural remains had been built within an oval-shaped rampart. The exterior rampart was 5 m thick, 14 m in height and had an outer circumference of 1,200 m, complete with 38 conical defense towers.

Takhteh-Soleiman has two entrance gates, from the south and the north. The outer wall is a remnant from the Sassanian period. During the Ilkhanid reign, a new gateway had been constructed adjoined with the former southern gateway. Within the oval rampart there are two square plots, placed along a single axis but with different centers.

In the center of the southern square there is a lake, and in northern square an ancient fire-temple, respectively. A vaulted hall, Eivaneh-Khosrow, is placed to the northwest of the lake, and another, Eivaneh-Garabaqeh-Khosrow, on the southern side. **(figure 4)**

This ancient site is best known for its Sassanid monuments, such as:

- Azargoshnasb Fire Temple
- Anahita Temple
- Hadaya (Gifts) Museum
- Zendan (Jail) Mountain
- Belgheis Castle

The main fire temple had four columns and one dome with crescent ceilings and plaster work. People used to pray in the temple for solving their problems. The Anahita Fire Temple, which has now only eight columns left, was unearthed by a group of archaeologists from Iran and Germany. Remains of the only castle dating back to the Ilkhanid period (1256-1353 AD) can also be seen in this historic site. **(figure 6)**

The castle has been constructed around a lake surrounded by stone hedges, in an oval shape stretching about 400 meters to the south and 200 meters to the west. The castle used to be the state capital of Azarbaijan in the Sassanid era.

Soleiman Prison, 5 km from the castle, has architectural works in stone and clay that date back to the first millennium B.C. This place used to be a prison for locking up demons on a mountain top during the days of Prophet Soleiman. There used to be an inactive volcano on its top as well. This prison was about 100 meters high and used to discharge an unpleasant smell of gas.

## STUDY OF DAMAGE

Takhteh-Soleiman was destroyed during the Roman conquest in 624 AD. In archeological surveys around the area of the fire temple a variety of coins, tiles, and a huge copper cooking vessel (a remnant of the Islamic period) were discovered. Arab and Mongol attacks were causes of damage to the walls and towers.

Studies have identified four main sources of damage to this site:

1. Geographical conditions and long winters in the region, causing extreme temperature changes for many centuries, have provoked gradual erosion of the stones used on the facade and destruction of their edges.
2. Since the place was deserted and received no attention, due to the lack of roofs, water from melted snow and from rain has penetrated into the walls. This has caused the collapse of a considerable part of the upper parts of the wall as well as other significant damage.
3. Occasional flooding of the lake in the center of the compound has caused damage too. According to existing evidence, there have been many violent floods during the past 14 centuries. They have washed the mortar, seriously damaging the foundations of the construction.
4. Earthquakes have been another major cause of destruction, considering the height of the towers and the ramparts which reached 18 m, and the heavy weight of the covering layer, which was not properly connected to the main retaining wall. Earthquakes have been the main cause of the fall of stones from the façade of the wall, or of its collapse.

## CONSERVATION AND PROTECTION MEASURES

The complex of Takhteh-Soleiman has been the object of excavations and restorations from 1959 to 1978. Due to its great importance, the complex was recognized in 1993 by I.C.H.O (Iranian Cultural Heritage Organization) as one of the ten grand national projects for conservation of the historical monuments of Iran.

In 2003, after its inscription in the World Heritage List, in order to achieve the aims of restoration and protection defined for world heritage activities, three items were identified as short-term and mid-term activities in the site as followed:

- Management
- Project activities
- Various activities

Management included improving the sanitary services, improving road conditions, constructing a hotel, keeping up contacts with local organizations, etc.

Project activities were defined as protection of the ecosystem, fauna, etc., and various other activities include general cleaning of the site, covering the historical structures, surveying, continuing archaeological research, etc.

Conservation of archaeological remains was studied as part of the various activities, and a description of the conservation methods used in historical structures from 1959 up to 2008 lists the following.

- In order to prevent further destruction of the towers and the rampart, in the first stage measures must be taken to stabilize them, so the exposed parts should be covered by clay and straw as appropriate. **(figures 7, 11)**
- In order to prevent the penetration of moisture, and also to examine the hidden parts of the enclosing wall, piles of earth at the foot of the rampart must be removed.
- Consolidation of damaged walls and rampart (stone and brick walls). **(figures 7, 11, 12)**
- Reconstruction of ruined parts of rampart according to technical and documented evidence. **(figure 9)**
- Systematic collection of the fallen stones in the site.
- Setting up a metal scaffold and roof (shelter) for preservation at three spaces in the site. **(figure 13)**
- Covering the exposed parts of the walls with 5-10 cm of clay and straw plaster. **(figure 14)**

## **THE PROBLEMS OF CONSERVATION ACTIVITIES**

Today, the Takhteh-Soleiman complex is almost in a good condition and state of conservation, the only main problem which causes other problems being the hurried activities for attracting tourism under the pressure of Iranian Cultural Heritage, Handicrafts & Tourism Organization (ICHHTO). This is going to be a major reason for difficulties at this site, and moreover, archeologists must carry out the majority of conservation and restoration activities according to their own plans, the same as for most archeological sites in country. Providing a future management plan will be a major step toward solving the problems.

The following list defines some of the problems in detail.

- Managing for tourism but not for conservation causes problems such as setting the paths for visitors near the site, probably over cultural remains, without study and rescue measures.



- Using fallen stone around the site for reconstruction of some parts of the enclosure, while there is available material in the site, because it would take more time to carry stone from a quarry.
- Leveling part of the southern path leading access to the site in order to facilitate transportation for staff and tourists.
- Continuing archeological excavations in every part of the site.

### **Conclusion**

We need to make increased efforts to identify techniques for monument conservation in archeological sites, and as this has nothing to do with the archeologists' studies, this should be carried out by conservation architects, working in cooperation with archeologists, and as the conservation of buildings, places, sites, or structures will also be different in accordance to the building type, particular situation, and use, etc., it is a creative process.

There is no international law governing conservation, and local centers of protection are responsible for architectural remains in architectural sites under cultural heritage management in Iran.

### **References**

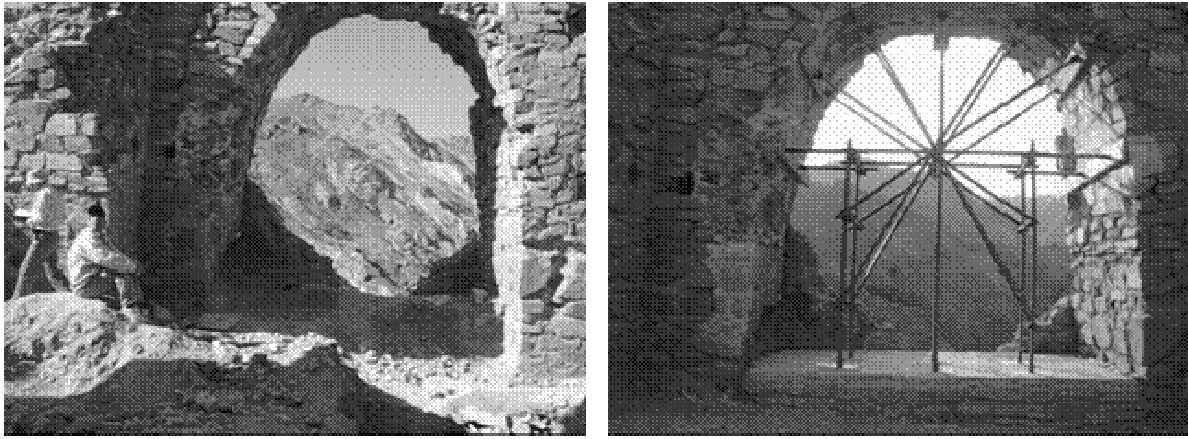
- Australia ICOMOS. 1999. *The Burra Charter: The Australian ICOMOS Charter for Places of Significance*. Canberra, Australia.
- ICOMOS. [www.international.icomos.org](http://www.international.icomos.org)
- International Centre for the Study of the Preservation and Restoration of Cultural Property. 1979. *The conservation of cultural property*. Rome: Unesco.
- Frank G. Matero. 2002. "Heritage, conservation, and Archaeology: An introduction." Archaeological Institute of America.
- Aylin Orbasli. 2007. *Architectural Conservation: Principles and Practice*. Blackwell publishing.

### **Definitions**

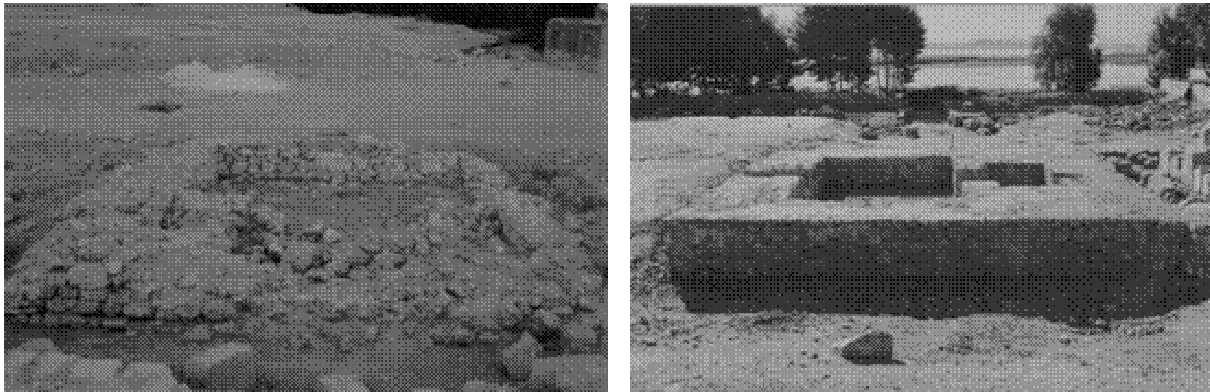
- **adaptation:** modifying a place to suit it to a compatible use, involving the least possible loss of cultural heritage value
- **conservation:** the processes of caring for a place so as to safeguard its cultural heritage value
- **cultural heritage value:** possessing historical, archaeological, architectural, technological, aesthetic, scientific, spiritual, social, traditional or other special cultural significance, associated with human activity
- **maintenance:** the protective care of a place
- **material:** physical matter which is the product of human activity or has been modified by human activity
- **place:** any land, including land covered by water, and the airspace forming the spatial context to such land, including any landscape, traditional site or sacred place, and anything fixed to

the land including any archaeological site, garden, building or structure, and any body of water, whether fresh or seawater, that forms part of the historical and cultural heritage

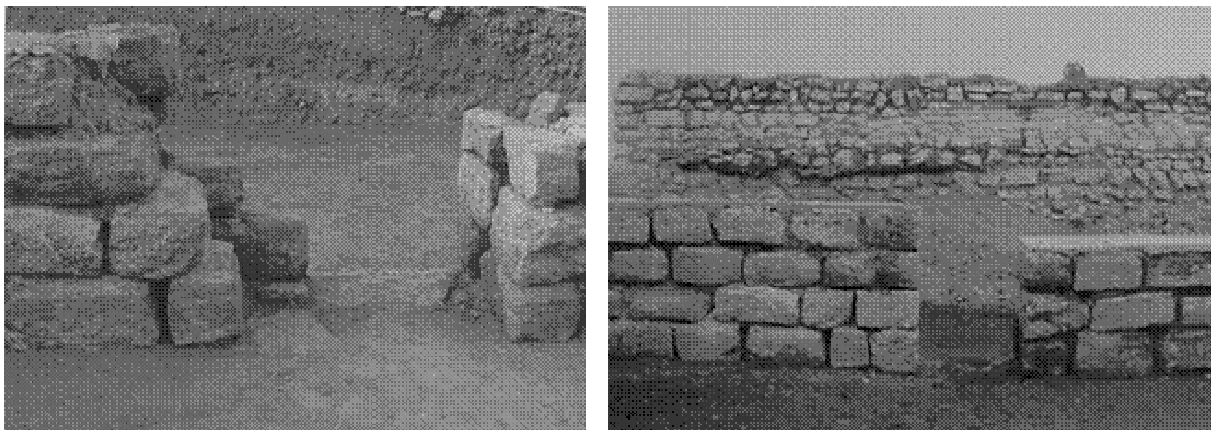
- **preservation:** maintaining a place with as little change as possible
- **reassembly (anastylosis):** putting existing but dismembered parts back together
- **reconstruction:** to build again in the original form using old or new material
- **reinstatement:** putting components of earlier material back in position
- **repair:** making good decayed or damaged material
- **restoration** returning a place as nearly as possible to a known earlier state by reassembly, reinstatement and/or the removal of extraneous additions
- **structure** any building, equipment, device or other facility made by people and which is fixed to the land
- **stabilization** the arrest of the processes of decay



**Figure1.** Supporting Scaffolds-Khorasan



**Figure2.** Reconstruction on Bishapour site-Fars



**Figure3.** Reconstruction on Bishapour site-Fars

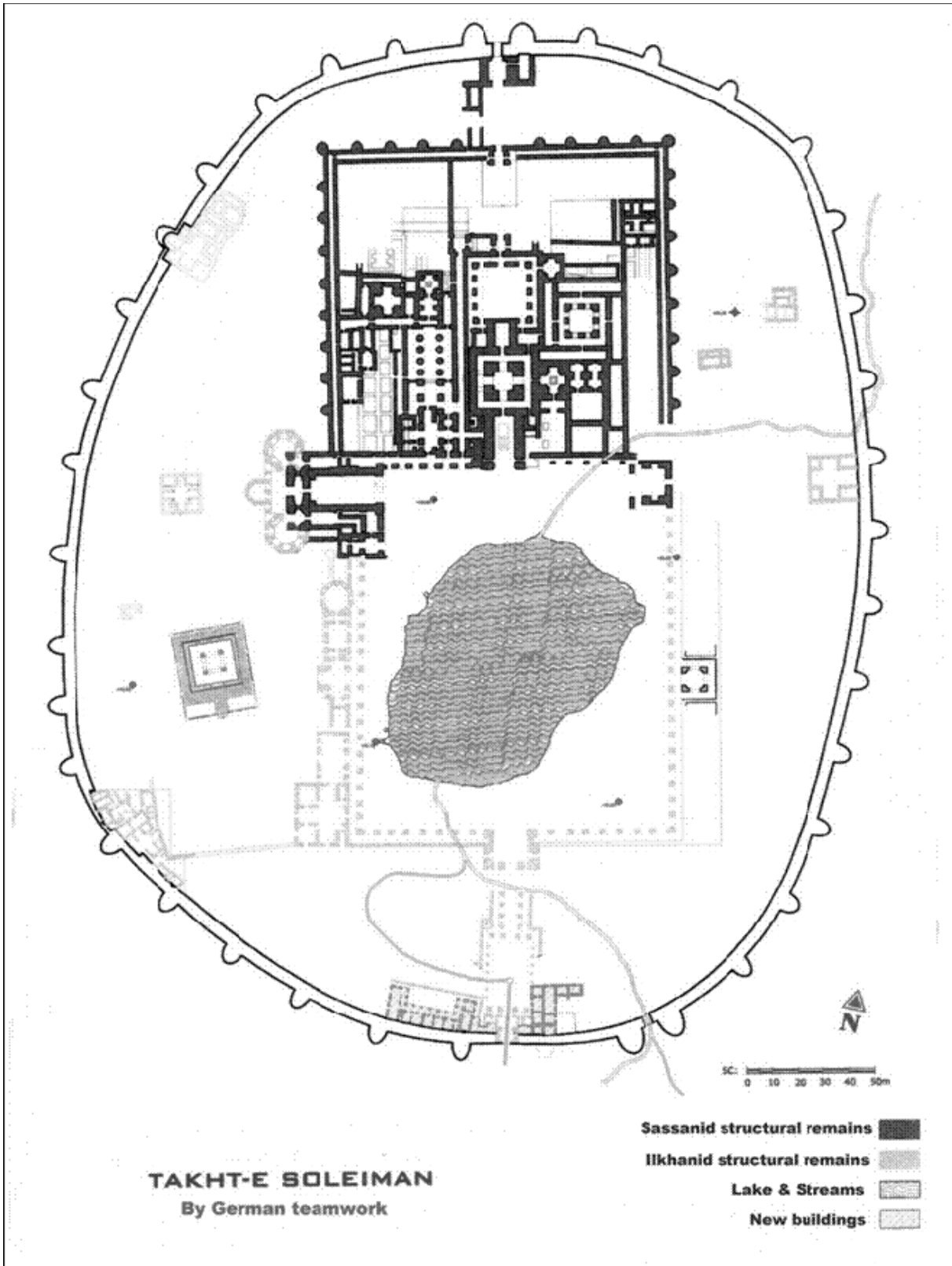
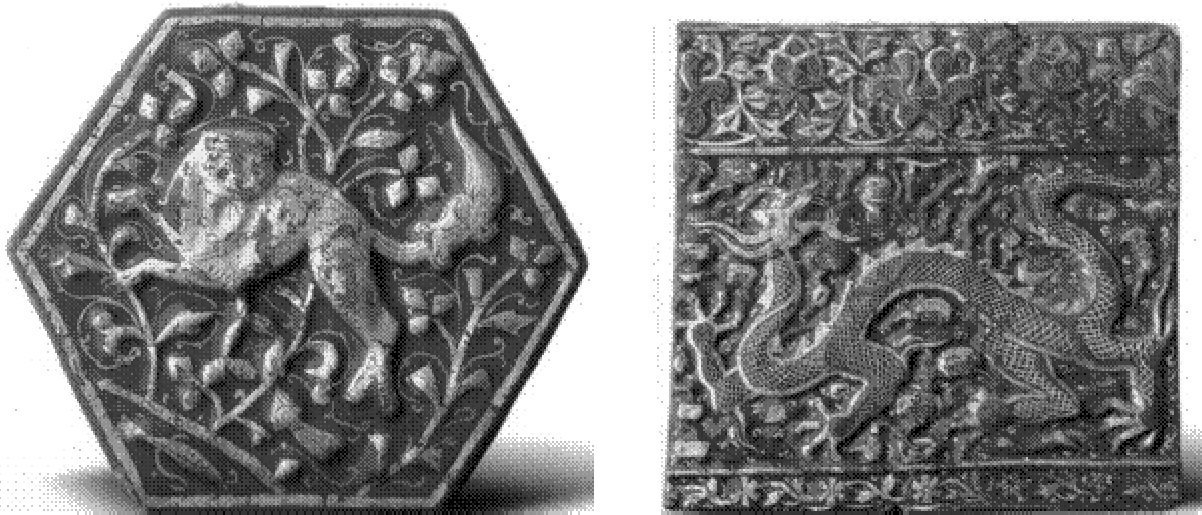


Figure4. Plan of Takhte-soleiman site



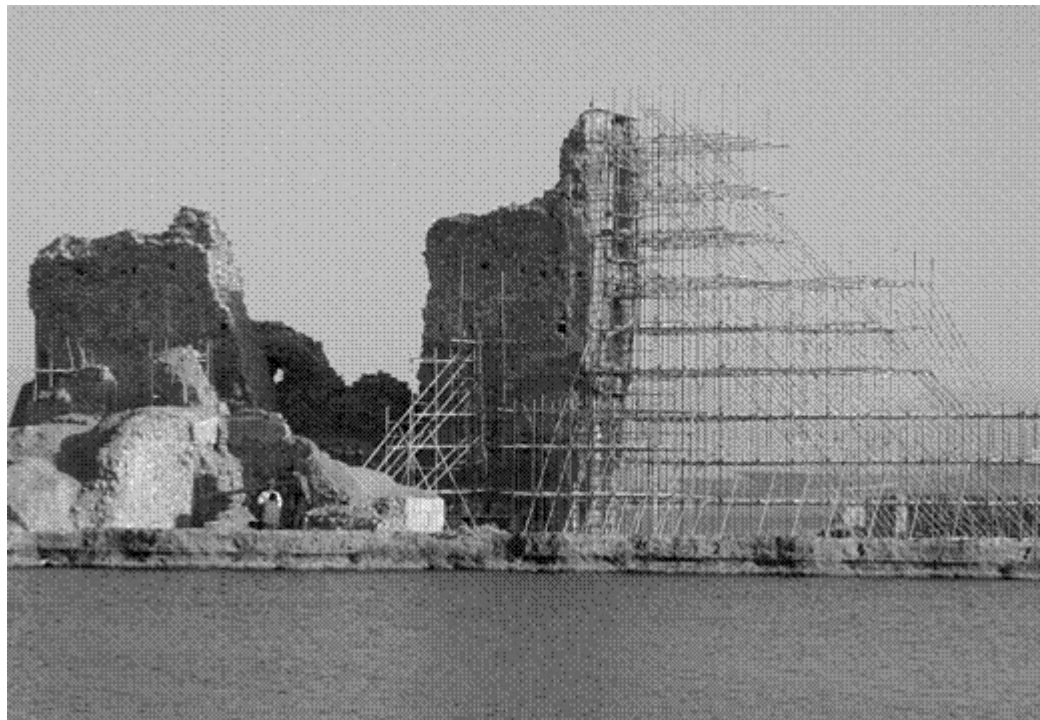
**Figure5.** A view of Takhteh-Soleiman site



**Figure6.** Luster-printed tile, Il-khanid period- (7th c.AH-13th c.AD)



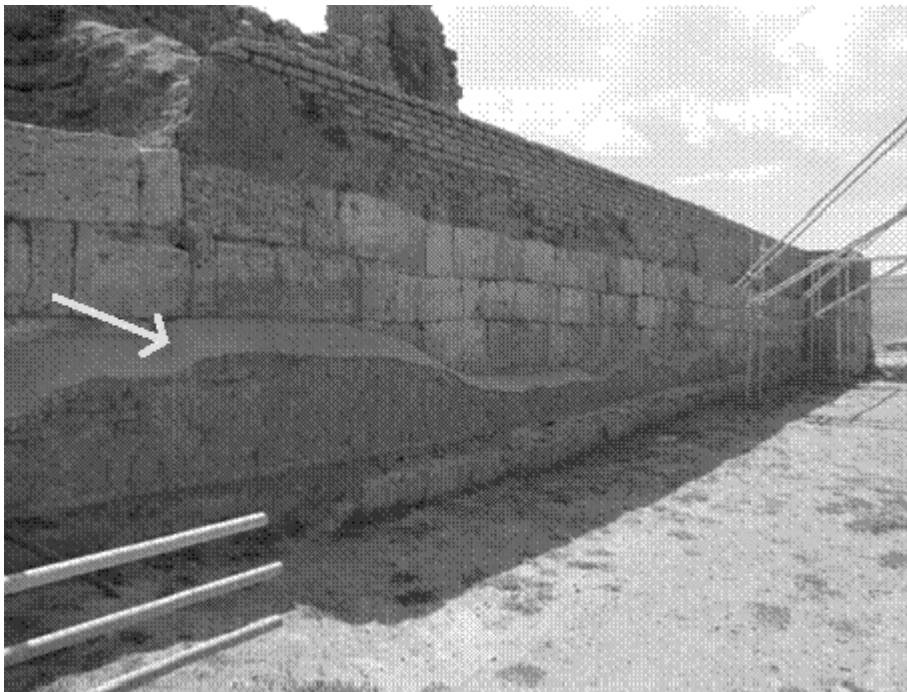
**Figure7.** Consolidation and stabilization of the ruined parts of the rampart



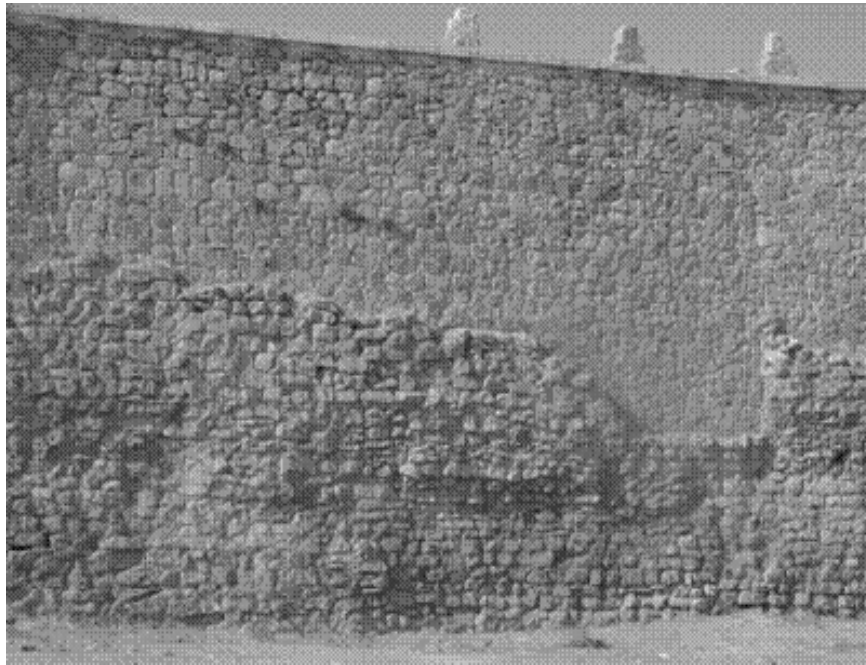
**Figure8.** Setting up a metallic scaffold on the *khosro* Eyvan



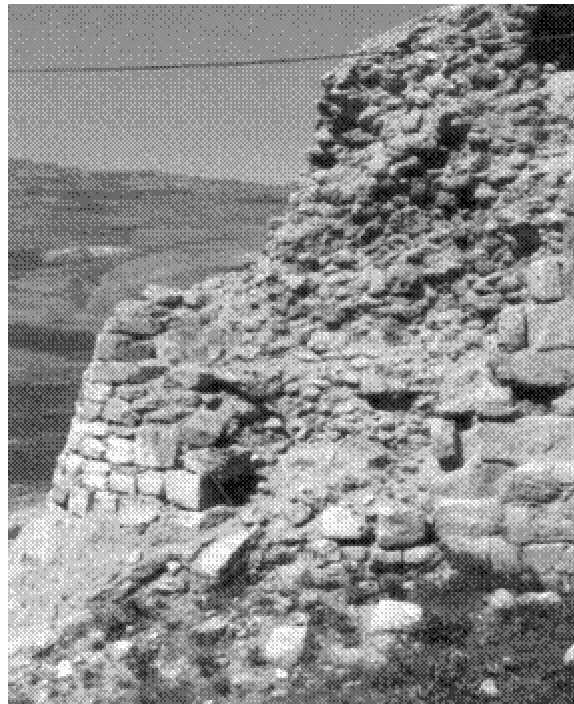
**Figure9.** Reconstruction of the walls



**Figure10.** Stabilizing with traditional gypsum plaster of places of tiles on the walls

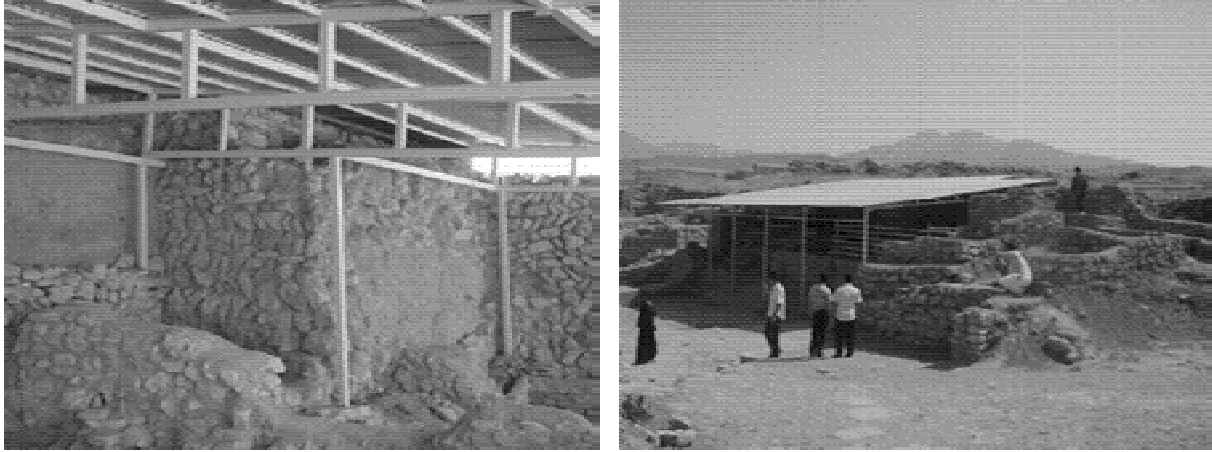


**Figure11.** Consolidation and stabilization of the ruined parts of the rampart

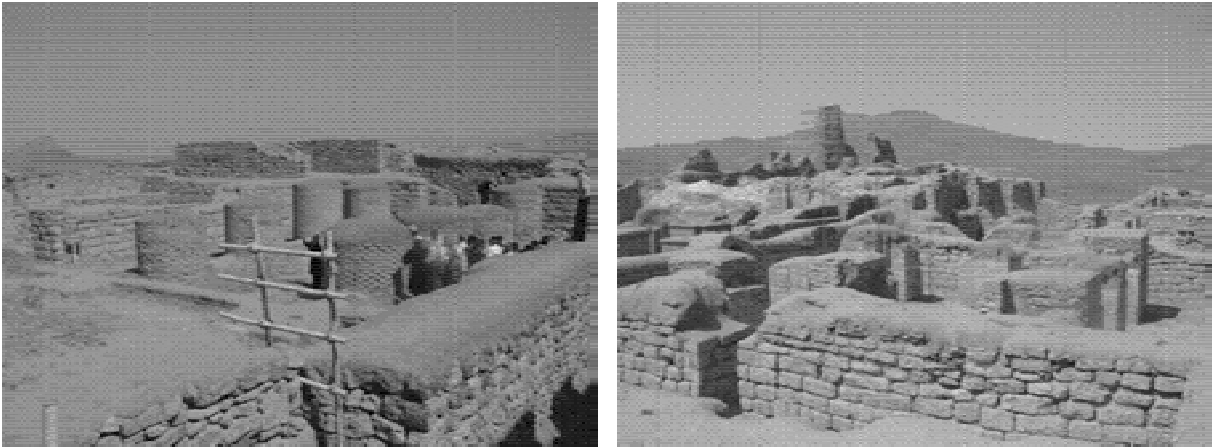


**Figure12.** Consolidation and stabilization of the ruined parts of the rampart





**Figure13.** Metalic roof (shelter) on remains of Ilkhanid bath



**Figure14.** Covering the exposed parts of walls by clay and straw plaster in 5-10cm

# Myanmar

## Daw Nyo Nyo Than

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## Problems and Needs for Cultural Heritage Protection and Restoration Activities in my Country

### 1. Introduction

Myanmar, one of the countries of Southeast Asia, is situated in the western part of the Indochina peninsula, between the latitudes of 9° 32' and 28° 31' north and longitudes of 92 ° 10' and 101 ° 11' east. The total area within its boundaries is 261,228 mi<sup>2</sup> (approximately 677, 000 km<sup>2</sup>). There are four main categories of regional topography in the country: mountains and valleys, plains, plateaus, and costal regions. Owing to their geographic and climatic conditions, the cultural heritage of each region has some differences, but the national identity is quite distinct.



## **2. The Ministry of Culture**

The Ministry of Union Cultures was established in March 1952. On 15 March 1972, the Ministry was given its new name as the Ministry of Culture, comprising of the following departments:

- (1) The Office of the Minister for Culture
- (2) Department of Fine Arts
- (3) Department of Archaeology
- (4) Department of Historical Research

The Department of Historical Research was transferred to the Ministry Education on 17 December 1987, and the Department of Archaeology was transferred to the Ministry of Planning and Finance on 16 March 1987. The Department of Archaeology was then transferred back to the Ministry of Culture on 16 March 1992 and, at present, the Department of Historical Research has also been transferred back to the Ministry of Culture since 2007.

### **2.1. The policy of the Ministry of Culture**

Since the formation of the Ministry of Culture in 1952, a variety of cultural activities have been promoted. The policy of the Ministry of Culture is “to love and cherish the country and the people by taking pride in its own good traditions as well as by preserving, exposing and propagating Myanmar Cultural Heritage.”

### **2.2. Work programs**

To implement the abovementioned policy, the following work programs have been laid down and are being carried out:

- (1) To preserve the cultural heritage of Myanmar with a view to the emergence and prevalence of Myanmar style and culture.
- (2) To produce works of fine arts which support the progress of the state and the public.
- (3) To enable the artists and artistes so that works of fine Arts are not for entertainment only, but to promote knowledge; to eliminate the idea that “a work of art is for the sake of both the artists and the public.”
- (4) To educate the public to be fully imbued with the prevailing ideas.
- (5) To help develop unity, nationalistic spirit, and patriotism among the people.
- (6) To help the elimination of decadent culture.
- (7) To support the promotion of the morale and morality of the public
- (8) To help develop a united spirit in displaying culture.
- (9) To make endeavors in promoting the development and standard of culture.

### **3. Background history of the Department of Archaeology, National Museum and Library, and its organization**

The Epigraphy Office of Myanmar was founded in 1902 under the supervision of the Archaeological Survey of India. After independence the Epigraphy Office was reformed as the Directorate of Archaeology in November 1954. In 1972, under the new administration system the Directorate of Archaeology became the Department of Archaeology. In 2007, the Department of Archaeology combined with the National Museum and Library. After that, the name became the Department of Archaeology, National Museum and Library.

The Department of Archaeology was set up with the following three divisions.

- (1) Research and Training division
  - Excavation Section
  - Epigraphy Section
  - Library and Archives
  - Antiquities and Museum Section
- (2) Administration and Finance Division
  - Administration Section
  - Finance Section
- (3) Conservation of Myanmar Cultural Heritage Division
  - Conservation Section
  - Cultural Heritage Region Section

The Ministry of Culture has laid down the following objectives:

- (1) To protect and preserve Myanmar Cultural Heritage.
- (2) To reveal and present Myanmar Cultural Heritage in order to arouse the spirit of loving Myanmar Cultural Heritage so that national patriotism can be promoted among Myanmar people.

The main objectives of the Department of Archaeology are as follows:

- (1) To reveal the lifeways of ancient people, such as religious life, social life, economic life, etc.
- (2) To protect, preserve, restore and conserve cultural monuments, antiquities of historical evidence, and ancient sites, as they are not only the national cultural heritage but also world heritage which the people of the world should protect, preserve, restore, and conserve.
- (3) To restore ancient monuments and create a cultural landscape which can attract local and foreign tourists. Also, to enable local and foreign researchers to view and enjoy the ancient cultural monuments and antiquities of historical evidence already preserved, and to raise the

value of Myanmar ancient historic culture.

- (4) To uplift the morale of every citizen, to foster and develop the awareness of preservation of Myanmar ancient cultural heritage as a national responsibility, and thus arouse in every citizen the spirit of loving his own country, nationality, and culture.

The department is implementing the following functions in order to fulfill the abovementioned objectives.

- (1) To undertake field research and excavate in order to learn about prehistoric cultural assets.
- (2) To undertake field research to find out historic ancient sites.
- (3) To excavate in those historic sites in order to reveal the ancient culture.
- (4) To collect, preserve, and systematically study the antiquities.
- (5) To supervise the registration of cultural properties and antiquities in order to control illicit trafficking, transfer, export, and import.
- (6) To record and keep an inventory of cultural heritage monuments and sites.
- (7) To preserve Myanmar cultural heritage monuments.
- (8) To preserve mural paintings and stucco carvings by scientific methods.
- (9) To collect, decipher, and carry out research on ancient stone inscriptions, ink inscriptions, and inscription on bells.
- (10) To write and publish research papers, books, and periodicals to educate the public.
- (11) To display Myanmar cultural properties in archaeological museums.
- (12) To create pleasant Myanmar ancient cultural heritage sites.
- (13) To educate the public to cherish the value of ancient cultural heritage.



Stone tools of upper Myanmar

#### 4. Cultural heritage in Myanmar

As to archaeological evidence, the heritage of Myanmar goes back to the Stone Age culture. These are known as Anyathian and Pyandalin Cave cultures. The former is assigned entirely to the Old Stone Age; the other shows Palaeolithic sequences and also a somewhat neolithic stage in Myanmar. These cultural remains are known widely over the entire area of the country, from river valleys, plateaus and part of the coastal trip.

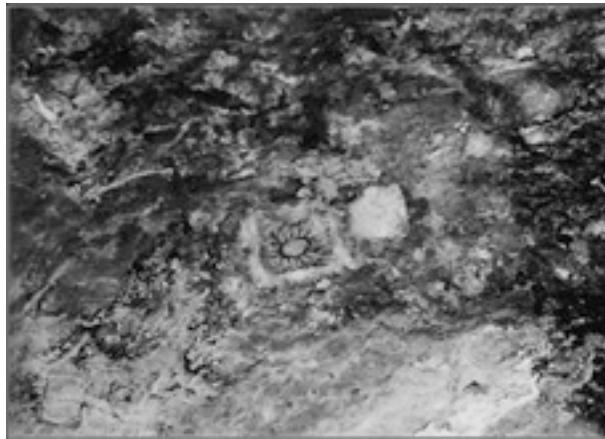
In recent discoveries, artifacts made of copper and bronze which may indicate the transformation from the Stone to the Bronze Age have been found in central Myanmar. Apart from the prehistoric period, ancient Myanmar also had a flourishing development of city states

into civilization. These firmly reveal the cultural continuation from the protohistoric to the historical periods.

#### **4.1. Stone Age sites and burial sites**

##### **4.1.1. Pyadalin excavation and research (1996)**

Pyadalin cave culture developed in South Shan state. According to a radiocarbon test, the bones unearthed from these caves were found to be 11,000 years old. Accumulated ash in the hearths inside each cave is about 4 feet deep. There are two caves; Cave 1 has animal figures, human hands and a blazing sun drawn with red ochre on the wall. The themes also conform to the ritualistic art in the so-called Late Paleolithic time. We studied these and excavated a test pit in 1998. The findings revealed stone implements, potsherds and ash.



With the evidence of archaeological finds, mural paintings can be traced back to Neolithic period in Myanmar. The Pyadalin cave rock painting is the earliest archaeological evidence of cultural development in Myanmar.

##### **4.1.2. Nyaunggan site**

In 1998 a burial site at Nyaunggan village, Butalin township, Monywa district, Sagaing division, Upper Myanmar was discovered. After that the Archaeology Department, Mandalay branch excavated in January 1998. The author was a member of excavation team. The excavation revealed 43 skeletons together with stone bracelets, gastropod beads, animal bones, bronze tools, and earthenware pottery. A group of international scholars was invited to study the site, and after a workshop where they gave their opinions, it was dated to 1000 B.C, contemporaneous with the last phase of the Bronze Age in Thailand, Cambodia and Vietnam.



#### **4.1.3. Monhtoo Site**

The Archaeology Department of Myanmar (Mandalay branch) subsequently excavated at the Monhtoo site. This site is located 3.2 km northwest of Monhtoo village, Butalin township, Monywa district, Sagaing division. The Archaeology Department's excavations have revealed incomplete skeletons, broken pots and iron objects (spears), bronze objects (bracelets), and semi-precious stone beads. There is no radiocarbon date. Although the burial practices were like Nyaunggan site, and the type and forms of pottery were similar, it is hard to say that it was a Bronze Age site. It was probably from the early Iron Age.

#### **4.1.4. Myinoohle Site**

The Archaeology Department excavated the Myinoohle site in 1999, which is located about 1.6 km north of Myinoohle village, Mahlaing township, Meikthila district, Mandalay division, Upper Myanmar. The excavation revealed 41 skeletons, some of which were laid east-west, and some north-south. Their heads were oriented to the east and the north. Excavated finds are the skeletal remains and associated bronze and iron objects, earthenware, and shells. There is no radiocarbon date, but based on the earthenware and iron spear heads, this site was of the Iron Age.

#### **4.1.5. Koke-ko-khar-hla Site**

Koke-ko-khar-hla is a Bronze Age site located 1.6 km east of Koke-ko-khar-hla village, Wundwin township, Meikthila district, Mandalay division. The excavated finds included 48 skeletons, plus associated earthenware, iron objects, stones and bone projectile points, and other types of grave potteries. Study of the excavated finds suggest that the Koke-ko-khar-hla site flourished during the transitional period from the Bronze to the Iron Age.

#### **4.1.6. Hnawkan Site**

In 2001, the author contracted an excavation at the Bronze Age culture site of Hnawkan, and was also a member of excavation team. The site is situated at MaHlaing township, Mandalay division. The excavation brought to light 76 skeletons, iron spear heads, earthenware, stone beads, bronze objects, and shell including cowry. After the excavation was finished we continued with conservation, preservation, and publication of the excavated finds. According to the findings, the site was estimated as probably ranging to the Iron Age within protohistoric times.

#### **4.1.7. Ywathin Site**

The Ywathin Bronze Age site at Ywathin village, Pyawbwe township, Yamethin dsistrict, Mandalay division, was excavated in 2002. The excavation revealed 48 skeletons associated with animal bones, earthenware, iron and bronze objects and stone objects. According to scientific dating the site was utilized between 400 and 300 B.C.

#### **4.1.8. Myo Hla Site**

Excavation of the Myo Hla Bronze Age site at Myo Hla village, Yamethin township, Mandalay division, revealed 33 skeletons associated with iron spear heads, a bronze pot, earthenware, stone projectile points, and bracelets which were made of animal long bones.

### **4.2. Ancient Pyu cities**

#### **4.2.1 Halin**

Halin is the site of an ancient Pyu city-state. It lies in the dry zone where the annual rain fall is less than 30 inches. Halin was one of the garrison towns guarding the north. The author had the experience of excavating structural remains of a burial center built by the Pyu people between the 2<sup>nd</sup> to 8<sup>th</sup> centuries A.D. Excavated features are a town wall, town gates, town moat, funeral home, monastery, palace platform, and the embankment of the Naga Yon Tank still in use. Excavated artifacts include the following:

- (1) Varieties of pottery
- (2) Stone objects and stone seal
- (3) Coins
- (4) Beads (ornamental)
- (5) Iron objects
- (6) Skeletal remains
- (7) Burial urns

Halin was supposedly destroyed by fire.

#### **4.2.2. Beikthano (Myo Haung)**

This is an old site to the north of Kokkogwa, 16.09 km northwest of Taungdwingyi, Magwe district. Masonry structures with massive walls constructed with large-sized bricks, uninscribed silver coins bearing symbols of prosperity and good-luck, burial urns of plain and exquisite designs, beads of clay and semi-precious stone, decorated domestic pottery, and iron nails have been recovered at the Beikthano site. The radiocarbon date of Beikthano Phase I is  $1950 \pm 50$ , and the date for Phase II is  $1650 \pm 50$  B.P. From these results, it has been surmised that Beikthano was at its apex between 1<sup>st</sup> and 4<sup>th</sup> centuries.

#### **4.2.3. Tagaung**

The ancient city of Tagaung was located on the eastern bank of the Ayeyarwady river in Thabeik-kyin township, Pyin-U-Lwin district, Mandalay.

Systematic excavations were conducted at Tagaung in 1967-68, and the items found during the



excavations included dolomite Buddha images of the Bagan period, Bagan-type pottery and terracotta beads. There were also stone images of the Buddha, spouted jars, earplugs and iron arrow heads, all placed in the Bagan period. Excavations were undertaken again at Tagaung from 2003 to 2005, yielding more artifacts dating from the first millennium A.D., during the Pyu era of Upper Myanmar.

#### **4.2.4. Sriksetra**

Sriksetra (18° 75' north latitude and 95° 25' east longitude) is 8.05 km southeast of Pyi. Of all the ancient cities in Myanmar, it is the biggest. It was a Pyu town built probably around the later half of the 2<sup>nd</sup> century B.C.



Baw Baw Gyi Stupa

Excavations at Sriksetra have unearthed stone sculptured Buddha images, stone sculptures of Brahmanical gods, large stone funerary urns, gold-leaf manuscripts, clay and stone beads, a silver casket having four Buddha figures on the four sides, embossed Buddha images, many terracotta votive-tablets, and stone slabs bearing Pyu inscriptions.

Excavated structures consist of religious buildings, residential buildings, ritual buildings, workshops and gateways. The earliest inscriptions in Myanmar are found at Sriksetra.

#### **4.3. Bagan Period**

Bagan is one of the most amazing and richest archaeological sites in Asia. The ancient temples of Bagan stand today as they have been standing for a thousand years. The age of Bagan was from A.D. 107 to 1369. It is situated on the eastern bank of the Ayeyarwaddy River in the dry zone of central Myanmar.

The site of the palace mound, as identified from a stone inscription, was excavated for research. Excavation of King Kyansittha's palace site started from 1989. Large pits for pillars were found on the eastern part and on the southern side of the road. Moreover, circular stone slabs for the bases of pillars, an old well, and some pieces of wood were also found. According to the conditions found at King Kyansittha's palace site, buildings had been built three times during three historic eras of the history of Myanmar.



Bagan is well known for the existence of great, magnificent, and wonderful temples and stupas. Most of the stupas and temples in Bagan are embellished with mural paintings and stucco carvings. In Bagan, there are 442 temples with mural paintings.

We can learn the following about the Bagan era and its people from the Bagan mural paintings:

(1) Socio-economic life

- Exchange system
- Way of life
- Utensils
- Subsistence
- Military life

(2) Religion and beliefs

- Varieties of Buddhist monuments
- Sects of Buddhism

(3) Fine Arts

- Art
- Costume
- Musical Instrument
- Design, form, and function

In undertaking the restoration of damaged Bagan ancient monuments, these mural paintings are very useful for the conservators. The conservators can study the designs of Bagan period temples or stupas from the paintings as reliable references.



In Myanmar, palaces were built throughout the historic periods. The Bagan palace site has been excavated since 1990. No substantial archaeological evidence was found which would enable us to conjecture about the superstructure of the palace. The earliest record which mentions the construction of a palace during the Bagan period is the “Inscriptions of King Kyansittha’s Palace construction.” These stone inscriptions recorded the traditional rites and ceremonies practiced in constructing King Kyansittha’s palace at the Bagan Kingdom. In the inscriptions, mention is made in fine detail about how the selected timbers were carried to the palace site, how the wooden posts were erected on certain auspicious times and dates, how the Brahmins who presided over the ceremonies performed the rituals, and so on.

Apart from these records, there are also *parabeik* or folded manuscripts about the palaces of Myanmar kings. In the time of Myanmar kings, before founding a new city or building a new palace, the king ordered a learned minister to prepare drawings and plans of the city and palace on the *parabeik* and the minister had to present these drawings and plans to the king. Only when the king approved these plans and drawings was the royal city founded with religious ceremony. Similarly, the palace buildings were built after performing ritual and religious ceremony. These *parabeik* are called the Myodaw, and Nandaw Pon Parabeik, the drawings of the city plan and palaces designs presented to His Majesty, King Amarapura.

Out of many ancient palaces which were built throughout the Myanmar historical periods, the palaces of four ancient cities have been selected and reconstructed, namely Kanbawzathadi palace of Bago (Hanthawaddy dynasty), Shwe-bon-yatanar palace of Shwebo (Ratanatheinga), Mya-nan-san-kyaw golden palace of Mandalay (Ratanar-pon) and King Anawyatha’s palace of Bagan. The selection is made on the basis of substantiality of the records supported by archaeological evidence. The reconstruction of palaces is not conjectural. Reconstruction is made on the original design with reference to ancient literary records and *parabeik* of palace drawings with measurements.

There are a large number of historical sites, monuments, pagodas, temples, stupas, and

monasteries scattered throughout the country. These monuments are mostly made of stone, brick, and wood depending on the ease of availability of the material. For the time being many of these monuments have been destroyed due to many causes such as time, climate, vandalism and neglect. Conservation is the means by which the true nature of an object is preserved. The aim of conservation is to control the environment to minimize the decay of objects. In treatment, decay is arrested and where possible, the objects are stabilized against further deterioration. Nowadays, various items of cultural heritage are facing the greatest challenge for prevention of decay and protection. Most of these cultural properties are seriously endangered from the following:

- (1) Long duration of time
- (2) Natural disaster (or) accident
- (3) Human vandalism
- (4) Rapid change due to urban growth

All these phenomena are threatening various cultural properties, such as the material culture and cultural landscape.



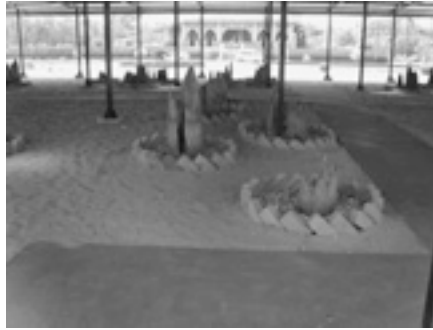
Flaking (of pigment and render) of a mural painting

#### **4.4. Rakhine culture**

Most of the ancient monuments in the Rakhine Cultural Heritage Region are built especially of stone blocks, and the architectural design is different from Bagan architecture. The Department of Archaeology has already conserved most of the monuments according to the original style.

#### **4.5. Hanthawaddy Period (Bago)**

Bago was an ancient capital of the Mon Kingdom in the 15<sup>th</sup> century. In Bago, excavation of the Kanbawzathadi Palace site of the Sinphyumyashin King Bayintnaung, the founder of the second sovereign state of Myanmar, was started by the Archaeology Department in 1990. The author conducted conservation work on excavated teak posts at the palace with steel bolts and chemical treatment in May 2008.



## 5. Inventory of ancient monuments

The author also has experience in inventory work on ancient monuments, conducted in Mandalay division, Upper Myanmar and Yangon (Than Lwin) division, Lower Myanmar.

Mandalay is historically known as the last royal capital of the Myanmar kingdom. Mandalay was founded by king Mindon in 1857. The city is now almost 150 years old and it is the country's second largest city.

The author has also done inventory work at Than Lwin, Yangon division. Inventory is basic work for the research, analysis and preservation of archaeological sites and remains.



The unfinished Mingun Pagoda

The Bagaya Monastery building, situated in Mandalay division, was built by the Queen Ma Nu, Chief Queen of king Mindaon, the second to last king of the Konbaung dynasty. The building is built of teak and is rich in carvings and reliefs. This is now a grand museum, rebuilt in its original style, housing hundreds of Buddha images and other antiquities. The lower floor is a *pitakataik* or library for old palm leaf and paper *parabeik* manuscripts. The author served as the official responsible for the exhibition, preservation, and conservation of Bagaya Monastery in 1997-1998.

## 6. Legal process of protection of cultural heritage in Myanmar

Myanmar was annexed by the British in stages, in 1824, 1852, and 1885. After annexation was completed in 1885, the entire country was put under the administration of the Viceroy of India and treated as a province of India. The Epigraphy Office, now the Department of Archaeology, was established shortly thereafter.



Bagaya Monastery

Myanmar gained her independence in 1948.

During the transitional period, Myanmar kept the name as the Epigraphy Office, and continued to follow the Indian legal processes of conservation and protection of cultural heritage. In 1954 the government changed the name from the Epigraphy Office of Burma to a new Department of Archaeology.

As a result, the aims and functions of Department of Archaeology became broader. The management of protection for the cultural heritage is carried out on a national level, as well as at the regional and local community levels. After independence, the management of protection for cultural heritage has been promoted mainly the government, which directs policy for the regional level and local communities. As result, the government has enacted the following laws and acts.

- (1) The Ancient Monument and Antiquities Preservation Act of 1957. This was the first act for the protection and preservation of Myanmar's ancient monument and antiquities. It was significant task after independence.
- (2) The 1962 Amendement to the Act for the Preservation of Ancient Monument and Antiquities. This was proclaimed by the law No. 28 of the Revolutionary Council.

Together these two legal actions designate the following.

- (1) If the Director General of the Department of Archaeology considers any ancient monument should be protected by the government, he can propose to the government to declare that ancient monument as a "Protected Monument."
- (2) With the recommendation of Director General, the government will declare the list of protected monuments by notification.
- (3) With the permission of the government those monuments will be marked as protected monument.
- (4) If there is no owner, the Director General will claim to be protector for the monument.
- (5) No new buildings are to be constructed in the environs of ancient monuments.
- (6) No private person or organization is allowed to alter or destroy the cultural heritage.

- (7) Protection is to extend to the antiquities or objects of cultural heritage which are of significance to Myanmar.
- (8) More serious penalties are established for those who break the laws protecting antiquities and ancient monuments.

At present, the State Peace and Development Council has also approved the Protection and Preservation of Cultural Heritage Region Law (10, September 1998).

## **7. Conclusion**

In Myanmar, conservation procedures have been implemented in accordance with the nature and circumstances, depending on the archaeological value, historical value, architectural value, and aesthetic value of the monument in danger. Our department always consults with local and foreign experts. Moreover we seek information from the local public. We systematically employ chemical methods, engineering techniques, and video and photo recording as well.

As far as the causes of damage are concerned, it has been found that the climatic and environmental factors, bio-deterioration, human factors, and other natural phenomenon are the main causes of damage to the cultural heritage.

With the passing of time, ancient monuments and antiquities have been destroyed by light, heat, humidity, air pollution, oxidation and salt, sound and vibration, insects, fungus and plant growth. Furthermore, mishandling by people, such as offering votive flames, whitewashing with limestone, and pressing their hands on the wall paintings, can also destroy the cultural heritage. In the same way, negligence on the part of people, and vandalism and smuggling of the antiques can cause their destruction or loss.

The Ministry of Culture endeavors to conserve the cultural heritage not only by implementing suitable techniques and technology, and by legislating against the vandals and smugglers, but by educating people through notifications and other mass media. In addition, the Ministry collects a variety of national heritage by rewarding those who willingly give up the heritage to the state.

In the year 1975, the Bagan earthquake destroyed not only the structure but also the mural paintings in the Bagan monuments. Under those circumstances, with the advice of an architect restorer provided by unesco, a conservation project was drawn up in May 1981 which was officially approved by the Myanmar government in cooperation with UNDP. The preliminary mission for conservation of mural paintings and stucco carvings as part of the project started with field work by Italian experts from ICCROM. As for the cooperative task, the Bagan Project UNDP/UNESCO, No. Bur-78/023, was beneficial for Myanmar conservators because they could learn conservation techniques for mural paintings.

Owing to the Nargis cyclone striking Myanmar in May 2008, many ancient pagodas and buildings were damaged. Now, we are in the process of reconstruction and preservation for them in a

prioritized sequence. And we wish to thank the government of Japan for helping those who suffered from the storm, and thanks also to those who donated everything for the storm victims.

The scope of preservation work is wide. So conservators should be sent abroad to attend courses of conservation, to receive theoretical and practical experience. Organizations such as ACCU, NARA, deserve our full gratitude for allowing us to send people to be trained for the purpose of conservation.



## **New Zealand**



**Matthew Derek SCHMIDT**

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New Zealand Historic Places Trust

Otago/Southland Area Office

### **Problems and Needs for Cultural Heritage Protection and Restoration Activities in New Zealand: Archaeological Sites & Remains**

#### **1. Introduction**

The archaeology of New Zealand/Aotearoa is unique in the world as New Zealand was the last major land mass to be colonised by people and, relative to the history of countries world wide, this colonisation was late. These two aspects of New Zealand's heritage has meant the way in which the significance of New Zealand's archaeological sites and remains are perceived by researchers, archaeological consultants, developers, Government, Councils and the general public is widely varied. This has generated a number of problems for cultural heritage protection and restoration activities in New Zealand. This report presents some of these problems and then identifies what New Zealand needs to be able to provide for more effective protection and restoration of its archaeological sites and remains.

Understanding New Zealand's archaeological cultural heritage and how it is advocated and managed is important in identifying problems and needs. This report therefore first describes the geography of New Zealand and the age of the different archaeological sites located around the country. What roles the two main heritage organisations, the New Zealand Historic Places Trust and New Zealand Archaeological Association, play in advocating for site protection is then described, and thirdly, the legislation which affects the management New Zealand's archaeological cultural heritage is explained. Finally, the problems and needs in cultural heritage protection and restoration activities in New Zealand are identified and discussed.

#### **2. New Zealand – Place & Setting**

New Zealand is located in the south west Pacific Ocean and lies 1500km east of Australia (Figures 1 & 2). The three main islands are the North Island, South Island and Stewart Island. Numerous smaller islands make up the extensive nature of New Zealand such as the Kermadecs 1000km to the northeast of mainland New Zealand, the Chatham Islands 850 km to the east of

New Zealand and the Campbell Islands 600 km south-east of Stewart Island. The larger area of New Zealand territory therefore extends from the sub-tropics to the sub-Antarctic. Archaeological evidence of pre-European Polynesian occupation stretches from the Kermadecs to the Auckland Islands (320 km south of Stewart island) and where Polynesians settled, so did the later Europeans.

Mainland New Zealand, where the majority of New Zealand archaeological sites and therefore management occurs, is 1600 km long from Cape Reinga at the northern tip to the bottom of Stewart Island. The land area is 270,534 sq km and New Zealand has over 15,000km of coastline along which lie most of New Zealand's archaeological sites and remains. The length of New Zealand means it experiences a sub-tropical environment in the far north to a temperate environment in the south.

The North Island in general has long sandy beaches and rolling hills with the low mountain ranges down the centre of the island, which make up a fifth of the land area. The North Island is more noticeably volcanically active than the South Island and in areas such as the Bay of Plenty or the desert plateau this activity can be readily seen. Native forest cover in the North Island lies on the low mountain areas but native forest does not cover land to the extent in the South Island. The North Island is overall warmer than the South Island but has a large temperature variation from sub-tropical in Northland to temperate in Wellington.



Figure 1. Location of New Zealand in the south west Pacific.



Figure 2. Map of New Zealand showing main cities and various locations.

The South Island is dominated by the Southern Alps mountain range which provides the backbone of the island and constitutes two thirds of the land area. Here large glacial lakes, great rivers and wide open plains can be seen. The west coast is wet and thick with Beech forest, whereas the east coast is in a rain shadow and so is drier and more open with less forest cover. As with the North Island, long sandy beaches line the coasts. The South Island is noticeably colder than the North Island but rain fall is significantly less on the South Island east coast than in the North Island overall. In addition, Otago and Canterbury experience hot dry summers and freezing dry winters, whereas in the North Island the summers and winters are warmer and damper.

The population of New Zealand is 4 Million people and the main centres are Auckland (with a population of *ca.* 1 million people), Hamilton, Wellington (the capital), Christchurch and Dunedin.

### **3. A New Zealand Archaeology Timeline**

For effective cultural heritage management, it is important to understand what periods of a country's history or prehistory are physically represented by the archaeological sites or remains known or recorded. The short pre-historic sequence for New Zealand means that understanding

how the different archaeological site types fit within this sequence is vital. For example, Maori archaeological sites lying side by side may appear similar in constituents and form, but may represent both early and late periods of occupation in that area. As will be seen below, prehistoric events which lie side by side may represent thousands of years of activity in many countries, but in New Zealand these events may represent only 100 years, and these 100 years may constitute 1/7 of the New Zealand prehistoric sequence.

When New Zealand was first colonised has been debated since the 19<sup>th</sup> century. It was not until scientific methodologies were applied to archaeology in the late 1950s, however, that the time of colonisation was able to be determined directly from charcoal, wood, marine shell or bone samples recovered from archaeological contexts. This was due to the opening of New Zealand's first radiocarbon dating facility at the Institute of Government National Scientific (IGNS) laboratories in Wellington in 1956. This was one of the first radiocarbon dating laboratories in the world and archaeological samples were quickly submitted by New Zealand archaeologists to answer the question of first colonisation. Schmidt (2000) provides a detailed history of the use of radiocarbon dating in New Zealand archaeology and how this affected the interpretation of the New Zealand archaeological sequence (pp. 13-28). In summary, the first results appeared to show that New Zealand was colonised around 800AD by Polynesians from East Polynesia. These results were based on charcoal radiocarbon dates, but it became apparent in the 1960s that dates on this material could vary widely between samples derived from the same stratigraphic layer. Archaeologists were soon aware that the samples had an inbuilt age ie. the sample dated did not date the archaeological event as the wood had been dead for some time before use in prehistory. Marine shell dates were also used but as the reliability of this sample type had never been tested, the accuracy of this sample type was unknown (see Schmidt 2000:4). However, given the problems of this dating method, collectively the radiocarbon dates from New Zealand sequences implied to archaeologists up until the 1980s that Polynesians arrived in New Zealand around 1000AD.

In the 1990s, dedicated research into resolving the radiocarbon dating of New Zealand archaeological sites began. Anderson (1991) considered all of the charcoal radiocarbon ages from New Zealand archaeological sites, applied a 'chronometric hygiene', to these dates, discarding charcoal affected by inbuilt age, old wood etc., and proposed New Zealand was colonised in the 12<sup>th</sup> century. Higham (1994) considered the use of moa egg shell for radiocarbon dating and found this sample type was effective at dating when early Maori archaeological sites were occupied. This research and later research using this sample type by Higham, Anderson and Jacomb (1999) indicated New Zealand was colonised in the late 13<sup>th</sup> century. Schmidt (1996, 2000) concentrated on marine shell as a reliable sample type for radiocarbon dating in New Zealand and concluded this sample type was reliable. He proposed

colonisation of New Zealand possibly by the 13<sup>th</sup> century and certainly by the 14<sup>th</sup> century. Schmidt's (1996) research on the dating of Maori *pa* (fortifications) saw the commencement of this event believed to have occurred *ca.* 1500 AD. Recent research by Wilmshurst *et al.* (2008) has further proposed a colonisation date for New Zealand based on an analysis of reliable archaeological samples of *ca.* 1280AD.

Current research therefore indicates that New Zealand was colonised by the Polynesians from East Polynesia around 1280AD and Maori fortifications began to be built by 1500AD. Abel Tasman, a Dutch explorer, is believed to have been the first European to visit New Zealand in 1642 but he did not make land fall and mapped only a fraction of the country (Figure 3). The English explorer Capt. James Cook was the first European to make contact with Maori and mapped New Zealand shores in 1769 (Figure 4). From the <sup>14</sup>C dating and historic data presented, a possible timeline for New Zealand archaeology may therefore be suggested (Figure 5), within which the various Maori, European and Chinese archaeological site types described below lie.

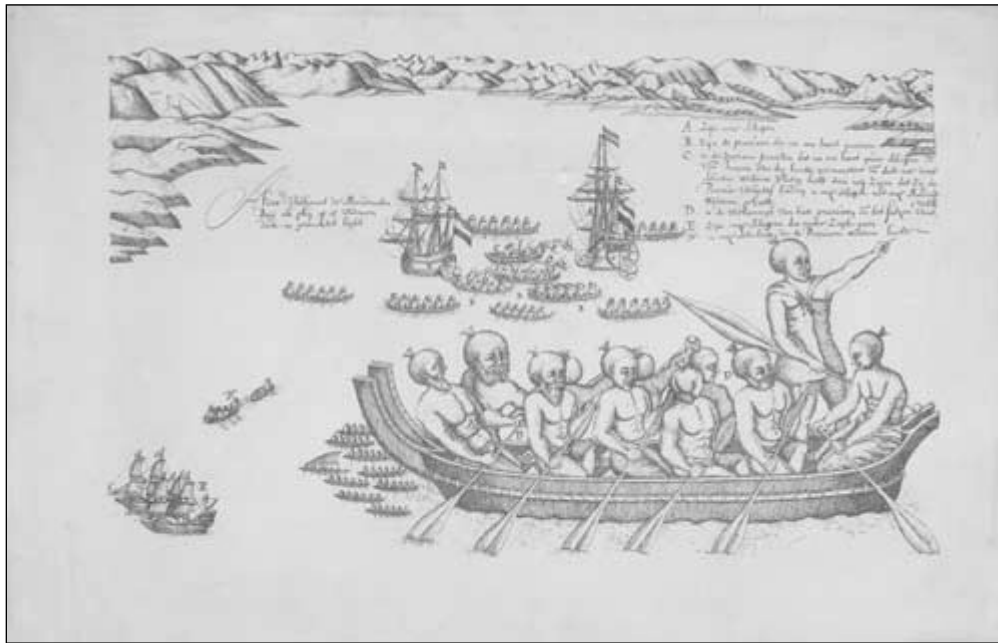


Figure 3. Tasman's encounter with Maori at the top of the South Island in 1642 which ended in bloodshed for both Europeans and Maori.

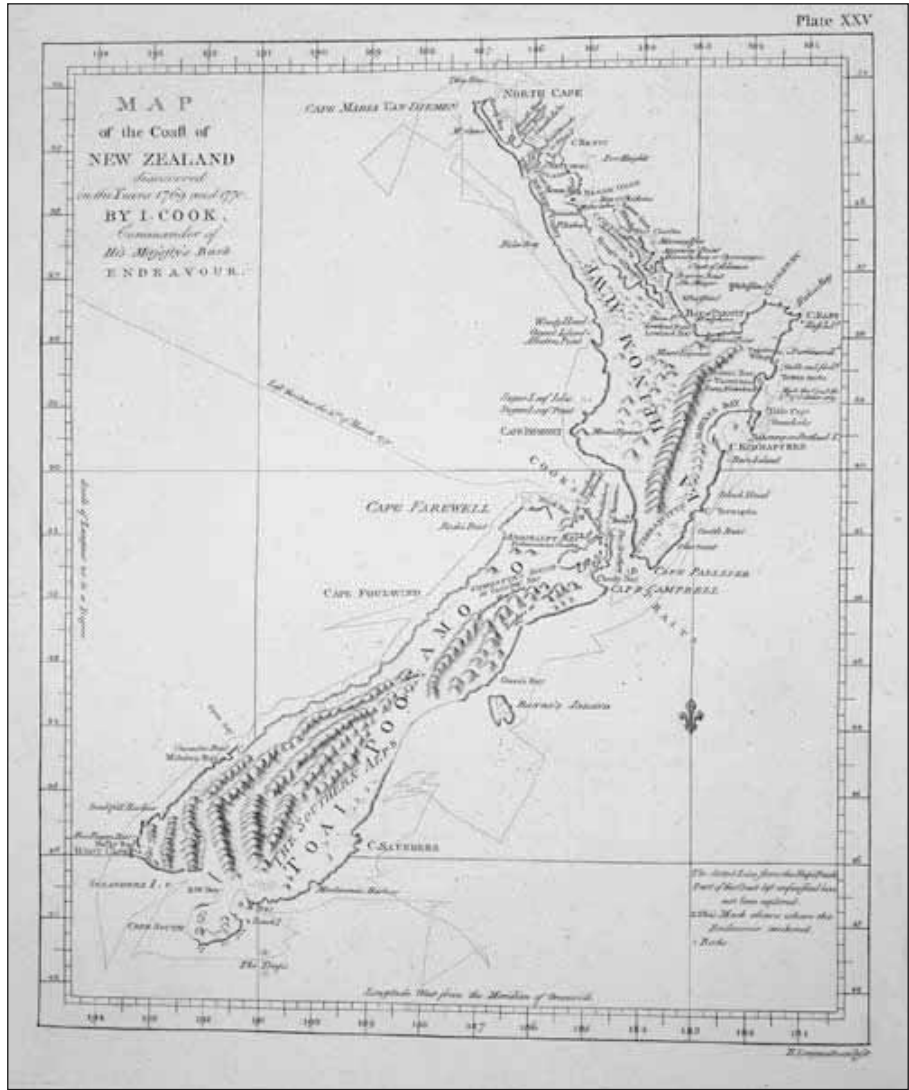


Figure 4. Cook's map of New Zealand from his 1769-70 surveys.

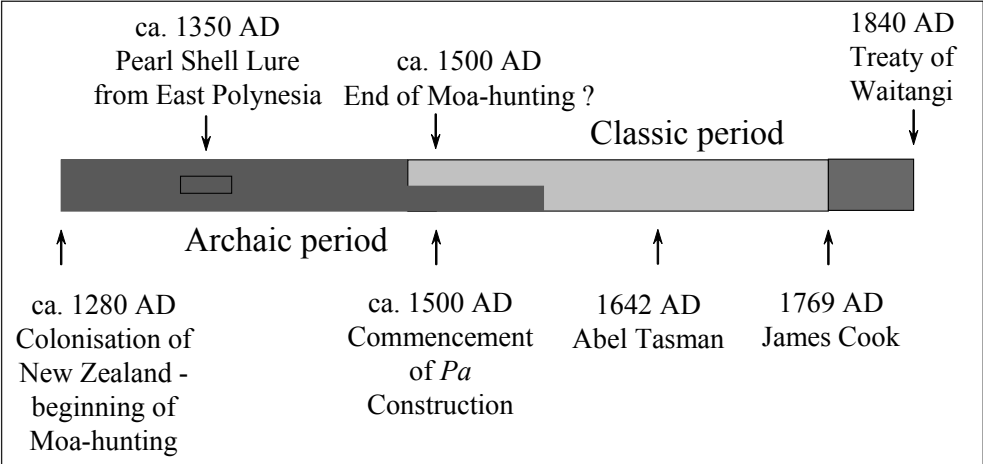


Figure 5. Timeline of major events in New Zealand archaeology.

#### 4. Archaeological Sites Types found in New Zealand

The New Zealand environment had a major impact on the lives of the first colonisers and directly influenced where the archaeological record is found today and what types of archaeological sites and remains are present. The first peoples to arrive from East Polynesia came from a tropical environment and brought with them tropical plants as the main subsistence food. Rats (kiore) and dogs (kuri) were the only animals brought by these people and New Zealand's only terrestrial land mammal was the bat. The only other mammal which would occasionally inhabit the land was seals which had colonies along the New Zealand coastline. New Zealand was a land of birds and the landscape was dominated by a wide variety of ground-based birdlife, the biggest being Moa which could reach a weight of up to 240kg (Figure 6).

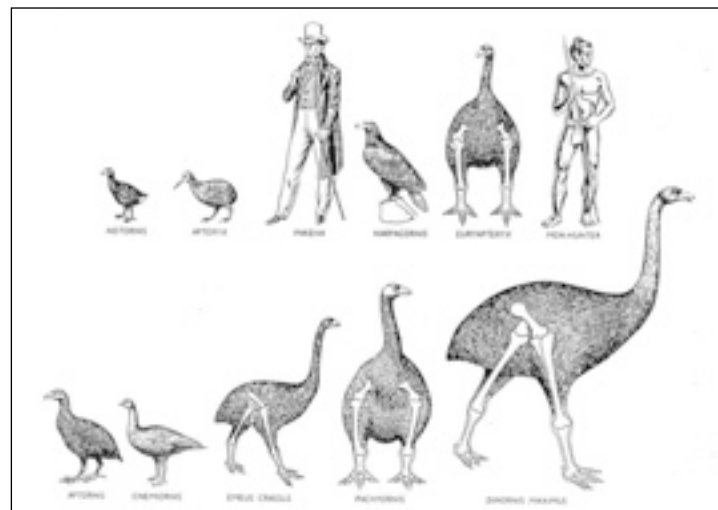


Figure 6. The dominant terrestrial fauna of pre-human New Zealand compared to the size of humans and the New Zealand giant eagle *harpagornis* (from Anderson 1989).

When Europeans arrived, they encountered the Maori whose society was based on a technology of stone, bone and wood and relied heavily on horticulture and resources from the sea. Europeans introduced 18<sup>th</sup>/19<sup>th</sup> century materials, buildings, industry, commerce, farming and flora and faunal species which immediately impacted on the New Zealand landscape and Maori.

Presented below are brief descriptions of the variety of Maori, European/Pakeha and Chinese archaeological sites and remains that make up New Zealand's archaeological cultural heritage. Not all of the archaeological remains encountered in these sites are described, but an idea will be gained on what remains may be seen. An archaeological site is defined in New Zealand law as any place where human activity occurred before 1900AD and is or may be through archaeological methods to provide information about the history of New Zealand (see discussion on the *Historic Places Act 1993* below).

- **Maori archaeological sites**

- **Moa hunting sites**

Moa hunting sites represent the earliest archaeological sites in New Zealand and are indicative of the Archaic Period (Figure 5 & 10). These sites date from *ca.*1300 AD to *ca.* 1500AD and depict a new people arriving and quickly exploiting the largest food source available, these being Moa (Figures 6 and 7). Moa were large ratites, they were flightless and ranged in size from 20kg and 0.8m tall at the back to 240kg and 1.8m at the back, and 11 species have been identified. Moa occupied land from sea level to the bush line in the mountains. Moa hunting sites are predominantly coastal sites, although inland sites occur in the South Island, and they were occupied seasonally to take advantage of the changing availability of various food sources. Thousands of Moa were killed and processed by Maori and it is believed this species and many other ground based bird species became quickly extinct after first colonisation. Archaeological remains consist of middens and ovens/hangi full of shell, bone (moa, seal, dog), sometimes moa egg shell and oven/hangi stones in a dark usually sandy matrix, hut sites indicated by three standing stones showing the outline of a hearth and sometimes post-holes (Figure 8). Artefacts can consist of silcrete and porcellanite flakes and choppers, obsidian flakes, moa bone fish hooks and chisels, adzes, stone fishing lures and tattooing chisels of stone or pounamu (Figure 10, Archaic).



Figure 7. Depictions of moa hunters on the hunt for *Dinornis* (left), the biggest moa, and *Euryapteryx* (right), a commonly hunted species in the South Island.





Figure 8. Clockwise: health indicating hut site; eroding moa hunting site on the South Is. coast showing midden spilling from a dune (photo: M Schmidt); reconstruction of seasonal inland moa hunting camp at the Dart River, South Island; moa bones at the Waitaki River Mouth, Otago 1930s (from Buick 1937); charcoal stained sand on a coastal moa hunting site in Dunedin city showing ovens (photo: Southern Pacific Archaeological Research).

- **Midden sites**

The most common Maori archaeological site in New Zealand which is found throughout the archaeological sequence, are middens. Thousands of these sites lie on the New Zealand coastline and hundreds have been recorded. These sites consist of debris from cooking and

living activities and are typically made up of marine shell (eg. from clams, pipi, tuatua, paua), fish bone, hangi stones and artefacts such as flake tools, fish hooks and lure shanks and sometimes adzes, patu (club), fern root beaters and obsidian (sometimes from distant sources). (Figures 9 & 10).



Figure 9. Typical Maori midden site found on the New Zealand coastline (photo: Southern Pacific Archaeological Research).

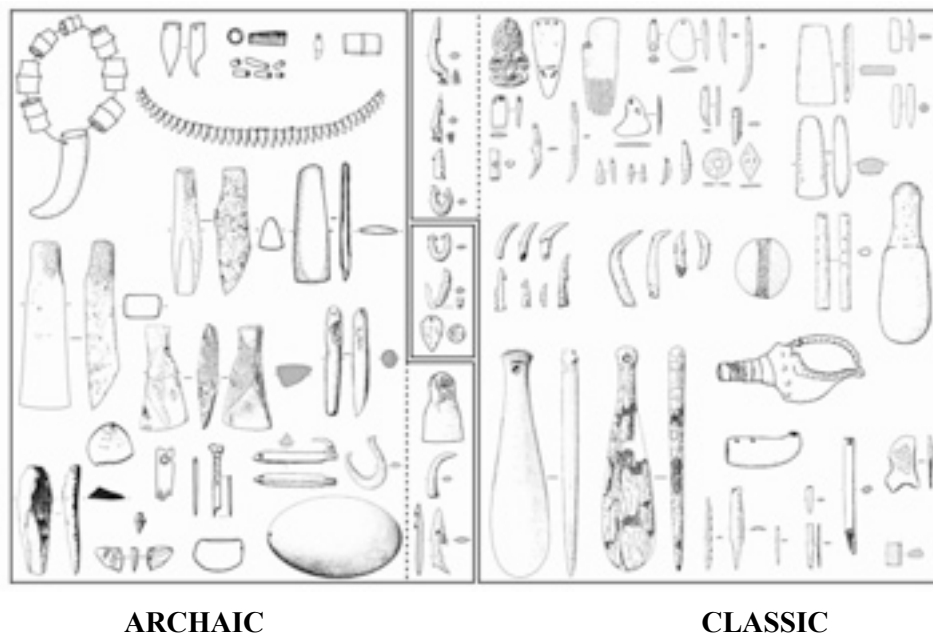


Figure 10. Artefacts found in Maori archaeological sites from the Archaic Period (such as moa hunting sites) and Classic Period (such as *pa* sites and later middens) (from Davidson 1987).

- ***Pa* sites and Horticultural sites**

Horticultural sites and *pa* sites are discussed together as these sites are often directly associated. In the lower South Island where horticulture was not possible, *pa* are present but in significantly fewer numbers.

*Pa* are Maori fortifications indicative of the Classic period of New Zealand archaeology and are believed to have been built to protect the local population from attack by invading or threatening tribes (Iwi). About 6000 *pa* have so far been recorded in New Zealand. Schmidt (1996) has proposed that *pa* began to be built around 1500AD based on reliable radiocarbon dates from these sites. These sometimes elaborate and complex fortifications are often associated with storage pits where food was stored and protected within the walls of the *pa*. It is unclear whether *pa* were occupied all year or whether only in times of strife, certainly some *pa* imply occupation during all times of the year by the local Chief and his whanau (family). *Pa* form was dependent on geography, purpose and need and all pre-European *pa* were built by hand using tools made of stone, bone and wood. *Pa* are often described as occurring as one of four types (see Groube 1970, Fox 1976). Type I *pa* are those where a high area has been terraced for occupation and food storage (Figure 11); Type II have transverse ditches and banks added for defence; Type III have transverse and lateral ditches and banks or a ditch and bank around the whole *pa* (Figure 12); Type IV are swamp *pa*. Swamp *pa* are sites where occupation occurred on raised ground surrounded by a natural or human made swamp or lake.



Figure 11. Kauri Point *pa*. A terraced Type I *pa* (photo: Kevin Jones).



Figure 12. A Type III *pa* in Papamoa, Tauranga showing many terraces and then transverse and lateral ditches and banks at the tihi (top) of the *pa* (centre left of the picture) (photo: Kevin Jones).

Associated with the earthworks defensive features of *pa* were wooden palisades which created the main wall of defence for the fortification. Archaeological remains found with *pa* may consist of an extensive amount of marine shell midden, bone, flake tools, and only occasionally adzes, stone chisels (possibly of pounamu), weapons, such as stone patu, or fern root beaters (Figure 10). Archaeological excavations have found few artefacts within *pa* in comparison to other Maori sites as *pa* were kept relatively clean by the occupants. Often prehistoric debris, middens and artefacts are found down the sides of the structures (though swamp *pa* can be rich in artefacts in the interior) with the interiors having structural evidence of living and storage structures seen by postholes, hearths and pits.

Horticulture would have begun when the first East Polynesian set foot in New Zealand. It is unknown how many cultigens the first colonisers brought to New Zealand (in tropical Polynesia eight root cultigens and 11 tree cultigens were grown), but only six were being grown when Europeans arrived (Furey 2006:10). Of these six, kumara was the dominant cultigen due to its tolerance of colder climates, but it would not grow south of Banks Peninsula in the South Island. South of this line Maori continued to hunt and gather. As the Moa and other ground based birds became extinct and seal colonies were over exploited, horticulture became the most important resource for pre-contact Maori. This is why horticultural sites are often associated with *pa* sites. Archaeological evidence of horticultural soil is often indicated by mixed and disturbed soils flecked with charcoal. Maori also manufactured soils to enhance kumara crop growth. This would sometimes entail digging into river flats to source gritty pebbly material to add to soil to which charcoal was also added. This activity has left archaeological features called 'borrow pits' which can be seen lying near fields where soil additives have been identified. Stone rows defining field boundaries (Figure 13) can also

sometimes be seen with kumara storage pits being the most common archaeological evidence of horticulture.

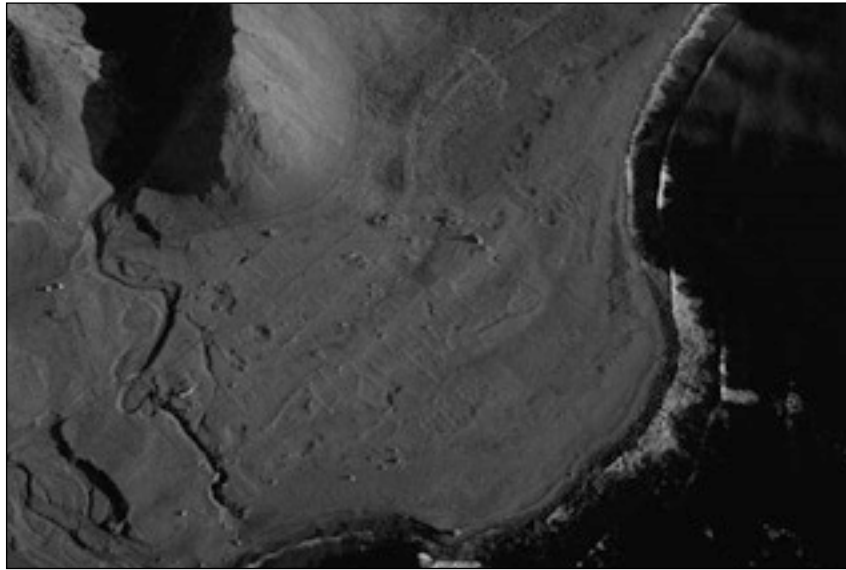


Figure 13. Stone rows in a Maori horticultural field (photo: Kevin Jones).

The size of kumara storage pits found on *pa* or horticultural sites can vary markedly from massive structures measuring many meters long, which were roofed and accessed through a small doorway to step down into the pits, to bell-shaped pits which were sealed by a simple lid on the top (Figures 14 to 15). The archaeological remains appear as either obvious pit features on the surface in *pa* sites or in fields or as distinctive areas of fill when excavated. Post holes are usually found in the bottom of storage pits. House sites on *pa* can look similar to pit sites although the arrangement of post holes may be different and evidence of a hearth may be present.



Figure 14. Clockwise: storage pit on *pa*, pit excavated showing postholes, pit reconstruction (photos: Rachel Darmody).



Figure 15. Rua or underground storage pit in profile during excavation (photos: Rachel Darmody).

▪ **Kainga and house sites**

Kainga are occupation or village areas which did not have the elaborate defences that *pa* did but may still have had lines of palisades and fences (Figure 16). Kainga are also associated with horticultural soils but may not be, such in the lower South Island where there is no horticulture, and are essentially sites where a village, be it temporary, seasonal or permanent, occurred. These sites may be of the Archaic or Classic Periods, be coastal or inland like *pa* and the house sites may be complex where are distinctive series of post holes may be found archaeologically, or simple where small light huts are only shown by very small post holes and a hearth. Archaeological remains may consists of flake tools, fish hooks and lures, adzes and chisels (possibly of pounamu), weapons such as stone patu, or fern root beaters (Figure 10). If a kainga is associated with a swampy or damp area, an extensive amount of wooden archaeological material may be revealed such as at the Kohika archaeological site near Whangarei where extensive wooden artefacts and remains were excavated by the University of Auckland between 1975 & 1981 and during recent fieldwork in 2004 & 2005.

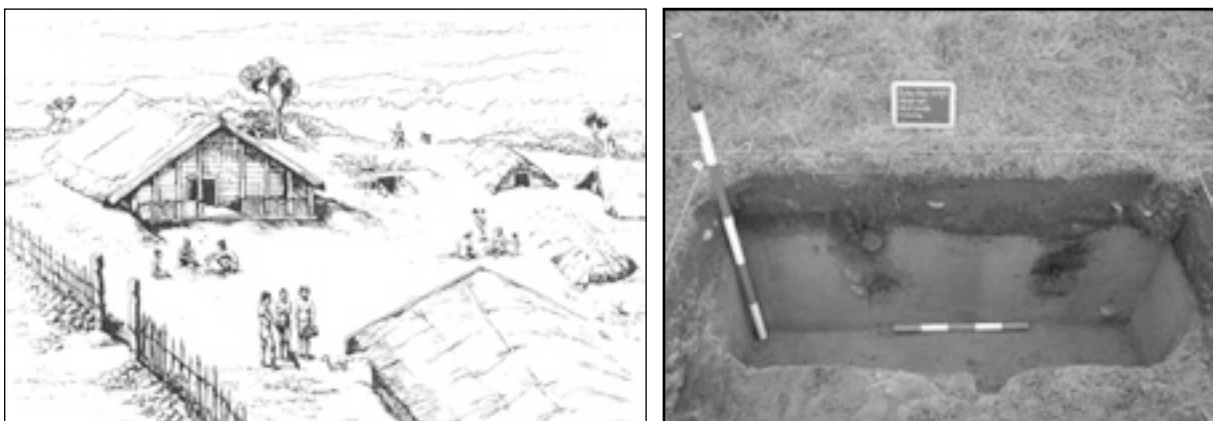


Figure 16. A reconstruction of a kainga (left) and archaeological evidence of postholes for a house (right) (photo: Southern Pacific Archaeological Research).

- **Gun fighter pa/redoubts**

During British confrontations with Maori from the 1840s to the 1860s, Maori developed elaborate and complex “gunfighter” *pa* or redoubts which were adapted to the use of the musket. Whereas traditional *pa* were built to keep invaders physically out of *pa* and weapons consisted of wooden, stone and bone hand weapons, spears, clubs and darts or rocks, muskets introduced the powerful projectile weapon into the more traditional hand to hand combat world of the Maori. This led Maori to design *pa* sites where muskets could not be fired down the ditch line of a traditional *pa* site. Instead, zigzagged trench systems and underground access tunnelling between areas of the *pa* were developed. Added to these defences were lines of tightly packed wooden palisades which were sometimes made of ‘shock absorbing’ tree species that could adsorb the energy of a musket ball or to some degree a canon ball. As can be seen in figure 17, the structure of these redoubts is a striking example of adaptive defensive construction. Archaeological artefacts associated with these sites can include musket balls, ammunition cases and canon balls.

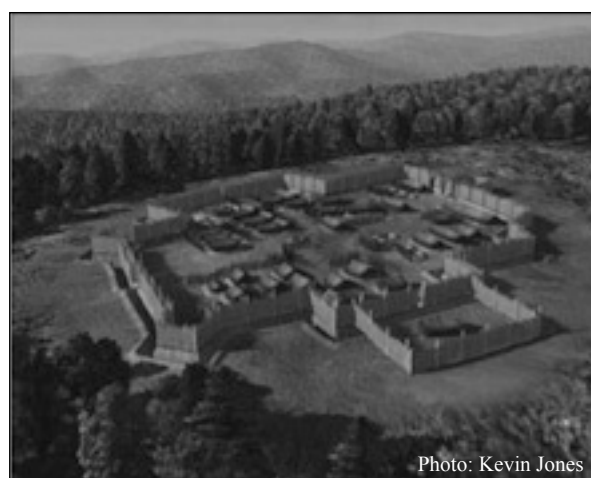


Figure 17. Maori gunfighter *pa*/redoubt Ruapekapeka built in 1845. As it is today (top) and an artist's reconstruction of the *pa* in 1845 (bottom) (source: Department of Conservation).

- **European/Pakeha and Chinese archaeological sites**

European/Pakeha archaeological sites are widely varied and comprise of mining sites (gold, tin & coal), village/town/city occupations, harbour reclamation including wharves and jetties, building ruins, transport systems such as roads, causeways, tracks, railways and tramways, industrial sites such as gas works and whaling and sealing bases, shipwrecks including inland dredges, pastoral sites for example fence lines, yards and farm buildings, surveyor points, contact period sites with Maori, and land wars redoubts. The Chinese began to arrive in New Zealand in notable numbers in the 1870s due to the discovery of gold in Otago in 1861. Chinese sites mainly consist of gold mining remains and the related towns and occupation areas particular to the Chinese, who were often excluded from living in European dominated goldfield's towns.

European and Chinese sites comprise of metal, brick, stone, earth and wood remains and are often well preserved, other than wooden sites where preservation is dependent on the environment. The dry conditions of Central Otago in the South island preserves wooden items from European/Chinese gold mining sites particularly well. European/Pakeha and Chinese archaeological sites occupy all environments in New Zealand. Examples of European/Chinese archaeological sites and remains which can be seen in my area as Regional Archaeologist Otago/Southland for the New Zealand Historic Places Trust, are shown in Figures 18 to 36.

European/Pakeha and Chinese sites make up the time period of New Zealand prehistory/history from 1769, when Capt. James Cook first arrived in New Zealand to 1900AD. These sites are associated with artefacts which may be of local origin, and/or from Europe, the Americas and, less so, Asia. The most common artefacts found are 19<sup>th</sup> century bottles, ceramics and stoneware as these tough items often survive the activities of later occupations, and also many of the town or city occupations in the 19<sup>th</sup> century use to dump their household refuse in rubbish pits at the back of the houses and businesses, hence preserving these items well. Bone is also often present in these sites and metals, though these items are often quite degraded unless the conditions are dry. In damp locations which were occupied by early European arrivals or where reclamation of the harbour has occurred which saw the dumping of domestic rubbish for fill, such as in Dunedin and Wellington from the 1850s to 1890s, wooden and leather items survive such as shoes, hats and purses, construction timbers, wharf piles, and very rarely boat remains and wooden causeways (Figures 35 to 36).

The types of Maori, European/Pakeha and Chinese archaeological sites and remains found in New Zealand and described above and in figures 8 to 36 illustrate the variety of cultural heritage sites which are protected by New Zealand law. Numerous sites require protection or restoration to ensure that they are preserved for future generations. For the Otago/Southland



Regions, which are the focus of my work as Regional Archaeologist for the New Zealand Historic Places Trust (see below) (Figure 37), the majority of archaeological sites under threat from human and natural intervention are European/Pakeha and Chinese gold mining sites located in the interior of these regions, which are particularly under pressure from developments, and Maori moa-hunting and middens sites on the coast which are threatened by both developments and rapid coastal erosion.



Figure 18. 19<sup>th</sup> century gold mining water race hand dug using spades and a plumb line. These races can run for many kilometres and are the most common gold mining archaeological site in Otago. (photo: Matthew Schmidt).



Figure 19. Gold mining water reservoir fed by water races. Gold mining in the 19<sup>th</sup> century depended on water and so water races and reservoirs were essential. (photo: Matthew Schmidt).



Figure 20. Gold mining tailings in herring bone form, Otago. Thousands of stones were hand stacked during the sluicing of ground for gold. (photo: Matthew Schmidt).



Figure 21. Aerial view of a 19<sup>th</sup> century gold mining system in Otago. Water races, a reservoir, sluice faces and tailings can be seen. (photo: Shar Briden).



Figure 22. Scheelite and gold mine at Glenorchy, Otago. Original support timbers, mining cars and rail lines can be seen (photo: Matthew Schmidt).



Figure 23. Typical 19<sup>th</sup> century gold miners hut ruins in Otago. Huts are often located right next to the miners claim. (photo: Shar Briden).



Figure 24. Sunken gold mining dredge on the Clutha River, Central Otago. New Zealand led the world in gold dredging technology in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Dozens of dredges worked the Clutha River. (photo: Jonathan Howard).



Figure 25. Before the gold rush to Otago in 1861, the main industry for the region was sheep farming. 19<sup>th</sup> century fencelines express this heritage and many are located at high altitude. (photo: Department of Conservation, Central Otago).



Figure 26. 19<sup>th</sup> century wooden and stone posted sheep yards on the Rock and Pillar Range, Otago. (photo: Matthew Schmidt)



Figure 27. Mud brick stables and store built *ca.* 1871, Lauder Pastoral Lease, Central Otago. (photo: Matthew Schmidt).



Figure 28. Shipwreck, Southland. (photo: Matthew Schmidt).



Figure 29. 19<sup>th</sup> century stone bridge piers, Roaring Meg, Kawarau Gorge, Central Otago. (photo: Matthew Schmidt).



Figure 30. Stone cobbled coach road along a Catlins beach, Southland. (photo: Southern Pacific Archaeological Research).



Figure 31. Stone riveting on the 1860s Old Dunstan Road, Central Otago. (photo: Matthew Schmidt).



Figure 32. 19<sup>th</sup> century railway lines preserved beneath a late 20<sup>th</sup> century building. (photo: Emma Brooks).



Figure 33. Timber mill amongst regenerated beech, Paradise, Lake Wakatipu. (photo. Jonathan Howard).





Figure 34. 19<sup>th</sup> century surveyor's cairn used to divide up land in Otago for the colonial Government. (photo: Matthew Schmidt).



Figure 35. 1870s glass, stoneware, leather and wooden artefacts preserved in harbour reclamation, Dunedin. Leather goods were particularly well preserved in this damp environment with shoes, hats and other daily goods found. (photo: Matthew Schmidt).



Figure 36. Corduroy (wooden) causeway from the 1850s when Europeans first settled Dunedin. The causeway was buried in wet pug/clay conditions 1.8m below the current road surface. (photo: Owen Graham).



Figure 37. Map showing the area covered by my role as Regional Archaeologist Otago/Southland for the New Zealand Historic Places Trust.

## **5. A Brief History of the New Zealand Historic Places Trust (the “Trust”) and the New Zealand Archaeological Association (“NZAA”)**

The lead heritage advisor and advocator for cultural heritage protection and restoration in New Zealand is the New Zealand Historic Places Trust (the “Trust”) which was founded in 1954. McClean (2000:25-44) provides a history of heritage protection in New Zealand from the 19<sup>th</sup> century to 2000, and he shows that up until one body was formed under Government legislation to advocate for New Zealand’s heritage in 1954, cultural heritage protection tended to be sporadic.

In the 19<sup>th</sup> century, protection and preservation of colonial and Maori heritage was limited to local heritage groups advocating for the safeguarding of local history, such as the Otago Early Settlers Museum founded in 1898, laws passed to protect only certain locations or sites considered important to New Zealand European history, for example Ship Cove in Queen Charlotte Sound where Cook landed in 1770, or by the gifting of heritage areas to the Crown most often by Maori as happened for the Tongariro National Park in 1887 which was New Zealand’s first national park. In the 19<sup>th</sup> to early 20<sup>th</sup> centuries Maori were often considered a ‘dying race’ by social scientists and so laws or Government groups, for example the Scenery Preservation Act and associated Board from 1903 to *ca.* 1919, during this time tended to focus on protecting Maori heritage rather than European/Pakeha and Chinese history.

In 1954 the Historic Places Act was passed which aimed at protecting and preserving New Zealand’s Maori and Pakeha cultural heritage. The National Historic Places Trust, which became the New Zealand Historic Places Trust in 1963, originally had 12 members but only one paid staff member in 1955. By 1975 the Trust still only had 13 staff to advocate for heritage (McClean 2000:35). Today the Trust has 100 staff made up of archaeologists, registrations advisors, built heritage advisors, planners, policy advisors, legal counsel, and administrative and management staff. The Regional Archaeologists of the Trust administer the statutory sections of the HPA in the protection of archaeological sites and remains (see below). The Trust therefore is the body independent of Government charged with ensuring New Zealand’s heritage is preserved for future generations.

In 1955 the New Zealand Archaeological Association (NZAA) was formed with the purpose of bringing together professional and amateur archaeologists under one organisation so research, theories and ideas about New Zealand archaeology could be shared. Since 1958 the NZAA has produced a quarterly newsletter and it holds an annual conference where papers are presented by any persons with an interest in archaeology. Through the NZAA, archaeologists also advocate for archaeological site protection, management and research.

In May 1958 the NZAA began the NZAA Site Recording Scheme (SRS) where archaeological sites recorded by archaeologists could be filed under one national scheme. This scheme had a standard Site Recording Form (SRF) so as to provide consistency in the recording of archaeological sites anywhere in New Zealand. Each site had its own Site Record Number and the form provided information such as a grid reference for the site, who recorded the site, site description and notes on the site location, and archaeologists also added photographs, sketches, and maps of the sites. The NZAA SRS is still running today and currently *ca.* 60,000 archaeological sites have been recorded nationwide (Figure 38) (see [www.nzarchaeology.org/recording.htm](http://www.nzarchaeology.org/recording.htm) for more information). The SRS is the largest and most comprehensive non-governmental archaeological site recording system in the world.

The SRS was established as a special interest database, and its primary use for many years was as a research tool for members of NZAA. Since the advent of the Resource Management Act 1991 (the “RMA”) and the Historic Places Act 1993 (the “HPA”) (see below) there has been greater use of the Scheme in planning and legal issues for site identification, protection and management. Territorial local authorities (Councils) are one of the principle users of the SRS in their ongoing land and heritage



Figure 38. Topographical map of the Bay of Plenty, North Is. showing dozens of archaeological sites (red dots) recorded in the NZAA Site Recording Scheme.

**Management and protection roles:** The Site Recording Scheme is endorsed by the New Zealand Historic Places Trust and the Department of Conservation and has been described in a review (1996) by the Parliamentary Commissioner for the Environment as “a database of major national significance”.

From the brief history of the Trust and NZAA presented above, it can be seen that both these organisations have been active for over 50 years in the protection and preservation of archaeological sites and remains. Each organisation protects cultural heritage in entirely different ways but have always worked closely together towards the same goals for heritage.

## **6. Legislation that Protects New Zealand’s Archaeological Sites and Remains**

Legislation regarding the protection and management of archaeological sites and remains is vital to the preservation of cultural heritage resources. In New Zealand, two pieces of legislation directly affect the protection of archaeological sites remains, these are the *Historic Places Act (1993)* (the “HPA”) and the *Resource Management Act (1991)* (the “RMA”). Each piece of legislation approaches the management of archaeological sites in different ways, as will be seen below. The role of the *Protected Objects Act (1975)* (the “POA”) is to ensure no person shall illegally possess *taonga* or export artefacts from archaeological sites.

### ○ **Historic Places Act 1993 (“HPA”)**

In the HPA an archaeological site “means any place in New Zealand that

(a) Either –

(i) Was associated with human activity that occurred before 1900; or

(ii) Is the site of the wreck of any vessel where that wreck occurred before 1900; and

(b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.”

All archaeological sites are protected under Section 10 of the HPA. This section of the Act says that it “shall not be lawful” to damage, modify or destroy an archaeological site “knowing or having reasonable cause to suspect that it is an archaeological site”. This law is one of strict liability and if prosecuted under Section 99 or Section 100 of the HPA (see below), the penalty is a criminal conviction and a fine up to \$40,000 for damage or modification of an archaeological site, or a fine not exceeding \$100,000 for destruction of an archaeological site. This protection of archaeological sites applies to all sites whether they are on private or Crown land or whether they are recorded (such as in the NZAA SRS) or not.

If a person wants to damage, modify or destroy an archaeological site they may apply to the Trust for an Archaeological Authority to do so under Section 11 (for one site) or 12 (for all sites within a legal specified area of land) of the Act. This Authority may be granted or declined by the Trust with a granted Authority always listing conditions under which an archaeological site may be damaged, modified or destroyed. A prosecution under Section 99 of

the HPA is when an archaeological site is damaged, modified or destroyed without an Archaeological Authority, a prosecution under Section 100 of the HPA is when conditions of a granted Authority have been breached. It is important to note that the demolition of 19<sup>th</sup> century buildings also requires an Archaeological Authority from the Trust.

The HPA is therefore a powerful legal tool for the protection of archaeological sites and remains. It is the role of the Trust Regional Archaeologist, such as myself, to process Archaeological Authorities for his/her geographic regions, undertake site damage investigations where an Archaeological Authority has not been granted, and ensure persons comply with the conditions of granted Archaeological Authorities.

- **Resource Management Act 1991 (“RMA”)**

The role of the RMA is to ensure any activities by any person which may affect natural and/or physical (including historic) resources on land, in the sky and in any waterway, and the visual and audible environment, are considered before that activity may commence. For example, a developer wanting to build a 20 lot subdivision near a coastline would have to consider the impact of that activity on the waterways, birdlife, marine life, vegetation, landscape and historic resources etc. as part of the process of obtaining a Resource Consent under the RMA from a Council to be able to begin the development. Councils in New Zealand work under the RMA and are charged with granting or declining a Resource Consent which is a document that gives a person the right to undertake a development and affect resources.

Under Sections 5, 6 (e), 6 (f) and 8 of the Resource Management Act (1991), Councils are required to sustainably manage cultural heritage resources. Section 6(f) in particular considers protection of historic heritage from inappropriate subdivision and development as a matter of national importance. Councils shall recognise and provide for, and have particular regard to archaeological sites as these sites form part of this historic heritage, are a finite resource, and are physical resources that may possess scientific, historical and cultural values. Therefore when a person applies for a Resource Consent which may affect cultural heritage resources, then Councils must consider archaeological sites and remains and the impact of the activity on this resource.

Given the protection of archaeological sites under the HPA and their consideration under the RMA, it is important to recognise the differences between these two different pieces of legislation in regard to how archaeological sites are dealt with.

The role of the HPA is not to manage archaeological sites. Its primary role is the protection of archaeological sites from unlawful damage. Applying for an Archaeological Authority under

Section 11 or 12 of the HPA is a tool whereby a person(s) may legally damage, modify or destroy a site(s) under certain conditions. Although this may directly influence the management of natural and heritage resources on a person(s) property, the role of the Authority process is not to manage a national resource in isolation.

The RMA requires that archaeological sites are considered alongside other resources when it comes to the impact of a development or project on a property's natural and heritage resources. It is therefore at this stage that correct management of archaeological sites is to be scrutinised to ensure their long term preservation. How archaeological sites and remains are managed at the Resource Consent stage can thus have a major bearing on the survival of this cultural resource.

- **Protected Objects Act 1975 (“POA”)**

The POA protects Maori *taonga* (treasures) from illegal possession and trafficking and ensures that these items, when found in archaeological contexts for example, are deposited with the rightful Iwi (Maori tribe) or Runanga (Maori council). This rightful possession is determined by the Crown through the Ministry of Culture & Heritage. If a wooden artefact/*taonga* is found which needs conservation, then the Ministry of Culture and Heritage will take possession of the item and pay for the conservation work required.

European/Pakeha and Chinese artefacts are treated differently under the POA. Ownership of these items lies with the land owner and if found in an archaeological context, such artefacts are only protected from export. In addition, wooden items of European or Chinese origin, no matter of what historic significance, requiring conservation for their preservation are not required to be conserved by the Ministry of Culture & Heritage with the choice of conservation being left to the land owner.

## **7. Problems with Culture Heritage Protection and Restoration Activities**

In the previous sections I have provided a background on what the archaeological record comprises in New Zealand, a brief history on the two main heritage organisations, and the legislation which protects archaeological sites and remains. The Regional Archaeologists for the New Zealand Historic Places Trust work within the environment of these sites, organisations and laws to have a direct role in the protection of archaeological cultural heritage. However, key problems or issues make the protection of sites and works on site restoration difficult to achieve for not only the Regional Archaeologist but for those with the same goals and aims for the preservation of cultural heritage. From a recognition of these problems, what needs are required for culture heritage protection and restoration activities in New Zealand may

then be identified. In this section those problems that affect archaeological sites in New Zealand on a daily basis are presented.

- **Age and significance: “if it ain’t old, why keep it”**

A fundamental problem which inhibits the preservation of archaeological sites and restoration activities in New Zealand is the public perception that New Zealand has not had people here long enough for its heritage to be important. This issue affects attitudes to heritage in all sectors of New Zealand society and is particularly noticeable at the legislative level (see below). As New Zealand was the last major land mass to be colonised, first by the East Polynesians in *ca.* 1300 AD who then became the Maori, and then by Europeans in the late 18<sup>th</sup> century, New Zealanders tend to compare this time line with that of other countries with thousands of years of history. This has brought about complacency with the archaeological heritage where the significance of this heritage is directly associated with age. This general attitude reaches not only to archaeological sites but also to 19<sup>th</sup> century buildings, even though New Zealand has colonial architecture found no-where else in the world (Figure 39).

New Zealand’s archaeology is unique and, as illustrated above, resulted from the first peoples encountering a unique landscape devoid of land mammals and dominated by giant bird life. The first Europeans then encountered a people with a distinctive culture and a vastly different environment from which they were use to, which then influenced the type of activities practiced and therefore the type of archaeology found today. The importance of this cultural heritage and its place in World history, however, is not taught in detail at New Zealand schools and so the general public is only aware of this heritage mostly through random media sources. These sources of information often portray heritage in a negative manner with newspaper and television reports more interested in how heritage is holding up developments or often reporting on more trivial heritage matters such as unusual artefact finds, mostly from other countries. The Trust, and consultant and university archaeologists are often put in the position of educating developers or Councils, on Maori, European and Chinese cultural heritage and how this is expressed through the archaeological record. Proactive site protection or restoration then depends greatly on how conducive that developer or Council is in recognising the importance of this heritage.





Figure 39. Waikouiti Public Hall near Dunedin, built in 1872. An example of ‘demolition through neglect’. Early social buildings such as this are often left to degrade in New Zealand and are eventually demolished, even though they represent a significant part of the local heritage and their architecture and setting is found no-where else in the world.

Varying attitudes towards the significance of Maori, European and Chinese archaeological sites is not restricted to any one cultural sector of the community. Europeans/Pakeha may be as indifferent to European archaeological sites as to Iwi (Maori tribe) sites, and some Maori do not consider European sites as significant at all. Some Maori also do not consider Maori archaeological sites in their Rohe (territory) as important and have no concern whether these sites are destroyed or not. It is unclear what views ancestral New Zealand Chinese or more recent Chinese may have towards Chinese archaeological sites and remains, but there has been a significant increase in interest by the New Zealand Chinese community in this aspect of their history in the last four years.

- **Cultural Heritage Legislation: Good Intentions, Difficult Implementation**

- **The HPA**

As illustrated previously, the HPA is a powerful tool in the protection of archaeological sites and few countries have such strict legislation. Implementation of this legislation by the Trust, though, is restrictive mainly due to the size of the organisation and its limited budget. The Trust has only 12 archaeologists, seven being full time Regional Archaeologists, who administer the statutory requirements of the HPA with a budget to do so of only \$1.8 (NZHPT Statement of Intent 2008/2011). These Regional Archaeologists administer large regions containing thousands of archaeological sites (Figures 37 & 38). The NZAA SRS currently has 60,000 sites on record, this being only a fraction of the actual number of sites in New Zealand,

and it is the role of the Regional Archaeologist to ensure any person who may want to modify, damage or destroy these sites does so under an Archaeological Authority.

Added to this, the Regional Archaeologist has to monitor compliance of conditions on Archaeological Authorities (which often entails visits to sites hundreds of kilometres from their office), undertake site damage investigations reported to the Trust, compile evidence for prosecutions under Section 99 or 100 of the HPA, comment on Resource Consents which may impact on archaeological sites, undertake advocacy on heritage protection and management, and provide advice on the presence of archaeological sites on land to be disposed by the Crown. In addition, the Regional Archaeologist has to provide general feedback and advice to members of the public, archaeological consultants, Councils or developers on a daily basis. It is important to note that the tasks of the Regional Archaeologist are directed to all archaeological sites, but these tasks can only be applied to sites the Trust knows may be impacted on, such as through the Resource Consent process. Many archaeological sites damaged, modified or destroyed are never brought to the attention of the Trust.

Another obstacle to the effective implementation of the HPA to New Zealand's archaeological cultural heritage is the shortage of skilled archaeological consultants. Archaeological consultants are the critical link between a developer and the Trust. The consultant will provide independent advice to his/her client in regard to the impact of the clients activities on any archaeological remains and the report provided to the client will be used for an Archaeological Authority Application to the Trust. The report or Archaeological Assessment may also be used for a Resource Consent application.

Archaeology was not generally considered a career in New Zealand until the *ca.* 1990s. Most archaeologists studying archaeology before this time did solely out of interest and gained their skills through voluntary archaeological excavations and surveying. These archaeologists then worked either in the University, Department of Conservation or in the small Trust team with only a few providing independent services. This changed with the *Historic Places Act* (1993) and the added protection of archaeological sites meaning many students from the early 1990s became consultants. These students often graduated with a Masters level university qualification and had a high level of archaeological fieldwork experience, much gained through voluntary work.

However, in the last 10 years few Masters graduates in archaeology have moved into the field of consultant archaeology and those that have sometimes lack the extent of field experience of their predecessors. This may be due to the alarming increase in student fees to attend University in the last 15 years and the number of students ineligible to claim a student allowance for living expenses from the Government while being a student. This has meant

students have had to concentrate on paid employment to make ends meet and so archaeological experience is only gained by working on archaeological projects which pay for their services, hence reducing voluntary work and thus effecting field experience.

It is also important to note that New Zealand does not have any accreditation for archaeologists or a professional organisation which may only be joined with adequate qualifications and experience. Anyone can claim they are an archaeologist in New Zealand and undertake “archaeological assessments”. It is only at the Archaeological Authority Application stage that the Trust may decline that an “archaeologist” is qualified enough to undertake the work required for an Authority under Section 17 of the HPA.

- **The RMA**

The intent of the RMA is the sustainable management of New Zealand’s resources. As discussed above, archaeological sites under the RMA are part of these resources, but in reality people and developers applying for Resource Consents and Councils processing Resource Consents under the RMA often do not have consideration for archaeological sites even though this is part of the legislation.

Applications for a Resource Consent can be notified or un-notified ie. made known to the general public through a public notification process, which enables the public to lodge submissions, or processed through the Council without any public notice. Councils may also notify an application on a limited basis where specific persons and/or organisations who are considered to be “affected parties” are only advised. The Trust most often will only see notified Resource Consents and those it is specifically advised of as an affected party by the Council whose role it is to approve or decline the Resource Consent. This therefore means that the Trust may not necessarily be made aware of Resource Consents which may affect heritage directly. Hence the RMA puts too much of a reliance on Councils to consider whether heritage is an important matter or not for their District. Most Councils also have no in-house heritage staff that may highlight the possible affects of a Resource Consent on archaeological sites, and so it is up to the Trust Heritage Advisors, such as the Planner or Archaeologist, to actively seek information from Councils on Resource Consent applications in areas where heritage may be impacted.

A fundamental flaw in the RMA is the view that archaeological sites are a “sustainable resource”. Archaeological sites and remains are finite resources which require careful consideration and management. Unlike natural resources where impacts may be mitigated or damage may be restored more readily, once an archaeological site is destroyed, then this loss is irreversible and restoration is no substitute for lost heritage. Under the RMA certain Resource

Consents do not have to be publicly notified (as noted above), and therefore any cultural heritage which may be impacted on can not be “sustainably managed” as it can not be evaluated by an independent qualified heritage advisor. Non-notified Resource Consents appear to be responsible for numerous losses of archaeological sites around the country.

- **The POA**

The goal of the POA is the protection of *taonga* from illegal possession, trade and export. It also protects artefacts from Maori, European and Chinese archaeological sites from being exported. This legislation, however, falls well short of protecting all artefacts from New Zealand archaeological sites. As noted above, all Maori artefacts fall under the stewardship of the Crown until the rightful Iwi or Runanga is identified as being the owner. This offers a clear path to protection, but for European or Chinese artefacts protection is dependent solely on the landowner from where the artefact derived. Although an Archaeological Authority may require detailed analysis and recording of a European or Chinese artefact from an archaeological site, after analysis the owner can do what he/she wishes with that item regardless of the national significance of that item (see “Wall St.” corduroy causeway below). This places this physical aspect of New Zealand’s European/Chinese history in the hands of the individual whereby significance and appropriate deposition of an artefact is judged by a private citizen.

- **Restoration by restricted choice rather than need**

Cultural heritage restoration activities are not a common practice in New Zealand for archaeological sites and remains. This only occurs where there is a will by individuals, groups, developers, Councils or Government bodies, such as the Department of Conservation. Restoration of archaeological sites and remains are therefore not undertaken in terms of there being a need, but when a choice is made whether restoration is to be undertaken or not. Two case studies in the Otago area illustrate this: the Come-In-Time Gold Mining Battery Restoration Project and the Macetown Huts & Battery Restoration Project.

The Come-In-Time Gold Mining Battery is a 19<sup>th</sup> century hard rock gold mining battery located in the Bendigo Historic Reserve near Cromwell in Central Otago (see Figure 37). This reserve is managed by the Department of Conservation (“DoC”), the Government agency required to manage Crown Conservation Land for the public.



Figure 40. Come-in-Time gold mining battery, Bendigo, Central Otago. Before restoration works. (photo: Matthew Sole).

This gold mining battery is a significant structure as it is one of the few remaining in Otago in relatively good condition on its original location of last use (Figures 40 & 41). This battery required its main structural timbers to be replaced as they had rotted to a stage where collapse of the structure was imminent. Recognising this need, a local group called the Otago Goldfields Heritage Trust raised the money required to have the rotten timbers replaced and the stonework around the battery stabilised. This positive project saw this battery restored and today it can be visited safely by the public. This restoration, however, was not funded by the Department of Conservation, on whose land the battery sits, but a public group whose purpose is to protect, promote and restore goldfields heritage. This project should have been solely funded by the Crown through DoC as part of the role of this government agency is the management of heritage on its lands.



Figure 41. The Come-in-Time gold mining battery after restoration works *ca.* 11 months later. The replaced macrocarpa timbers will eventually weather and appear as the aged originals.

The restoration works of the Macetown Huts & Battery at the DoC managed Macetown Historic Reserve was funded by the Crown. Macetown was a 19<sup>th</sup> century town located in an isolated river valley near Arrowtown in Central Otago (Figures 37, 42 to 44). This town and its associated gold mining sites and remains is regionally significant as it tells the story of changes in 19<sup>th</sup> century mining techniques, from early low level sluicing for gold to later high altitude hard rock mining, and how the successes and failures of these changes affected the prosperity and population of an Otago Goldfields town. Remains of sluicing such as tailings and sluice faces are everywhere, as well as hard rock mining tunnels, huts, mining batteries, skylines, water races, tracks and town buildings etc. The town is visited by large numbers of tourists who access the isolated location by four wheel drive through rough terrain and via many river crossings.

Two historic stone buildings in the town and a nearby metal gold mining battery required restoration to ensure these structures did not collapse in the near future (Figures 42 and 50). The DoC Area Office which managed this reserve therefore required funding for the restoration works, but obtaining this funding was on a competitive basis within DoC itself as other heritage projects on other DoC reserves also required money. Although the bid for money was successful by the Area/Conservancy, and the restoration completed, this project illustrated the alarming lack of investment by the Crown in the restoration of cultural heritage archaeological sites and remains on its own property. Because of this lack of money for such works, DoC Area Offices and Conservancies have to compete for national funding and therefore have to choose on a Regional level what heritage items can be left to degrade at the expense of another. Restoration activities by DoC are therefore not based on need but on restricted choice.

This management of heritage is contrary to the role of DoC whose primary function under the Conservation Act (1987: Section 6) is “*To manage for conservation purposes, all land, and all other natural and historic resources*”. As the biggest land manager in New Zealand whose property contains hundreds of archaeological sites and remains which are freely accessible by the public, DoC only allocates 2% of its national funding to manage these resources (source: Department of Conservation Annual Report 2007). This level of funding is clearly not enough, and where one of the primary industries for New Zealand is tourism where visitors view cultural heritage sites on DoC land everyday, the degradation of sites from lack of management is not beneficial to the future of this industry.



Figure 42. Macetown in the *ca.* 1870s (Alexander Turnbull library).



Figure 43. View of historic mining surrounding Macetown. The town main street and ruins lie below the terrace in the centre of the photo. (photo: Matthew Schmidt).



Figure 44. Ruins of town buildings in Macetown. (photo: Matthew Schmidt).



Figure 45. Needham's Cottage before restoration. (photo: Matthew Schmidt).





Figure 46. Needham's Cottage after restoration.(photo: Matthew Schmidt).



Figure 47. Bakery before restoration. (photo: Matthew Schmidt).



Figure 48. Bakery after restoration works. (photo: Matthew Schmidt).



Figure 49. Metal gold mining battery before restoration works. (photo: Matthew Schmidt).



Figure 50. Metal gold mining battery after restoration works. (photo. Shar Briden)

- **Preservation and Restoration: the problems of funding, restoration skills & facilities**

The protection, preservation, restoration and on-going management of archaeological sites and remains is often expensive. In New Zealand there is a lack of funding to undertake such intervention on nationally important archaeological sites. To illustrate this, I have considered the recent archaeological find of the Dunedin 1850s Corduroy Causeway as a case study.

During the Dunedin City Council (“DCC”) “Wall St.” shopping mall development in Dunedin, Otago, a preserved timber causeway was uncovered in the wet clayey/pub substrate by the archaeologist working at the project under an Archaeological Authority issued by the Trust (Figures 36 & 51). This 14m x 3m causeway was buried 1.8m below the current ground level and was determined to have been built in the 1850s during the initial European settlement period of Dunedin, which eventually became one of New Zealand’s first main cities. This made the artefact a nationally significant cultural heritage item. The Trust worked closely with the DCC to determine whether this site could be preserved in-situ under glass in a controlled environment for public viewing. The cost of such preservation was determined to be very expensive but after an analysis of the timbers was undertaken by a wood preservation specialist, it was found preservation in-situ was not possible. It was therefore decided that a sample of the best preserved timbers would be retrieved from the site for conservation treatment, with these timbers put back on display near its original location and the remaining section of the causeway reburied.

This project revealed the inadequacies in New Zealand in the protection, preservation, and management of nationally significant archaeological sites, in particular those sites where wooden structures or items have been preserved in a wet environment. Considering first protection, because the timber causeway was an artefact of European origin and not of Maori make, then under the POA the landowner owned the structure. This meant it was the choice of the DCC whether any of this site would be preserved. The Trust or the Crown had no say on the future of this structure and it was only the good will of the DCC that steps were taken to preserve the site. If the timber causeway had evidence of Maori manufacture then the Ministry of Culture and Heritage would have been involved in the protection and management of the causeway.

Preservation of wooden structures or artefacts in-situ in wet-sites is expensive as such sites require on-going care and management. For this archaeological site, the Trust could only offer its advice on the steps required to achieve conservation of the causeway as the Trust has no funding available for the preservation, management or restoration of archaeological sites and remains. Although the Trust has a \$464,000 Incentive Fund, which is a fund that person may apply to for financial aid in the restoration of a Category 1 heritage building<sup>1</sup>, no such fund exists for significant archaeological sites. This means that for any archaeological sites or remains, be they made of wood, stone, bone or earth, that require direct intervention for preservation, the Trust

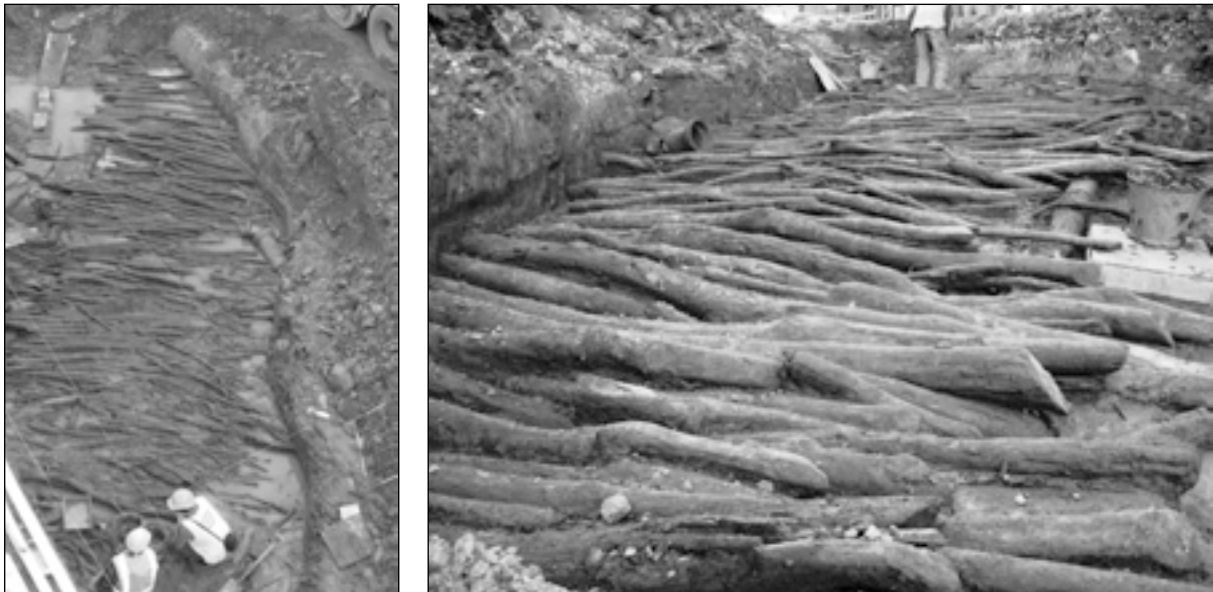


Figure 51. Corduroy causeway from the 1850s found during shopping mall development in George St., Dunedin. This causeway was built across muddy ground by the first settlers in Dunedin. (photos: Owen Graham).

<sup>1</sup>The Trust registers significant buildings as either Category 1 or 2, Category 1 being places of special or outstanding historical or cultural heritage significance or value.

can not support these projects financially and the onus is on the land owner. Direct Government funding was also not an option for this site as this only extends to Maori *taonga* where these items become the responsibility of the Crown to ensure these artefacts are conserved under the POA. This funding issue therefore creates difficulties not only for the Trust in advocating cultural heritage preservation, but also for landowners where they are expected to fund site preservation or restoration themselves on their own property or, when considering artefacts under the POA, preservation of heritage items of European or Chinese origin.

The “Wall St.” timber causeway project also illustrated the lack of skilled conservators available in New Zealand. The Trust has one conservation specialist and there are a number of other conservation advisors distributed around the country. However, there is only one specialist conservator in wood identification and preservation who is based in a laboratory dedicated to conservation work in New Zealand. For a country where Maori pre-contact artefacts and structures constitute items made of bone and wood, and where many European colonial structures were made of wood, one national specialist who can advise and undertake the laboratory conservation work required severely restricts the ability for New Zealand to manage any cultural items made of these materials. When the “Wall St.” timber causeway was first revealed, advice on timber preservation had to wait until the specialist wood conservator was back in the country. As the causeway was located in a deep hole, it could be flooded to keep the timbers water logged to reduce the rate of deterioration while specialist advice was sought. But the lack of timely advice caused delays for the development as no works in the area of the site could proceed which in turn caused problems for the Trust who was also trying to manage the site under the Archaeological Authority granted for the project.

## **8. Needs for Culture Heritage Protection and Restoration Activities for archaeological sites and remains in New Zealand**

From the problems identified in culture heritage protection and restoration activities of archaeological sites and remains in New Zealand presented, the needs for better ensuring this protection and to support restoration activities are clear. These needs are summarised below:

- New Zealand schools require a curriculum which focuses specifically on the archaeological and built heritage of New Zealand prior to 1900 AD. This curriculum should include detailed teachings on the life of Maori before and after the arrival of European/Pakeha as seen in the archaeological record. The contact period between these two cultures and the changes brought about by Europeans/Pakeha and the Chinese as revealed through the latest archaeological research should also be taught. This early

education may change the views many New Zealanders have regarding the significance of New Zealand's cultural heritage.

- The archaeological provisions of the HPA are a positive tool for cultural heritage preservation. However, for the New Zealand Historic Places Trust to more effectively administer these provisions, a significant increase in archaeological staffing and the administrative budget are required. Trust led archaeological research should also be funded so as the Trust may be seen as an active participant in cultural heritage studies and as a national promoter of 'best practice' archaeology.
- The RMA needs a tightening of its provisions regarding heritage sites. This should include making consideration of any effects on such sites during any notified or un-notified Resource Consent application compulsory. In addition, Councils should be required to list all known recorded archaeological sites in their District Plans, such as found in the NZAA SRS, and have specific rules regarding how Resource Consents are managed in areas where sites are known or believed to be present. All Councils should also have a full time heritage advisor to identify heritage at risk in Resource Consent applications to Council and to liaise with the Trust on heritage matters.
- The Ministry of Culture and Heritage needs to change the Protected Objects Act (1975) so as European/Pakeha & Chinese archaeological remains which are believed to be nationally significant are protected and eligible for conservation funding in the same way Maori *taonga* are.
- New Zealand archaeology needs a professional archaeological organisation which accredits archaeologists based on their qualifications *and* their skills and experience. This may help to resolve the issue of poor archaeological work being undertaken and lack of experience of new archaeologists.
- The Department of Conservation requires a significant increase in its heritage budget (up from the current 2% it attributes to historic heritage) to be able to manage and preserve cultural heritage items on its land. This budget would be specifically focused on heritage items and not recreation management in areas where heritage is present.
- A conservation laboratory is required in the South Island and more wood conservation specialists need to be trained to ensure historically significant wood or bone remains can be preserved for future generations.

- The Trust provides an Incentive Fund so as a private person who owns a Category 1 building may apply for money to aid in the conservation of that building. The Trust also needs an Incentive Fund specifically for Category 1 archaeological sites and for sites revealed during archaeological work where the finds are considered nationally significant, for example the DCC “Wall St.” corduroy causeway.
- The New Zealand Government should manage its own Incentive Fund for heritage where discoveries of national importance either on Crown or private land may receive funding for preservation and restoration.
- The New Zealand Government should directly fund the management of the NZAA SRS and the, yet to be launched, NZAA online Digital Site Recording Scheme (NZAA DSRS) in the long term<sup>2</sup>. This funding should include financing archaeological fieldwork directed to updating old archaeological site records nationwide and surveying areas where sites are known but are yet to be recorded.

Most of the needs identified above stem from problems with the implementation of the legislation on the protection and management of archaeological sites in New Zealand and inadequate money nationally to preserve significant sites. To resolve these needs, the New Zealand Government and Councils need to understand and recognise the importance of New Zealand’s cultural heritage particularly with regard to archaeological sites and remains.

## **9. Conclusions**

This report has attempted to identify the main problems and needs for culture heritage protection and restoration activities for archaeological sites and remains in New Zealand. Other problems and needs remain, for example the management of cultural heritage from the loss by natural processes, such as coastal erosion which is rapidly causing the loss of Maori archaeological sites, and the loss of heritage knowledge through the generation of ‘grey’ literature (unpublished reports) on archaeological investigations, for example reports produced by independent archaeological consultants for clients where the report may never be written up for publication.

It is through the identification and recognition of problems and needs that solutions may be found. For cultural heritage in New Zealand, these solutions are not surmountable, they just

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<sup>2</sup> The NZAA DSRS will be an internet based Site Recording Scheme where data from archaeological sites can be viewed and searched for via a map and search facility online. New data can also be added and downloaded.

need a will by Government and Councils to recognise that heritage is a finite resource and once lost, a piece of New Zealand's identity is gone forever.

## References

Anderson, AJ. 1989. *Prodigious Birds: Moas and Moa-Hunting in New Zealand*. Published by Cambridge University Press.

Anderson, AJ. 1991. The chronology of colonisation of New Zealand. *Antiquity* 65:767-795.

Buick, T. 1937. *The Moa-Hunters of New Zealand: Sportsman of the Stone Age*. Thomas Avery and Sons Limited.

Conservation Act 1987. Government of New Zealand.

Davidson, J. 1987. *The Prehistory of New Zealand*. 2nd Edition. Longman Paul, Auckland.

Department of Conservation, *Annual Report for the year ended 30 June 2007*.

Fox, A., 1976b. *Prehistoric Maori Fortifications in the North Island of New Zealand*. Auckland, Longman Paul.

Furey, L. 2006. *Maori gardening: An archaeological perspective*. Science & Technical Publishing, Department of Conservation.

Groube, L.M., 1970. *The Origin and Development of Earthwork Fortifications in the Pacific*. In R.C. Green and M. Kelly (eds.) *Studies in Oceanic Culture History*, Vol. 1. PAR 11, Bishop Museum, Honolulu. pp. 133-164.

Higham, TFG. 1994. Radiocarbon Dating New Zealand Prehistory with Moa eggshell: Some Preliminary Results. *Quaternary Geochronology (Quaternary Science Reviews)* Vol. 13 pp. 163-169.

Higham TFG, Anderson AJ, Jacomb C. 1999. Dating the first New Zealanders: The chronology of Wairau Bar. *Antiquity* 73: 420-427.

Historic Places Act 1993. Government of New Zealand.



McClellan, G. 2000. *Where Sheep May not Safely Graze: A Brief history of New Zealand's Heritage Movement 1890-2000*. In *Common ground : heritage and public places in New Zealand* in Trapeznik, Alexander (ed) -- Dunedin: University of Otago Press, 2000. pp.25 – 44.

New Zealand Historic Places Trust. *Statement of Intent 2007-2010*.

Protected Objects Act 1975. Government of New Zealand.

Resource Management Act 1991. Government of New Zealand.

Schmidt, M. 1996. *The commencement of pa construction in New Zealand prehistory*. Journal of the Polynesian Society 105(4), 441-460.

Schmidt, M. 2000. *Radiocarbon Dating New Zealand Prehistory Using Marine Shell*. BAR International Series 842, Hadrian Books, Oxford, England.

Wilmshurst JM, Anderson AJ, Higham TFG, Worthy H. 2008. Dating the late prehistoric dispersal of Polynesians to New Zealand using the commensal Pacific rat. *Proceedings of the National Academy of Sciences* vol. 105, no. 22, pp. 7676-7680.

## **Pakistan**

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### **Problems and Needs of the World Famous Prehistoric Site of Harappa, District Sahiwal, Pakistan**

#### **INTRODUCTION**

Pakistan gained independence from the British and came onto the globe on 14 August 1947. It is located in South Asia, having common borders with India to the east, China to the north, Afghanistan to the northwest, Iran to the southwest, and the Arabian Sea on the south. Nature has gifted Pakistan with all types of geographical features. The northern areas of Pakistan are occupied by snow-covered high peaks such as K-2, Naga Parbat, Rakaposhi, and icy glaciers, whereas the northwestern high mountains separate the country from Afghanistan. Central parts of Pakistan consist of fertile plains irrigated by the rivers Sindh, Jehlum, Chanab, Ravi and Satluj. The Cholistan, the Thar, and the Thal are the major deserts of Pakistan. Karachi, Bin Qasim and Gawader are three seaports on the Arabian Sea. It is an ever-fascinating country. It is also one of the countries having the most ancient cultures in the world. It has an amazing ancient past, and a splendid history exists in the form of monuments and ancient sites. The Department of Archaeology and Museums is the only organ responsible for preserving, protecting and controlling moveable and immovable cultural heritage in Pakistan.

#### **LEGISLATION REGARDING THE CULTURAL HERITAGE**

Legislation for the protection and preservation of archaeological sites and monuments started during the British period, and after making various amendments from time to time on old acts, a new act



under the name of the Antiquities Act 1975 has been enacted, which is now part of the constitution of Pakistan. This act provides all necessary powers to the Department of Archaeology and Museums for the protection of cultural heritage. Through this act, the Department of Archaeology and Museums, Government of Pakistan, can declare as protected any moveable or immovable property that may be considered worth protecting. Under this act no one, except the Department of Archaeology and Museums or persons acting with its permission, can carry out archaeological explorations, excavations, and conservation activities throughout the country. The Department of Archaeology and Museums is also responsible for controlling illegal trade in antiquities. In short, the Antiquities Act 1975 is a very important document regarding the preservation and protection of the culture heritage of Pakistan.

### **ARCHAEOLOGICAL ACTIVITIES IN PAKISTAN**

Archaeological activities in Pakistan started in nineteenth century when British archaeologists Alexander Cunningham, Sir John Marshall, and Aural Stein carried out an archaeological survey on a large scale. As a result of such archaeological surveys many sites and monuments from the Stone Age to historic periods were discovered. Among them the prehistoric sites of the Indus Valley Civilization and early historic Buddhist sites in the Gandhara region are the most distinguished. On the other hand, the historic period tombs, graveyards, and shrines of the Hindu Shahi, and monuments of early Islamic and Mughal periods represented by forts, gardens, mosques, and tombs are most significant in Pakistan. In the wake of the archaeological surveys, scientific excavations, conservation, and restoration of all important sites and monuments started in the beginning of nineteenth century and are still going on.

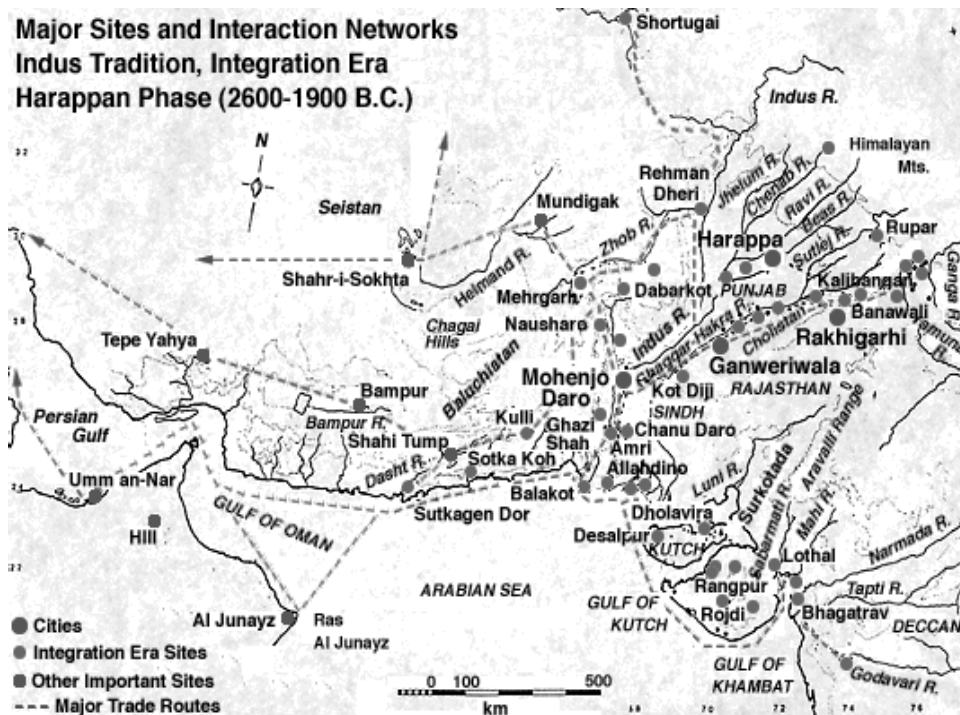
Pakistan is one of those countries with a complete chronology of human history from the Stone Age to present times. Luckily, we have archaeological sites and monument of many different periods. The sites of Harappa and Mohenjo-Daro, the two major urban centers of Indus Civilization and many other Buddhist sites like Taxila, Takhat Bai, and their monuments represent the different types of architecture, masonry, and various types of materials which have been used in the construction of different monuments all over the country. The archaeological remains and monuments are scattered over a variety of climatic and geographical environments. All these sites and monuments are faced with various conservation and restoration problems that are all different from each other. In this report it is too difficult to discuss all the problems facing these sites and monuments, accordingly the focus will be limited to only the prehistoric archaeological site at Harappa.

### **HARAPPA, METROPOLIS OF HARAPPAN CIVILIZATION**

#### **LOCATION, DISCOVERY, EXCAVATIONS**

The site of Harappa is located about 27 kilometers southwest of Sahiwal city. It is the second largest city of the Indus Valley Civilization, which flourished from about 2,600 to 1,900 B.C. over an area that includes much of Pakistan. Some sites of the Indus Valley Civilization are also situated in western

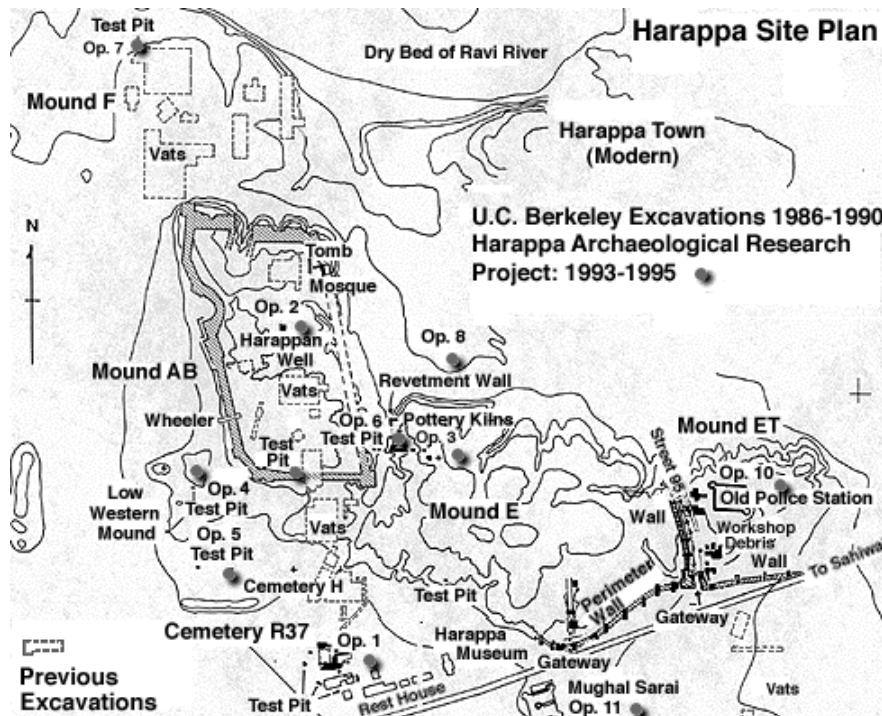
India and southern Afghanistan. Mr. Masson, a British military deserter, first visited the site of Harappa in 1826. After that Mr. Alexander Cunningham visited the site twice in 1853 and 1856, and reported it to the Government. After a long period, Harappa was declared a protected site in 1920, but unfortunately before the area was declared protected the mounds of Harappa had long been the source of brick ballast for the approximately 160-kilometer line of the Lahore-Multan Railway, as well as a ready source of bricks for the local people of modern town of Harappa. Most of the brick structures were thus destroyed by the construction of the railway line and stealing by locals. About this destruction, M. S. Vats (excavator of the site) says “I made several excavations at Harappa, but the whole surface had been so cleared out by the railway contractors that I found very little worth preserving.” After the protection, archaeological excavations were started and different archaeologists excavated the site and exposed a large number of antiquities and structures. The first excavation was made by Daya Ram Sahni in 1921, and continued up to 1925. Then Mr. Vats excavated the site from 1926 to 1934. K. N. Shastri excavated the site in 1937, and Sir M. Wheeler excavated from 1944 to 1946.



After the independence of Pakistan on 14 August 1947, Dr. Muhammad Rafique Mughal carried out excavations at Harappa in 1969, and provided a large amount of information for scholars and tourists.

An American archaeological mission under the guidance of G. F. Dales, Richard Meadow, and J. M. Kenoyer started archaeological research at Harappa in 1986, and it is still going on with the coordination of the Department of Archaeology and Museums, Government of Pakistan. As a result of these excavations a large area of the Harappa site has been unearthed, and the chronology of the site established as follows.

1. Ravi aspect Hakra 3500–2800 B.C.
2. Kot Diji Phase 2800–2600 B.C.
3. Harappan Phase 2600–1900 B.C.
4. Harappan\late Harappan transition 1900–1800 B.C.
5. Late Harappan (Cemetery H) phase 1800–1500 B.C.



#### GENERAL DESCRIPTION OF THE ANCIENT SITE OF HARAPPA

The entire extent of ruins at Harappa is roughly 12,500 feet or nearly 4 kilometers in circumference, with a height of 60 feet above the surrounding cultivated fields, and lies on the left bank of river Ravi. It may again be mentioned that the brick diggers, before excavation, made the whole site so disturbed that in 95 percent of cases it is impossible to understand the plan of the actual houses, not to speak of the layout of the streets, drainage system, etc. But from the available features of the remains, the old city of Harappa may be divided into two parts, the lower and the upper. The lower part consists of the remains at Mound E towards the east and southeast where the southern gateway has also been recovered. To the south lie Cemetery R 37, Cemetery H, and Area G away to the southeast, and Mound F to the north. The workmen's platforms and quarters and the granary, which appear to have functioned under the administrative control of the Citadel, stand to the north and west. The upper part includes the whole of Mound AB and the Citadel area, where the defence wall and the western gateway are situated. A hypothetical tour through the site for visitors may be described as follows.

(a) *Cemetery R-37.* After studying the objects on display in the Museum, while proceeding on the approach path to the Harappa site, visitors on a study walk may first see Cemetery R-37 on the left

side. This cemetery was discovered in 1937, and further excavations were later conducted in 1944 and 1946. Here about 57 graves of the true Harappan period were uncovered. This is the only systematic cemetery of mature Harappan culture known at present.

*(b) Cemetery H.* Going a few steps further, the visitors come to Cemetery H. This cemetery has signs of utilization later than the last period of the Harappa mounds. The pottery recovered here is also distinct from that found elsewhere on the site in its fabric, shape, and decoration. The painted designs are stars, fish, peacock, oxen, and goat.

Some of the burials recovered have collections of bones regarded as “fractional,” i.e. incomplete collections of bones gathered after the exposure of the body. However, it is not clear whether they were truly “fractional” burials, or merely fragmentary because they had been disturbed later on. According to general opinion, Cemetery H belonged to people who occupied the site after the end of the Harappa culture. It is worth noting Area G in passing, situated to the southeast of the Museum, just opposite the Harappa approach road. Here an assortment of pottery has been discovered in association with human remains. Among this pottery there are in particular dishes which are more closely similar in shape, etc., to the offering dishes found in the Harappan mounds than to those discovered at Cemetery H. So it seems very likely that whatever may be the interval between the mounds and Cemetery H, Area G stands between the two, but nothing may be concluded pending further research on the subject.

*(c) Mound AB, Citadel area.* Entering into this area, there may be noted the remains of 54 jars located in a row. This row extends for 109 feet from east to west and cuts across the entire width of the trench. These urns were placed against the wall of several houses which stood originally in a line immediately to their south. A large number of such urns have also been found at Dabar-Kot, Pariano-Cundai Mughal Gundai, Mehi and Sutka-gendor in Balochistan Province.



*(d) A double-ringed well.* Adjacent to the row of urns, there exists a well with a double ring of masonry. The outer ring is 7 feet 3 inches in diameter and the inner one 3 feet 9 inches; the gap of 1 foot between them is filled with pure clay. It is twice as deep as any of the other well so far unearthed at Harappa. This is probably the reason why the outer ring, which must have been very costly to build, was considered indispensable for additional strength.

(e) *Western section of Mound AB.* Walking ahead just a few steps, remains of the western section of this area may be seen; these buildings are divided across the middle by an open space. At the west end of this space, and running north to south at a right angle to it, there is a broad passage near the western limit of the excavations between Houses 1 and 2. Two small earthen jars, lying close to each other, have been recovered from this spot.

Other important features of this area are the remains of an east-west wall on the northern side. Here may be noticed the opening of two small drains which appear one above the other. There is also a water chute sloping back near the side of the drains. Here exist the remains of an incomplete room where there is a broken drain to its south and also another which used to empty itself down into the drain of earlier periods alongside the water chute. At the back of this confused continuation of the structural remains, there may be noticed a large room. However, the west and south wall of this room are missing. The long wall, the water chute, and the drain openings described above, are so managed as to drain away towards the east through a gable-roofed drain which may be noticed for a length of about 130 feet.

(f) *The defense wall.* From here it is more convenient for the visitors to return to the western side of the Citadel where they may study the defense wall exposed in section. Four periods of construction may be observed in the section of the defense wall. Period I shows the time when the Harappans, after their first arrival at the site, constructed the fortification wall, and when the original revetment was reconstructed with first-class bricks and elaborately thickened. This phase represents the climax of Harappa Culture. In Period III, the northwest corner was consolidated by an additional bastion and the entrances of the western gateway system were blocked. Period IV probably represents the roughly built houses on the site of the western terraces which stand above a layer of debris, and are associated with the newer ceramics of Cemetery H.

(g) *The Western Gateway.* Continuing their sight-seeing, the visitors go northwards and see the gateway. It is curved inwardly, and situated on the line of the western defense wall of the citadel. The width of the gateway appears to narrow down from 8 to 5 feet as it approaches the fortification wall. Such a narrow passage could have served no other purpose than as a small gate in time of danger. It may be noted here that the probable site of the main entrance, on the western flank of the citadel, is a few steps further towards the northwestern corner of the defense wall. To describe the same, it is better to quote M. Wheeler, who says: “relatively modern depredation had reduced the whole area to a shambles such as I have never before encountered on any ancient site—the ground had been ransacked for bricks almost from end to end top to bottom.” Nevertheless, patient and extensive excavation revealed the probable site of the main entrance at a point where the mud brick structure of the defensive system was interrupted by a rising passage between lateral walls of mixed mud brick. If, as appears likely, this was in fact the site of the main western gate, only the sub-structure of it remains.

(h) *Northeastern side of the Citadel.* After visiting the site of the western gateway, the visitors may turn to the right and proceed to the northeastern side of the citadel area. There is a tomb of a Muslim saint, Nor Shah. By the side of this tomb and associated with it is the building of a mosque. Not far from this, but at higher level to the west, had been found the remains of flights of steps on both the eastern and western faces of the citadel, and also the foundation of a large square building. However, no signs of this reported building now exist as it seems to have been removed by the brick diggers before excavation. In these disturbed remains there may, however, be noticed the structure of an oblong room measuring 14 by 12 feet internally, but its walls are not bonded with one another. In contact with and parallel to its northern wall, is a slightly earlier wall which is seen projecting from below the east wall of this room.

From this part of the citadel, a heap of large undulating stone rings, polished architectural stone pieces with tube-drill holes and heavy socketed stone pedestals, have also been unearthed. The foundation of the square-shaped building as mentioned above, and these material evidences together, may indicate the probable site of the Harappan Temple.

Again at the top of these structural remains of the supposed temple, there are found several large-sized brick tiles, terracotta panels with human figures, a few cast human heads, and pottery spouts showing a clear workmanship of the Gupta period dating to the 4<sup>th</sup> century A.D. A similar situation is confronted in the citadel area at Mohenjodaro, where the highest part was crowned with a Buddhist stupa and monastery. Beneath this construction, the supposed temple at Mohenjodaro is likely to have been buried. So it is possible that like the Stupa Mound at Mohenjodaro, the top northern extremity of the citadel at Harappa was also occupied by a Buddhist settlement in early Gupta period.

(i) *A well-to-do house on Mound F.* From the remains described in the citadel area, the visitors may step slowly further north and see the rest of the remains belonging to the lower part of the city. To the right at a low level on the eastern slope of Mound F may be seen the remains of a well-to-do house. It is a large house and the eastern part of its plan is quite clear, while its western part is broken and partly buried, and hence not clearly understood.

(j) *Trench I.* As a continuation of these monumental remains, but on a higher plain and just on the right side of the approach path, there is a large trench, measuring 224 feet north-south by 68 feet wide. In this trench, eight strata of occupation, each in fragmentary condition, have been unearthed. This area has been disturbed by brick diggers to an extent that no precise description of its remains can be reproduced. Among the most important and interesting finds, from the southern portion of this trench, is an extremely delicate miniature of a two-wheeled copper chariot which has been pieced together from numerous fragments. The chariot is open both front and back and has a gabled roof. The driver is shown in front on a raised seat, but the animal supposed to be yoked to the chariot, the poles, the wheels and the axle are all missing. The chariot is very small at only two inches in height. As an



instance of a covered chariot, it is the first example from the sites of Harappa culture, antedating the earliest use of a wheeled vehicle in Egypt by several centuries.

*(k) The workmen's platforms and quarters.* At a small distance from Trench I are the workmen's platforms and quarters to the southwest, and the granary to the northwest. To begin visiting these buildings, the workmen's platforms and quarters are best viewed first. These platforms are 20 in number and circular in shape. Each platform is 11 feet in diameter and consists of a single course of four continuous concentric rings of brick-on-edge masonry with a hollow space at the center, equal to the length of three bricks. The mortar used in them is mud, but the pointing is of gypsum. In the central hollow of one of these platforms there was found a quantity of burnt wheat and husked barely, while another one offered evidence of some fragments of straw or huts in centre. It is therefore presumed that the platforms surrounded a wooden mortar, where grain was pounded with long pestles.



Here also mention may be made of a small well which is situated slightly to the north, between Platforms 4 and 5. Its diameter is 2 feet 4 inches. The discovery of four large pottery jars, lying one above the other near the well, indicate that the jars were used for the storage of drinking water for wayfarers. It is of interest to mention also that 15 feet northwest of this well, the small torso of a nude figure, carved in the round in red sandstone, was discovered.

Adjacent to the platforms there may be seen an array of small residential quarters for the workmen, which are 14 in number. Originally, these houses were all carefully planned, and with the partial exception of Houses 5 and 9, closely resembled one another. But most of the remains of these houses have perished, about which M. S. Vats says: "In many cases the original walls are now represented by nothing but a few brickbats belonging to their cores, and in some cases by mud brick or only a rammed bed of earth for laying the foundation." However, from the surviving remains of some of the houses, it appears that each house is rectangular, consisting of three rooms, or of a courtyard and two rooms. The entrances of these houses are peculiarly shaped with oblique passages which are meant probably for preventing any one looking into the inside of the house from the outside lanes. It is important to mention here that a large collection of jewelry, including gold and silver articles, has been recovered from the courtyard of House 2.

*(l) Furnaces.* To the west of these quarters, there may be noticed a furnace surviving from among 16 found on and about the site of these small houses, but at a higher level. From the discovery of a crucible in the vicinity, it is thought that the furnaces may have been used for melting metals.

(m) *The Granary.* At a little distance toward the north, there may be observed the blocks of the granary. The granary is the best and most imposing monument at Harappa. This extraordinary monument, which measures 168 feet from north to south by 135 feet from east to west, was obviously a public building of great importance for the whole city. It is situated on the northwest flank of Mound F. It consists of two similar blocks (eastern and western) opposite each other, with an open passage 23 feet wide between them. Each block comprises six halls alternating regularly with five corridors which open only on the outside. Each of these halls is partitioned into four narrow divisions by full-length walls which terminate in broader piers at both ends. Excepting the piers, which are made entirely of fired bricks, the remaining portion of these dividing walls is made sometimes of fired bricks, but more usually of fired and sun-dried bricks.

Some time later, the passage between the blocks of halls had to be provided with series of air holes at the end of each block at a higher level, in order to maintain the free circulation of fresh air through the original passage. This device was introduced to keep the grain in a better state of preservation. There is also a common foundation wall, 3 feet 6 inches wide running underneath the entire length of the two blocks, without any corresponding walls at the opposite ends.

The halls, each measuring about 52 by 17 feet, had been timbered over with a cover which rested on the brick walls. Access to them could be had directly from the corridors, which were probably sloped up to the entrance of the hall or from the passage, where remains of steps are discovered both on the eastern and western sides of the blocks.

The granary was used for storing either the surplus, or the state's share of crop produce, paid as taxes. There is relevant evidence found in other countries, such as the long, narrow store houses provided at the Minoan palaces at Knossos and Phaestus in Crete. In connection with this similarity, John Marshall, as quoted by M. S. Vats, observes: "In some of the roman forts in England and Germany, there are structures remarkably like the Great Granary at Harappa with the same long narrow galleries and the small apertures at the bottom of the end walls—intended to allow the circulation of air under the floors, to prevent the grains becoming mildewed. The resemblance of one



of these granaries, which I visited on the Roman Wall this summer, to the Harappa Granary was very striking.”

The most interesting find of this area is the torso of a dancer, made of dark-grey stone and discovered in the Intermediate I level of the south of Hall VI in the eastern block.

*(n) Houses, streets and the southeastern gateway.* From the granary area the visitors may return to Mound E on the southeastern side to see more remains of the ancient city. These include the structures of houses, streets, and evidence of a copper workshop and the site of the manufacturing of shell and agate beads. It is here on the southern side that a lofty mud brick wall has survived which seems to have encompassed the entire mound. The width of the wall varied from 19 feet 8 inches to 29 feet 7 inches, and may have been configured several feet high. At this place, there also exists an imposing fired-brick gateway which checked the movements of the inhabitants of the southern flank of the city. Both the wall and the gateway belong to the mature Harappan phase of the city. In connection with the gateway system, mention has already been made of the western gateway supposed to be buried on the western side of the Citadel area.

*(o) Architecture and masonry.* The foundation of Harappa city was laid out in accordance with a pre-engineered scheme. But the brick diggers, as pointed out earlier, had disturbed the entire site to such an extent that the complete layout of the houses could not possibly be reproduced by the excavators. In this context, M. S. Vats says “The aspect of the ruins, so far brought to light, is in general so hopelessly mutilated that in 95 per cent of cases it is impossible to draw even a tentative plan of what the houses once looked like, much less to reconstruct their facades, or the layout of their streets, drainage systems, and the like.” However, from the study of the few better preserved remains it is apparent that from the earliest time onwards, most of the Harappans lived in houses made of fired bricks. The usual size of the brick is 11 by 5.5–3 inches in the better class houses; sometimes bricks with relief works were also used for decoration. Both fired and mud bricks were used in the middle class houses in the intermediate period of the city’s life. In some cases broken bricks were used for raising solid terraces to ward off the danger of floods. Mud was used as a common mortar in the masonry work but in some cases gypsum was also used for pointing, to add solidity to the structure.

The house floor was usually made either of mud or bricks, laid flat but also partly executed with the bricks stood on edge. The bathrooms were paved with well-rubbed bricks, having very fine joints. Bricks laid on edge, either on their longer or shorter sides, were used to border the pavements. The remains of houses are of very small height, and as such no signs of windows etc. have been traced. It is for this reason that not much corbelling work has been founded in the city of Harappa. It is interesting to mention that only three instances of stairways have been observed in the excavated buildings. Their risers are high and the steps narrow.

Drains made of fired bricks have been discovered. They are covered either with flat roofs, gabled roofs, or round arches. In some cases, the drains have been kept completely open. These open drains

were probably meant for the drainage of a particular area. There were dustbins alongside the drains sunk below the ground level. These were always paved and built at suitable places in the street. There were also refuse water pits lined with jars which were used for storing the used up water from the baths or kitchens, and were to be cleaned by the sweepers employed by the civic authorities especially for this purpose.

In Harappa only six wells have been found, and as compared to Mohenjodaro the wells are very few. They are all public wells, and their diameters range from 1 foot 10 inches to 7 feet. It is to be noted that the wells found in Mound F are so small that two people cannot draw water from them at the same time. But the diameters of the wells situated away from the ancient bed of the Ravi are much bigger. The reason is that the people living close to the river used well water only for cooking and drinking purposes, while people occupying the area of the city away from the river utilized well water for all purposes, and hence the construction of large size wells was a reasonable necessity.

### **CONSERVATION PROBLEMS**

The Department of Archaeology is responsible for the preservation and presentation of the cultural heritage of our ancient past. So far as the conservation aspect of the archaeological discipline is concerned, it is a continuous and slow process and no let up can be allowed without risking the breakdown of the site and the monument. This vital function is performed by the two Circle Offices, the Northern Circle of Archaeology, Lahore and the Southern Circle of Archaeology, Karachi, with various sub-regional offices; their trained staff, appointed to look after these monuments, is also responsible for the conservation, preservation, and restoration of the monuments, and maintenance of archaeological sites and museums under the jurisdiction/control of the Circles and sub-regional offices. The visual manifestations of the past demand from the experts that their originality not be impaired or damaged while strengthening their fabric, conserving architectural features, and preserving any embellishment and decoration. The job is, therefore, of a very sensitive and delicate nature. A thorough study of the structure is made and the material closely examined before planning any such project. The financial limitations notwithstanding, the results of all the undertakings in this field have been rather satisfactory. Harappa is one of those sites which have faced many conservation problems. Harappa is a huge site and the remains at Harappa having great archaeological importance are scattered over an area about 84 hectares. The archaeological mound of Harappa is visible from a long distance, having a considerable height of about 60 feet above the adjacent ground level. The entire area lies buried except where archaeological excavations have been carried out from 1920 to the present date. Both the areas of site that have been excavated or are lying intact are facing many hazards under the effects of weathering, and above all due to their aging. These problems may be summarized as follows.

### **EFFLORESCENCE**

Efflorescence is a very common problem here being faced by the entire site. When a structure or

any object is unearthed, it begins to turn brittle under the effect of efflorescence interacting with the open atmosphere, and the entire surface of the structure or unearthed object is covered with an accumulation of salts, thereby disintegrating into ash. As the entire site is badly under colossal attack from this menace, the removal of the salts from the entire site is almost impossible. However, the unearthed structure/object may be secured by treating it chemically after the process of desalination. It is worth mentioning that the desalination of moveable objects both small and big is possible easily in the laboratory, whereas the immovable, intact, large and massive structures at the site are difficult to desalinate completely. However, the laborious desalination work is executed by the conservation laboratory.



#### DEFACING OF SECTIONS OF EXCAVATED REMAINS

The archaeological excavations were carried out over numerous areas of the site in 1920 and it is still going on. After the lapse of a considerable period, deep sections of the excavated areas gradually start to become defaced due to having no binding force between the loose, salt-affected and swollen particles of mud in the presence of the weathering effects of sun, rain, and wind, and the many visitors who have come to the site since the time of excavation. In this situation, one has no idea about the exact extent of an excavated trench, and the trench is found in a completely ruined condition.

To keep the badly defaced sections of the excavated trenches in a presentable condition, the erection of retaining walls against the defaced sections has been practiced in the past, especially at Mounds AB and F. Before erecting the retaining walls against the defaced sections, the basic ethic of conservation was kept in mind that the measures being adopted should be reversible. For the purpose of erecting the retaining wall both fired and sun-dried bricks were used for masonry materials, while using mud as mortar.

On the faces of the wall, burnt bricks were used for strengthening, while on other parts of the wall the sun dried bricks were used. Before laying the retaining wall in the required position, loose

earth from the defaced section lying on a slope extending down inside the excavated trench was carefully removed, given the possible presence of antiquities in the loose soil, and a foundation trench was also dug very carefully keeping in view the exact extent of excavated trench. The foundation bed was not laid in a uniform level rather it was kept low or high for various stretches depending upon the availability of comparatively hard soil to bear the dead load of the wall being erected. The second purpose of keeping uneven levels at various stretches was to avoid the maximum cutting of the earth at the site, and thirdly, adding the minimum retaining wall structure, and fourthly, to minimize the thrust pressure of the back-filled mud behind the retaining wall. Moreover, abutment walls along the length of the retaining wall, behind it in the shape of the letters T or U, were provided to avoid the overturning of the wall under the thrust pressure of back-filled earth.



The retaining wall was also kept slightly tapering towards the top to bear the maximum thrust of the back-filled earth. First the lower most portions of both the retaining and abutment walls are completed and after maintaining the uniform level of the uneven retaining and abutment walls, the entire wall was completed up to the top level of the section. The gaps behind the retaining wall were refilled and compacted with a filling of earth removed from the trench, after screening to sort out possible antiquities in the soil. The face and the top of the back-filled areas were then plastered over with mud mortar, to avoid the penetration of rain water in the newly built retaining wall.

#### CONSERVATION OF EXISTING STRUCTURES AT THE SITE

As a result of scientific excavations at the site both moveable and immovable antiquities have been made available from the site. The moveable antiquities are brought to the laboratory for their chemical treatments. While the immovable antiquities remain intact at site, which may be in the form of archaeological remains, statues, etc., at Harappa the lower level remains were unearthed as a result of theft of bricks before declaration of the remains as protected by the Department and the carrying

out of archaeological excavations. These structures now face many hazards to their existence being exposed to the open atmosphere. Efflorescence is the worst enemy of the existing structures. The removal of saltpeter from the core of the thick and massive structures is not only laborious work but also impossible to conduct completely, but which is carried out at site by the archaeological laboratory established for that purpose.

With the passage of time the bricks originally laid with mud mortar are subjected to various weathering effects, losing the bondage between the mud mortar and the bricks and as a result, the



structures become loose and disintegrate. To keep the structures intact, re-erection of the loose portions of the structures is done either by means of underpinning by inserting the original bricks in the core, applying fresh mud mortar to the effected portion, or by inserting new bricks of the original size with fresh mud mortar if the original bricks removed were too brittle to enable their reuse. However, every effort is made during the process of conservation so that the original pattern of laying the bricks is followed.

#### STRENGTHENING OF EXISTING ARCHAEOLOGICAL STRUCTURES AT THE SITE

During the process of archaeological excavations in the past, various structures besides other moveable objects were discovered from different levels. Among the existing structures, having their foundations intact in the bed of the excavated trench, some are found from the lowermost level relating to the early period, while others are found from the medium and upper levels, relating to comparatively later periods. Structures from the medium and upper levels are standing on the pedestal of earth filling originally under their respective foundations. As the original earth filling is loose, it becomes swollen and is badly affected by efflorescence. Hence, it is very necessary to keep the original earth under the structure intact. For this purpose a technique called erecting “mud pushta” (retaining wall) is applied



at site. During the process of conservation a protective thick layer of mud mortar mixed with *bhusa* (wheat straw) is applied around the earth filled pedestal of the structure keeping the mud mortar tapering towards the top. After this process, the original earth filling under the structure is saved from the pressure of the dead load of brick structure over it.

#### EROSION OF HISTORICAL MOUNDS UNDER THE EFFECTS OF WEATHER

The archaeological mounds Harappa are of various levels at various locations, with sloping slides. These mounds are constantly subjected to various weathering effects. Among them wind is one natural factor in their erosion. At Harappa from May to the middle of October the days become very hot. Towards the end of August and around the middle of September, a change in the temperature may be noticed especially in the morning times and after sunset. A breeze, often changing into a strong wind, usually blows at night during the hot weather. Dust storms are common features in this area. So the loose, swollen and salt-affected mud of the mounds keeps escaping under the blowing wind, a natural phenomenon that is impossible to overcome in general, but the intensity of the blowing wind can be lowered by planting vegetation in abundance at site.

The second weathering factor is the rain falling over the site area, which starts generally in the month of July, but the fall is on the average greatest in August. In November, there is no rain but up to December the fall may generally be observed twice. As a result of the heavy lashings of rain, water begins to flow very rapidly downstream, sliding over the slopes of the mounds to find its natural way. The rapidly descending rainwater from the slopes causes a lot of destruction to the prehistoric mound. The rainwater erodes the slopes, making fissures, gaps, and gullies, taking away with it the unearthed moveable antiques and leaving behind the existing naked structures to face the hazards at the hands of weather and other agents responsible for the destruction of the site. The rainwater, after descending





from the mounds, collects at various points and starts flowing very rapidly towards the low-lying adjacent areas around the mounds, causing the cutting and erosion of those areas under its rapid flow.

The natural solution to this problem is to plant sufficient vegetation all over the historical mounds to cut down the speed of the descending flow of water and minimize the erosion at the site during the hours of heavy rains.

The second possible man-made solution to this problem is giving safe passage to the rainwater to minimize the erosion process during the hours of rain. For this purpose measures can be taken such as refilling the fissures, gaps, and gullies with mud and compacting fill, and moreover, dressing the surface in a way to give a wider and safe passage to the rain water instead of a narrow one which causes rapid erosion.

Many other reversible practical measures can also be adopted for minimizing the erosion of the site. Among them one is to lay a thick layer of mud mortar mixed with *bhusa* (wheat straw) over the treated area mentioned above, and then laying a jute mat or polythene sheet, or simply putting a layer of loose dry straw over the mud, and then applying another mud mortar layer over it to provide a safe and wider passage for the rain water, to check erosion. This measure can be repeated when previously laid layers are eroded due to rain water.

Another reversible measure which may also be adopted at the site is the rough dressing of the descending passages of rain water and provision of a layer of mud mortar mixed with *bhusa* (wheat straws), and then laying simply a dry layer of sun-dried bricks stood on edge with a thin bond of masonry. The top of the sun-dried bricks may be kept free of a layer of mud mortar or it can be provided with such a layer, keeping in view the position of the site. This measure will also provide a safe passage for the descending flow of water without affecting the site. This very simple process may be repeated if the sun-dried bricks in the path of the water are washed away due to erosion.

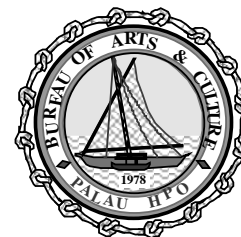
## Palau

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## **Country Report of the Republic of Palau: Bureau of Arts and Culture**

### **INTRODUCTION**

The Republic of Palau is one of the smallest nations in the world, located in the westernmost island group in Micronesia, approximately 7 degrees north of the equator. It is about 700 kilometers east of the Philippines and about the same distance north of Papua New Guinea. Palau is an archipelago of approximately 500 high and low islands. The main archipelago consists of a chain of islands that covers an area 160 kilometers long in a northwest to southeast direction, and 25 kilometers at its widest width. Palau is divided into sixteen states that govern by their state constitutions in line with the national constitution. The inhabited islands of Palau include from north to south: Kayangel, Babeldaob, Koror, Peleliu, Angaur, and the Southwest Islands group. Most of the islands are encompassed by a barrier reef that stretches for approximately 105 kilometers, except for the Kayangel atoll to the north and Angaur and the Southwest Islands to the south.

Palau has a population of nearly twenty thousand who are Palauan, and approximately seven thousand foreigners. The foreigners are mostly from the Philippines, plus smaller groups of people from Bangladesh, India, Taiwan, Hong Kong, Korea, Fiji, and a few from Japan, Europe, and the U. S. as well as other people from Micronesia. We have our own language called Palauan, but English is widely spoken.

### **COLONIZATION**

Based on scientific studies, Palau was first colonized around four thousand years ago by people who came from Southeast Asia. People started to manipulate the environment by clearing land, perhaps for slash-and-burn agriculture. This is shown in the increase of sediment and charcoal in the environmental core studies for the Compact Road. Around 400 BC-800 AD people were creating small terraces. Toward the end of this era, terraces became more complex in design and much larger in scale. Around 1200 AD some of the people began to inhabit the rock islands. This movement is due to an increase in population and warfare. This is shown by several sites on the rock islands that have stone walls behind beaches that served as fortresses, where people have to go through narrow openings in order to reach the settlement areas on top of the ridge. Between 1200 and 1400 AD people began to construct their villages with stones, such as stone platforms and stone paths. During

this time, around 1300 AD, taro patches were utilized. After 1400 AD, rock island settlements were abandoned and people just lived on high islands and Kayangel Island, which is the only atoll in Palau.

## **HISTORIC PERIOD**

The first comprehensive documentation of Palau was during the era of stonework villages or what is also referred to as traditional villages. This was first recorded in the account of Palau by Captain Wilson, an Englishman on his way back to England from China, who was blown off-course and wrecked his ship at Ulong rock island of Koror in 1783.

At this period of contact, Palau had a well developed political and social structure. There were many villages independent from each other with their own hamlets. The villages had their own chiefs, warriors, and clubs who formed alliances with other villages while fighting still other villages for money, lands, and other valuables. The account by Captain Wilson in Palau was published exposing Palau to the western world, opening the door to many traders and entrepreneurs who came to Palau searching for wealth and fame, and to save the souls of indigenous people. The foreign people came from several countries, including Britain, America, Germany, and Spain.

In 1885, Palau and the rest of the Micronesia came under Spanish administration. The Spanish did not do very much in term of economic development. Their presence was felt mostly in the eradication of traditional rituals and warfare, and the introduction of Christianity. Other countries were given free reign to trade. Then in 1899, Palau along with the rest of Micronesia was purchased from Spain by Germany. Germany began to exploit Palau's natural resources such as phosphate mined on Angaur, and promoted the planting of coconuts around Palau for copra production. Many local people, including people from other islands of Micronesia as well as foreigners, came to Angaur where they lived and worked. As a result of WWI, Japan gained control of Palau from 1914. Japan expanded the economic development of the islands, including the continuation of phosphate mining on Angaur, pineapple plantations and canning, fisheries and bauxite mining in Ngardmau. Koror became a center of Japanese administration in Micronesia where administration buildings, shrines and other facilities were built. During WWII, in 1944, Palau hosted one of the bloodiest battles in the Pacific, where there were many wounded and dead on both the Japanese and American sides. After the war, Palau was administered by the American military from 1945 until 1951, followed by Trust Territory status. In 1979 Palau ratified its Constitution, and two years later the first Constitutional Government was established in 1981. It was not until 1994 that Palau became recognized as a fully independent nation by signing the Compact of Free Association with the United States.

## **BUREAU OF ARTS AND CULTURE**

The Bureau of Arts and Culture (BAC), also known as the Historic Preservation Office (HPO), is a Palau government office that was first established in 1978 as the Division of Cultural Affairs (DCA)

with the passage of the Palau Historic Preservation Act. The Division continued its operations under the auspices of the Bureau of Arts and Culture in the Ministry of Community and Cultural Affairs until November 28, 2001, when President Tommy E. Remengesau Jr. signed Executive Order No. 203 to reorganize the Executive Branch of the Palau National Government. Through this Executive Order, the Division of Cultural Affairs became one of the Bureaus within the Ministry of Community and Cultural Affairs.

The mandate of the Palau Bureau of Arts and Culture arises out of the Historical and Cultural Preservation Act of the Republic of Palau, Title 19, Chapter 1, of the Palau National Code. This act provides a regulatory framework in an attempt to insure that archaeological sites and cultural resources are adequately protected. The mandate comprises the following goals.

1. To preserve and foster historic properties for the benefit of all Palauan people.
2. To preserve, and educate about, Palauan traditions that are threatened with extinction.
3. To protect historic properties from destruction.
4. To preserve cultures and traditions in the face of inevitable increasing foreign contact and interaction.

### ***Mission***

Based on the Title 19, Chapter 1, the Bureau of Arts and Culture's overarching mission is to protect and preserve the historical and cultural resources of the Republic of Palau for present and future generations. This involves conducting archaeological surveys and inventories, promoting the registration, restoration, and interpretation of sites, and documenting oral history and collecting ethnographic materials to ensure that opportunities for education and enjoyment of Palau's cultural heritage are available for everyone.

The Bureau is divided into five sections: Administration; Survey and Inventory, and Project Review and Compliance (Archaeology); Oral History and Ethnography; Public Education; and the Palau National Register of Historic Places and Research Library (Registrar).

The Bureau of Arts and Culture receives funds from the local government of Palau, and Historic Preservation Fund Grants from the U.S. National Park Service. The Bureau has been operating with the support of twelve staff members, including six full-time staff who are funded by Historic Preservation Fund Grant and six full-time staff who are funded by Palau's National Government.

The Bureau is advised by the sixteen members of Palau Historical and Cultural Advisory Board, who represent each of the sixteen states of Palau and are appointed by the president of the Republic of Palau. The members of the Board include governors, educators, traditional chiefs, clergy and other

community leaders. The Board reviews and approves site registration nominations, guidelines and regulations, and research activities. The Board members also serve as liaisons between the BAC and the people of the states that they represent. They assist the BAC by explaining its activities and winning grassroots cooperation.

The Bureau also works closely with sixteen members of the Society of Historians, a group of knowledgeable elders from each of the sixteen states in Palau. They meet three times a year with the BAC staff to produce publications on Palau culture. They also meet with community members and researchers to consult on cultural matters. The members of the Society of Historians assist the BAC with community outreach and research projects. This may involve meeting with high school students to discuss traditional values or helping to assess a historical site that is slated for development.

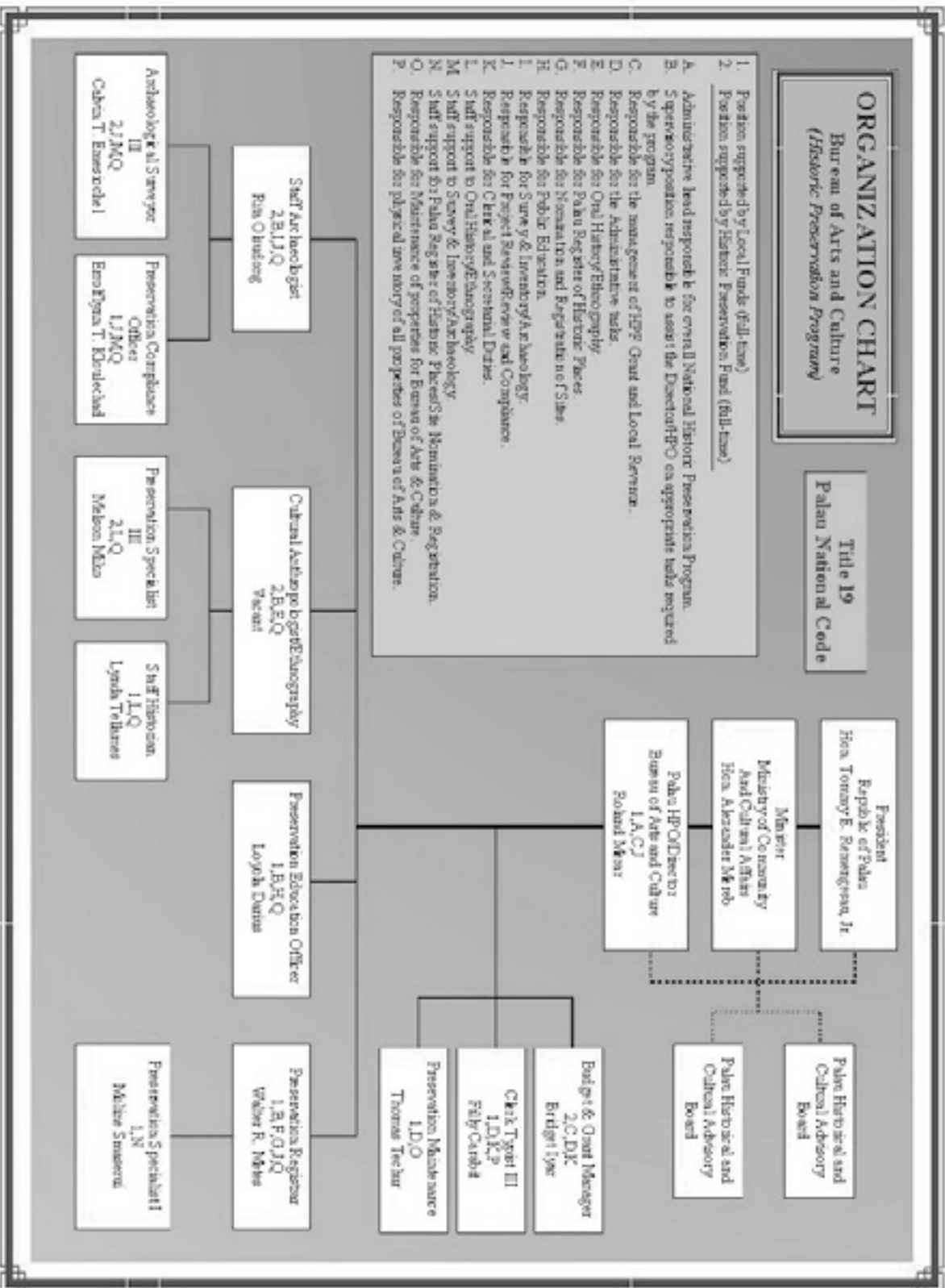
### ***Objectives***

Specific objectives of the Bureau may be listed as follows.

1. Identify, evaluate, and nominate archaeological and historical sites in Palau for the Palau National Register of Historic Places.
2. Restore and develop important historical and cultural sites.
3. Survey all lands and waters under the jurisdiction of the Republic of Palau for archaeological and historical sites that have not yet been surveyed, in conjunction with a survey of related oral histories.
4. Record and document Palauan oral histories and traditional culture while knowledgeable informants are still available, in both Palauan and English languages, for publication and distribution to a wide audience.
5. Upgrade the levels of formal education and professional training of the staff.
6. Continually seek ways to ensure that funding is maintained and increased for operations.
7. Increase cooperation with all the states, and various agencies and organizations, in order to achieve Bureau objectives.
8. Undertake public education programs and projects designed to promote awareness of historic resources and Palauan culture.
9. Develop relationships with universities or other institutions for educational opportunities, and to enhance the effectiveness of the historic preservation program.
10. Promote international relations regarding the protection and preservation of cultural resources.

### ***Activities***

The Bureau of Arts and Culture's activities involve a number of areas. These include public education to raise awareness about the importance of preserving historic sites through different media such



as newspapers, radio, and television. It also conducts school and public presentations as well as distributing brochures, calendars, and leaflets. Also, it conducts a cultural symposium once a year in collaboration with other agencies to ensure that mutual understanding and working relationships are adequate for the preservation and protection of our heritage.

The Registrar solicits nominations for sites to be registered in the Palau National Register of Historic Places. As of today, there are 166 sites listed in the Palau Register of Historic Places.

It also organizes activities for the restoration of one registered site once a year. It also supervises the BAC Research Library and makes sure that all information about our heritage has copies in the library for researchers, educators, and the general public.

Research is conducted by both the Survey and Inventory section (Archaeology) and the Oral History/Ethnography section. The most prominent research project is the comprehensive state-by-state inventory of all archaeological sites in Palau. The survey team will survey the cultural resources on the ground, and provide opportunity for the ethnographers to collect oral histories.

The Survey and Inventory/Archaeology section, in which I work, is responsible for conducting a state-by-state survey and inventory of the historical and cultural sites throughout Palau. This is being done in three phases. First is to conduct background research of previous archaeological records. The second is to do an actual field investigation with detailed mapping and documenting, as well as photographing all of the archaeological properties found in each state. Finally, the information collected from the field will then be input into the Bureau's database, and hard copy produced to be used by researchers, educators, as well as the general public.

Based on the state-by-state inventory of cultural resources, we have identified more than 800 archaeological sites through out Palau. These sites includes traditional villages, terraces, taro patches, monoliths, stone faces, megaliths, caves, underwater sites, burials, landmarks, historic remains, as well as WWII remains.

We also perform a project review of every proposed project in the Republic, to ensure that any historic property inside the project area is protected or mitigated. This consideration is extended to park proposals, disposition of human remains, development agendas, and enforcement measures, in conjunction with other agencies. We assist the public education section in disseminating information and educating the public through presentations and site visits, in order to foster awareness and importance of protecting, preserving, and conserving our cultural heritage that is our national identity for our future generations.

Even though it seems that the Bureau of Arts and Culture is well structured and does its best to

provide all necessary means to protect and preserve the Palauan cultural resources, in reality our cultural resources continue to diminish somewhat in face of rapid development.

### ***Problems and Challenges***

The very root of the challenge we are facing is the strong force of world economic trends. As a young and developing nation, Palau is striving to catch up with the rest of the world. This force is affecting the spirit of the Palauan people, and so we are trying our best to ensure that our heritage is secured.

Another major challenge is the lack of sufficient funding. This has contributed to the following factors affecting the performance of the BAC.

1. Not enough personnel to carry out essential measures.
2. Limited training to elevate the skills and abilities of personnel.
3. Limited equipment and tools.
4. Lack of adequate office space for storage, labs, etc.

All in all, these challenges and problems exhibit the weaknesses of our laws and policy. We have proposed new changes to our lawmakers to revise our existing law to improve the protection and preservation of our culture.

Because of these challenges, the Bureau of Arts and Culture is only able to protect and preserve the cultural resources from human destruction to a certain extent, with our limited staff and resources, and insufficient ability to restore and/or prevent those resources from natural deterioration such as corrosion, and the erosion of metal, concrete, and stone features.

Therefore, it was my great honor to be selected to attend this Training Course on Cultural Heritage Protection in the Asia/Pacific Region, which I believe will expand my knowledge and ability to make the right decisions based on proper investigation and analysis, in the preservation and development of historical and cultural sites. It is hoped that the training and information I get from this program will allow me to share valuable information with my colleagues at the office, and to assist states and other agencies with whom our office is working, to promote protection, preservation, and awareness of our cultural and historical heritage. Furthermore, it is hoped that this training will provide me enough experience and knowledge to allow me to assist my office in elevating and improving the capabilities of the Bureau of Arts and Culture, to reach its goal based on its mission statement, to preserve and protect our precious heritage which is our true identity for everlasting generations.

**THANK YOU**



## **Philippines**

**Edwin Winston Agito VALIENTES**

*Instructor*

Department of Anthropology

University of the Philippines

### **The Batanes Archaeological Landscape: Issues and Concerns**

The Philippines, like every other country in the Asia/Pacific region, is rich in archaeological resources which are greatly in need of further research and conservation intervention. While the Philippine government is seriously taking steps in protecting archaeological sites all over the country, wanton destruction either due to natural forces or human activities, such as massive land-use conversion for development and industrial projects, and looting of the sites, is still prevalent. This situation is compounded by the still insufficient number of archaeologists working in the country to conduct rescue excavations whenever reports of chance discoveries, or notices of large-scale earth-moving activities that can potentially affect known archaeological sites, are brought to government authorities. The National Museum of the Philippines, the only government institution mandated by law to oversee research and management of the country's archaeological heritage, is understaffed and poorly funded. Therefore, most of the large-scale archaeological excavations conducted in the country have been made by foreign researchers. While I see no wrong in this situation in terms of the potential to broaden our understanding of Philippine prehistory, it does little for the professional growth of local archaeologists who often do not have much control over the direction of such research. In addition, legal measures such as the law concerning the ban on 'treasure hunting' and the possession of artifacts deemed of national importance are yet to be fully implemented. In its twenty or so years of existence, there has not been a single person apprehended by authorities or convicted in court for breaking the law, despite numerous reports of rampant and organized looting in many parts of the country. Heritage conservation, if you may call it that, is still largely an 'elite' pastime confined to collecting old religious statues and Chinese ceramics, and organizing fund-raising activities to repair roofs of old Spanish churches and ancestral houses. Archaeology is very low on the agenda.

That is the large picture – the national situation.

But in this particular paper, I would like to focus my discussion on the Philippines by sharing certain issues and concerns which confront cultural heritage conservation in the area where I am currently working, both as a 'native' researcher and a heritage conservation advocate. I will draw mainly from my observations and experiences in Batanes, the smallest and northernmost province of the Philippine archipelago, and also one of the richest and most interesting places in the country in terms

of archaeology. Batanes consists of eleven small islands located within the vast and dangerous sea channel separating Taiwan and Luzon. I was born and lived in one of these islands – the Batan island – until I went to college and, eventually, work in Manila. I started to be actively involved in heritage conservation in Batanes when I went home after my graduation from college and had an opportunity to join an archaeological excavation conducted there by the National Museum, together with some archaeologists from the Australian National University. I worked as a provincial heritage assistant at an opportune time, when Batanes was preparing its bid for the UNESCO World Heritage List. There, I got the chance to meet and interact with several local cultural heritage advocates and people from academia who acted as consultants in the preparation of the nomination dossier. All of us were hoping that in a year or so, Batanes would be inscribed on the World Heritage List, which unfortunately did not happen.

That short stint as a local government employee turned out to be the beginning of my exposure to heritage work and, fortunately or unfortunately, the politics of it all. While I did not have any direct participation in the making of the final version of the nomination dossier and the heritage management plan, as the drafting relied solely upon consultants, I did try my best to get a grip on what was said in the documents, and what policies and conservation measures were prescribed in the plan, if ever it would be implemented. Maybe it was the anthropologist in me which brought me to express some unfavorable reaction to the final form of the nomination dossier, taking issue with ‘misrepresentation’ and ‘misinterpretation’ of the archaeological data at hand, and asking if the local people were ever consulted in the preparation of the management plan. While I was assured that they indeed consulted the people, it was also at this time that I started to explore work at the grassroots level, not so much to confirm if the local communities were consulted or aware of their responsibility, should the province be inscribed on the World Heritage List, but more so to try to get their view about what cultural heritage was to them in the first place, what kind of heritage they deemed important, and what they thought they could do to protect such heritage. I was actually aiming at eliciting local views about heritage and heritage work, and to explore the possibility of creating a locally-based heritage conservation program – one within the means and capacity of small communities like Batanes.

This of course is not to say that the heritage management plan the government prepared for the World Heritage nomination of Batanes is ineffective or superfluous. Actually, I found it to be very ideal (straight from the book, so to speak), and that if implemented properly would be an excellent model for other countries. The problem, however, lies in its implementation and whether the provincial government would be able to enforce such rigid conservation measures and regulations without running the risk of breaching the rights of any person to decide what he wants to do with his property. Heritage conservation requires a strong political will on the side of local leaders, but this should also go hand-in-hand with proper consultation or dialogue with the people, particularly those who will be directly affected by such regulations and policies. To risk sounding too idealistic or perhaps irrelevant,

heritage management for me is something that should not be imposed, whether by the state or by certain interest groups; it must come from the stakeholders themselves (in close collaboration with 'specialists', e.g. archaeologists, architects, cultural workers etc. in the field of conservation), out of self-realization of the value of their cultural heritage in their lives. And this is where the importance of public awareness comes in. It should be the responsibility of all researchers to bring back the results of their research to the stakeholders for their information and evaluation.

### **The Batanes archaeological landscape**

Batanes has been the subject of several archaeological research projects conducted in the country over the past two decades. In fact, one can safely assume that Batanes is one of the few areas in the Philippines which now has an archaeological record extensive enough to reconstruct its own cultural history. From the numerous C14 dates taken from various excavations conducted at different sites, we now have a good sense of the chronological sequence of material culture in Batanes. The earliest major archaeological survey and excavation conducted in the province was done by Japanese anthropologists in the 1980s. Their work was focused in Batan island, the main island of Batanes where the capital town of Basco is located. This was followed by the National Museum of the Philippines from 1994 to 1997 with a series of surveys and excavations that covered three of the four largest islands in Batanes, namely: Batan, Sabtang, and Vuhus. More recently, from 2002 to 2007, Peter Bellwood of the Australian National University, in collaboration with the National Museum and the Archaeological Studies Program of the University of the Philippines, conducted extensive surveys and excavations in almost all the islands of Batanes in hope of finding early cultural deposits. The Batanes islands, because of their geographical location, are seen as crucial witnesses to early movements of people into Southeast Asia and the Pacific during the Neolithic period. This year, an attempt to explore Spanish colonial structures was initiated and a proposal for further research is currently in process. While far from being exhaustive (as there is still so much to be discovered and learned), the research to date has already given us a good glimpse of the potential of archaeology in Batanes to shed further information on, and provide understanding of, the prehistory of not only the islands, but also of the Philippines as a whole, and the regions of Southeast Asia and the Pacific in general.

From what is known so far in the archaeology of Batanes, four types of sites have been identified as significant and thus meriting further research exploration. These include settlement sites, hill fortresses or what we refer to in Batanes as *ijangs*, burial grounds, and Spanish colonial structures. Settlement sites include early habitation areas dated to the Neolithic period along with several protohistoric settlement areas, all characterized by thick deposits of earthenware vessels, shell middens, megalithic stone structures, and stone walls. The initial settlement of Batanes has been dated to around 4000 BP. Following Peter Bellwood's model, Batanes was populated by agricultural and Austronesian-speaking people, who moved out of Taiwan in the Neolithic period as they began to spread out into island Southeast Asia and the Pacific region in search of new territories and food resources.

This early population movement and interaction is recorded clearly by numerous materials such as stone adzes, slate points and knives, plus jade ornaments found in Batanes but whose source has been traced to Taiwan. The strong similarities of forms and designs observed in pottery of the same age found in the Batanes islands to that excavated in Taiwan further attest to the occurrence of extensive interaction between the two in the past. Other artifacts associated with this time period include shell ornaments, spindle whorls, stone bark cloth beaters, and stone net sinkers. In sites dated to much later periods, particularly protohistoric settlement sites, stone house posts, domestic materials such as stone grinders and pottery, pieces of Chinese ceramics, and foreign trade beads have been found abundantly.

Another archaeological feature that is worthy of attention is the *ijang* or the hill fortresses found in the different islands of Batanes. These *ijang* are terraced habitation sites located at highly elevated areas that were used as places of refuge by prehistoric people during times of inter-village hostility or warfare. Stone walls and house posts in the form of columnar stones were found in some hill fortresses surveyed by archaeologists. Earthenware sherds and stone implements were littered all over the surface of the Savidug *ijang*, one of the largest and most prominent *ijang* in Batanes. According to Dr. Eusebio Dizon of the National Museum who headed the initial archaeological survey in the site, the Batanes *ijang* closely resemble the *guzuku* of Okinawa in Japan both in form and function. Near these hill fortresses are prehistoric burial grounds characterized by boat-shaped stone grave mounds and jar burials. No similar burial mound has yet been found in other parts of the Philippines, but boat symbolism associated with death ritual and practices, as expressed in these mounds, is shared all throughout Southeast Asia. It is a common belief among Austronesian societies that the soul of the dead travels to the afterlife by boat.

Recent archaeological surveys in Batanes have added Spanish colonial structures to the islands' archaeological heritage. These include old and abandoned bridges, chapels, convents, schools, and leper houses made of stone and lime mortar. While these structures have been mentioned in early Spanish accounts about Batanes, this written information is yet to be corroborated by material evidence and actual structural surveys. Besides, given the colonial context within which many of these written accounts were made, archaeological research can potentially provide new information on their construction, use, and abandonment. Spanish colonial structures in Batanes are classic examples of a fusion of two cultures in terms of architectural designs, artisanship, and technology. Historical archaeology in the Philippines is relatively new, and this attempt to study colonial structures in Batanes is a pioneering effort towards understanding the Spanish colonial legacy through archaeology.

### **Issues and concerns**

Most of the archaeological sites so far studied in Batanes have been found intact and in good states of preservation. While signs of damage and disturbance have been observed in some sites, they are minimal and do not affect their overall integrity. This good preservation may be attributed to their

relative isolation and difficulty of access over a long period of time. The local belief that ancient settlements and burial grounds are enchanted and the abode of malevolent spirits has also contributed in restricting people's activities at these sites. However, this does not mean that other threats are not present. In fact, natural forces such as heavy rain, earthquakes, and soil erosion continue to be the major causes of destruction at some sites. Thick vegetation is also posing a serious threat to fragile parts of certain archaeological features and the fabric of historical structures. In addition, if part of conserving heritage sites is to heighten the public's appreciation of their value through appropriate interpretative and enhancement procedures, most archaeological sites in Batanes are indeed in need of management. The following are some issues and concerns that currently affect the preservation and conservation of archaeological resources in Batanes.

#### Development pressures

Like many other places in the Philippines, Batanes is undergoing a process of rapid modernization due in part to a sudden increase in contact with major urban centers of Luzon in the recent years. Communication and transportation have greatly improved and boats bringing products from key commercial centers such as Manila are frequent and almost regular nowadays. While this development brings a lot of technological convenience to many people in Batanes, this process is also bringing unavoidable and irreversible changes to their social and natural environment, including the destruction of archaeological sites. Development projects conducted by the provincial government such as road construction, the construction of government facilities, and other pieces of public infrastructure have brought serious damage to several archaeological sites, particularly those located within or near town centers. This destruction might have been mitigated if the government cared to contract archaeologists to survey these areas first and conduct rescue excavation if needed before construction started. Road widening along coastal areas, where ancient burial grounds are mostly located, has destroyed numerous burial mounds and burial jars. In another case, the stone walls of ancient houses in one settlement site have been quarried to supply the growing demand for stone in various government infrastructure projects. This situation is compounded by the still unregulated conversion and development of land by private individuals, who own parts of some important archaeological sites in Batanes.

#### Environmental pressures

Batanes is located in a region where the occurrence of natural calamities such as typhoons, earthquakes, and heavy rains is frequent. Yearly, an average of ten typhoons visit Batanes, bringing flash floods and strong winds that cause the degradation of archaeological sites. Earthquakes are also frequent, and some have been strong enough to pose serious dangers to houses and Spanish colonial structures. While there is no way to prevent such natural calamities from occurring, their potential effect on the sites can be mitigated through proper conservation measures.

### Conflicting laws and policies

Several national laws and local regulations have been enacted for the protection and conservation of the cultural heritage of Batanes. Presidential Decree 4846 or the *National Integrated Protected Area Systems Act* (NIPAS) includes the province of Batanes in the top ten priority areas of government, to receive support for the protection of its natural and cultural resources, including archaeological sites. The responsibility for its implementation is currently under the Department of Environment and Natural Resources (DENR). Another national law, *the Indigenous People's Rights Act* (IPRA) includes, rather surprisingly, the people of Batanes as one of the 'cultural minorities' in the Philippines who should be given legal rights, through the issuance of a *Certificate of Ancestral Domain Title*, to manage their own resources without much state intervention, including the protection and conservation of their own cultural heritage. Presidential Decree 374 or the *Amendments to the Cultural Properties Preservation and Conservation Act* 4846, on the other hand, regulates the extraction and collection of cultural properties all over the country. This law also gives the National Museum the sole authority to issue permits for conducting archaeological research in any part of the country, including Batanes.

While these laws can provide enough legal support to ensure the protection and conservation of archaeological sites in Batanes, the often conflicting policies provided and the differing priorities of their implementing agencies at the local level prove them totally ineffective in many aspects. For instance, in the issuance of permits to carry out research, each implementing agency would have its own regulation and requirements with which both local and foreign researchers need to comply. In most cases, the requirements are impractical to achieve and the permit fees too large to be met for the meager budgets that researchers usually get nowadays. Complicating further this process are the equally differing regulations set up by the different municipalities (towns) for researchers who wish to conduct a study in their area. I think what is now happening is that these local regulations have been put up not so much in view of protecting archaeological sites but more as a resource to gain additional revenues for the implementing agencies.

### Inadequate land use plans

Each municipality in Batanes has its own comprehensive land use plan for the management of land resources located within its jurisdiction. These plans are revised every two years upon the approval of the local councils to meet the changing demands of land utilization in their respective municipalities. The plans designate areas for agricultural use, government infrastructure use, zones for economic activities, quarry zones for stones, sand, and gravels, and forest reserve zones. Unfortunately, in all the existing land use plans for various municipalities, archaeological areas are not recognized and specifically delineated for protection and conservation. Some sites are in areas classified for agricultural cultivation and for the extraction of quarry materials. In one municipality, a huge prehistoric settlement site is currently in an area designated for livestock grazing. This neglect might be due either to local planners' lack of consideration for cultural heritage places such as archaeological

sites, or they simply do not know that such sites exist in the area. There is a need to consider archaeological sites in all local planning by recognizing and providing zones for archaeological research and conservation.

#### Lack of resident archaeologists to oversee the management of sites

As mentioned earlier in this paper, there are very few archaeologists working in the Philippines on a full-time basis. Most of the archaeologists who conducted research in Batanes are working in universities and museums in Manila and abroad. They only come to Batanes to conduct excavations and collect data for their research. While this situation is understandable, it would be, for me, much better if there were one resident archaeologist to work full-time in the conduct of research and management of archaeological sites in Batanes. Monitoring the sites on a regular basis by someone who is knowledgeable in archaeology and heritage management would be helpful to ensure their good preservation on a long-term basis.

#### Lack of archaeological facilities

There is also a need for facilities to store properly all the archaeological materials excavated in Batanes. While some artifacts, particularly those that need further analysis, have been taken to the National Museum, most of the materials excavated over the past several years are now temporarily stored in private houses or government buildings near the excavation areas, without any assurance that these materials are well taken care of. What is needed is a large storage facility to house all these archaeological materials in one place, with proper recording and storing procedures. This would allow the viewing of these materials (Batanes has no museum yet) by the local people, and also other researchers who want to examine the collection, without difficulty.

#### Tourism

The tourism industry is now growing as one of the major sources of income in Batanes. Every year, there is an increasing number of visitors coming just to see some of the well publicized scenic spots in Batanes, some of which are archaeological sites. While this may be a welcome development for the province, there is no mechanism yet to manage the potential negative impact of tourism on the different communities, the natural environment, and heritage places. Measures to assist and monitor the activities of tourists visiting archaeological sites are absent. There are no interpretative facilities yet in most of the sites frequented by visitors. Some locals who act as guides are not even aware of the significance of the sites, so visitors do not gain an appreciation of the place.

#### Survey and recording of archaeological sites

There is also a need to conduct more survey and recording of the sites to facilitate better planning and monitoring. Site mapping through Geographical Information System (GIS) would provide a better understanding of the geographical distribution of the sites with high accuracy, their boundaries, and

their levels of conservation needs.

#### Capacity-building for communities

Given the lack of resident archaeologist in Batanes, locals can be trained to manage the sites such as the conduct of rescue excavation, monitoring, recording, and conservation. Seminars and workshops can be a good way of training the locals, but if we could also begin to involve them in actual surveys and excavation, we could help them better appreciate archaeological methods of research, recording, and conservation. The idea here is not so much to turn all the people into archaeologists (which is quite impossible) as to familiarize them and increase their appreciation on the way professional archaeologists work in the field, and how 'context' is given a good deal of importance in understanding materials in the archaeological record. This would also help dispel common notions about archaeology as merely collecting antiques for museums.

#### Lack of institutional support from the local government

The protection and conservation of archaeological sites is still far from the priorities of the provincial government. While the deluge of archaeological research conducted in Batanes in the recent times, and the application of Batanes for the World Heritage List have somehow brought an increased awareness of their value to the people, there is yet to be a serious program instituted by the government to respond to their protection and conservation needs. In terms of funds allocation, there are none. This maybe one reason why there is no local office yet established particularly to oversee these sites' management.

#### Awareness

Ignorance is one of the major reasons why archaeological sites have been destroyed. It is also the reason why local government units fail to give them much attention. Their value as heritage and in relation to cultural history are simply unknown. To put it bluntly, how can you manage something you do not know? Or how can you manage something whose value you do not know?

These shortcomings might be blamed partly on archaeologists who have yet to provide the results of their research to the local people in a manner that they can easily understand. I might be the only person in Batanes who has regular access to all the published archaeological research conducted there. Although I conduct information dissemination campaign in schools whenever I have an opportunity, during my short vacations and fieldwork sessions in Batanes, I hardly think it sufficient. There is a need to develop more materials (films, leaflets, and books) to disseminate the results of these research efforts to the wider public. It is also timely to start incorporating this new information in the current educational curriculum. A properly informed public is the best strategy for conserving archaeological sites.



## **Conclusion**

What I have tried to do in this paper is outline some of the issues and concerns which I think need to be considered in the management of archaeological sites in Batanes. It is not as exhaustive as originally intended, and I am certain there is a lot more that can be added, but the above discussion can provide a general picture of the conditions and problems that currently confront the conservation of archaeological sites in Batanes. Most of these issues are not unique in Batanes however. The same problems also beset other archaeological sites in the Philippines, some even more seriously than in Batanes.

Be that as it may, I do not think this means the future of research and heritage conservation in the Philippines is bleak. Academic institutions such as the University of the Philippines, where I am currently teaching, are opening degree programs that aim to train more people in studying and managing our nation's archaeological resources. Institutional linkages here and abroad are also underway to strengthen the program. It is hoped that through these initiatives we can somehow provide solutions to some of the problems that confront archaeological resource conservation in the country, such as the lack of specialists in the fields of archaeology and heritage management.

Batanes is still working on its nomination for the UNESCO World Heritage List, after it was deferred in the last World Heritage Committee meeting in New Zealand. But with or without UNESCO's recognition, these archaeological sites are still worthy of utmost protection and conservation.

## Republic of Korea

**HAN Min Su**

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National Research Institute of Cultural Heritage

### **Status of Scientific Research and Conservation for Korean Archeological Sites and Remains**

#### **I. Introduction**

Historic sites in Korea are distributed through various time periods due to its extensive history of 5,000 years and these are continuously excavated today. From March 2007, 120 units were approved by the Cultural Administration for excavation, spending 2,150 hundred million won to work on 1,300 separate excavations per year. However, for a large amount of excavation there is a lack of structured conservation, and also serious questions have been raised regarding the conservation and restoration methods for organic/inorganic archeological finds. Thus researchers in the National Research Institute of Cultural Heritage are not only focusing on scientific and structural conservation at archeological excavation sites, but also on developing effective and stable treatment methods for the archeological finds; furthermore, diverse information gained from the various excavations is being thoroughly studied, then simultaneously processed to find unique features of the origin of the Korean race, after which we are will conserve important information of the ancient period through this process.



Fig. 1. O-Ryang Dong, Na-Joo earthenware site



Fig. 2. Condition of excavated earthenware

#### **II. Scientific Research on Archaeological Sites**

For scientific conservation and restoration of historical sites and artifacts, analysis with a firm base in science must be carried out first.

Research on archaeological sites includes mid- and long-term academic examinations, site surveys of cultural relics, research on important cultural remains, and geophysical exploration.

At our institution, more scientific geophysical investigation is being conducted prior to conventional archeological excavation.

Ground-penetrating radar, electric resistivity and magnetic surveys, and aerial photography are used for geophysical investigations of archeological sites, and this process is represented in Fig. 3.

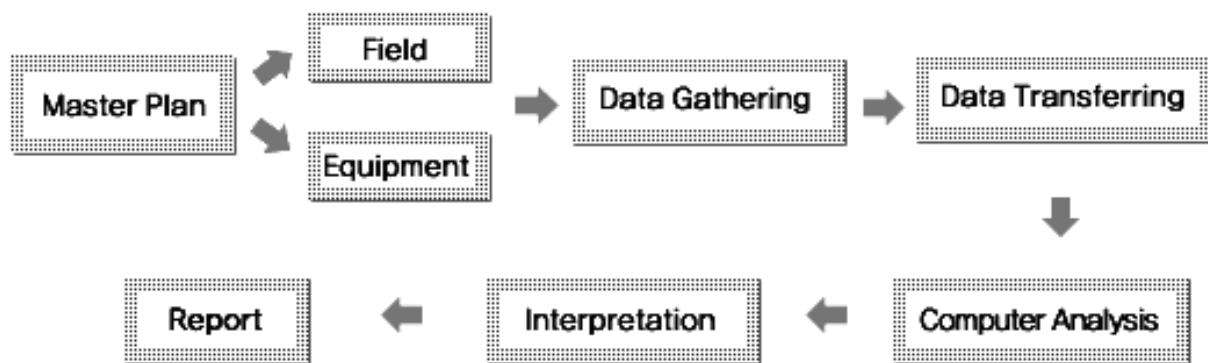


Fig. 3. Investigation procedures for archeological sites

In ground-penetrating radar (GPR), images can be displayed of ground and underground structures from their diffraction of electromagnetic waves, which is caused by changes in the type of the medium. This survey is applied to understand the distribution of ancient burial grounds, kilns, and buildings.

Resistivity can be used in almost all archaeological sites to measure the specific resistance by sending an electric current through the ground by using changed electric probes. This type of survey is also applied to understand the distribution of ancient burial grounds, kilns, and buildings.

Magnetic surveys focus on the magnetic properties of iron, which generally makes up about 4~5% of the soil, a rate that may increase from human activities. Ashes contain magnetic substances, and these are accumulated in the soil to generate more magnetic field than uninhibited areas. So, magnetic methods are applied to find magnetic anomalies by measuring the magnetic field created by human inhabitants. In using magnetic methods at an archaeological site, the places that used to be houses, wells, and buildings have a monopole with both positive and negative electromagnetic fields.

nd more diverse and accurate methods must be applied. It is not an easy task to apply one For aerial photography, an unmanned aircraft using engine power or the buoyancy of helium gas is remotely controlled from the ground, and it contains a video camera and other investigation devices to take photographs of an archeological site.

In conclusion, the benefits of geophysical investigation of archeological sites are as follows.

- A. Ensuring systematic excavation by measuring the area, conditions, and depth of the archaeological site.
- B. Reducing manpower and budget by minimizing the scale of excavation.
- C. Minimizing the damage to historical artifacts through nondestructive testing.
- D. Checking the ground stability of the historic site.

At present, however, not enough investigation is done before excavation in spite of the need, a method to an entire site, due to different construction periods and conditions. This problem must be solved with further research and study.

### **III. Conservation of archeological sites**

#### **1. The direction of excavation and conservation at archeological sites**

The right to excavation for a historical site is granted (for study, for construction, or when artifacts are unearthed during construction) through cultural administration by Presidential decree, with the exception of tomb sites, shell mounds providing data on extinct organisms, and naturally occurring caves that are known to contain artifacts, according to the artifact protection law.

A lot of data and artifacts can be obtained through excavation, and with this information the direction of conservation is determined. For example, if a site is deemed to be historically significant based on the excavated artifacts, it may be assigned the status of historically significant site, or its entire region named as a historical area and then protected accordingly. Sometimes, it can be recognized as a World Heritage Site (e.g., Gyeongju Historic Areas, B.C. 57 – A.D. 935, inscribed October 2000), and continuous conservation efforts are carried out.

Sometimes restoration of excavated materials to their original form is carried out with the assignment of historical site status, or else a detailed report is made of the site's condition and significant artifacts are stored under appropriate conditions. However, these procedures are not well organized; rather, the direction of conservation is determined through a number of legal considerations that vary with the conditions and ages of sites. Also, any development within a 300-m area of a site is restricted once it is determined as a historical site, and thus there are possible conflicts with the land owner and/or residents of the area.

The biggest obstacle in protecting a historical site is finding a way for conservation and development to coexist.

#### **2. Research for conservation of archeological sites**

For systemic and organized conservation efforts, a variety of materials and methods are being studied not only theoretically but also for practical application. In particular, scientific research and design at the National Research Institution of Cultural Heritage aims to develop scientific methods for effective site transfer for historical sites, as will be presented here.



Fig. 4. Pit tomb as excavated at a historic site



Fig. 5. Relocated



Fig. 6. Excavated kiln site of white porcelain

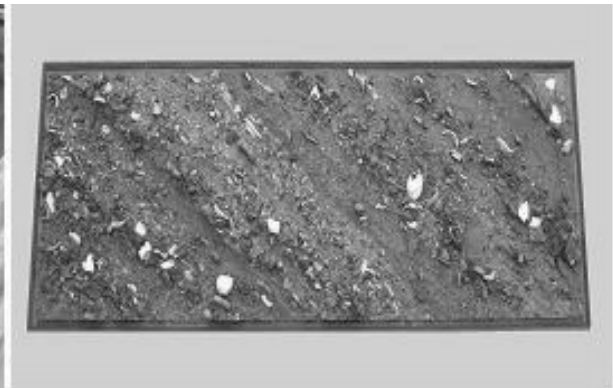


Fig. 7. Relocated

Relocating excavated historic sites leads to loss of their original forms due to repeated alterations of dry and wet conditions, and outflows and inflows of soil, by natural phenomena such as rain and wind. Thus pre-conservation treatment is necessary for important historic sites that are excavated, and at present there is active research on conservation and restoration treatment for historical sites using synthetic resin. The issues that must be resolved for the conservation of excavated historic sites are the use of reinforcing agents that do not impair original forms, and selection of the appropriate agent according to the historic site's soil condition (for example, mud, sedimentary layer, or marsh). These agents should withstand the effects of outdoor environments like marshes, and winter weather conditions or temperature fluctuations. In spite of an awareness of these problems, there has been damage to excavated historic sites because of different standards or the reliance on unquantifiable criteria for choosing reinforcing agents by different institutions.

We intend to develop Korea's own reinforcing agents for excavated historic sites, which can be

applied not only for indoor but also outdoor conservation, by gaining a thorough grip of the agents' specific characteristics, basing the reinforcing agents on historic sites' soil conditions, investigating methods which can deter soil degradation, as well as achieving quantification and standardization so the agent could also be used internationally.

The purposes of the research are as follows:

- A. Insuring stability of excavated historic sites by developing treatment technologies for the sites, as well as continually developing easier methods.
- B. Developing standards for other studies aimed at the development of reinforcing agents, through quantification and standardization of them based on specific and systematized studies.
- C. Utilization of the developed reinforcing agents in place of imported reinforcing agents, and promoting their export.
- D. Establishing Korea's own system for the conservation of historic sites.

One of the first issues in developing consolidants for relocating historic sites is the use of alcohol based additives, which lower viscosity for easy application, but are also responsible for deformation, surface problems, and cracks due to a decrease in structural strength. Also, urethane has similar problems with permeability and structural strength, thus accurate techniques for compounding, and understanding and efficient control of the materials is needed.

To address these issues, physical chemical characteristics of conventionally used consolidants were analyzed and improved to develop new epoxy or urethane materials. These new materials were tested through site application to gain quantified data on their effectiveness.

This new material development was conducted simultaneously with the production of a standard manual for using epoxy/urethane for more effective treatment. The manual contains standardized detailed information on resin/hardener ratios, material amounts for different permeation thicknesses and application methods.

We synthesized an epoxy resin and epoxy hardener, and a urethane resin for the restoration of historical sites. These products have very good tension strength, adhesion strength and various physical properties that users want. Particularly, these products, in both the epoxy and urethane forms, are characterized by good surface separation. Also, a standard treatment manual was developed from this research for effective treatment.



Fig. 8. Research method and structure

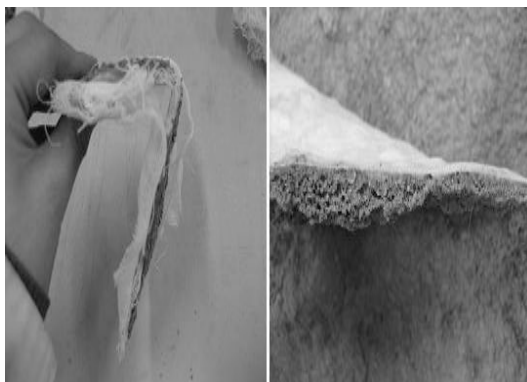


Fig. 9. Bending resistance test for a conventional epoxy

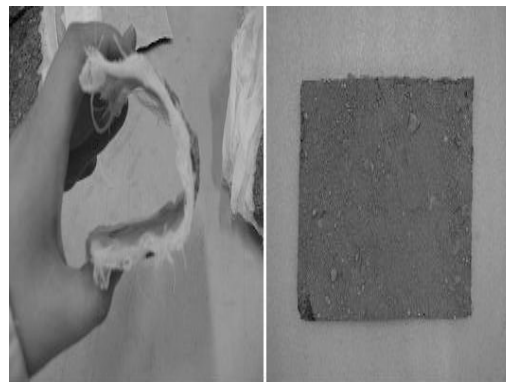


Fig. 10. Newly developed epoxy

#### IV. Conservation of remains

##### 1. The direction of collection and conservation of remains

Artifacts from an excavated site are vital evidence of the life style and conditions of a period long past. Thus the excavation and transport of these artifacts are essential processes in transmitting this information to the next generation.

Most excavated artifacts, with the few exceptions that have innate resistance to the environment, suffer from serious rusting, or are caked with dirt or residue, or sometimes are structurally weakened as to make excavation almost impossible. Also there could be extensive physical damage to the artifacts, and thus excavation must be done with extreme care, and many different methods and materials are employed.

Any excavated artifact may be reconstructed or conserved after legal considerations and sometimes virtually full restoration is done if needed. However, full restoration must be approached

with serious consideration to matters of ethics.

Another important aspect of conservation and restoration is the environment of conservation.

This essentially should provide for continuous preservation of a certain artifact by satisfying requirements for conditions surrounding the artifact. It is considered very important since the effect is continuous.

In conclusion, important issues in conservation are determining the extent of conservation and making improvements in methods.

## **2. Research on conservation of remains**

For systemic and organized conservation of artifacts, a variety of materials and methods are being studied not only theoretically but also for practical application. In particular, scientific research and design at the National Research Institution of Cultural Heritage aims to develop scientific methods for effective conservation of artifacts, as will be presented here.

*(1) Scientific conservation research for various materials.* Scientific research for conservation of different materials was conducted in categories of metal and non-metal objects (gold, silver, bronze, organic, etc.). The safety of conservation materials was determined and the data obtained used to find new methods and materials for conservation.

Iron artifacts easily corrode and deteriorate due to various environmental causes. Accordingly, a variety of methods and techniques are applied for restoration techniques of these items. The purposes of the present study were to establish methods for estimation, and techniques and guidelines for the restoration of iron relics scientifically.

This project was composed of the following three subjects, studied separately:

- A. Developing criteria for the evaluation of stability of chemicals and techniques for removing salts in iron artifacts.
- B. Developing criteria for estimating the stability of surface consolidation materials and techniques.
- C. Developing criteria for estimating the stability of restoration materials and methods.



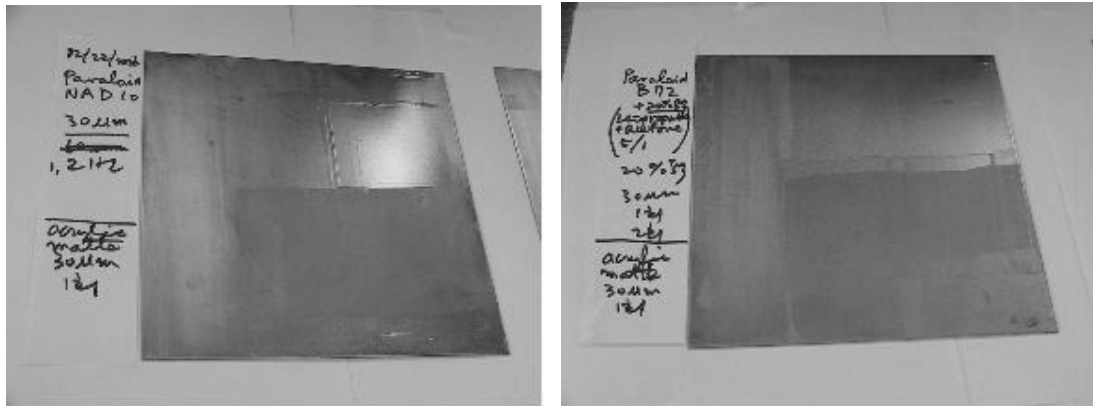


Fig. 11. Brilliance of film coating: (a) Paraloid NAD-10 (b) Paraloid B72

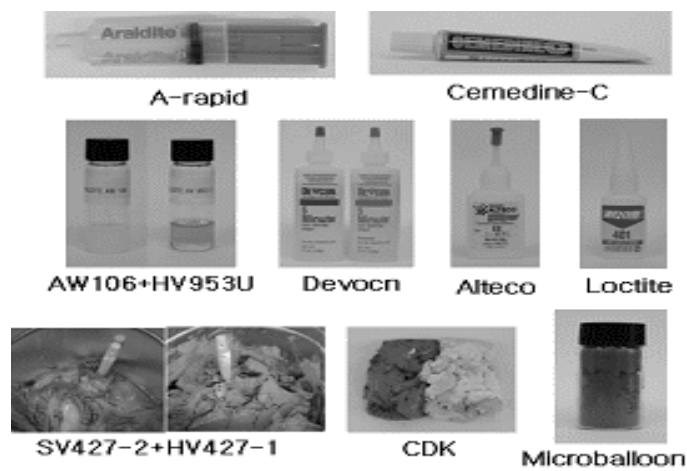


Fig. 12. Photographs of adhesives and restoration materials.

Secondly, bronze, gold, silver and non-metal material treatment methods were studied, and this study was approached in a different manner than for other metals due to the differences in characteristics.

The focus of this study also divided into separate areas, as below:

- A. Standardization of cleaning alien substances from the surface of non-ferrous artifacts.
- B. Evaluation of the stability of techniques for desalination, and of rust-inhibitors for the conservation of bronze artifacts.
- C. Evaluation of surface-reinforcing treatment agents for the conservation of bronze artifacts.
- D. Evaluation of adhesives and restoration agents for the conservation of bronze artifacts.

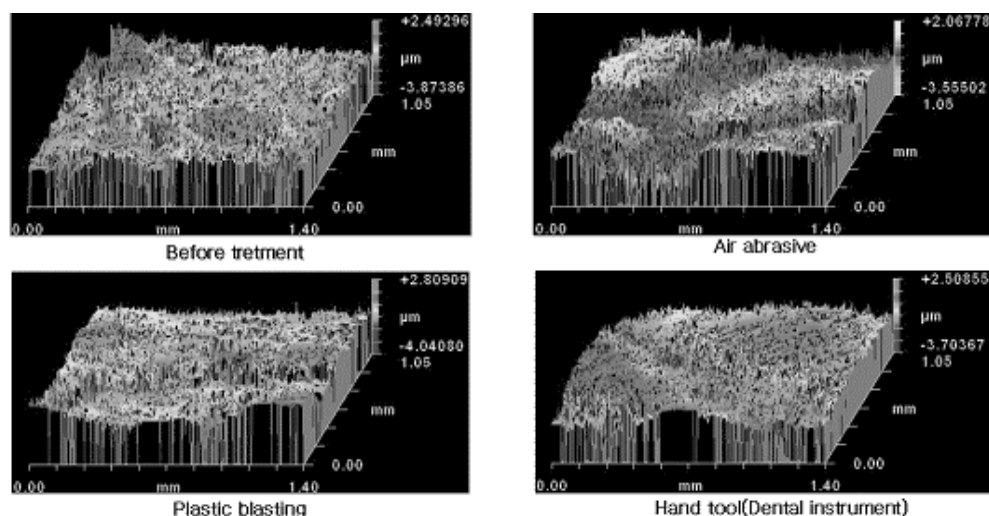


Fig. 13. Non-contact surface Illuminometer

Through these studies, the safety and effectiveness of materials for desalination, consolidation, and adhesion of metal and non-metal artifacts were ranked. This will not only serve to check current conservation materials and methods, but also help in developing new materials and methods.

(2) *Scientific conservation environment for various materials.* Various materials found at historical sites are stored in different institutions, including museums, and will be damaged by temperature, humidity, light, air, microorganisms, etc. Accordingly, it is vital to find a way to prevent these kinds of damage, and study on conservation environments for the protection of movable cultural properties has been conducted.

The objective of the study was to develop standardization in the environmental control systems of preserving facilities, through the establishment and application of guidelines for the quality of cultural heritage preservation, and the development of IPM (integrated pest management) for preserving organic matter among movable cultural properties.

For this purpose we researched indoor air pollutants based on field surveys at preserving facilities of movable cultural heritage, and collected many kinds of the fungi using adsorption tests for the air, and filtering tests for the surfaces of ancient paper materials stored at these facilities.

We observed damage mechanisms of paper materials and textile remains, and selected index pest species through the analysis and capture of pests in museums having paper materials and textile remains.

We conducted similar research for metal remains.



Fig. 14. Investigation of indoor and outdoor conservation environments for cultural heritage.

As a result of this research, we recommended a three-step environmental preservation guide be given priority by management, to prevent damage of movable cultural properties and reduce concentrations of pollutants. Also, we aimed for the efficiency of environmental preservation management, making a control system to be accomplished through a three-step environmental preservation guide.

In the long term, policy on maintaining the conservation environment should include considerations of the causes of pollutants, the damage mechanisms between environmental factors and artifacts, evaluations of modern pollutant materials, and thus provide a basis for principles or a manual for artifact conservation.

## **V. Studies on scientific analysis of information for archaeological sites and remains**

The last section of this paper will present a study on site and artifact data which may be neglected when protection of sites and artifacts are considered first.

The study of data obtained from sites and artifacts is continuously conducted in scientific manner, but it is not structured and there is need to organize it, thus the current study is being conducted. This study is expected to provide important keys to the origin and originality of Korean culture.

Research to identify scientifically the archaeological sites and remains of Korean culture is currently progressing under the title of “Studies on scientific analysis of ancient material remains and specimens to obtain information on Korean culture.”

The current, and restricted, archaeological methods to recover, analyze, and interpret past societies through their material remains and written records have given limited information. In this study, therefore, we have been analyzing various scientific characteristics and manufacturing parameters of ancient cultural objects and specimens, trying to understand ancient Korean culture, its transfer, and cultural exchange. By interpreting these results with archaeologists and historians, the study aims to obtain an integrated understanding of Korean cultural heritage.

Understanding of the complete history of humankind from its material remains needs an

extraordinarily broad resource of expertise. In particular, a variety of scientists specializing in dating have played an important role in the field of archaeology. These related project teams have reconstructed Korean ancient culture by using different scientific technologies and ancient material remains, to improve our theories and methodologies for studying ancient society.

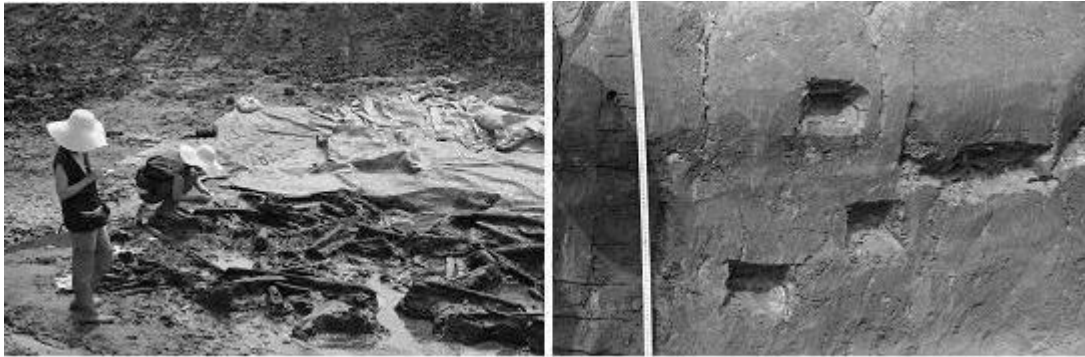


Fig. 15. Environment research and sampling of soil and wood on archaeological sites

The research is split into three different sections for smooth and integrated research of archeological sites that contain various information and artifacts.

- A. Re-interpretation of information of Korean chromatic culture through analysis of natural dyes, based on organic dyes of ancient cloth excavated from archeological sites.
- B. The development, adaptation, and exchange of ancient Korean culture has been investigated by compositional and micro-structural studies of human remains such as metals, glasses, ceramic wares, and wood products.
- C. Investigations are being conducted through analyses of stable isotope composition of organic specimens using Combustion Isotope Ratio Mass Spectrometry (C-IR-MS). Also, novel methods of analyses for trace amounts of various mixtures of organic materials and elements from remains, using Time-of-Flight Secondary Ion Mass Spectrometry (ToF-SIMS), has been developed.

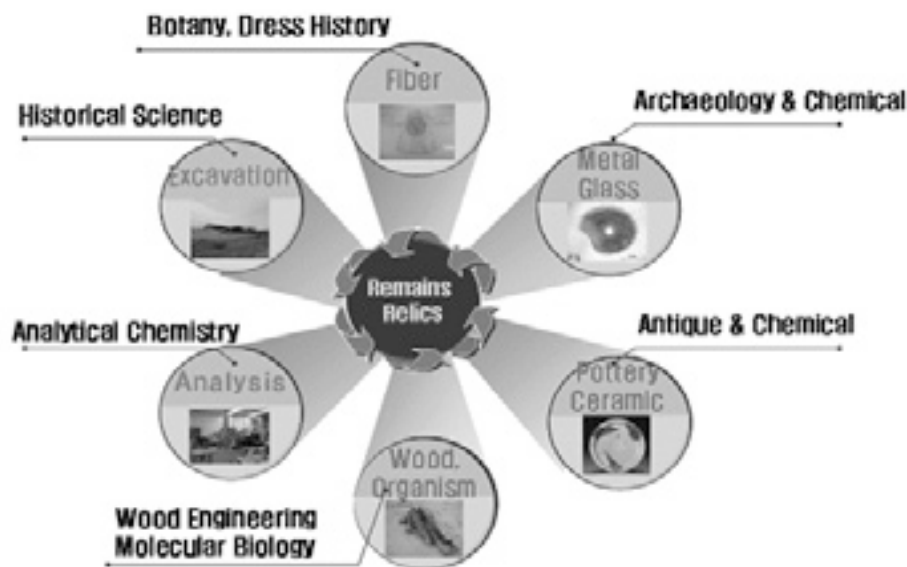


Fig. 16. Research method and structure

Since scientific studies of archaeology require diverse technologies to deal with delicate archaeological samples, this project can result in improvement or development of important tools in archaeology and related scientific research fields. Accurate interpretations of ancient evidence and knowledge from this project may also offer, with certainty, understandings of the origin and identity of Korean culture.

This will serve to close the gaps in understandings of unique cultures of different races, of historical cultural exchange, of historical dispute, and can be utilized in passing down and developing traditional culture. In addition, by cooperating and at times competing with the research institutes worldwide, specialized and accomplished researchers are expected to be cultivated in the fields of the humanities and in active scientific approaches to cultural heritage.

## VI. Conclusion

These conclusions can be derived through scientific research on conserving and utilizing archeological sites.

First of all, better scientific investigation and interpretation methods for archeological sites can be developed, and Korean archeological investigation methods can also be established.

Second, developing excavation site consolidation treatments, which have been neglected here in comparison with other advanced countries, would serve as initial improvement for our somewhat backward consolidation treatment discipline, and help secure fundamental technology for conservation treatment, including the restoration of materials, in the future.

Third, studies of conservation materials and methods are expected to develop techniques for controlling and improving conservation environments that will have continual effects on artifacts.

Fourth, there are possibilities for processing new information and creating fundamental

technology by going beyond simple analysis of artifacts and anthropological interpretations of archeological sites. Additionally, scientific studies utilizing the conservation of archeological sites and their data will have an important role in correcting views of our ancestors' traditions, in passing them down to future generations, in developing national identity and scientific understandings of cultural exchange relations.

In conclusion, these studies for the protection of historical sites and artifacts will provide important keys for safeguarding links between the past, present, and future.

## References

1. National Research Institute of Cultural Heritage (2006), "Research and Development of Restoration Material"
2. National Research Institute of Cultural Heritage (2006), "Studies on scientific analysis of ancient material remains and specimens to obtain the informations of Korean culture"
3. National Research Institute of Cultural Heritage (2006), "Study on the stability estimation of materials & techniques of restoration for iron objects"
4. National Research Institute of Cultural Heritage (2006), "Development of conservation system for protection of movable cultural properties"
5. National Research Institute of Cultural Heritage (2007), "Studies on scientific analysis of ancient material remains and specimens to obtain the informations of Korean culture"
6. National Research Institute of Cultural Heritage (2007), "Study on the stability estimation of materials & techniques of restoration for iron objects"
7. National Research Institute of Cultural Heritage (2007), "Development of conservation system for protection of movable cultural properties"
8. National Research Institute of Cultural Heritage (2008), <http://www.nricp.go.kr/eng/>

## **Samoa**

**Tautala Silaulelei ASUA**

*Lecturer*

The National University of Samoa

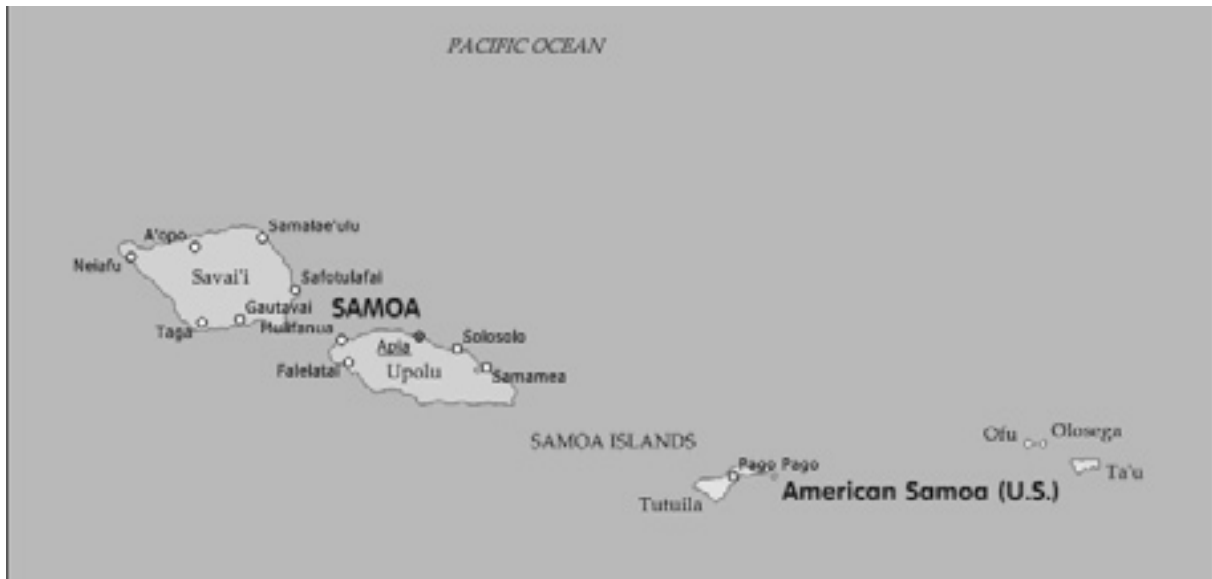
### **A Brief Report on Achievements in Archaeological Heritage Conservation in Samoa**

#### **INTRODUCTION**

Currently we have no solid policies or legislation recognized by the government protecting archaeological sites in Samoa. As the only archaeologist in Samoa, there is significant fundamental work which needs to be accomplished in order for Samoa to have effective legislation and policies that are recognized and understood by all in the country, concerning the protection of archaeological sites. However, this requires much public education and consultation at the government level, the community level, and the individual level. It also requires careful planning and consultation with communities in order for policies concerning protection of archaeological and cultural heritage sites to be widely accepted by the country. Furthermore, funding is a major issue which contributes to the lack of policies for truly protecting archaeological sites in Samoa. This will be discussed further in the following brief report.

#### **HISTORY OF ARCHAEOLOGY IN SAMOA: THE 1950S TO THE 1970S**

Samoa comprises several islands now divided into independent Samoa (formerly known as Western Samoa) and American Samoa. The latter group of islands, located to the east, became a US territory in 1900 (Figure 1). Archaeological evidence shows that the first arrival of people into the Fiji, Tonga, and Samoa region dates back 3000 years ago (e.g. Burley and Clark 2006). The original settlers are known as the Lapita people, who originated from the Bismarck Archipelago and expanded eastward through the Solomon chains, including Vanuatu, New Caledonia, Uvea, Futuna, Fiji, Tonga, and ending in Samoa. Currently, there is only one Lapita site in Samoa, located at the Mulifanua Ferry Berth site on Upolu island, making this the oldest archaeological site in Samoa (refer to Figure 1, Mulifanua is indicated by the arrow).



**Figure 1:** Map of Samoa (Islands include Savai'i, Manono, Apolima and Upolu) and American Samoa (Islands include Tutuila, Ofu, Olosega and Ta'u). Source: <http://www.sitesatlas.com/Maps/Maps/wsm-pol.gif>

Archaeological investigations began in Samoa in the 1950s (Golson 1957), followed by larger projects in the 1960s (Green and Davidson 1969, 1974) and 1970s (Jennings and Holmer 1976, 1982). Since that time, little archaeology has been done in Samoa. Over thirty years have passed, and only recently has there been a resurgence of archaeological research, but not on the same scale as these earlier projects (Martinsson-Wallin et al. 2003, 2006; Ishimura and Inoue 2006). This means that at least three decades of unmonitored destruction of archaeological sites has occurred due to ongoing development in Samoa.

### **THE CURRENT SITUATION OF ARCHAEOLOGY IN SAMOA: THE NEW MILLENNIUM**

Over the last seven years, archaeology in Samoa has mostly been in the form of archaeological research conducted by researchers from Sweden and Australia (Martinsson-Wallin et al. 2003; 2006) and Japan (Ishimura and Inoue 2006). These have been studies focusing on specific areas of Samoan prehistory. In 2006, Gotland University in Sweden formed an exchange programme with the National University of Samoa (NUS) providing an opportunity for Samoan and Swedish students to experience each others' cultures through the discipline of archaeology. Visiting archaeologists also come over from Sweden conducting projects with our University on the theme of Cultural heritage. These are the same archaeologists who have revived research in Samoa from the year 2002 (Martinsson-Wallin et al. 2003, 2006). An attempt was also made by Martinsson-Wallin to have the Pulemelei Mound in Savai'i nominated for World Heritage, but with no success. There is currently a legal battle over the ownership of this mound between the village in which the mound is located, and the people who legally purchased the land (Martinsson-Wallin 2006). This became an issue when archaeological



research began on this mound, and is not the fault of the archaeologists, but related to customary and cultural beliefs about land ownership. Land is a very sensitive issue in Samoa, which is why careful planning must be undertaken for legislation and protection of archaeological sites in Samoa, in complete consultation with communities.

The other attempt made for nominating archaeological and cultural heritage sites in Samoa has been through the Heritage Committee under the Ministry of Education, Sports and Culture (MESC). This tentative list is still in the process of being prepared and submitted for nomination.

Archaeology in the new millennium has been mostly research based on projects by outside researchers, who are trying to help maintain the cultural heritage of archaeological sites through our University. Also, attempts have been made by MESC in nominating sites in Samoa as World Heritage. To this day, I firmly believe that before any nomination for World Heritage can take place, there is a lot of groundwork that needs to be done first. This groundwork is essential for ensuring the sustainability of any archaeological and cultural heritage programmes that may take place. This is in specific reference to the need for having a national inventory of sites of archaeological and cultural value. Below is a brief summary of what I believe are the greatest needs for archaeology and cultural heritage efforts to be successful in Samoa. It also includes the processes I am trying to achieve in order to establish the foundation for the goal of preserving our cultural heritage. The following section is included as a requirement for writing this report for this training.

## **THE NEEDS IN SAMOA CONCERNING THE PROTECTION OF ARCHAEOLOGICAL AND CULTURAL HERITAGE SITES**

### **DEVELOPMENT OF THE ARCHAEOLOGY PROGRAMME AT THE NATIONAL UNIVERSITY OF SAMOA THROUGH THE CENTRE FOR SAMOAN STUDIES**

A new archaeology programme has been developed at the National University of Samoa. Part of my job requirement was to develop the eight archaeology courses which are to be offered as a Major under the Bachelor of Samoan Studies degree. This achievement is a step forward for Samoa because the courses developed are centered on the theme of cultural heritage and the preservation of sites in Samoa. This archaeology programme also fits in with the objectives of the Centre for Samoan Studies which is responsible for the preservation and dissemination of information on all things relating to Samoan culture, language, and history.

I currently teach two introductory-level courses in archaeology and the courses are very new, but student interest is slowly growing. With this new development at the University, and as the only archaeologist in Samoa, all matters relating to archaeological and cultural heritage will be led by the Centre for Samoan Studies. This will be done in collaboration with other relevant government agencies such as the Planning and Urban and Management Agency (PUMA) and the Museum of Samoa. In 2007 I was also a co-editor of a special issue on archaeology in Samoa, which was published in the Journal of Samoan Studies. It was an issue on recent archaeological research done in Independent and

American Samoa, with researchers contributing from New Caledonia, Japan, Hawaii, Texas, France, Sweden, Australia, and Samoa.

#### DEVELOPMENT OF POLICIES AND LEGISLATION SPECIFICALLY FOR THE PROTECTION AND PRESERVATION OF ARCHAEOLOGICAL AND CULTURAL HERITAGE SITES IN SAMOA

There are no policies or acts that specifically deal with the protection of archaeological sites in Samoa. Where such provisions do exist in other acts (for example, the Planning and Urban Management Act 2004), these provisions are not strong enough to enforce full protection of archaeological sites. To provide an example, two known incidents (which happened before I was based in Samoa) have occurred in Samoa. One was the demolition of the Customs Building, a building which is one of four that the Government of Samoa had made a commitment to protecting, but resulted in being demolished. The second example is the construction of a five-star resort in close proximity to the oldest archaeological site in Samoa. No monitoring took place during construction of this resort, nor was there any clear code of practice. The provisions in the acts which are supposed to protect cultural heritage sites were not fully enforced. This is a reflection of how easily such provisions can be bypassed, which is why stronger policies which specifically deal with archaeological and cultural heritage sites need to be developed. It also indicates the lack of awareness and understanding of archaeology and cultural heritage.

#### DEVELOPMENT OF A NATIONAL INVENTORY OF ARCHAEOLOGICAL SITES IN SAMOA

There is no formal inventory of archaeological sites in Samoa. Funding is required to undertake and complete this task. Funding is always the biggest issue here in Samoa, which is why archaeology is never considered a priority. This has been the main barrier that is always expressed when I meet with the relevant government agencies. However, a basic database on known archaeological sites in Samoa can be started, which I hope to have my students undertake as part of their course work. This needs to be designed in a way that is relevant and meaningful to Samoa.

#### **SUMMARY**

The needs identified above are on both a national and a community level. In order for any future programmes relating to archaeology to be successful in Samoa, public education and consultation with communities is essential. The archaeology programme at the NUS is hoping to move toward resolving some of these fundamental problems, which will lead to creating relevant policies and legislation for the protection of sites of archaeological and cultural value. Due to difficulties in soliciting funds, research-based activities with external institutions (from Sweden and New Zealand, for example) will help resolve this issue for the meantime. The long-term vision is to ensure that all Samoans become aware of this discipline, gain an appreciation and understanding of their cultural heritage, and take

ownership of it. Encouraging such changes in attitude will enable Samoans to take ownership of their heritage and be equipped with the right knowledge of how to manage and maintain such sites, and present their heritage in a way that is meaningful to them from a Samoan perspective.

#### REFERENCES CITED

- Burley, D. V. and J. T. Clark. 2003. The Archaeology of Fiji/Western Polynesia in the Post-Lapita era. In *Pacific Archaeology: Assessments and Prospects: Proceedings of the International Conference for the 50th Anniversary of the First Lapita Excavation, Kone, Noumea 2002*, edited by C. Sand, pp. 235-254. Nouvelle-Caledonie.
- Golson, J. 1957. Preliminary Research: Archaeology in Western Samoa, 1957. In *Archaeology in Western Samoa*, edited by R. C. Green and J. M. Davidson, pp. 14-20. Auckland: Auckland Institute and Museum,
- Green, R. C. and J. Davidson. 1969. *Archaeology in Western Samoa*, Volume 1. Auckland: Auckland Institute and Museum.
- Green, R. C. and J. Davidson. 1974. *Archaeology in Western Samoa*, Volume 2. Auckland: Auckland Institute and Museum.
- Ishimura, T. and T. Inoue. 2006. Archaeological Excavations at Si'utu Midden Site, Savai'i Island. *Journal of Samoan Studies* 2:43-56.
- Jennings, J. D. 1974. *University of Utah Samoan Archeological Project [progress report]: Samoan Prehistory*. Dept. of Anthropology University of Utah.
- Martinsson-Wallin, H., G. Clark and P. Wallin. 2003. Archaeological Investigations at the Pulemelei Mound, Savai'i, Samoa. *Rapa Nui Journal* 17(2):81-84.
- Martinsson-Wallin, H., G. Clark and P. Wallin. 2006. Monuments and people: A report of the state of the Pulemelei Site, Savai'i, Samoa. *Journal of Samoan Studies* 2:57-64.
- Planning and Urban Management Act, 2004, Samoa.

#### MAPS

Figure 1 Map: Source: <http://www.sitesatlas.com/Maps/Maps/wsm-pol.gif>

## APPENDIX

Photographs of archaeological and cultural heritage investigations conducted by the National University of Samoa and Gotland University, Sweden (photographs courtesy of Assoc. Prof. Helene Martinsson-Wallin).



Figure 2. Investigations of Pulemelei Mound, Palauli, Savai'i.



Figure 3. Pulemelei Mound, Palauli, Savai'i.



Figure 4. Malaefono Starmound at Saleimoa, Upolu. Students From Gotland University, Sweden conducting Minor Field Studies as part of Exchange programme with NUS



Figure 5. Excavation at Fale o le Fee site in Apia, Upolu. Students in the archaeology programme at NUS learning excavation techniques (2007).



Figure 6. NUS archaeology student learning mapping techniques at Fale o le Fee site, 2007.



Figure 7. Students from the 2008 archaeology programme at NUS learning how to use a total station with GIS Specialist Gustaf Svedjemo from Gotland University, Sweden as part of Linnaeus-Palme exchange.

## **Thailand**

### **Sermasuk PRAKITTIPOOM**

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The 3rd Regional Office of Fine Arts

Fine Arts Department, Ministry of Culture

### **Archaeological Studies in the Lower Chao Phraya Basin of Thailand**

The lower Chao Phraya Basin in the central region of Thailand consists of five provinces located just north of the Bangkok area.

#### **Problems and Needs for Cultural Heritage Protection and Restoration**

The work of the 3<sup>rd</sup> Regional Office of Fine Arts, Ayutthaya, concentrates on the archaeological materials of the region, which includes five provinces of the upper central part of Thailand having a wide range of difference in geology, from flood plains suitable for rice growing to the limestone mountain ranges on the margin of the Chao Phraya Basin, where important industrial operations such as cement production are set.

This diverse landscape contains a multitude of archaeological and historical materials, including the World Heritage Site of Ayutthaya. Archaeological work in the area will require archaeologists to employ expertise from a range of disciplines in the arts and sciences.

For the purpose of supporting the preservation and development project of Ayutthaya Historical City, there is urgent work to be done to rescue sites in the construction areas, as well as data collection and taking advantage of the new town growth which is resulting from tourism.

The main procedure of the archaeological sector is making a complete circuit of the archaeological study in the area, including surveying and excavation, report writing for documentation, collecting archaeological data to study the monuments' style for planning restoration projects with proper techniques for their success.

In the 2008 fiscal year, the 3<sup>rd</sup> Regional Office of Fine Arts, Ayutthaya, received a budget for execution of this work in three provinces: Ayutthaya, Nakhon Nayok, and Ang Thong. The work done in each province will be discussed in turn.

#### **Ayutthaya Province: Wat Sam Vihara Excavation**

In Ayutthaya, the archaeological plan for this year is an excavation project at Wat Sam Vihara, one of the important monasteries in the northern part of the city outside the isle of Ayutthaya, which was constructed in early the Ayutthaya period.

This monastery is composed of a huge bell-shaped pagoda which reveals the architectural style of early Ayutthaya period, and three buildings lined up in front of the main structure. There are

currently two buildings whose nature is very clear, a Vihara with a reclining Buddha and an Ubosot (ordination hall). But the name “Sam Vihara” means three vihara, so it is necessary to investigate by the archaeological process of excavation.

This excavation was to look for monuments which possibly still remain in the form of foundations lying underground, although the upper structures may have worn down a long time ago, or have been changed in form through renovations to some of the parts.

The conditions of these monuments are as follows.

1. The Ubosot (ordination hall) of the present day was built overlaying an older one, but the boundary markers of the temple are the original ones which were made of fine grey slate in huge shapes. The decorative designs are only a convex spine carved vertically in the middle, with a separate rhombic shaped design, which indicates they were built in the early Ayutthaya period.
2. A Vihara (temple) is immediately north of the Ubosot. This open hall houses many large Buddha images that might be ancient items which have been renovated and appear much newer. This Vihara was based upon the previous one that had become ruined, and it is possible that they pulled down a former partition wall to create an open hall.
3. The Vihara with the reclining Buddha is immediately north of the open hall. The large reclining Buddha inside this building, as well as the structure itself, have been renovated. The renovation may have been done several times since the Ayutthaya period, so that there are no clues left to indicate the original age.

Many rectangular shaft holes were noticed in the pillars of the building, set at a level as high as the platform of the reclining Buddha. Because of the regularity of floods in this area, the shaft holes were probably made for setting beams supporting a wooden floor, to escape the flood level.

## **THE ARCHAEOLOGICAL EXCAVATION PROCESS**

A grid was established for the entire area, covering all structures: the main pagoda, the Vihara of the reclining Buddha, the open Vihara, the ordination hall (Ubosot), the decorated pagoda, etc. The grid was comprised of 4 x 4 meter squares. Data from documentary research, on chronicles, ancient records, and previous excavations, were taken into consideration for placement of the excavation pits.

After clearing up the area around the Vihara (the open hall), by moving the trees, ornamental plants, and grass, test pits were set up at the corners of the building, first at the northwestern followed by the northeastern corner, then detailed profiles were taken of the excavated remains.

## **EXCAVATION RESULTS**

*The northern zone of the Vihara.* In TP 1, the remains lay from west to east so the excavation was extended to follow them. The buried structural remains were composed of a lotus-shaped pedestal

23.3 m wide, and some sections had traces of stucco. Under the lotus-shaped pedestal, there is a brick floor spread with stucco, but this disappeared at the western side. At the northeastern corner, there were traces of a collapsed pillar with a dimension of about 52 cm.

In addition to the buried structural remains, there is a part of a brick construction rectangular in shape and about 1 x 2.3 m, which was placed 45 cm away from the building.

*The eastern zone of the Vihara.* There are some traces of the gallery. This side of the building is 13.6 m in length.

After finishing the excavation in both the northern and eastern areas, it was necessary to break the cement passage between the Vihara and Ubosot in the western zone to verify that the buried structural remains still lie toward the ordination hall.

Artifacts from the excavation include: fragments of roofing tiles, potsherds (earthenware, stoneware, and porcelain), fragments of the buildings' decorative stucco, animal bones, cowry shell, and metal nails.

The results of this excavation will be used for interpreting the architectural structures in planning the complete renovation project.

### **Nakhon Nayok Province: Dong La Khorn Excavation**

Nakhon Nayok contains outstanding geographic contrasts such as mountains and plains, with the area of the mountains taking up one of the three sections of the province. The mountain ranges in the northern area of this province lie mostly in Khao Yai National Park, with Khao Khiew as the highest peak at 1,351 m. These mountain ranges are the watershed between Nakhon Nayok, Prachin Buri, Nakhon Ratchasima, and Saraburi. There is a series of narrow valleys lying parallel to the mountain ranges, which consist of water ways and cliffs.

Hill slopes form a small area in the northwestern to southeastern zones of the province, lying in front of the mountain ranges; this area is about 5 – 10 degrees in slope. An important area of this province is comprised of the plains that extend throughout the southern and western zones, which form one part of the lower central plain known as the Chao Phraya basin.

The ancient site of Dong La Khorn is the most famous archaeological site in Nakhon Nayok and in this fiscal year the 3rd Regional office of Fine Arts, Ayutthaya, has conducted an excavation project with two pits located in the area outside the town wall, on private property.

A grid for the area was set up on a north to south axis, and the excavation pits were 2 x 2 meters in dimension. A datum point was set to the northeastern direction from the excavation, and the operation proceeded by taking 10 cm levels.

The excavation pits were divided into four quadrants named by direction (NEQ, NWQ, SEQ and SWQ) for recording finds until the excavation reached the sterile layer.

Ancient Dong La Khorn was near the sea coast of the late Pleistocene to early Holocene, and was contemporary with other ancient towns in Bang Pakong Basin. According to some artifacts, such as beads from India, these ancient towns are presumed to have had sea connections with other



communities. These connections had formed in the Dhavaravati period or much earlier.

Dong La Khorn at present has high potential as a community for conservation and for development as a site of historical and archaeological studies.

The finds from the excavation in layer II represent a deposit from various activities of ancient settlements.

### **Ang Thong Province**

Ang Thong is one of the central provinces of Thailand. The neighboring provinces are (clockwise from the north) Sing Buri, Lopburi, Ayutthaya, and Suphanburi.

The province has luxurious native handicrafts such as molded court dolls, firebrick, and wickerwork. In Ang Thong, there are more than 200 magnificent and interesting temples, appropriate for the chronological study of Thai history.

Ang Thong is located 108 kilometers north of Bangkok. It occupies an area of 968 square kilometers and is administratively divided into seven districts: Mueang Ang Thong, Chaiyo, Pa Mok, Pho Thong, Sawaeng Ha, Wiset Chai Chan and Samko.

### **GEOGRAPHY**

Ang Thong is a low alluvial plain, crossed by the Chao Phraya and the Noi Rivers. It has neither mountains nor forests, but consists of mostly agricultural land. The two rivers together with many canals provide enough water for rice farming.

### **HISTORY**

Ang Thong was historically known as Wiset Chai Chan, located on the Noi River. It formed an important border town of the Ayutthaya kingdom during the wars with Burma, as the Noi River served as a natural obstacle for advancing troops.

During the reign of King Taksin the Great, after the fall of Ayutthaya the main city of the province was moved to the Chao Phraya River, and named Ang Thong, as the Noi River had become too shallow for transportation.

The name Ang Thong means 'gold basin', presumed to come from the basin-like geography of the area, and the golden color of the rice grown in the region.

### **CULTURAL HERITAGE**

As a result of its good location, this area has a long history of over 1,000 years, as shown by ancient remains and artifacts which reveal the Dvaravati style.

Due to the greatness of the Ayutthaya kingdom, Wiset Chai Chan was advantaged as an important inner frontier of the capital city; there are 386 ancient temples spread around Ang Thong province, which relate to its special situation during the Ayutthaya period. Of this number, 180 temples have been abandoned but the rest are still functioning as monasteries.

The outstanding ancient monuments in Ang Thong province include the following.

*Wat Phinitthammasan.* Main attractions are the old vihara constructed in the late Ayutthaya period and the large seated Buddha image made of plaster in the posture of subduing Mara, with the lap width of approximately 12 m, enshrined in the open.

*Wat Ratchapaksi.* This temple has a large reclining Buddha similar to the one enshrined in Wat Pa Mok, but of a slightly smaller size. The image was assumed to have been constructed during the Ayutthaya period.

*Wat Mathurotsatiyaram.* This temple was assumed to have been constructed in the late Ayutthaya period. The only evidence that remains are a low wall surrounding the pagoda, Chedi (pagoda), Ubosot (ordination hall) and vihara standing on the appropriate positions with magnificent figures.

*Wat Tonson.* This is an ancient temple housing Somdet Phra Si Mueangthong, a very beautiful seated Buddha image in the posture of subduing Mara. This is regarded as one of the largest metal molded Buddha images, with a beautiful posture.

*Wat Tha Sutthawat.* This ancient temple was constructed in the early Ayutthaya period. At present, this temple is under the royal patronage of Princess Maha Chakri Sirindhorn. The temple compound is shaded with large trees exhibiting a magnificent scene over the bank of the Chao Phraya River.

*Wat Pa Mok Worawihan.* In the temple compound, there is a beautiful gilded reclining Buddha made of brick and plaster. Besides the reclining Buddha, this temple is famous for vihara Khian, where the wall fronting onto the river has a tall stand formerly used by the King.

*Wat Saket.* This is an ancient temple built in the Ayutthaya period. In the Royal Chronicle, it is mentioned that in 1585 when Phrachao Chiangmai led his army to encamp at Ban Saket, King Naresuan the Great and Somdet Phra Ekathotsarot attacked and finally defeated Phrachao Chiangmai's army.

*Wat Khun Inthapramun.* This is an ancient temple constructed in the Sukhothai period. The largest and longest reclining Buddha in Thailand, 50 m from the topknot to the feet, is enshrined here. Moreover, within the Wat Khun Inthapramun compound, there are historical remains of a basement, some parts of walls, and a Buddha image in the vihara.

*Wat Pho Thong.* In the Royal Chronicle, Wat Pho Thong was the place where Krommakhun Phornphinit (Prince Uthumphorn or Khunluang Hawat) entered his monkhood. King Rama VI

spent his summer vacation in this temple during his boat trip visiting the Noi River and Yai River in Krungkao precinct in 1916.

*Phra Tamnak Khamyat.* This 10 x 20 m royal residence, made of brick and plaster, stands eminently in a paddy field. The artistic beauty still remains, as seen in motifs around the window, and the front and back balconies were painted in red soil and covered with wooden floors.

*Wat Yang.* The historical remains to be found now are the Ubosot with an upwardly curved base similar to a junk, sandstone Buddha images, damaged stucco Buddha images and boundary stones.

*Wat Khian.* Inside the Ubosot are exquisite mural paintings featuring stories of ten former incarnations of the Lord Buddha, which were presumably the workmanship of a painter's school in Mueang Wiset Chai Chan in the late Ayutthaya period.

#### **EXCAVATION AT WAT KHOK LANGKA**

Wat Khok Langka is one of the deserted monasteries in Ang Thong province which is located near the Chao Phraya River in Ban Pho Tul, Tambon Jampa Loh, Muang Ang Thong district. There is no background record about this monument but some old local people tell a story of Buddha image fragments and an ancient well which were found here.

In this fiscal year, the 3<sup>rd</sup> Regional Office of the Fine Arts Department has taken on the project of excavating at this site. The project's aims were to conduct an archaeological investigation to compile data for interpreting the history of the communities lying between Ayutthaya and Ang Thong, and for the reconstruction plan of this ruined site.

This site is located about 1 km from the west bank of the Chao Phraya River, and 6 km distant from the town of Ang Thong. The site is approximately 4,500 square meters in area and has no ancient remains appearing on surface, excluding an old well. The western area next to the ancient well has public structures, one joss-house and two small halls. Tree farming has disturbed the site.

*Procedures.* Surveying and planning were conducted to locate features of the environment and the general conditions before excavation, collecting all data such as surface finds, measuring the levels, taking photographs, etc.

The excavation process began by setting the guide line trenches throughout the area to obtain some clues about the deposit layers. This was to be followed by data collecting and interpreting, surveying and planning after excavation, and publication of a primary report.

*Obstacles.* The work schedule was set in the rainy season, which caused some difficulties. Thick layers of disturbed deposits were encountered, and due to the thin nature of the other strata, they were badly damaged. Also, the excavation could not complete the entire plan because of the restricted

period and some troubles related to nearby private land.

*The monument after excavation.* After excavation there are many remains of architectural structures spread all around the area, lying in a eastern to western direction. The remains consist only of the bases of monument structures such pagodas, some rectangular buildings assumed to be sermon and ordination halls, and some parts of a low wall surrounding a temple.

## Uzbekistan

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### **Protecting Archaeological Sites in Uzbekistan: Problems and Perspectives**

Uzbekistan is a country with a very ancient and rich cultural heritage. Scientific investigations of archaeological sites began in the 19<sup>th</sup> century, mostly by Russian scientists and amateurs. Archaeological excavations on a large scale were carried out in the Soviet period, a time when most of the territory of the country was investigated. It was an enormous task, which helped us to understand how diverse Uzbekistan's archaeological sites are. From Stone Age caves and Bronze Age settlements to grandiose ancient cities and medieval commercial towns – all kinds of ancient remains can be found here. Excavations and investigations have shown that we have various artifacts made from metals, clay, stones, bones, etc., and they range from simple working tools and weapons to real masterpieces of ancient art: wall paintings, Buddhist sculpture, glazed pottery, etc.

During the phase of intensive excavation the most important trends for protecting heritage were the conservation and restoration of artifacts. A number of more or less effective methods for such protection were developed. But almost nothing was done for the conservation and protection of the sites. Filling up excavation areas with soil after the archaeological season was the main way to protect sites. But in most cases archaeological teams did not have additional money and time for such work. As a result, after a few years the remains of ancient architecture were destroyed or damaged by rain, snow, and wind.

The Scientific Research Institute for Restoration Projects (UzNIPIR) was located in Tashkent. There were some projects for the conservation and restoration of archeological sites drawn up (for instance, for the Buddhist monastery Fayaztepa in Termez, for the early medieval castle Aktepa in Tashkent, etc.), but these projects have never been realized in full. For example, in connection with the 2000<sup>th</sup> anniversary of Tashkent – the capital city of Uzbekistan – an attempt at the conservation of Aktepa was begun at the beginning of the 1980s. The walls, which were made from beaten mud (so called *pakhsa*) and mud bricks, were covered with extra mud-straw plaster and a special chemical compound was poured on, and they should have been protected with a light roof. But this last operation was never done, and after a few years the architectural remains of Aktepa were damaged by rain and wind.

Generally speaking, during the Soviet time all activity on conservation and restoration was concentrated on the well-known medieval architectural monuments of Samarqand, Bukhara, Khiva, and Tashkent.

Another big problem during the Soviet time was the intensive development of new fields for cotton cultivation. In the course of this activity hundreds of large and small archaeological sites were destroyed or damaged. Today we still have the problem of destruction, and the further weakening of state control is one of the reasons for this very bad situation.

On the other hand, after the independence of Uzbekistan (1991) some activity in conservation and reconstruction has begun. For instance, in connection with the celebration of the famous Islamic scientist Ahmad al-Farghoni, who was born in the medieval town of Kubo (modern Quva in the Farghona province), excavations at this site were organized in 1998. After excavating part of the site, this area was covered with a roof. In this manner the first attempts at the protection of archaeological sites in independent Uzbekistan began.

Another project, and perhaps the most famous and most expensive one, is the conservation of the well-known Buddhist monastery Fayaztepa, near Termez on the southern border of Uzbekistan. After being discovered in 1968 by prominent Uzbekistani archaeologist Lazar' Il'ich Al'baum, this site had been excavated in the 1970s by his team, which belonged to Museum of History of Peoples of Uzbekistan (now the National History Museum, Tashkent). They excavated a monumental monastery complex which consisted of three main units:

- A – The southern unit containing accommodations for pilgrims including dining rooms and kitchens;
- B – The main monastery building situated in the centre;
- C – The northern unit which was used for ceremonies and lectures.

The central unit (B) was built around a courtyard (30x20 m), which was surrounded by a colonnade and a series of special rooms. One of these rooms, which is in the centre of western side opposite to the entrance, is a shrine, where the famous “Triad” (a Buddha flanked by two monks) was found.

To the east of the main entrance, which is in the centre of unit B, the main *stupa* is situated. At the beginning it was small (3 m in diameter and 2.5 m high), decorated with one painting, but later it was enlarged to a big structure 7 m in diameter and 5 m in height.

The Japanese Government's mission visited Uzbekistan with the aim to support the Uzbekistan Government's efforts to preserve the country's cultural and historical heritage in September 1999. As a result it was proposed to undertake a field project at Fayaztepa, within the framework of the UNESCO/Japanese-Trust-Fund for the preservation of World Heritage. The purpose included not only undertaking conservation work, but also the development of tourism.

The project was started in 2002. Under the aegis of the UNESCO Tashkent office, experts from the Board of Monuments of Uzbekistan, as well as from Japan and the Centre de Recherche sur l'

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<sup>1</sup>Information about the Fayaztepa restoration project is taken from the booklet of Thierry Joffroy/Mahmoud Bendakir, “Fayaz Tepa”, CRATerre-Ensag, 2006.

Architecture de Terre, France, took part in these works.

Besides the conservation, restoration, and presentation of the archaeological site, the project comprised the construction of a visitors centre and the preparation of a master plan for both the conservation of heritage and tourism development in the Termez region.

In addition to the conservation and restoration practices, much attention was paid to finding methodologies of intervention with well-adapted and efficient techniques of treatment. Therefore, the project started with quite a long period of documentation, observation and experimentation with possible solutions. The setting-up of a good scientific and technical database would make it possible to define and select appropriate methods and well-adapted solutions for the proposed restoration–preservation project. There was also a need to adapt to the existing know-how available in the area. In addition to a monitoring program (climatic, hydrological, geological) that aimed at verifying the hypotheses, various conservation techniques and methods were tested. It was decided to experiment on a small scale first, without touching the original fabric of the site. Test walls and stupa were built near the site, to experiment with local materials and conservation techniques – surface protection, plasters, capping, protection for stupa, drainage systems, etc.

Some problems which arose during the project are:

- The difficulty of getting archaeologists and restorers to work together, and at times simultaneously;
- The desire to keep the ruins looking like ruins, meaning that some of the protective assets that the original building probably had could not be reproduced;
- The need to maintain intact the visual relationship of the ruins to their landscape surroundings, which excluded the idea of covering the ruins with a roof;
- The choice to use only natural building materials, like the ones that were available at the time of the construction of the site.

In accordance with international conservation principles, it was decided that the methods to be used would as much as possible be non-intrusive and reversible, and would make use of original materials. Another major choice, which was agreed upon right from the beginning of the project, is that the site should keep its ruined aspect.

Earth is a quite a fragile material and soft interventions are required to avoid serious disturbances. In return, this weakness of the material allows the evaluation of the efficiency of conservation techniques within a short time frame – just a few years. It was decided that repairs should be minimal, and focused on the reduction of the speed of decay in a passive way. The concept to be followed was to undertake works that would ensure that degradation risks and degradation speed would be minimized, without affecting the original structures. This was concretely achieved mainly through the addition of a rounded protective “hat” (they called it “*shapka*”) on the top of the walls, and the implementation of proper drainage systems surrounding the wall bases. Aside from that, the mud

bricks used for the restoration works were slightly stabilized with lime. This improvement will avoid risks of degradation even if maintenance cannot be done on a very regular basis.

To improve the visitors' experience, a walkway was proposed with *in situ* copies of important archaeological installations, and the original findings and layers were properly backfilled. The column bases marking the positions of the colonnades surrounding the central courtyard are replicas based on limestone fragments uncovered on the site during archaeological cleaning.

Conservation options for the stupa were subject to numerous discussions. The main issue was the fact that the stupa originally had been protected by a larger stupa, built at the later stage around it and removed during the excavations of Al'baum's team. Thanks to the later stupa the smaller one had kept its original decorative fabric and patterns. After the excavations it was decided to protect it with a metallic roof; however, the metallic roof provided insufficient protection from driving rains and wind-borne sand which caused significant damage. Another big problem was graffiti left by visitors to the site. It was decided that the best solution would be to cover the remains of the ancient stupa with a protective structure in the form of the original outer stupa as found and removed by Al'baum. Built as a protective dome with an accessible window, this solution enables one not only to see the original stupa, but also to go around it and monitor the state of conservation of this very valuable asset of the site. It was agreed that a consistent project for the stupa should include both the restoration of the platform and the construction of a cupola above the stupa. The stupa base as well as the protective cupola have been designed according to the findings of the excavations, keeping the dimensions of the larger stupa, as discovered during the archaeological excavations carried out by Al'baum.

To make the visit to the site more enjoyable, and to improve the understanding of the site, a visitors centre was built close to the archaeological site. It features a small museum, a documentation centre, and a permanent guard/guide.

Another example of protection of archaeological sites is Kapyrtepa, which is also situated in the southernmost region of Uzbekistan, in the Muzrabad district of Surkhandarya province, about 30 km to the west of Termez. Kapyrtepa is a very important fortress on the river-crossing point of Oxus (Amudarya), which was founded in the Seleucids period (end of 4<sup>th</sup> – 3<sup>rd</sup> centuries BC) and was abandoned between 127 and 150 A.D. There is an opinion that Alexander the Great, during his campaign against the Central Asian part of the Achaemenid Empire, crossed the river at precisely this location.

The site was discovered in 1971 by prominent Uzbekistani archaeologist Edward Rtveladze, who started excavations at Kamyrepa in 1979.

Kapyrtepa is situated on the second terrace of the Oxus and consists of an ancient kernel (citadel), with a fortified lower part which surrounded the citadel (*shahristan*). The shahristan is surrounded by a 3-m thick wall with rectangular (and one semicircular) towers. This part of Kapyrtepa was built in the 1<sup>st</sup> century A.D. when the Kushan Kingdom was ruled by the king of kings Vema Takto ("Soter Megas"). In the time of great Kushan king Kanishka I (127–150), as the



result of the some natural disaster (flood or earthquake), the fortress was abandoned and has never been settled again. The people of Kampyrtepa, the ancient name of which was probably Pandaheion, had gone away to live in other places, and archaeologists thus had the very rare opportunity to investigate pure Kushan layers. This situation makes Kampyrtepa extremely important for Kushan archaeology. As the site is not big – only 4 hectares – our aim is to excavate the site completely.

Since 1999 I have been working on the Kampyrtepa site as a deputy chief of the Tokharistan Archaeological Expedition, which was founded in the Art History Department of the Fine Arts Scientific Research Institute (Tashkent) in that year. Under the scientific leadership of academician Edward Rtveladze, we are working in cooperation with archaeological teams from Russia (State Orient Museum and Institute of Archaeology, Moscow) and Japan (Kyoto University of Art and Design).

In 2000–02 our expedition worked with the financial support of JICA. And the first attempt to protect one of the important buildings in the eastern part of the fortress – a temple – was undertaken during the 2000–02 archaeological seasons. Restoration work was conducted by archaeologist Konstantin Sheyko. Mud bricks of the standard Kushan size (30-32 x 30-32 x 10-12 cm) were made, and the remains of the temple walls were completed with the new brickwork. Dry cane was laid over the walls, and covered with mud.

Since 2006 we have been trying to restore a part of the Kampyrtepa site with the aim to protect it from destruction while turning it into a spot for tourists to visit. In the northeastern corner, two towers and part of the fortress wall were restored, as well as the living area. At an location outside the site mud bricks were made, and some twenty local men and youths worked under the guidance of Konstantin Sheyko. These works were made possible with a grant from The Ambassador's Fund for Cultural Preservation (USA), which Edward Rtveladze has received twice. Part of the sum received was also used for excavation, documentation, and preparation work.

If compared with restoration of Fayaztepa, it can be said that our restoration work was organized in much simpler way. It was also much cheaper. Because of the natural relief of the site the northeastern corner is the most damaged and destroyed by corrosion. Of the fortification only two to three tiers of mud bricks remained, and after a few years they would have disappeared completely. With the restoration of this part of the site we want to protect the remains from being destroyed, and at the same time make Kampyrtepa attractive for foreign tourists.

In my presentation I would like to show some visual materials on the topic and speak about some problems and perspectives on restoration and protection of archaeological sites in my country.

For me, as the member of the excavations and restoration team of Kampyrtepa, it would be very important to make an acquaintance with the rich Japanese experience in this field.



Fig. 1. Fayaztepa. Restored stupa.



Fig. 2. Fayaztepa. View onto the courtyard of unit B.



Fig. 3. Kamyrtapa. View of the northern part of *shahristan*.



Fig. 4. Kamyrtapa. View of the eastern part of *shahristan*.



Fig. 5. Kampyrtepa. Part of the restored fortress wall with the northeastern tower.

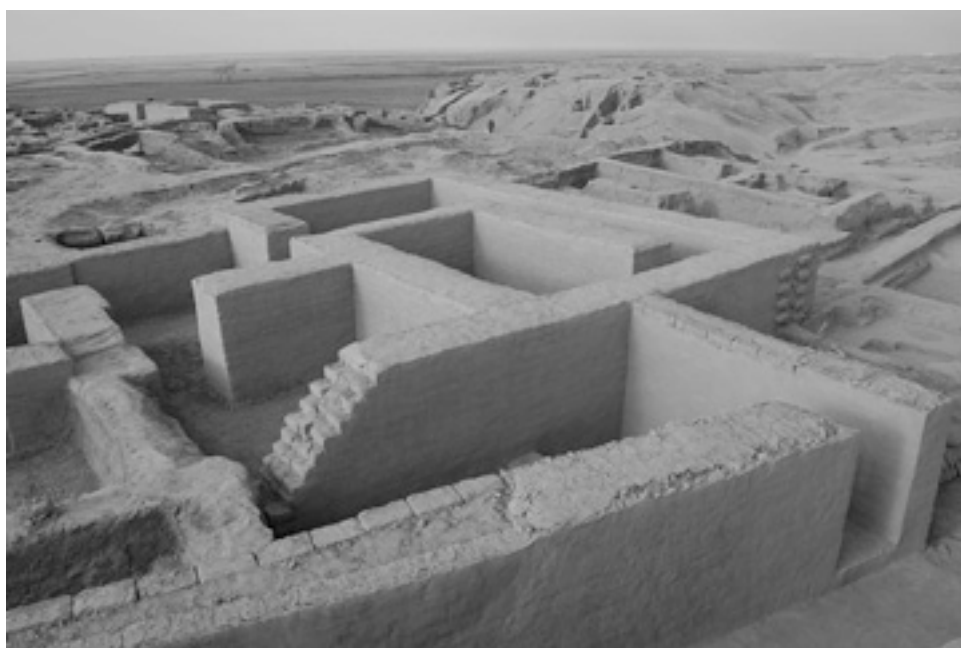


Fig. 6. Kampyrtepa. View of the restored part of the northeastern living area.

## Vietnam

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### **The Cat Tien Archaeological Site in Southern Vietnam: Problems in Restoration and Conservation**

#### **1. Introduction**

The Cat Tien archaeological site is located in the transition area between the Tay Nguyen Highland and the Dong Nam Bo Plain in southern Vietnam. A large-scale architectural complex extends over 15 km along the northern bank of the Dong Nai River, from Quang Ngai commune to Duc Pho commune in Cat Tien district, Lam Dong province.



In 1984 the site was discovered by local inhabitants, and the Lam Dong Province Museum was informed. Initial archaeological surveys confirmed that the complex consisted of architectural structures having high cultural value.

During the period from 1994 to 1998, the archaeologists at the Institute of Archaeology (Ha Noi, Vietnam) conducted excavations at four locations numbered as the No. 1A, No. 2A, No. 2B, and No. 5 architectural structures. Findings were made public in 2001 at a conference held in Cat Tien district.

According to the results of the archaeological research, the site was officially designated as a National Heritage Relic in 1998.

From 2001 to 2003, and then again in 2006, archaeologists of the Centre for Archaeological Studies (SISS – Southern Institute of Social Sciences – Ho Chi Minh City), including myself, conducted many archaeological surveys and excavations at Cat Tien. These investigations have brought to light a panorama at the complex having brick-constructed items of architecture, a brick kiln,



and so on, yielding over 1,140 artifacts of a diverse range: stone, bronze, gold, high-fired ceramic, and terra-cotta. These artifacts may reveal both the daily and the spiritual life of the ancient inhabitants of Cat Tien.

## **2. Cultural and historical value of the Cat Tien complex**

Hinduism-influenced architectural ruins found in Vietnam are very numerous. Most of them are distributed along the coastal area of Central Vietnam. The most famous, the My Son Sanctuary (Quang Nam province), has nearly seventy architectural ruins which form several groups. The My Son Complex was designated a UNESCO World Heritage Site in 1999.

Excavations at Cat Tien revealed some architectural structures standing alone and some in the combinations forming a complex plan. These findings have proved that it was probably a religious center of considerable scale, although most buildings had lost their superstructures and the excavated ruins are fewer in number in comparison to the My Son complex. However, Cat Tien occupies an even larger area than My Son. There are fourteen architectural structures in the central area (Quang Ngai commune), and two more structures located over a distance of 15 km along the northern bank of the Dong Nai river. It might well have been a large stretch of holy land and a great religious center in ancient times. No doubt it is a valuable item of the cultural heritage of Vietnam and the entire world.

The diversity of archaeological ruins at Cat Tien includes: foundations of towers and temples, tombs, a water conduit, and a brick kiln built on a perfect plan.

These archaeological findings have provided useful information on the chronology, ancient lifestyle, and ancient religion of the inhabitants, as well as at other excavated sites in Vietnam.

However, we still do not really understand who left the huge complex in such a deeply inland and forested area as Cat Tien. Did the entire complex belonging to Champa? To Funan? To Chenla? Or even some other polity ?



## **3. Types of architecture of the Cat Tien complex**

According to the archaeological data collected over twenty years, we can group the architecture of the Cat Tien complex into different types. These architectural types include: tower, temple, temple-tower, pedestal, tomb, long house, water supply system, brick kiln, and so forth.

**3.1. Tower architecture.** Examples are the structures designated No. 1, No. 2A, No. 2B, and No. 3. All of these were built on top of small mounds of different heights. There are some



special variations of the plans of the tower type: polygonal, eastern gate with a four-stepped perron, door frame and perron made with large stone slabs, etc. In front of the gate there may be a small antechamber with decoration on the wall.

The area inside is square with stone paving. At the center of this area are placed the Linga and Yoni, and a holy brick column underground. At the bottom of the brick column were placed many artifacts: a golden plate with a Brahmanist god, holy animals, Sanskrit characters, and so forth.



**3.2. Tower-temple architecture.** Examples are the No. 4, No. 8 and Duc Pho structures. They are built on top of separate small mounds. The main tower is built on a higher level than the other structures. There is a gateway to the east with a

four-stepped perron (made with stone slabs). The area inside is square and brick paving. At the center of this area are placed the Linga and Yoni, and a holy brick column underground with holy artifacts: a golden plate with a Brahman god, holy animals, and Sanskrit characters like the artifacts of the tower architectures. The difference between this architecture and the tower architecture is the large area covered with brick in front of the gateway.

**3.3. Temple architecture.** There are two examples, No. 6A and No. 6B. These two structures were small-scaled and open-aired (with no roof). They were built on the natural surface of high mounds by the riverside, like structure No. 1A. They lie parallel to each other, with the same structure, especially in the brick perron with a crescent shape in front of the door. They could have been open-air temples



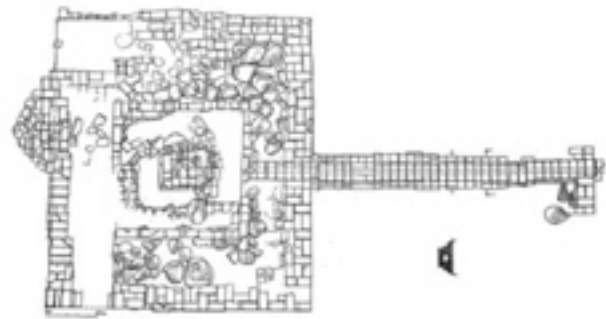
*Structure No. 6A*



*Structure No. 7A*

when first built. After that, they were reconstructed with wooden roofs; we found the column holes around the walls. At the center of the temples is a square brick column built on the surface of the mound (in the first brick layer). At the bottom of the brick column were placed many holy artifacts: terra cotta linga, bronze and iron linga, gold plate with characters, Brahmanist gods, and so forth.

**3.4. Monument architecture.** Examples include structures No. 5, No.7, and H3. They are constructed of brick with a square block structure. The centers of these sites are the same, with a temple-tower in the center. At site No. 7, we found a Somasutra (a holy-water gutter) over 6 m long.



*Structure No. 7*

**3.5. Long house architecture.** Examples include structures No. 2C, No. 2D, No. 8B, No. 8C. They are simply constructed with brick on a rectangular plan, having two or three sections, an eastern gate, and tile roof. This type of structure was built in groups, in front of a tower.



*Structure No. 8B*



*Structure No. 2D*



**3.6. Tomb architecture.** The only example is structure No. H2. It is built with brick and has a square shape about 6 m on a side. In the center is a smaller square of about 1 m. Under the center square was a large burial jar with human bone, charcoal, and golden grave goods inside.





**3.7. *Water conduit.*** This very long structure was built in an east to west direction. Its parallel walls of brick formed a pipe about 1.0–1.2 m wide, 0.6 m high, and the inner channel about 0.4–0.6 m wide. It has been excavated over a length of about 45 m.



*The water conduit*

**3.8. *A road/dike.*** This feature runs about 2 km in length along the Dong Nai river, and is about 7 m wide. It was constructed with stone and broken brick (the same type of brick in other structures), covering up an earthen ridge. It may have functioned as a road for traffic road and as a dike to prevent flooding from the Dong Nai river in the past.

**3.9. *Brick kiln.*** This was the new discovery of 2006; we found and excavated four brick kilns far away from other groups of structures, about 1 km distant, in a large rice field. They have the same structure but are different in scale, lie on an east-west axis, and the direction of brick and fire channel is north-south. The entrance opens to the south for supply with air from the southeasterly wind. We found charcoal and waste brick in these kilns. The waste bricks are the same size as those used in the brick structures (towers, temples, etc.).



*An ancient brick kiln*

**3.10. Settlement site.** In the lower strata of the structures' foundations, we found settlement site evidence: potsherds, charcoal, vases, jars, and so forth. In the summer of 2006, we found many settlement sites in the fields near by the road/dike. The artifacts include potsherds of jars and vases, and some iron tools. These are the same materials, and the same types, as those collected from the lower strata of the architectural foundations.

We classified many kinds of structures as described above based on their basic differences. All of them were constructed on complex plans, over many different periods and with separate functions. Many archaeologists have defined Cat Tien as a holy land for the ancient inhabitants.

#### **4. Detecting the functional areas of the Cat Tien complex**

**4.1. Residential area.** The questions of “Who built the Cat Tien site? Where did they live? What was their livelihood?” were difficult ones for archaeologists until the year 2006. We had previously found many archaeological artifacts under the architectural foundations, which enabled us to determine the residence of ancient inhabitants in a period preceding that of the architectural structures, but we could not delineate the residential area.

During the excavations of 2006, we collected much evidence for a large residential area along the road/dike nearby the Dong Nai river. This is a large area of flat fields created by the Dong Nai



river's alluvium, with an area of about 100 hectares.

**4.2. Brick producing area.** This is located on the rice fields of the modern Cat Tien inhabitants. This is a large area and perhaps contains many brick kilns buried

underground. The location is good for brick producing, as fine clay can be taken from depths of about 30–40cm, and there are wide areas for drying. A small stream flowing into Dong Nai river is convenient for conveying the bricks to sites of construction. The area was ideally chosen by the ancient inhabitants.

**4.3. Religious areas.** The main religious area is located on the Quang Ngai commune, with over fourteen structures in many groups. Moreover, there are other structures located further in. After working for over twenty years at this location, archaeologists can determine the area of distribution of the Cat Tien complex as centered in the Quang Ngai commune.

We do not know exactly which ethnic group built the Cat Tien complex in the past, but we can infer the existence of a small polity in this area for hundreds of years.

## **5. Dating the Cat Tien complex**

There are a number of opinions regarding the problem of dating the Cat Tien complex, as follows.

- From the 8<sup>th</sup> to 10<sup>th</sup> centuries, based on a comparison of golden artifacts.
- From the 6<sup>th</sup> to 8<sup>th</sup> centuries, based on pottery, and on comparison of the decorations on the stone lintel and two stone columns of structure No. 2A with the Sambor Prei Kuk site (Cambodia).
- From the 4<sup>th</sup> to 8<sup>th</sup> centuries, based on radiocarbon dating and comparisons of pottery. This dating framework is the most recent, and has been updated with new data from the latest excavation.

We have analyzed over ten charcoal samples, dating from 1,730±55 BP to 1,330±70 BP. These charcoal samples were collected from some of the structures, from the settlement site, and the brick kilns. The dating of the brick kilns is the same as the structures.

The artifacts (especially the golden plates with religion symbols, Sanskrit characters, Brahmanist gods, etc.) and the presence of a central structure built with brick are similar to the Oc Eo culture (southern Vietnam).

The later dating is based on statues of Ganesa and Uma deva excavated at structure No. 8A.

The use of the radiocarbon method for dating this site is meaningful and important, but not sufficient. It can only give us a framework for dating the entire site. The relative order of the building of the different structures has not been established yet.

## **6. Problems in conservation and preservation**

What is necessary for the Cat Tien complex is conservation work, in order to preserve the remaining structures from natural and man-made threats. We have carried out some restoration of the architectural complex soon after our excavations, aiming to fortify the damaged structures according

to their original conditions. But this is not enough. The contributions of and collaboration with more archaeologists, professional architects, conservators, and other technical specialists are indispensable.

Moreover, the support and expert advice of specialists, archaeological organizations, and communities all over the world will be appreciated.

**6.1. Threats.** At present, we have some protective roofs giving open-air cover at Cat Tien, but this will not really protect the structures for a long time in the rain forest environment. The uncovered structures confront the threats of severe tropical weather, an environment high in moisture which definitely causes serious damage against.



Moreover, as the ancient ruins are situated on the bank of the Dong Nai River, they have a high risk of being subjected to floods especially in the rainy season, which continues for five or six months of the year. The area where the architectural structures are most concentrated is also influenced by seasonal floods. The natural stones which form small falls in the river provide

a wonderful panorama, but are harmful to the ruins. In the rainy season, because of heavy rainfall in the region upstream on the Dong Nai river, flash floods engulf the entire Cat Tien complex. In the last several years the complex has suffered intensive flooding many times, which partially submerged the architectural structures and immersed them in mud, increasing the risk of their falling down.

How to protect the Cat Tien complex during the rainy season is the most important and urgent issue in the area of preservation and conservation of the site.

**6.2. Heritage management needs.** The Cat Tien complex can be visited by travelers from the two cities of Ho Chi Minh and Dalat. In the future, it may become a hot spot for archaeological tours. A plan for how to keep the ruins stabilized when they become open to the public, and how to enable visitors to enjoy it while at the same time preventing the site from unintentional damage on the part of visitors, is necessary for proper heritage management.

The excavated structures are only the main frame of the complex. A system of auxiliary facilities linked to these primary structures, especially isolated structures, still remain to be unearthed. Further archaeological excavations are necessary in order to bring to light the entire complex of ancient structures. Well-organized research and planning for conservation and restoration is another important issue. Modern archaeological research should be done in close collaboration with many technical specialists in various scientific disciplines. For example, advanced technology such as GPR (ground penetrating radar) mapping may not only provide initial exploration data, but also help us plan the preservation of the remaining cultural property.

## **7. Public accessibility**

The archaeological site will be stabilized and opened for the public to understand, appreciate, and enjoy. New facilities such as exhibition halls, conference halls, parking, restrooms, etc., will be constructed. All of these must be considered as a part of a harmonious complex, planned under the concept of the promotion of heritage. There should be many solutions for open-air exhibitions for visitors which do not harm the remains, but we have too little experience in this area. Vietnam needs to learn from other countries and international organizations which have developed advanced technologies and methodologies for promoting cultural tourism of the historical heritage.

## **8. What does the Cat Tien complex need?**

The conservation process for the archaeological remains at Cat Tien needs the cooperation of many researchers, scientists, and engineers in new fields of technology. These new technologies, new materials, and new methodologies are needed to protect the site from serious influences of the hard tropical weather.

The thousands of artifacts collected in the excavations, made of different materials (bronze, gold, silver, clay, stone, etc.), need proper treatment against deterioration according to the materials.

Further scientific research is also necessary. The most important problem is the historical significance of Cat Tien. Was it related to Champa, Funan, Chenla, or some other ancient polity of which we are not yet aware? Comparative study of Cat Tien and other famous complexes such as My Son of Champa, Oc Eo of Funan, Sambor Prei Kuk of Chenla in Cambodia, Wat Phu of Chenla in Laos, etc., has not yet been made properly. For this comparative study, further radiocarbon analysis for dating Cat Tien is indispensable.

Solutions for the restoration and conservation Cat Tien site must include the following steps.

### **Step 1: Preparation**

- The complex should be mapped in high detail, locating all known structures to help predict the locations of unrevealed structures.
- That map should be combined with aerial photos and GPR technology in surveying for the unrevealed buried structures.

### **Step 2: Continued research**

- Based on data collected in Step 1, we can determine where excavation may continue for research and where to avoid excavating (to prevent unwanted damage).
- In case more tombs are found, we should excavate in order to research the race of the ancient inhabitants. Human bones in those tombs are useful for DNA analysis in answering the question “Who built and inhabited the Cat Tien complex?”

### **Step 3: Restoration and conservation**

- The foundations of structures need to be restored, and the walls and corners stabilized with adhesive.

- Structures need to be protected with a thin clear liquid coating to prevent damage from humidity, rain, and moss.
- A protective wall is needed along the river to prevent flooding in the rainy season.
- A system of protective roofs is needed for stabilization, being high and well-aired while protecting the structures from rain and direct sunlight.
- Small sized-models, photos, and 3D pictures are need to aid public accessibility.

## 9. Conclusion

With thousands of excavated artifacts and many architectural structures, the Cat Tien complex has its own unique cultural and historical value. It could bring new perspectives on the ancient history of mainland Southeast Asia, which has been generally described in terms of Champa, Funan, Chenla, and so on.

Conservation and restoration work is urgently needed at Cat Tien. The support and cooperation of experienced archaeologists, architects and engineers of other countries will be most appreciated. Advanced methods and technology will help the maintenance of the ruins and promote further research on diverse aspects of them. We also do not have enough experience in the field of cultural heritage management. The experiences of other developed countries such as Japan in these areas are invaluable for us to learn.

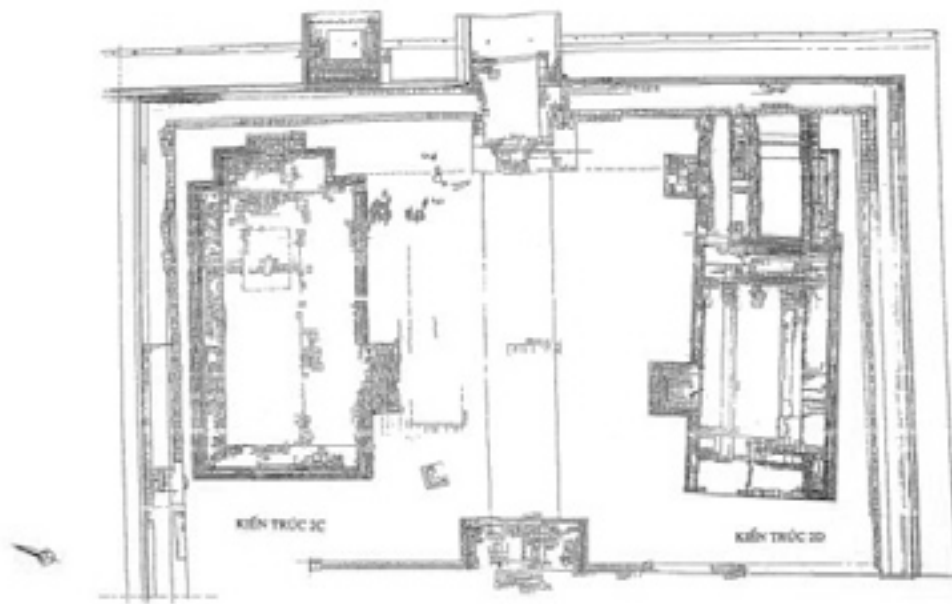
In the end, we want to emphasize the value of the Cat Tien complex for the people and organizations of not only Vietnam but also other countries.



*Cat Tien site (Google Earth)*



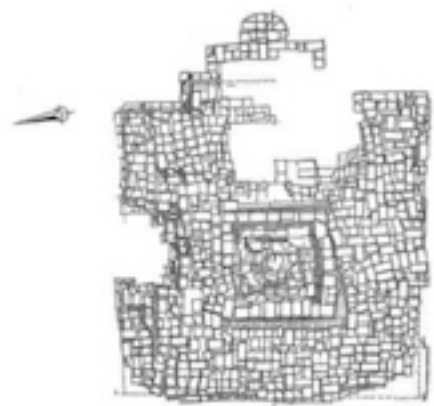
*Excavated' long houses," No. 2C and No.2D*



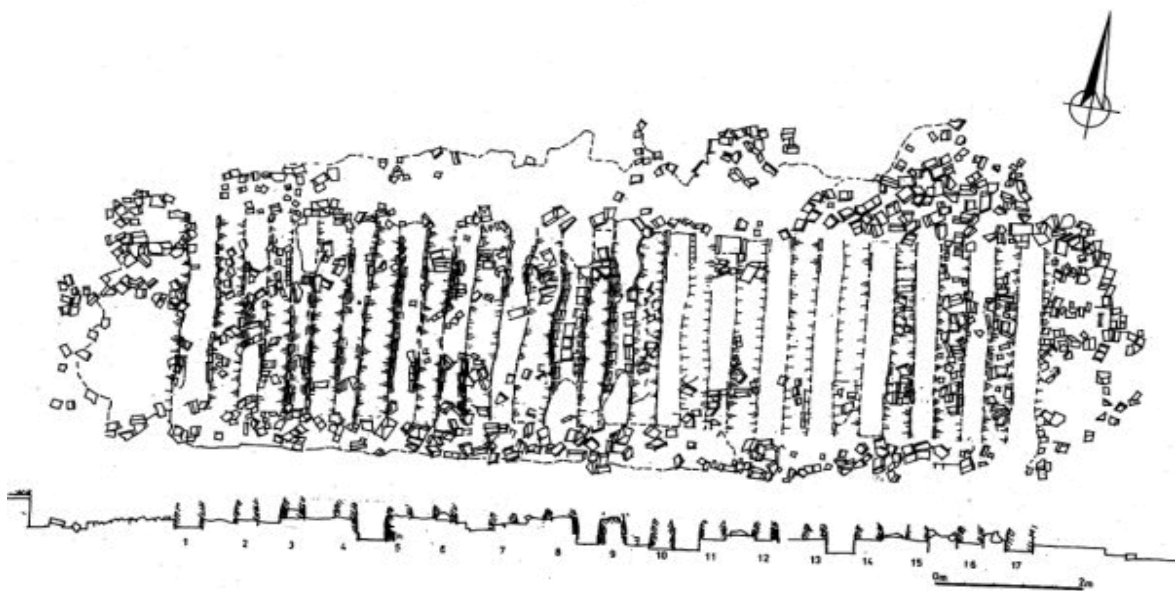
*Thế' long houses," No. 2C and No. 2D (top view)*



*Tower No. 3 (top view)*



*Temple No. 6B (top view)*



*The ancient brick kiln (top view)*





*The center bricked column  
of temple No. 6A*



*Holy artifacts at the bottom  
of the bricked column*



*Golden artifacts of the Cat Tien complex*



*Bronze artifacts of the Cat Tien complex*



*Uma (stone)*

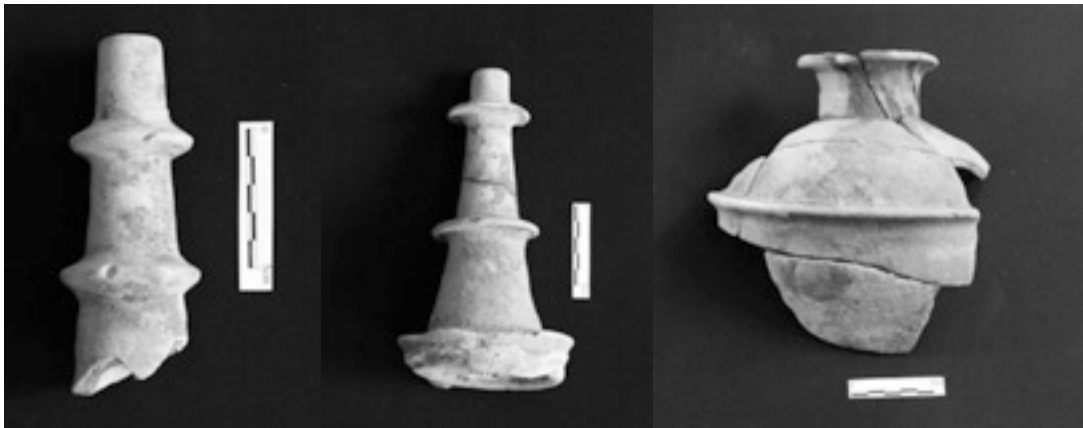


*Ganesa God (stone statue)*





*Silver box with lion decoration*



*Ceramic artifacts*



## Final Reports by Participants



## **Bangladesh**

**Mst. Naheed SULTANA**

### **Introduction**

I am very proud to be in Japan for one month to participate in this august gathering of scholars from Japan and many other countries, to obtain knowledge in the training course on cultural heritage protection in the Asia/Pacific Region, 2008, “Research, Analysis and Preservation of Archaeological Sites and Remains” (9 September- 9 October 2008, Nara, Japan), provided by the Asia/Pacific Cultural Centre for UNESCO (ACCU Nara office), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICROM), and the National Research Institute for Cultural Properties, Japan. This course was attended by representatives of 15 different countries within the Asia/Pacific region. The opening ceremony was conducted at the Nara Prefecture Office on 9 September 2008.

On the first day Ms. Claire Smith, professor of archaeology at the University of Newcastle, gave a very important lecture on “Global Trends in Conservation of Archaeological Sites.”

On 11-12 September, country report presentations were made by the course participants. It was very interesting and enjoyable for me to learn about the conservation methods applied for stone architecture, wooden artifacts and architecture, and brick structures in different countries.

I also presented my country report, in which I told participants about the location of my country, Bangladesh, and about its important sites and monuments. I also discussed problems that we are facing in the protection and preservation of cultural heritage in Bangladesh. The participants and Professor Smith give me many useful suggestions for how to improve the situation.

Mr. Ichihara Fujio, cultural properties specialist in the Monuments and Sites Division, Agency for Cultural Affairs, gave an introduction to the cultural property protection system in Japan and the conservation and utilization of cultural heritage resources. He gave detailed information on the system for protecting cultural properties, including tangible cultural properties, architecture and other structural monuments, folk cultural properties, cultural landscapes, and so on. He lectured on the chronology of laws on historical, cultural, and archaeological properties in Japan, from the beginning of the Meiji period in 1869 up to 2004.

The national government, local governments, land owners, and the public are all included in the framework for considering how to protect cultural properties, and in other laws and regulations. The government of Japan spends large amounts of money on culture heritage preservation, conservation,

and research.

Mr. Shimada Toshio, of the architectural section of the Department of Heijo Palace Site Investigations, Nara National Research Institute for Cultural Properties, introduced the maintenance, management, and preservation of structural remains, focusing on the actual conditions and challenges of cultural heritage management.

Mr. Kurosaka Takahiro, researcher with the Department of Asuka/Fujiwara Palace Site Investigations, Nara National Research Institute for Cultural Properties, gave precious details about the practical side of improvements and conservation at the Asuka and Fujiwara palace sites. He also gave us an idea of the architecture and the excavation at the site of the Fujiwara Daigokuden (great audience hall), which was very important and informative for me.

Professor Nagatomo Tsuneto, Nara University of Education, gave a lecture introducing us to various scientific dating methods for age determination in archaeology, including radiometry methods such as radiocarbon dating (C14).

Professor Kanehara Masaaki, Nara University of Education, gave an introduction to environmental archaeology. I was impressed by the information on pollen analysis, the identification of seeds and fruits, the identification of tree species, and diatom analysis. This was a very important and informative subject for me (especially for excavation, research and analysis), as I did not have in-depth knowledge about environmental archaeology and toilet archaeology.

Mr. Kohdzuma Yohsei gave an overall view of conservation technologies for archaeological sites and artifacts, a very technical subject. Japanese organic artifacts include those made of wood, fiber, and paper; wooden articles are unearthed in the greatest quantities. But in Bangladesh, in conservation and during the building process, different kinds of bricks and mud mortar are used in traditional buildings and monuments.

I moreover obtained a vast amount of knowledge about the documentation of archaeological artifacts such as various types of roof tiles, and about tiling methods and roof architecture from the presentations by Baba Hajime and Imai Koki, researchers with the Nara National Research Institute for Cultural Properties.

Another interesting lecture and workshop was on the photographing and documentation of sites and remains, from Nakamura Ichiro, an expert on the staff of the Nara National Research Institute for Cultural Properties.



I was really impressed by the lecture given by Nishimura Yasushi, Director, Asia/Pacific Cultural Centre for UNESCO. He gave a lecture introducing the archaeological prospection of sites. This lecture was difficult and scientific but very interesting. He talked about the classification of targets in archaeological prospection, methods and techniques of photo interpretation, geophysical methods, ground penetrating radar, electromagnetic, seismic, and other methods.

On the same day Okochi Takayuki, a researcher at the Nara National Research Institute for Cultural Properties, gave a very difficult and scientific introduction to dendrochronology. This method provides absolute dating, which is necessary in archaeological research and conservation.

From 30 September to 3 October we participated in a study tour. We went to Himeji castle (World Heritage Site), and were given a lecture at the Kyushu National Museum on the subject of “Maintenance and Utilization of Sites in Practice.” We also visited the Yoshinogari Site in Saga prefecture, one of the largest sites of an ancient moat-enclosed settlement. I was really impressed with the Japanese traditional house conservation system.

On the last two days Mr. Gamini Wijesuriya, project manager with ICCROM, presented lectures and led discussions on “Future Issues on the Preservation of Sites and Remains,” focusing on risk management and utilization for the public. The lectures were instructive and the discussions fruitful. He introduced us to the ICCROM organization, to modern conservation and utilization of culture heritage resources and challenges, and to conservation awareness in archaeological training.

## **Comments**

Japan is the richest country in the Asia/Pacific region, and rich in cultural properties and historic monuments. There are 14 World Heritage Sites, many old settlements with traditional culture, and religious historical sites, palaces, and ancient tombs here and there throughout Japan. In this training course I had the opportunity learn a lot about modern scientific conservation, management systems, research methods, material analysis, antiquity display systems, exhibitions, and I am very much astonished by the efforts made on the part of the Japanese national government, various prefectural governments and municipalities, to conserve and manage the heritage in the form of a large number of monuments, and to speak proudly of their glory and splendor. The traditional technology and workmanship, conservation materials, risk preparedness, documentation techniques, survey methods, reconstruction to retain authenticity, conservation contexts, modern techniques of measuring and drawing for publication, all these methods and techniques really enchanted me.

Bangladesh has a long legacy of cultural heritage rooted in two thousand years of history. We find many splendid cities, magnificent palaces and buildings, temples, stupas, mosques, and mausoleums—

thousands of such archaeological sites lying all over Bangladesh. She is an underdeveloped country, so it is very difficult to conserve this heritage with the limited budget allocated by the government of Bangladesh.

If the Department of Archaeology wants to conduct complete conservation, it cannot do so because of a lack of money. The most important problem is that archaeological laws enacted in 1968 (reformed in 1976) are not completely effective for the protection and preservation of archaeological assets. There is a lack of skilled manpower, training facilities, equipment and vehicles. Another problem is insufficient allocation of funds from the national budget, an obstacle to implementing development projects. Many problems are seen for the conservation and preservation of brick structures, terracotta plaques, terracotta images, bronze images, wooden artifacts, coins, etc. They are a lack of conservation experts, of traditional and modern technologies, of proper management, of public awareness and education. Religious sentiments are playing a harmful role in the protection and preservation of the ancient temples, mosques, and mazars. Religious practitioners want to alter the monuments' coloring, or to enlarge, reform, and decorate in manners that destroy the real value, meaning, and nature of the architectural evidence. Other risks are from environmental deterioration (such as heavy rainfall, dampness, biological growth), and from vandalism by visitors and local people.

The training course was very beneficial, fruitful, and a good opportunity for me to learn all aspects of conservation from Japanese and international experts, and to share various ideas with other participants, which will be very helpful for my department in dealing with future challenges.

### **Acknowledgments**

In conclusion, I believe that in this one-month training course, all participants obtained a lot of knowledge about scientific preservation and conservation methods, excavation, photography, scientific research and analysis, from Japanese experts.

I would like to express my gratitude to the Agency for Cultural Affairs of Japan, the Cultural Heritage Protection Cooperation Office of the Asia/Pacific Cultural Centre for UNESCO in Nara, the International Centre for the Study of the Preservation and Restoration of Cultural Properties (ICCROM), and to the Nara prefectural and municipal governments. I am very thankful to Mr. Nishimura Yasushi, Director of ACCU, for giving me the chance to come Japan and participate in this training course. I would like to thank especially the director of ACCU Mr. Nakai Isao, associate director Mr. Kinoshita Wataru, and staff member Ms. Otani Yasuko, and all other staff of the ACCU office for their excellent cooperation with the course from its inception to completion. I would like to thank Ms. Hata Chiyako for her very good translations of the lectures and other necessary information.

I am thankful to all staff members of ACCU who helped me greatly throughout the training course. I am also thankful to my Director General Dr. Shafiqul Alam, who nominated me for this training course. My thanks are due to all my colleagues in Bangladesh who helped me in my preparations for coming to Japan.

## **Cambodia**

**LUN Votey**

### **Final Report on the Training Course on Research, Analysis and Preservation of Archaeological Sites and Remains**

#### **I. Introduction**

Cambodia is a country rich in culture and has a very long history, with the remains of more than a thousand sites from the very earliest times to date; one can say that Cambodia is the Rome of the East. But due to repeated war, and especially the most recent war, with the rise of the Khmer Rouge (the so-called Pol Pot regime), and the on-going suffering after the collapse of the Khmer Rouge, the tangible cultural heritage in Cambodia has been ignored or destroyed, and much intangible cultural heritage has been lost. To prevent further loss and protect the cultural heritage in this dangerous situation, the Royal Government of Cambodia has created laws for the protection and conservation of cultural property, and in particular it has established the Authority for the Protection and Management of Angkor and the Region of Siem Reap (APSARA Authority, short for “Autorité pour la Protection du Site et l’Aménagement de la Région d’Angkor/Siem Reap”), which mainly focuses on the Angkor area.

In order to protect all the national cultural heritage and world cultural heritage in Cambodia, many countries have offered their support for conservation and restoration work in Siem Reap. Besides directly conducting such work, most institutions involved in archaeological and conservation work in Cambodia usually offer training to local people, in hopes of enabling Cambodian people to do their own work on conserving and restoring their cultural heritage.

I am very glad to have the opportunity to participate in this training course on “Research, Analysis and Preservation of Archaeological Sites and Remains” as one of 16 participants from 15 countries, jointly organized by Bunkacho (Agency for Cultural Affairs in Japan), the Asia/Pacific Cultural Centre of UNESCO (ACCU), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), and the Independent Administrative Institution, Nara National Research Institute for Cultural Properties, in cooperation with Japan Consortium for International Cooperation in Cultural Heritage, the Ministry of Foreign Affairs of Japan, the Japanese National Commission for UNESCO, and the Nara prefectural and municipal governments. This report mainly focuses on the knowledge gained from the training which can be applied when considering the problems and needs for the conservation and restoration work in the Bayon complex, and at other sites of cultural heritage in Cambodia.

#### **II. Protection of Cultural Properties and Archaeological Work in Cambodia**

From the early part of the 19<sup>th</sup> century until the outbreak of internal conflict in Cambodia (Pol Pot regime, from 1975 to 1978), the *École Française d’Extrême-Orient* conducted archaeological surveys,

conservation, and restoration work in the entire country, especially in the Angkor area of Khmer ancient capitals which contains numerous ancient monuments, archaeological sites, and traditional ceremonies, etc. All of these works were recorded and published in their *Bulletin* and other journals. After the Pol Pot regime was overthrown in 1978, conservation work was started on some monuments by the Ministry of Culture and Fine Arts. Due to the war that had just finished, and the lack of human resources and financial support, cultural properties were still in poor condition due to destruction from the war, looting, urban development, abandonment by people who moved to settle in other places, natural disasters, illegal export, and so on.

In 1992, the Angkor area was inscribed on the UNESCO World Heritage List. Many international researchers from various countries have started research in this area under the supervision of APSARA, and France, China, Germany, Italy, India, and Japan have been especially active in the conservation, restoration, and archaeological survey work. In 1994, Angkor was inscribed on the list of World Heritage in Danger. In order to protect the cultural properties, laws for protection the cultural properties were legislated and five protection zones of the Angkor Archaeological Park were created (Zone 1: Monumental Sites, Zone 2: Protected Archaeological Reserves, Zone 3: Protected Cultural Landscape, Zone 4: Sites of Archaeological, Anthropological or Historic Interest, and Zone 5: The Socio-economic and Cultural Development Zone of the Siam Reap Region). In addition, an International Committee of Coordination (ICC) was created to enable the international community to cooperate with the national authorities and to check the processing and technical work of each international organization, and especially to promote discussion for dealing with the problems by holding conferences twice every year. Because of the more strenuous efforts of the national authorities and international institutes, the situation in Angkor has improved, and the World Heritage Committee has taken Angkor off the danger list, considering Angkor to be stable as of 2004. At the same time, the Royal Ballet of Cambodia was registered as Intangible World Heritage. On 8 July 2008, the Temple of Preah Vihear, which is located atop a cliff in the Dânggrêk mountains, Preah Vihear province, was registered as World Heritage and a new authority was established to manage and conserve this monument, called the Preah Vihear Authority.

One type of archaeological work, excavation, has been conducted at pre-historical sites, historical sites, settlement sites, kiln sites, etc. Lately, in the Angkor area, excavations have been conducted for the purpose of research, rescue (prior to construction), and restoration (to study the foundations, for conservation and restoration work on monuments). After excavation, all of the artifacts are washed, marked, joined with glue (to the extent possible), classified, and held in each organization's storage, but we are unable to conduct conservation work on artifacts, or perform scientific analysis such as the radiocarbon dating of charcoal and wood, soil analysis, etc. Thus, some of the artifacts have been sent to laboratories in other countries like Japan, Singapore, and the United States for analysis. However, most of these analyses are only possible for the international organizations, because of the expensive cost. Finally, reports of the results have been written, but few of them have been published.

Recently, the joint framework JAPAN-APSARA Safeguarding Angkor (JASA), which is responsible for the conservation and restoration work at the Southern Library of the Bayon complex, has planned to exhibit photos of the procedures and the results of current work, as well as the artifacts from excavations. This exhibition will be held at the office of JASA, and be open to the local people and international visitors.

Despite the efforts of the Cambodian government and many institutions, both local and international, to protect the cultural heritage, achievements are generally limited strictly to the Angkor area, which is listed as World Heritage. As mentioned above, there are more than a thousand sites spread throughout the country, some with value challenging even Preah Vihear and Angkor Wat, that have been ignored or poorly managed. In Cambodia, to the majority of Cambodian people, tangible cultural heritage was misunderstood as only being temples that remained from the ancient past, while many historical buildings, especially those from the colonial period, have been ignored or destroyed.

### **III. Protection of Cultural Properties and Archaeological Work in Japan**

Beginning in 1871 and continuing up through 2004, Japan has been establishing a system for cultural property protection step by step, through laws for the preservation of ancient artifacts, ancient temples and shrines, historic sites, places of scenic beauty and natural monuments, national treasures, etc. Under these laws for the protection of cultural properties, the Japanese government has selected and designated the most important cultural properties, and imposes restrictions on such activities as alteration of their existing state, repairs, and export. Moreover, diverse measures necessary for the preservation and utilization of cultural properties have also been implemented. Cultural properties are divided into tangible cultural properties (important cultural properties and national treasures), intangible cultural properties, folk cultural properties, monuments, cultural landscapes, groups of historical buildings, and buried cultural properties. In 1992, the Buddhist Monuments in the Horyu-ji Area and Himeji-jo were registered as World Heritage by the UNESCO World Heritage Committee. At present, Japan has a total of 11 cultural heritage sites inscribed on the World Heritage List, including: Historic Monuments of Ancient Kyoto, Historic Villages of Shirakawa-go and Gokayama, Hiroshima Peace Memorial, Itsukushima Shinto Shrine, Historic Monuments of Ancient Nara, Shrines and Temples of Nikko, Gusuku Sites and Related Properties of the Kingdom of Ryukyu, Sacred Sites and Pilgrimage Routes in the Kii Mountain Range, and Iwami Ginzan Silver Mine and its Cultural Landscape.

In field of archaeology, Japan has reached high standards of analysis, conservation and interpretation of archaeological data by using good methodologies, and modern equipment and technology. Up to the present, there have been many historic and archaeological sites excavated for rescue or research, and many have been reconstructed, preserved, and maintained. Before excavation, plans are made based on the results from surveys. All the data and objects are recorded and collected during excavation, and analyzed later. In the end, the results of the excavation are interpreted and published. Reconstruction work divides into three types; the first is to reconstruct an entire ancient

building and its structure using traditional methods, referring to the archaeological data, ancient documentation, and remaining buildings of the same period. The second is to indicate the former location of the building with surface representations of postholes made using plants, or by using foundation stone replicas, and so on. The third type is reconstruction of the ancient environment, through techniques such as pollen analysis. Before the reconstruction work, the original sites are covered with soil (0.5 to 1 m thick) for the purpose of preservation, but some sites are left in their original condition and protected with a shelter. After the reconstruction work is finished, sites are used as site museums and opened to the public. For Japanese's wooden temples, the restoration work has been very extensive. A temple needs to be restored once every 300 years using the original materials or the same kind of materials with traditional methods.

#### **IV. The Training Course and My Impressions**

Let me first remark that there were many techniques and methods, especially related to equipment, of which I was not aware. During the training course, I received much knowledge about methods for the preservation, maintenance, management, and development of historical sites.

**First Week:** Lectures focused on general themes, and on various archaeological and conservation work around the world, including the following topics.

- Archaeological Congress and Cultural Heritage Protection
- Interpreting the Heritages of Others: Indigenous Voice and the Post-Colonial Process
- International Trends: Implication of the Axum Obelisk Repatriation
- Looted Cultural Heritage: Iraq
- West Africa and the USA
- Cultural Heritage and Symbolic Wars
- Doing Archaeology in Aboriginal Australia
- Dilemmas in the Management of Cultural Heritage in Indigenous Australia
- Vestiges of Colonialism: The Culture/Nature Division in Heritage Management
- Indigenous Australians in World History

In addition to gaining knowledge from the lectures, the participants had the opportunity to share our experiences on how to protect and restore archaeological sites and remains in various ways, depending on the climate and other circumstances of the participant's own country, through the country reports.

**Second Week:** Lectures and site visits were the following.

- Cultural Property Protection System, Conservation, and Utilization of Cultural Heritage

#### Resources in Japan

- Site visits on Maintenance and Management of Archaeological Sites at the Nara Heijo Palace site and the Imperial Palace sites at Asuka and Fujiwara
- Introduction to Scientific Dating Methods
- Environmental Archaeology

**Third week:** In this week the course provided lectures and workshops, beginning with one on conservation science of archeological sites and remains. This showed what kinds of conservation treatments and materials should be applied for different materials such as metal, wood, and stone; processing techniques for conservation such as how to reinforce, remove, wrap, store temporarily, and analyze for conservation and restoration; types of weathering and deterioration; the relation between conservation and the utilization of archaeological sites; and how to conduct the transcription of stratigraphy. The lecture on the documentation of artifacts provided me with extensive information on how to clean, classify, record information about, and store artifacts from excavation such as wood, metal, pottery, and roof tiles; I especially appreciated the practice in the method of drawing archaeological objects (pottery and other ceramics) and in taking rubbings of decorations on round and flat eave tiles. Also, the lecture on photographic documentation of archaeological sites and remains gave me very important knowledge about taking photographs of sites and artifacts, and although some kinds of the modern cameras involved are not used in my country, I could obtain a basic understanding about getting high quality photographs. Moreover, I also learned the basics about how to preserve film and digital data for use in the distant future.

**Fourth week:** We had a day of lectures, beginning with the “Introduction to Archaeological Prospection,” which gave information on scientific methods and techniques of observation of archaeological sites with non-destructive means, such as photo interpretation, and geophysical methods such as seismic survey, etc. By using these methods, we can understand site’s condition, size, what kinds of remains it has, and so on without excavation. The other lecture was the “Introduction to Dendrochronology,” in which I learned briefly about the scientific technique of dating by examining tree rings.

In addition to the lectures, a four-day study tour was conducted to observe historical sites and museums in western Japan. We visited Himeji castle (a World Heritage Site), Kyushu National Museum, Dazaifu historic site, Yoshinogari site, Korokan site, and Fukuoka castle. During this study tour, I ascertained that all of the sites are well conserved, reconstructed, and maintained. Moreover, they are open as site museums to visitors, allowing especially local people and the younger generation to understand their value and participate in the activity of preserving historical sites and cultural properties. Moreover, the excellent national museum was created with the same aims. All of this has helped me to extend and improve my knowledge on methods of archaeological survey, conservation (traditional and scientific methods), maintenance, site management, and utilization.



Throughout the training course, I felt that all of the programs are very valuable for issues of conservation, restoration, and archaeological work in my job and also in my country. Despite differences in the sites and materials, especially for monuments built of brick, laterite, and sandstone, all of the methods that I learned from this course can be applied or used as models. Moreover, there are many scientific methods and technologies used for conservation, analysis, and interpretation in the archaeological work in Japan, that have not been generally introduced to Cambodia, even though some international organizations in Cambodia use these methods.

## **V. Conclusion**

After the month-long training course, I have been provided with information, experience, and knowledge on the conservation, protection, maintenance, management, reconstruction and restoration of the cultural heritage, and various archaeological techniques through lectures, on-site demonstrations and practical training, all sharing different approaches and solutions. It will be very important and useful for me to apply this knowledge in my own developing country. In addition, in the mutual discussions among the participants, there were additional benefits that will be relevant to activities that I will be working on, in terms of protecting, preserving, and maintaining World Heritage Sites. I strongly hope to apply and utilize the valuable knowledge I learned from this training course in my country.

## **VI. Acknowledgments**

I would like to express my gratitude to the ACCU Cultural Heritage Protection Cooperation Office, Bunkacho (the Agency for Cultural Affairs in Japan), ICCROM, Nara National Research Institute for Cultural Properties, Japan Consortium for International Cooperation in Cultural Heritage, Ministry of Foreign Affairs of Japan, Japanese National Commission for UNESCO, and the Nara prefectural municipal governments for organizing this training course. I would like express my heartfelt thanks to Dr. NISHIMURA Yasushi (Director of ACCU Cultural Heritage Protection Cooperation Office), Mr. NAKAI Isao (Director, International Cooperation Division Cultural Heritage Protection Cooperation Office), Mr. KINOSHITA Wataru, Mr. YAMASHITA Tsutomu, Ms. OTANI Yasuko, the local government, the lecturers, translators, and all the staff of the ACCU Nara office, and the providers of the training sessions for the excellent and wonderfully organized training course.

# **Cambodia**

## **PHIN Phakdey**

### **I. Introduction**

In 1992, Angkor was inscribed on the World Heritage List of UNESCO. Since then, in 1995, the Royal Government of Cambodia created a national authority called APSARA (Authority for the Protection and Management of Angkor and the Region of Siem Reap) by royal decree. With this act, all temples in Angkor park were declared protected and managed by this national authority, with cooperation from various international institutions such as Sophia University Tokyo (Japan), JSA=JASA (Japan), ASI (India), EFEO (France), CSA (China), ITASA (Indonesia), WMF (United States), I. Ge. S (Italy), GASP (Germany), etc.

In addition to the sites of the Angkor region, now protected as World Heritage, Cambodia is a country rich in cultural properties, both tangible and intangible. More than a thousand sites, including ancient temples, mounds, roads, and many other archaeological sites (pre-historical and historic) still remain in danger, without sufficient protection, maintenance, or conservation, along with intangible cultural heritage located all over Cambodia. In Battambang, one of the provinces of Cambodia, there are more than 170 archaeological sites known to remain. For more than thirty years, these cultural properties have faced extremely dangerous conditions threatening them with destruction. Accordingly, the Royal Government of Cambodia decided to create laws for the protection of cultural properties and heritage sites, not only for Angkor but for other areas as well. However, a lack of understanding of the value of cultural heritage has resulted in damage to many archaeological sites, as day by day they have been destroyed by the local people.

Cambodia currently needs human resources to carry out the provisions of cultural laws for the protection of cultural heritage, and even though we have many involved in this work we can only say “better than nothing but still not enough.” Accordingly, Cambodia should increase the human resources concerned, to provide more professional researchers, more specialists and experts, and more conservation and heritage management personnel.

Accordingly this is a very useful training program, on the preservation and restoration of cultural heritage in the Asia/Pacific region for a period of one month (9 September – 9 October 2008), which is organized every year by the Culture Heritage Protection Cooperation Office, Asia/Pacific Culture Centre for UNESCO (ACCU). Through the country report presentations (by 16 participants from 15 countries), we could learn about issues and successes in cultural properties work in each country. Afterwards, this program helped us to develop our knowledge of techniques and methods for investigating archaeological sites, and for preserving, restoring them through conservation science, to apply in our countries in the future. This year the course was based on the archaeological sites and cultural properties protection system in Japan.

## **II. The Training Program**

In the first week we had an introduction to World Heritage in the Nara area, where we visited Todaiji temple to understand restoration work at a historic site. The next day, in Ms. Claire Smith's lecture, we learned more about global trends in the conservation of archaeological sites. It was excellent and very useful information for me to apply in my research in the future. In this first week, all participants gave their country reports, and discussed approaches to the issues that were raised.

In the second week, the training course was mainly concerned with the establishment of the cultural properties protection system in Japan, the maintenance and management of archaeological sites, and scientific dating methods. The lectures were very instructive regarding the protection of cultural properties and field research. But in my country the cultural properties protection system is relatively new, so we still have many issues about protecting historic sites, and as for scientific dating methods, we have not yet started to apply these in archaeological research because of the lack of equipment and laboratories. Without doubt, all historical sites or cultural properties must have a proper system for their protection. So from what I understood from Mr. Ichihara's introduction to the cultural properties protection system in Japan, I thought that we need to apply these measures in my country. We also visited other sites, such as those in Asuka and Fujiwara.

In the third week, I was very surprised by the work conducted at the Nara Heijo Palace site in the field of conservation science for archaeological sites and remains, and their utilization for education as presented by Mr. Kohdzuma. He demonstrated scientific technical conservation work, such as investigating the surface or insides of artifacts with infrared equipment, conservation methods for archaeological waterlogged wood to protect wooden artifacts after excavation, and methods for removing artifacts from the excavation site safely. In this week too, we took a site visit to Kyoto. We learned about site management and restoration work as done at Byodoin temple and Ujigami-jinja shrine (World Heritage Sites), and Manpuku-ji temple. Over the next three days there were lectures about the Documentation of Archaeological Artifacts, and Photographic Documentation of Sites and Remains.

In the fourth week, Mr. Nishimura gave a very interesting lecture about archaeological prospection, in which sites are investigated with non-destructive methods. In my country, sometimes we do not want to excavate a site because we would be unable to manage it or protect it from the local people after excavation. After we excavate a site, local people sometimes also dig there to look for valuable artifacts to sell. For example, Snay village (a pre-historic site) and other sites have been destroyed in this manner by local people. Prospection is also very useful for investigating sites to understand about conditions under the ground prior to excavation. In this week we also went to Himeiji castle and Fukuoka to learn more about historical sites and site management. We spent four days on the trip, visiting the sites of Dazaifu, Yoshinogari, and Korokan. This week we gained a better understanding about site management and the protection system for cultural properties in Japan.

In the last week, Dr. Gamini Wijesuriya (Project Manager, ICCROM) lectured on "Future Issues on the Preservation of Sites and Remains" (Risk Management and Utilization for the Public). On his

first day, he explained about the actions of ICCROM for conserving culture and promoting diversity around the world, focusing on the methods of archaeological conservation work. On the second day, he lectured on cultural hazards, disasters, and risk management. After the lectures, we had group discussions about finding solutions for protecting cultural properties.

### **III. The System for Protecting Cultural Properties in Cambodia**

From 1975 to 1979, there was no enforcement of laws for the protection of cultural properties in Cambodia. Many cultural properties and heritage sites were destroyed or damaged by the war during the dark period of the Khmer Rouge, even though we had adopted the Hague Convention of May 1954, and created the National Committee of Cambodia for the Protection of Cultural Property in the Event of Armed Conflict in 1970. After our liberation, we still continued to protect cultural property based on laws that had been created before. From 1995, the APSARA Authority was established and the Law on the Protection of Cultural Heritage (specific for Angkor Park to allow urgent intervention) adopted by the National Assembly during the first session of its fifth mandate, and subsequently revised in 2004 for extension over all of Cambodia under the supervision of the Ministry of Culture and Fine Arts.

Recently, under the supervision of the APSARA national authority, which has responsibility for the research, conservation, and restoration work at the Angkor World Heritage Site with the cooperation and collaboration of other international institutions, work has been done to conserve and restore the historical monuments in the archaeological park, including the following.

- The Sophia Asia Centre for Research and Human Development (formerly, the Sophia University Angkor International Mission from Tokyo, Japan), located in Siem Reap province, conducts a research program at Banteay Kdei temple as a training site to develop human resources (students from the Royal University of Fine Arts) every year, and has finished restoration work at the western causeway of Angkor Wat.
- The Nara National Research Institute for Cultural Properties has done archaeological research and restoration work at Western Top temple and at ancient kiln sites.
- JASA (formerly JSA) from Japan has done research at Sour Proat and restoration of the libraries of Bayon temple, and the north library of the second causeway of Angkor Wat.
- ASI, the Archaeological Survey of India, conducts research on Ta Prohm temple.
- EFEO, l'École Française d'Extrême-Orient of France, conducts research on archaeological sites and the restoration of Baphuon temple.
- The CSA team from China conducts research and restoration at Chau Say Tevota temple.
- The WMF team from the United States of America conducts research in archaeology and restoration at the temple of Preah Khan in Angkor, as well as clearing and managing the site of Neak Poan, and restoring the temple of Ta Som.
- ITASA, an Indonesian team, conducts restoration work on the entrance pavilion of the Royal Palace at Angkor Thom.

- I. Ge. S, an Italian team, is in charge of the restoration work at Pre Rup temple.
- GACP, a German team, works on the conservation of stone carvings of Apsaras.

We also have a new authority, named the Preah Vihear Authority, which has responsibility for research, conservation, and restoration work at Preah Vihear Temple (World Heritage Site, registered July 2008).

#### **IV. System for Protecting Cultural Properties in Japan**

During this training in the ACCU program, I was surprised to learn about the system for protecting culture properties in Japan, especially the management of each site. The timeline for the legal framework in Japan is as follows.

1868 - Meiji Restoration

1871 - Law for the Preservation of Ancient Artifacts

1897 - Ancient Temples and Shrines Preservation Law

1919 - Historical Sites, Places of Scenic Beauty, and Natural Monuments Preservation Law

1929 - National Treasures Preservation Law

1950 - Law for the Protection of Cultural Properties, providing for:

- establishment of the Committee for the Protection of Cultural Properties
- amendment of the designation system for cultural properties
- establishment of a system for the protection of intangible cultural properties and buried cultural properties

1954 - Amendments to the Law for the Protection of Cultural Properties, providing for:

- expansion of the system for intangible cultural properties
- expansion of the system for buried cultural properties
- expansion of the system for folk materials

1968 - Amendments to the Law for the Protection of Cultural Properties, providing for:

- establishment of the Agency for Cultural Affairs
- establishment of the Council for the Protection of Cultural Properties

1975 - Amendments to the Law for the Protection of Cultural Properties, providing for:

- development of the system for buried cultural properties
- expansion of the system for folk cultural properties
- establishment of a system of Preservation Districts for Groups of Traditional Buildings
- establishment of a system for the protection of Conservation Techniques for Cultural Properties

1996 - Amendment to the Law for the Protection of Cultural Properties, providing for the establishment of a system of Registered Cultural Properties

1999 - Amendments to the Law for the Protection of Cultural Properties, providing for:

- transfer of authority to prefectures and designated cities

- reform of the Council for Cultural Affairs

2004 - Amendments to the Law for the Protection of Cultural Properties, providing for:

- establishment of a system for the protection of Cultural Landscapes
- the addition of Folk Techniques as objects of protection
- expansion of the system of Registered Cultural Properties

Currently the legal responsibilities for the protection of cultural properties in Japan are divided under the legal framework among four main agents, as follows.

#### 1. National government

- Legislation for the protection of cultural properties
- Designation, selection, and preservation of important cultural properties and the registration of cultural properties that particularly require utilization (structures)
- Instructions, imperatives, and recommendations regarding administration, restoration, and public display to owners and administrative organizations of designated cultural properties
- Regulations concerning alteration of the shape of designated cultural properties and similar actions, export restrictions, and injunctions to restore their original form
- Assistance to owners and administrative organizations regarding the administration, restoration, public display, etc. of designated cultural properties
- Assistance to local public entities regarding the transfer of cultural properties to public ownership
- Establishment of special tax measures regarding designated cultural properties and related matters
- Establishment and operation of facilities open to the public (such as museums and theaters) and of research institutes for cultural properties

#### 2. Local governments

- Ordinances for the protection of cultural properties
- Designation, selection, and preservation of important cultural properties (excluding those designated the national government)
- Instructions and recommendations regarding the administration, restoration, and public display to owners and administrative organizations of designated cultural properties
- Assistance to owners and administrative organizations regarding the administration, restoration, public display, etc. of designated cultural properties
- Establishment and operation of facilities for the conservation and public display of cultural properties
- Promotion of local activities to promote the protection of cultural properties, such as activities for the study, protection, or transmission of cultural properties

- Serving as the administrative organization for the administration, restoration, etc. of cultural properties designated by the national government
3. Owners and administrative organizations
    - Notification of transfer of ownership, loss or destruction, damage, change in location, and so forth concerning cultural properties designated by the national or local government
    - Administration and restoration of cultural properties
    - Public display of cultural properties
    - Notification to the national government in the event of any transfer of ownership of Important Cultural properties or cultural properties
  4. General Public
    - Cooperation with activities conducted the national and local governments for the protection of cultural properties
    - Notification regarding the discovery of historic ruins
    - Notification prior to conducting excavation in any area commonly known to hold buried cultural properties
    - Notification prior to conducting excavation for the purpose of archaeological research on buried cultural properties

In my opinion, Cambodia could use a similar system to provide protection for its cultural heritage, as there are currently a number of problems in this area. I was intrigued by the site museums and the national museum system in Japan. A museum is an educational place for all people to visit in ways similar to a library. After our visits we understood the value of cultural heritage through exhibitions at the museums. Previously, I had little understanding of the history of Japan, but this was well explained at the site museums. I think that in Japanese museums the exhibitions are easy to understand, which means the management systems for education in Japanese museums function very well.

## **V. Conclusions**

In the first place, I wish to thank the Director of the ACCU program and all of the staff who allowed me to participate in this program to further my knowledge. Also special thanks to Prof. Ishizawa Yoshiaki and Prof. Marui Masako who recommended I join this program. Lastly, thanks to all participants who shared their knowledge and became good friends.

This ACCU program is very useful for participants to discuss their ideas concerning cultural heritage issues in their countries, and the training course introduced conservation methods for archaeological sites in different places in Japan, which provided a great opportunity for enhancing my knowledge.

Japan has a great variety of ancient historical monuments, and after the loss of many valuable

structures during World War II, and others due to natural disasters, Japan has been very active in the preservation, protection, and management of its cultural heritage and sites. In fact, Japan is one of the richest developed countries in terms of technology and construction, but there still remain many ancient monuments, protected by site management and conservation.

This training course provided me and the participants with a clear overview of cultural heritage issues, and a better understanding of its preservation and reconstruction. After I return to my country, I intend to share this knowledge with colleagues to further their understanding of archaeological research in Japan, and to use these methods for the further development of archaeological research in my country.



## China

WANG Renyu

### Acknowledgements

Here I would like to take the opportunity to express my sincere gratitude to the ACCU office Nara for their considerate programme arrangement over the past four weeks, and especially for their contribution to promoting cultural heritage research and protection in the Asia/Pacific region.

### Programme Evaluation

I would like to give this brief report as follows, to present several preliminary thoughts inspired by this programme.

During this programme, every participant discovered useful information which can provide many thoughtful ideas for site management in his/her own country. I would like to briefly classify some of these issues, dealing mainly with reconstruction and restoration problems, into several subcategories. Historic sites in Japan are similar to Chinese historic sites in structure and building materials, primarily wood and soil. In Japanese archaeological site management practices, there are mainly four ways of restoration undertaken, which are also currently used in Chinese archaeological site presentation, and other post-excavation archaeological practices.

*(1) Restoration with partial replica.* The archaeological features are reburied with soil and the surface elevated with additional layers of soil, clay, or even harder mixtures of clay and plaster; finally only the foundation or the base part of the original buildings is restored in replica atop the 'original' location.

Use of such restoration methodology in Japan is seen at the Nara Palace site, the Fujiwara site, and also many other sites and temples. The counterpart in China can be found in the late Shang dynasty capital site at Anyang. The advantage of such a method is that without leaving the excavated features exposed, it can preserve the location of the original site features while protecting them underneath without requiring too much imagination for the superstructures. This enables people to observe the features at the original site locations. The disadvantage in doing this lies in that as the site features are covered by solid and hard materials, it is very difficult to conduct any post-management monitoring processes. I personally fully agree that artificial disturbances should be limited to a very low level, and site managers should keep the original layout as much as possible, without introducing too much physical damage or reconstruction. It is logically obvious that the site has experienced a very important phase, i.e., the abandonment of the place and its transformation to an archaeological site known as ruins. It is in this sense that what we can observe today is only the result of a long-term multi-period

site evolution (construction, use, abandonment, burial, discovery, and excavation). In line with this fact, incompleteness in itself represents a key perspective in the history of an archaeological site.

Therefore, when the site in question is determined by any means to be partially restored or even fully reconstructed, we need to make trade-offs; a new surface reuse may inhibit any attempt to present the authenticity of a real site. Right now, the question of ‘to reconstruct or not to reconstruct’ still lies at the core of archaeological site management in China. Specifically, why should we fully reconstruct a site feature, even if we have detailed and accurate historic records for directing such restoration? It is especially impossible to find common agreement on how to solve this problem worldwide, considering that different peoples or nations have diverse thoughts about what authenticity is.

In China, there has been a very embarrassing period in which reconstruction was at a peak, but conditions and strategies have changed dramatically in recent years. During the course of this programme, several participants discussed intently about how restoration should be conducted. At least there is a consensus that if a site manager does not know, or hesitates to determine, how it should be restored, then the simplest way is to rebury and perhaps make a sort of coating with clay or sand to give a clear demarcation between the original soil structures and the overlying materials used for reburial, and finally just turn the site green. This idea has not been widely accepted yet in China, as more scholars believe that there should be at least something visible on the surface, otherwise nothing can mark the existence of the past and subsequently let the public know its existence or enjoy visiting the site. In the event that there should be something on the ground, we think the less reconstruction the better for the maintenance of the site.

*(2) Restoration with surface markings.* The archaeological features are reburied and covered with clays and soils, and the postholes etc. are marked, for example with vegetation. Compared with methods using partial or full replicas, this is more convenient and has the following advantageous aspects: it can limit damage to the original site features to the lowest level, and vegetation can always provide more alternatives for structuring the ground surface. As we have seen in the practices in the Fujiwara and Nara palace areas, plants are widely used in zoning and marking postholes imaginatively, and this can also give a very broad garden-like scenic view for the site goers. At the Yoshinogari site, Japanese site managers decided to transform the entire site area into a vast historic park; such creative inventions may be largely due to the fact that it is always not easy to exhibit the sites of early human cultures, in effect, archaeological sites prior to the times when stones and bricks were actually used.

It is most likely that if reburial of such large areas had happened then nothing would be left in sight. But I still wonder whether this fully reconstructed space can create obstacles for understanding the past, as people when standing in this area can see nothing other than the reconstructed houses and shelters. Such issues are also widely debated in China, especially as to what extent a site should be

reconstructed, and whether the newly invented space on the ground should have any relationship with the site remains beneath. No standard answer can be given yet, as the conditions of sites may vary across a wide range. As both the Yoshinogari and Dazaifu sites are concerned here, we can make a comparison of the site conditions upon which different ideas of restoration have been applied. In contrast to Yoshinogari, Dazaifu is rather small in size and its buildings were complex in the past; it was heavily used and the environs have been densely populated since the Nara period. A large area of green plants has been used to make the site consistent with the local surroundings and in fact no large reconstruction has ever been done, which I believe has contributed a lot to the maintenance of the entire site. This seemingly simple treatment has not only given a green look to the site, it also generates a calm ambiance for the local society. In fact, such a method may be more plausible compared with large-scale reconstruction and invention of new space. I was informed when visiting the Dazaifu archaeological site that there has recently been an increasing trend to keep the ruins as ruins in Japan. Some scholars may still dislike the invisibility of the site or be more enthusiastic about the reconstruction of space, but I would say that reconstructed buildings are not the only possible way to show the public the past. And of particular interest and also significance is the fact that we should limit the exhibition to certain appropriate methods, amongst which information centres or in situ exhibitions are both recommended. Again, the influence on original site remains should be limited to the lowest level.

Having said all of this, it should be recognized that for prehistoric sites as large as Yoshinogari, how to establish a commonly-agreed plan still stands as a core issue for site management. As mentioned above, in the 1990s through the early 21st century, Chinese archaeological practices have seen many such complete reconstructions, the creation of new spaces, and theme park-like establishments. These are usually considered a kind of threat that may destroy the site remains. I agree with the Japanese principles for restoration, that if the abandonment of a site is believed to be a key historic perspective then the ruined state should be well preserved and presented. However, if we consider the process of ruin as a very important and inevitable phase of an archaeological site, then we should at least give some thought to the present restoration methods widely used in the Asia/Pacific region. If restoration or reconstruction is equally inevitable, then a proportion should be determined, such as how large an area of the total area, or how many building structures out of the total number of the ancient building remains, are allowed to be restored or reconstructed, and for what purposes they can be given a restoration or reconstruction. Also relevant is the proportion that should be reburied and covered with green vegetation at a specific site. Some rationale is always needed. Over the next ten years, promotion and development of archaeological sites will reach a peak in China, and these problems will undoubtedly continue.

(3) *Restoration with full replica.* After reburial as in the previous methods, a new imitation of the past is constructed based on the features lying underneath the present ground surface. This is something

that frequently happens in the world of cultural heritage. People reconstruct for admiring their own past, or for economical reasons, at the expense of losing a tangible sense of the former ruined physical existence. On the other hand, as prehistoric studies have included and been influenced by experimental archaeology, especially since the commencement of Soviet settlement archaeology in the 1960s and the New Archaeology in the West, such restoration or even complete reconstruction is more often than not conducted in line with a corresponding archaeological theory or interpretation. This, as I have further explained in my country report, has been very important for prehistoric site management, as the Banpo site museum has shown us. However, prehistoric archaeological exploration relies heavily on interdisciplinary research on both living conditions and societal conditions, such as social structure and principles of social origination. It is in this sense that we cannot simplify the restoration or reconstruction of prehistoric sites into pure imitations, as the prototypes might have been lost for quite a long time. For this reason, to relive a prehistoric or early historic site such as the Yoshinogari site is at total risk of losing authenticity. I personally disagree with such an idea in terms of directly applying the outcomes of experimental archaeology to the site managing processes. Again, I should say that to some extent, restoration and reconstruction should be viewed only as a method which helps promote understanding the structure and evolutionary history of the past, and it cannot be overused or relied on too heavily as the major way of presenting the past. As compulsory elements of successful site management, restoration and reconstruction are both necessary and should be undertaken in accordance with archaeological findings, ethnographic sources, and historical records as well. But this is just a supplementary way of interpreting the site. What I would like to suggest further is the possibility of using natural vegetation or materials such as clay or soils to create a large area of the past, as has been successfully done at the Dazifu site, the Nara Palace site, and in the Fujiwara landscape.

(4) *In situ exhibition.* This is a commonly used method to reveal an uncovered corner of an otherwise reburied site. Although the micro-environment inside the shelter is usually believed to be under control, we have seen many problems caused by physical, chemical and biological factors. In China, large site museums such as the terracotta warrior museum in Shaanxi and many other tomb museums of the Han dynasty are also confronted with the same problems. During the study tour in Fukuoka, we have seen the use of an in situ exhibition in the Korokan site; the structure of the exhibition room is very well designed, for it involves a semi-restoration of the building frame, which has successfully fulfilled the task of illustrating the ancient building structure. This is a better way to show the structure than making a one-to-one scale building reconstruction.

The archaeological resource managing process is the most impressive aspect of this programme. A site-based heritage management pattern is a very convenient way to control the processes regarding the protection and conservation of an archaeological site, as it usually incorporates studies, conservation, public service, site management, and many other relevant functions. One such representative examples is the Nara National Research Institute for Cultural Properties. This seems to me not only

a combination of many functions of diverse units but a very convenient way to unite all procedures in relation to a site. It is in this way that a site can be well managed via a well-organized series of processes, including the initial surface survey, test excavation, excavation, management, presentation, conservation in the field and the lab, interpretation, site condition monitoring, and many other relevant procedures. As a very effective way of cultural heritage/resource administration, it provides a good example of combining archaeological resources, managers, researchers, and the public.

## **Indonesia**

**Sri Patmiarsi Retnaningtyas**

### **I. Introduction**

First of all, I would like to thank the Cultural Heritage Protection Cooperation Office, Asia/Pacific Cultural Center for UNESCO, for the opportunity to participate in the training course on cultural heritage protection in the Asia/Pacific region 2008, on the theme of “Research, Analysis and Preservation of Archaeological Sites and Remains.” It has provided me with valuable information and experience about the latest methodologies and technologies for the investigation, conservation, and management for utilization of archaeological remains and sites in Japan.

Indonesia has more 5,000 cultural properties in various forms of cultural heritage, such as early-man sites, megaliths, temples, mosques, traditional settlements, palaces, and churches and buildings influenced by Europe. Nevertheless, only three of them are inscribed as World Heritage. Currently, the Cultural Landscape of Bali Province is being processed for World Heritage nomination. Additional cultural properties worthy of nomination have not yet been included on the tentative list. One of problems is they are not well preserved.

Cultural properties are important resources of the nation for the understanding and promotion of history, science, and culture. Therefore, the government is obligated, based on current legislation, to protect cultural property as the heritage of Indonesian national culture. To preserve cultural property, it is necessary to draw up regulations by means of legislation. Since 1992, Indonesia had enacted national laws concerning cultural property.

Nevertheless, preservation of cultural property in Indonesia has been conducted since the early 20<sup>th</sup> century. One point that requires attention in the preservation of cultural property is authenticity. In the National Law Number 5 of 1992, it is stipulated that authenticity covers form, materials, workmanship, setting, and the historical value of cultural property.

In fact, the principle of authenticity cannot always be applied to the restoration of cultural property, especially with regard to materials and workmanship. Nowadays, materials similar to the original are unavailable for preservation. It is necessary to have appropriate principles, methodologies, and techniques of preservation for current conditions. In addition, restoration or conservation of culture property is not at present designed for utilization. Restoration or conservation is aimed only at ‘preservation’ in the narrow sense.

I hope the results of this training course in Japan will promote cultural property preservation in a manner appropriate with conditions in Indonesia.

### **II. Training Course on Research, Analysis and Preservation of Archaeological Sites and Remains**

This program included lectures, workshops, and study tours. The subjects of the lectures covered

introductions to scientific dating in archaeology, environmental archaeology, dendrochronology, archaeological prospection, and explanations about conservation technologies for archaeological remains and sites, and photography. Introductions about other sciences indicate that there are many sciences that can give data or information relevant to the preservation of cultural property. How to draw ceramics accurately, how to take roof tile rubbings carefully, how to perform conservation treatment of artifacts were part of the workshops. Study tours on preservation, development, and utilization of archaeological sites were conducted at the Fujiwara Palace site and in Asuka, at sites and a museum in the Kyoto area, and sites and at museums in Kyushu.

### **III. Discussion**

Generally speaking, there are main subjects for discussion in relation to the program: research, preservation, and the utilization of cultural properties.

#### **1. RESEARCH**

Archaeological research is conducted to understand social life through its physical remains. In Japan, archaeological research has also played an important role in the preservation of cultural properties. Excavation is an archaeological method for gathering data from a site, after an archaeological survey. Actually, excavation damages archaeological remains, so accurate and complete documentation is very important.

In Japan, excavation of archaeological materials can be divided between academic excavations and rescue excavations. Academic excavation usually takes a longer time than rescue excavation. Academic excavation may be conducted for many months in a single area, and it may cover wide areas. It needs a high level of finance, but it results in more complete and accurate data.

In Indonesia, academic excavation and rescue excavation are completely separate. Each type of excavation is conducted by different institutions, so the objectives are also different. The objective of academic excavation is the collection of data to understand social life in ancient times. The results of academic excavation usually only consists of academic or research reports. Sometimes there is recommendation for preservation of an archaeological site in the report, but in fact there is usually no further action. Academic institutions rarely work with other institutions.

We usually conduct rescue excavations for every development project that is planned which can possibly cause the defilement, removal, damage, alteration, disappearance, or destruction of a cultural property or its historical value, or the defilement or alteration of its physical setting and environment. Based on the results of archaeological investigation, the government can:

- a. maintain the cultural property and site in their present state;
- b. suggest changes in the development plan;
- c. remove the items of cultural property from the site;
- d. agree to continue the planned development activity, or;

- e. delete the items of cultural property and the site from the register.

In addition to instances of development planned for an area, rescue excavation is conducted for the preservation of cultural property. The objective of excavation is to collect data on the existing conditions found. This information has very important value for efforts to preserve cultural property, especially for establishing targets and steps for preservation.

Further discussion in this section may be divided among the three topics of documentation, analysis, and storage.

*a. Documentation.* Documentation has the important role of recording and conveying accurate and detailed information for the preservation of cultural property. Based on form, documentation can be divided between verbal description, as writing, and pictorial recording, as drawing, photographing, or mapping. In the training course, some of these techniques were included such as methods of drawing ceramics and pottery, documentation of roof tiles, wooden artifacts, and metal artifacts, and photographic techniques.

In Indonesia as well, documentation has played an important role for the preservation of archaeological remains and sites. The techniques that are applied in drawing and copying archaeological remains are very similar. The difference is that Indonesia lacks the array of modern instruments for documentation used in Japan, as seen at the Nara institute. In addition, many documents have not yet been stored under appropriate conditions, and especially documents made in the early 20th century were not well compiled. Nevertheless, nowadays we are compiling and organizing databases of documents such as photographs (negatives, including glass, and positives) and copies of inscriptions.

*b. Analysis.* Analysis is the next step after documentation. There are various means of analysis for cultural properties. Cultural properties in the form of artifacts can be brought to the lab or analysis room. Those artifacts are classified based on material, such as wood, metal, earthenware or stoneware pottery, roof tiles, etc. The artifacts are cleaned and also classified based on form or style.

To help in the analysis of cultural properties, other sciences are involved in such areas as scientific dating, environmental archaeology, and dendrochronology. Scientific dating can be applied for more accurate dating of archaeological remains and sites. Radiocarbon (C14) dating is an important method. C14 is radioactive and decays into stable nitrogen (14N) with a half-life of 5730 years. The chemical characteristics of radioactive CO<sub>2</sub> and stable CO<sub>2</sub> are the same, so the ratio of them in the biosphere (plants and animals) and the ocean is close to that of the atmosphere. If we know how much the ratio of carbon isotopes in excavated organic materials has decreased, the time since the death of the materials can be estimated.

Besides radiocarbon dating, there are thermoluminescence dating, archaeomagnetism and paleomagnetism; nevertheless, in principle it is desirable to use more than two scientific methods for



getting a more accurate age, and to draw one's conclusions after comparing all data and considering the archaeological aspects.

In principle, there is similarity in the data processing of artifacts between Japan and Indonesia. Artifacts are found by excavation, and after they have been documented at the site, they are classified based on materials. Each item is also classified by form, type or subtype, if possible. If some artifacts are of actual importance for national culture, they may be analyzed by carbon dating or other methods requiring a high level of finance to conduct.

*c. Storage.* In Japan, storage is an important part of preservation. After artifacts are conserved and analyzed, they are placed in proper storage. Various types of storage are used to store artifacts. Based on their physical condition, some artifacts, especially wooden ones, may be conserved with chemicals. After that, those artifacts are placed in storage.

Most wooden artifacts are placed in boxes filled with water, because they were found in wet areas. Plastic boxes are used to store roof tiles, earthenware, or other ceramic artifacts. Then all are placed in separate storage rooms in accordance with the material.

Due attention is paid to the storage environment. Storage rooms have humidifiers to preserve artifacts in a stable condition. Each storage room has different humidity and temperature settings according to material. For example the ideal environment for long-term storage for photographs is a room with low temperature, low humidity, and shielded from sunlight.

## 2. PRESERVATION

Cultural properties in Japan are essential for accurately understanding the history and culture of Japan. They also form the foundation for its future cultural growth and development. It is extremely important to preserve and appropriately utilize such cultural properties, which are the heritage of the Japanese people.

The system for protecting cultural properties covers designation, selection, imposition of restrictions, and registration. The most important cultural properties are designated and selected. Restrictions are imposed on such activities as alteration of their existing state, repair, and export. The registration system provides more moderate protective measures than the designation system. Under the registration system, cultural properties that are in special need of preservation and utilization are registered by the national government.

Cultural property can be divided into eight categories: tangible cultural properties, intangible cultural properties, folk cultural properties, monuments, cultural landscapes, groups of historic buildings, techniques for the preservation of cultural properties, and buried cultural properties.

There is a difference between Japan and Indonesia in the classification of cultural properties. Natural monuments are not covered as cultural property in Indonesia. Cultural property or items of cultural property as mentioned in the National Law Number 5 of 1992 consist of artifacts made by man, movable or immovable and individually or in groups, or parts thereof or remains thereof, which

are at least 50 years of age, or represent a specific stylistic period of at least 50 years of age, and are considered to possess value of importance to history, science, and culture; also natural objects which are considered to possess important value for history, science, and culture. Besides items of cultural property, the National Law mentions locations which contain or are presumed to contain items of cultural property, together with the surroundings which require safeguarding. Of course, natural objects related to human life are categorized among cultural property. In Japan, natural monuments characteristic of Japan had no law for their protection, so natural monuments have been included among cultural property.

In principle, preservation of cultural property in Japan is based on the results of research. The results of excavation can result in designation as important cultural property. A committee on the site will then establish matters such as whether or not the site should only be reconstructed up to 15 cm above ground level, or give permission for change to a historic site. In some examples, at sites such as the Heijo palace complex, the Fujiwara palace site and other sites, excavated areas were reburied for preservation of the cultural properties that were found. The excavation area could be reburied with soil if it was well and accurately documented and the cultural properties were in good condition underground. Then, on the ground surface a new structure can be built in accordance with the data found in terms of form, materials, setting, and workmanship. Nevertheless, not all of the features are reconstructed at a particular site. In some parts of the Heijo palace site where postholes were found, shrubs have been planted on the ground directly above these features in the form of pillars.

There were many methods and techniques of preservation of cultural property that were new ideas for us. The Yoshinagari site provides one example. This site comes from the Yayoi period, beginning around the 3rd century BC. At the site, many artifacts and features were found such as burial jars, postholes, metal artifacts, wooden farming tools, and ditches. Nowadays, this site is designed as a historical park. For preservation, the original features were reburied in the ground after excavation and complete documentation. Then reconstructions of parts of the settlement were built on the ground surface, like wooden houses together with a ditch and wooden fence, and a burial complex. The park, complete with a museum, is divided into four zones: entrance area, burial mound area, area of reconstruction of ancient life, and area of ancient views.

### 3. UTILIZATION

Once cultural properties are found, the institution having responsibility for their preservation arranges research and investigation for their designation as cultural property. There are three types of monuments included as cultural property, namely historic sites, places of scenic beauty, and natural monuments. Subsequently the institution supervises restrictions on making changes to the existing historic monuments. The last process is designing and implementing appropriate preservation and management.

Utilization and promotion are important aspects of providing information about cultural properties to the public, for example the value of cultural property, what traditional techniques were

used in ancient buildings or what was the condition that survived when the site was excavated, or how the cultural property originally appeared as seen through a replica of a building or a map of a site. At the Ishibutai tomb, we can see how an ancient burial chamber from the 6<sup>th</sup> century was built using huge stones. At a site in Asuka, we can see some pillar base stones of pagodas on two mounds, in a modern environment of paddy fields, hence a wet area. Some types of plants that grow in wet areas were in bloom. So visitors to this area could appreciate the base stones as well as the flowers.

One point that receives attention in the utilization of cultural property in Japan is the necessity of providing access to all people. For example, at all sites, museums, or other facilities, ways or facilities are provided for people using wheel chairs. This is indicated with signs at these places. This is an interesting point for site management in Indonesia.

In my country, most of cultural properties have not yet been provided with a management plan. For protection, the supervising institution should arrange a master plan for the site, include a zoning system. The purpose of the master plan is to restrain development and control utilization in site. The boundary of the site and its environment is regulated in accordance with necessity. A zoning system is planned for the site and its environment consisting of a central or main zone, a supporting zone or buffer zone, and a development zone or facilities zone. The main zone gives a border of protection based on the original borders, the prominence of the archaeological remains, the contextual environment and eyewitness feasibility for the archaeological remains. The buffer zone functions as protection for the main zone, and is also a place for facility structures in limited amounts. The buffer zone area is determined by the need for protection and the degree of threat to the archaeological remains. The facilities zone is provided for common tourism facilities. Determination of the facilities zone area is based on accessibility, floor area ratio, and the facilities that will be provided. In the facilities zone, there could be approved souvenir shops, parking areas, restaurants, toilets, information or ticket offices.

Actually, the management of cultural property is the responsibility of governments. The management of cultural properties which are owned by the state is conducted by the national government. The management covers the care, protection, permission, utilization, supervision and other matters related to the preservation of cultural property. The public, in groups or individually, is involved in the management of cultural property. Some regional or local governments nowadays have arranged management plans for their cultural properties based on master plans that have been made before.

Utilization and promotion are ways to give information to the public about the site. Besides the presentation of buildings that are restored, means to achieve this include government built exhibitions of artifacts that were found at the site, and presentation of part of the excavated features. In the utilization of cultural property, regional or local governments give more attention to tourism. That is because tourism can bring income for regional or local governments. Accordingly, the utilization that they make is sometimes not in keeping with the value of the cultural heritage.

#### **IV. Conclusion**

The points to be learned from the preservation of cultural properties in Japan include the constant efforts to increase knowledge of principles, methodologies, and techniques about preservation, and to include research and analysis of cultural properties themselves. We can see this from the results of Japanese preservation of cultural properties.

For me, there were some methodologies and techniques that were new ideas for the preservation and presentation of sites. For example, what we saw at the Yoshinogari site. They manage a site from the 3<sup>rd</sup> century BC as a historical park with much information that is easily understood by the public. Probably, we have to start thinking about changing our views about preservation, not only about authenticity, but how preservation can be utilized for the public, or more generally for the advancement of the national culture of Indonesia as well. We should think about changing principles, methodologies, and techniques for the preservation of cultural property as well, in accordance with the needs and purpose. For example, to reduce risk from earthquakes, we can retrofit for seismic resistance ancient buildings located in unsafe areas, or apply traditional techniques in the reconstruction of buildings. Nevertheless, such changes require careful consideration so that cultural properties are preserved in stable fashion.

I hope that by revising the legislation in Indonesia, there will be significant changes regarding the preservation of cultural properties. For example, does authenticity have to be strictly adhered to in preservation? How far do we apply it for preservation? Or can preservation be conducted by local governments or communities? This would require revising current conditions, such as changing from a centralized to a decentralized administrative system. Through new legislation, it is hoped that the central government, local governments, and communities can conduct the preservation of cultural properties in accordance with their respective responsibilities.

## **Iran**

**Aileen BABAKHANI**

### **Methods of Cultural Heritage Site Presentation in Japan**

#### **Introduction**

While research about cultural heritage with archaeological science through excavations is very extensive in Iran, cultural heritage experts have been challenged in the maintenance of ancient remains for more than a hundred years, and although they have gained much experience at maintaining and presenting cultural properties or in architectural remains, at present this is not enough to provide the best results in this field.

No doubt maintenance and conservation methods can be developed more with the sharing of experience between different countries by professional experts, as through the training course on cultural heritage protection in the Asia/Pacific region – “Research, Analysis and Preservation of Archaeological Sites and Remains” (9 Sep. - 9 Oct. 2008, Nara, Japan). During this course, in addition to having theoretical presentations and lectures by the instructors, the techniques of interpretation at the archaeological sites we visited had very high impact on my thinking, because we need to use these methods to present our archaeological activities in Iran.

#### **Interpretation (presentation) of archaeological remains in Iran**

Recently, management with regard to tourism of archaeological sites after excavation has become the most significant challenge in Iran. If we can not control the process of tourist visits to historical sites, it can cause serious damage to the cultural heritage remains at those sites. The following list mentions some of the main activities for presenting the cultural heritage to visitors in Iran.

1. Presentation of cultural relics in major museums, which are mostly not site museums. (National Museum of Iran, Islamic Period Museum, Natural History Museum, Iranian Glassware and Ceramics Museum, Carpet Museum, etc.)
2. Presentation of cultural relics at a few archeological sites as site museums.
3. Establishment of some buildings and shelters to present architectural remains at archeological sites. In most cases it will take a long time to plan for providing facilities for visitors, such as roads, parking lots, etc., at these sites. (Site of Pasargad, Takhte jamshid Site, Hegmatane Site, etc.)
4. Establishment of the Research Centre for Conservation of Cultural Relics in 1990 with three main research departments: Material Sciences and Technology, Dating and Environs, General Policies and Supervision.

The main issue for the second and third items is to decrease the damage of tourist visits to historical sites, because usually we never try to rebury the original remains as preservation so the archaeological features remain completely exposed.

We still have problems with site management on the one hand for visitors, such as how to provide roads, parking lots, resting places, etc., and on the other for conservation activities, such as how to conduct the restoration, reconstruction, development of the site, and so forth. These problems can easily be solved if we think about the effects of visitors entering archaeological or historical sites before inviting them to visit, without providing necessary facilities and conservation measures.

### **Techniques for the presentation of archaeological remains in Japan**

As a short description, in accordance with the provisions of the law for the protection of cultural properties and architectural remains in Japan, the permission of the Commissioner for Cultural Affairs is required for any alteration to the existing state of structures designated as Important Cultural Properties. Major or minor repair work is periodically required to keep them in good condition. As of 1 Apr. 2007, the national government of Japan has designated 2,286 sites, 4,043 architectural and other structures.

During this course, apart from the lectures, theoretical and practical experiences, and communication with other participants through their country reports which were so useful, I was very intrigued by the visits to various historical sites because I have found new methods for presentation of the cultural heritage, especially architectural remains, while maintaining a high level of protection as well.

There are three ways for presenting the remains of archaeological sites in Japan:

- Flat presentation in sites
- Utilization of 3D images or animated views
- Reconstruction of monuments

For more detail on the three ways mentioned above, I would like to present some observations made when we visited museums and open sites.

In museums, various methods for presentation of cultural remains fall into four main types:

- Presentation of historical buildings or areas with scale models (Fig. 5).
- Aerial photos (flat presentation) showing the locations of excavated sites or historical buildings (Fig. 8).
- Exhibition of the excavation process through posters.
- Introduction of historical sites and the excavation process through videos.

At historical sites which we visited, some of the main methods for presentation of cultural

remains are:

- Reconstruction of historical buildings based on direct archaeological evidence as well as indirect evidence, as seen at the Heijo Palace site in Nara (Fig. 1), and the Byodoin Teien garden. For reconstruction, the exterior sides of buildings are constructed with the same traditional materials as the original, while inner parts may be built with steel frames or modern materials to protect the monument against unexpected risk. Also, remains of monuments found during excavation, such as roof tiles, may be used in reconstructed buildings.
- Presentation of excavated features in situ, by designing stairs and ramps to allow a close look while providing structural shelter (site museum), as at the Heijo Palace site in Nara (Fig. 2), the Korokan site (Fig. 4), the multi-burial mounded tomb at the Yoshinogari Site (Fig. 6).
- Preventing visitors from entering reconstructed buildings to decrease damage that may be caused by tourism.
- Reburial of finds, especially architectural remains, to protect them.
- Covering reburied architectural and archaeological remains with new surface materials designed to indicate the ancient and original remains to visitors, while keeping the original finds under about 30-100 cm of soil (Fig. 9, 10).
- Presentation of historical architectural remains areas by rows of flowers or mounds. Presentation of ancient pillars found through excavation with trees or lines of trees, to indicate ancient wall locations or building areas (Fig. 11).

### **Public education**

Public education regarding cultural heritage issues is very significant in Japan, since without sharing issues about cultural heritage protection with the people it is not easy to achieve safe protection for historical remains. Local governments in Japan try to convey the importance of protecting indigenous cultural heritage for the benefit of local residents, and provide facilities at historical sites to allow people including children to visit and enjoy these places.

What I saw about these activities includes the following items:

- Holding public exhibits to introduce excavation activities (Fig. 14).
- Publicizing excavation results through brochures and in local newspaper articles, or by displaying them in public places such as malls (Fig. 13).
- Taking children to visit the sites, especially as school groups.
- Providing facilities for tourism such as benches, toilets, restaurants, bicycles, parking lots, etc. (Fig. 7).

## Conclusion

Conservation is often the main point in excavation, museums, and sites in Japan.

I hope all other countries facing the challenges of tourism and excavation try to plan for conservation before and after excavation as an essential item, and to achieve this aim provide professional groups for every excavation team. Such groups can be a committee as in Japan, to plan and decide the activities at archaeological sites; moreover this method will help avoid more difficulties and problems at ancient sites.

I would like to thank Mr. Nakai Isao and all the other staff of ACCU for their kind assistance, and also express my gratitude for giving me this opportunity to participate in this training course, and to make many nice friends from different countries.

I know that we all are going to implement the benefits of the new experiences we obtained during this course.

Thank you.



Fig. 1  
Reconstruction at the Heijo Palace site in Nara





Fig. 2  
Heijo Palace site museum



Fig. 3  
Museum at the Yoshinogari site



Fig. 4  
Site museum, Korokan remains site



Fig. 5  
Heijo Palace site museum



Fig. 6  
Multi-burial mounded tomb, Yoshinogari



Fig. 7  
Asuka



Fig. 8  
Part of an aerial photograph of Asuka in a museum in that region

Fig. 9  
Preservation by covering the remains  
with new material.  
Kofukuji temple site



Fig. 10  
New look after covering the remains.  
Kofukuji temple site



Fig.11  
Trees at the Heijo Palace site showing the position of ancient pillars



Fig. 12  
A family holiday at a historical site.  
Hejio palace site.



Fig.13  
Public information in a shopping mall



Fig. 14  
Arrangements for a public exhibition of excavation results at the Hejio palace site



Fig. 15  
Lecture class



Fig. 16  
Study tour

## **Myanmar**

### **Daw Nyo Nyo Than**

#### **Introduction**

First of all, let me take this opportunity to give my thanks for the chance to participate in the Training Course on Cultural Protection in the Asia/Pacific Region 2008: 'Research, Analysis and Preservation of Archaeological Sites and Remains'. The training was held from 9 September to 9 October 2008, in Nara, Japan. In this training, there were total of sixteen participants from fifteen countries (Bangladesh, Cambodia, China, Indonesia, Iran, Myanmar, New Zealand, Pakistan, Palau, Philippines, Republic of Korea, Samoa, Thailand, Uzbekistan and Vietnam). The course enabled participants to learn from Japanese heritage professionals and to share their own experience. The training course consisted of theoretical and practical work and on-site lectures at different places in Japan, enlightening me and providing greater chance for enhancing my knowledge. I strongly felt that the most important topics in the training course were the conservation of archaeological sites, reconstruction of historical monuments, and management of the sites. This is because the conservation, reconstruction, and management of historical monuments have been well conducted in Japan.

#### **Training Course Summary**

In the first week, the training course had an introduction to 'Global Trends in Conservation of the Archaeological Sites' by Ms. Claire Smith, which had interesting and useful information for me. I also became acquainted with the different international charters, recommendations, and conventions regarding guidelines for heritage conservation in various parts of the world.

The country paper presentations were given by the sixteen participants, mainly on the needs and problems of cultural heritage protection in their countries. The training course in this way provided a good opportunity for the sixteen participants from the Asia-Pacific region to exchange views and ideas with colleagues from different countries.

In the second week, the lecture delivered by Mr. Ichihara Fujio on 'The Cultural Property Protection System in Japan' covered how Japan has enacted and revised a number of different laws. The following lecture on 'Conservation and Utilization of Cultural Heritage Resources' (cases in Japan) was very useful for understanding the legal framework for the protection of cultural heritage in Japan. This lecture provided an outline of guidelines that govern the funding, management, conservation, and protection of cultural properties from both international and national perspectives.

Much valuable knowledge was obtained particularly on the preservation and restoration of cultural heritage at the Heijo Palace site and the imperial palace sites at Asuka and Fujiwara. In Japan, the concept of a site museum is very interesting, which should be studied further. The concept of joining preservation, restoration, gardening, development and utilization was vividly felt after visiting some sites in the on-site lectures. At the former Imperial Audience Hall restoration at Heijo, there are

additional components having a non-rigid character among the lower structure and building pillars, representing a real example of risk preparedness. That building restoration requires great expense is clearly visible when we have time to observe the process of restoration activity.

Out of many ancient palaces which were built throughout Myanmar's historical period, the palaces of four ancient cities have been selected and reconstructed. The selection is made on the basis of substantiality of historic records supported by archaeological evidence. Our aims in reconstructing old palaces are as follows. By reconstructing the palaces, the spirit of patriotism and the spirit of protecting national independence can be aroused among the Myanmar people. By seeing these palaces, the people become aware that they had once lived under their own sovereignty independently and how important it is to protect their independence. By seeing the reconstructed palaces, people will admire the art and architecture of their past. From the spirit of admiration, the spirit of loving one's own culture may lead to love of one's own country. In this way patriotic spirit can be instilled and promoted. Revival of traditional arts and crafts is also important for a nation. So by reconstructing the palaces, master craftsmen and master wood-carvers can show their skills and have the chance to give practical training to new blood at the palace sites. So the government's aim in reconstructing the palaces includes the revival of traditional arts and crafts.

Professor Nagatomo Tsuneto, of Nara University of Education, explained in his 'Introduction to Scientific Dating Methods' how traditional methods sometimes may present problems in age determination. For example, similar typological forms may occur in totally different ages throughout history. Accordingly, the use of scientific methods is vital for dating. Both relative dating (stratigraphy and typology) and absolute dating are used in Myanmar for the purpose of chronology.

It was interesting to learn, as Professor Mr. Kanehara Masaaki of Nara University of Education explained in 'Introduction to Environmental Archaeology', how the living environment, the eating habits of ancient people, and the environment of ancient Japan are reconstructed through environmental archaeological research, because in tropical environments microorganic remains do not survive long enough to conduct this type of study. A few studies have been initiated to understand the flora and fauna, the environment and food habits of ancient man, to identify the classes of animals eaten, and to make age and sex determinations of human skeletons found during the excavations, but more detailed study is required. During this lecture basic information regarding comparative morphology and ecology of mammalian bones was provided, which enhanced my knowledge about the identification of different bones discovered from archaeological excavations.

From the study tour, I had the opportunity together with all the participants to observe the practical side of improvements and conservation in Asuka and at the Fujiwara palace site. This program exposed me to famous historical sites in Japan such as Fujiwara, in Kashihara city, where we saw the Fujiwara Daigokuden (great audience hall) site and excavation sites (court of state), west wall surrounding the Fujiwara Palace (reconstruction case), as well as Moto-Yakushiji temple (environmental improvement), the exhibit hall at the Department of Asuka/Fujiwara Palace Site Investigations (Nara, National Research Institute for Cultural Properties), Takamatsuzuka tomb, Kawaharadera temple

(remains representation), Asukadera temple (the first Buddhist temple in Japan), and Asuka Historical Museum. All the participants obtained a lot of information about the significance of the cultural heritage that we should be preserving. The Fujiwara Daigokuden site and excavation sites were especially interesting.

Among sites excavated to date in Myanmar, research on the ancient Pyu city of Halin (2<sup>nd</sup> – 8<sup>th</sup> centuries AD) shows that civilization of the bronze age, the iron age and the Pyu era flourished in this ancient city. We also found out that people have lived there since much earlier times. These facts are very important for research in Myanmar as they are the cultural links to the prehistory of our country. Moreover it has also been discovered that Pyu architects could build magnificent temples, as a result of the research on brick structures of site No. 39, in the ancient city of Sriksetra (2<sup>nd</sup> century BC). The ancient Pyu architects had the architectural technique of building round-shaped buildings on square foundations, using corners and terraces, especially in building stupas. As a result of the research on the bricks found in site No. 41, the building can be dated back to the late Pyu period, and it was later used as a residence. The building at site No. 40 was found to be a magnificent religious building. This shows that although they built their houses of timber and bamboo, they built religious structures out of brick.

In the third week, in the subject of ‘Conservation Science of Archaeological Sites and Remains’, the main emphasis of the training was on archaeological materials and artefacts. This lecture provided me an excellent opportunity to learn and develop my understanding about the need for archaeological sites and artefacts. The lecture and workshop on documentation of archaeological artefacts was arranged under the guidance of Mr. Namba Yozo, Nara National Research Institute for Cultural Properties. All the participants of the training course carried out practical work of drawing pottery, taking rubbings of roof tiles, and taking photographs. Information on Japanese roof tiles was provided by Mr Baba Hajime, Nara National Research Institute for Cultural Properties. In this week, a lecture and workshop on ‘Photographic Documentation of Sites and Remains’ was arranged under the guidance of Mr. Nakamura Ichiro of the Nara National Research Institute for Cultural Properties. Photography is an important and necessary method for recording archaeological artefacts and sites. He explained basic knowledge of the camera, the storage of photographs, and general photographic knowledge. We also visited the important cultural sites of Byodoin temple, Ujigami shrine, and Manpuku-ji temple in Kyoto.

In the fourth week, Mr, Nishimura Yasushi, Director of ACCU, gave a class on the ‘Introduction to Archaeological Prospection of Sites’. This lecture was useful and interesting, but Japanese archaeologists use machines that are expensive. Mr. Okochi Takayuki gave a class on the ‘Introduction to Dendrochronology’ in Japan, covering aspects of tree species and annual rings. It provided a lot of knowledge about an absolute dating method, necessary in archaeology and conservation.

The most important and comprehensive part of our training course was the itinerary of the study tour to the Kyushu area (from 30 September 2008 to 3 October 2008), in which we visited cultural heritage sites and museums such as Himeji-jo castle, Kyushu National Museum, Dazaifu Historic



Site, and the Yoshinogari and Korokan sites. I observed that all the sites are well taken care of and also there are excellent exhibitions at the museums to help improve and expand my understanding of archaeological methods by observing archaeological research, preservation, reconstruction, and site management. The Kyushu museum showed the high level of presentation and display techniques adopted by Japanese professionals. At this museum I studied many ancient artefacts of Japan and other countries, and I wanted to repeat the experience, passing through that adorable atmosphere which made me walk slowly and admire it, but we did not have enough time. At the Yoshinogari site and other sites, I studied the preservation of precious monuments or castles, the principles of conservation and utilization of historical sites, how to arrange and manage a historical site, how to develop an archaeological site, and how to attract the people to come and visit these beautiful places, and I thereby gained useful information about historical sites for the future generations in my country. All of these things will be very important for us in taking care of the cultural heritage in our countries soon.

I was impressed with the lectures and discussions on 'Future Issues on the Preservation of Site and Remains' (Risk Management, and Utilization for the Public) by Dr. Gamini Wijesuriya of ICCROM. The risk management lecture provided me an excellent opportunity to learn and develop my understanding about the need for risk management of cultural assets. The major causes of damage to cultural assets can be classified as: typhoons and earthquakes, fire and lightning, war and crime. Preventing unintentional destruction of cultural assets involves creating a plan that includes preventive measures and emergency actions. This lecture enhanced my knowledge about risk preparedness for cultural heritage in the event of natural disasters. I also became acquainted with the different international charters, recommendations, and conventions regarding guidelines for heritage conservation in the various parts of the world, and how ICCROM and other international organizations are playing a significant role in cultural heritage preservation and protection. On the last day of the training course, discussion by all the participants, of the problems and needs for cultural heritage protection and restoration activities, was coordinated by Dr. Gamini Wijesuriya.

## **Conclusion**

The Training Course on Cultural Heritage Protection in the Asia/Pacific Region 2008 has provided an excellent opportunity to gain in-depth knowledge about Japanese cultural heritage and its conservation, preservation, and excavation, using both traditional and modern methods. This training course has provided me with a wealth of technical information which I look forward to utilizing in my future research work. During the visit to different museums in Japan, I learned the latest methods and techniques applied by Japanese experts for the proper display of artefacts and their preservation in the museums. By visiting these museums, I could study about the development of museology in Japan and these techniques will be applied in my country. Most countries in the Asia/Pacific region suffer from an insufficiency of funds and experts for preserving their cultural heritage. We have different kinds of problems, with different backgrounds. Therefore it is essential to cooperate with one another and share our information and experience. The experience that I have gained during this training program

is applicable, in most cases, in my country. In conclusion, I can say that this training program will be beneficial for both my professional work and the further conservation procedures of our department in Myanmar.

### **Acknowledgements**

First of all, I want to express my sincere gratitude to the government of Japan for giving me the chance to attend the ACCU Training Course on Cultural Heritage Protection in the Asia/Pacific Region 2008, 'Research, Analysis and Preservation of Archaeological Sites and Remains' organized by the Agency for Cultural Affairs of Japan, the Asia/Pacific Centre for UNESCO (ACCU), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), and Independent Administrative Institution, Nara National Institute for Cultural Properties, with cooperation from the Japan Consortium for International Cooperation in Cultural Heritage, the Ministry of Foreign Affairs of Japan, the Japanese national government and the Nara prefectural and municipal governments.

I am very grateful to Mr. Nishimura Yashusi, Director of ACCU, Nara, Mr. Tarouda Akinori, Mr. Nakai Isao, Mr. Kinoshita Wataru, Mr. Yamashita Tsutomu, Ms. Hata Chiyako, Ms. Otani Yasuko, Ms. Tanda Kaoru, Ms. Nishida Michiko, Mr. Nishikawa Gisuke, Ms. Itaya Tomomi, Ms. Tanaka Rie, Ms. Kanda Hiroko, and all the ACCU staff for the excellent and wonderful organization during the entire period of the training course. And I extend a special word of thanks to all the lecturers.

Arigato gozaimasu



## **New Zealand**

**Matthew Derek SCHMIDT**

### **1. Introduction**

The training course on the Preservation of Cultural Heritage in the Asia-Pacific Region 2008 (9 September 2008 - 9 October 2008) was attended by 16 representatives in cultural heritage from 15 countries. During the course, lectures on a range of topics, such as the cultural property protection system in Japan, documentation of archaeological artefacts and remains, archaeological site maintenance and management and the dating and prospection of archaeological sites, were presented. Visits to museums archaeological sites and historic buildings around Nara, Kyoto, Asuka, Fujiwara, and as far afield as Kyushu were also included. The course enabled the participants and the Japanese cultural heritage experts to share and discuss the positive and negative aspects of cultural heritage management in their own countries.

This report first briefly describes my role as Regional Archaeologist for the New Zealand Historic Places Trust (the “Trust”) and then discusses specific aspects of how this training may be applied to my work to improve the management and protection of New Zealand’s archaeological sites. I finally evaluate the relevance of the training programme to cultural heritage conservation work in New Zealand.

### **2. Role of New Zealand Historic Places Trust and the Regional Archaeologist**

The New Zealand Historic Places Trust (the “Trust”) is responsible for the advocacy and protection of New Zealand’s cultural heritage as set out under the *Historic Places Act* 1993 (“HPA”). As the lead agency on heritage advice in New Zealand, the Trust comments directly to local and regional Councils and Government on how heritage, be it historic buildings or archaeological sites, should be protected and managed. In addition, the Trust manages 42 heritage properties on behalf of the nation and maintains of Register of nationally (Category 1) and regionally (Category 2) important heritage sites which includes buildings, wahi tapu (places important to Maori) and archaeological sites. The Trust also provides some funding to private owners of Category 1 buildings.

My role as one of the seven Regional Archaeologists for the New Zealand Historic Places Trust means that every week I make decisions on how archaeological sites and remains are protected and managed. The *Historic Places Act* 1993 (“HPA”) is the legislation in New Zealand which protects all archaeological sites from being damaged, modified or destroyed by any person and it is this legislation which I am required to consider in determining the future of archaeological remains. An archaeological site “means any place in New Zealand that

- (a) Either –
  - (i) Was associated with human activity that occurred before 1900; or
  - (ii) Is the site of the wreck of any vessel where that wreck occurred before 1900; and
  
- (b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.”

Only with the granting of an Archaeological Authority by the Trust can archaeological sites be affected by any person in New Zealand. It is the Regional Archaeologists role to process Archaeological Authority applications and advise the Senior Archaeologist on whether the application should be granted or not. The Regional Archaeologist also has to monitor compliance of conditions on Archaeological Authorities, undertake site damage investigations reported to the Trust, compile evidence for prosecutions for illegal damage of archaeological sites under Section 99 or 100 of the HPA, and occasionally defend decisions on Archaeological Authorities in the Environment Court. Regional Archaeologists also provide evidence to Councils for or against applications for Resource Consents by persons under the *Resource Management Act 1991* for developments (eg. building projects, large earthworks on private property) which may affect archaeological sites.

A large part of my role as a Regional Archaeologist for the Trust is advocacy. This aspect of my role is vital as through education of the public comes a better understanding of the significance of archaeological sites in my region. By being informed of what archaeology in present, people, Councils and Government are able to make better decisions on heritage protection and management and this is achieved through public presentations, workshops and through media.

The Regional Archaeologists therefore have a significant responsibility in ensuring that New Zealand’s archaeological heritage is preserved for future generations of New Zealanders and for visitors to New Zealand who want to experience one aspect of New Zealand’s rich Maori, Pakeha and Chinese culture.

### **3. Applying the Training Course on the Preservation of Cultural Heritage to New Zealand Archaeological Site Protection and Management in My Work**

#### **3.1 Japanese Legislation on Cultural Properties: Cultural Landscapes & Archaeological Artefact Protection**

The New Zealand legislation on heritage protection is similar to that of the Japanese legislation in its aim to protect and manage archaeological sites and remains, and the registration of historically important buildings, structures and areas. All New Zealand archaeological sites are protected under Section 10 of the *Historic Places Act 1993* (“HPA”) and in Japan the *Law for the Protection of Cultural Properties 1950 (with the most recent amendment in 2005)* (“LPCP”) protects these heritage

resources. Although the New Zealand HPA clearly defines what an archaeological site is, the LPCP not only protects these sites but has recently included the protection of Cultural Landscapes. This aspect of heritage protection is a valuable component in the LPCP which is missing from New Zealand's HPA. Inclusion of Cultural Landscapes in the LPCP means that this legislation recognises that the way in which humans interact with the landscape determines the archaeological record, and so archaeological sites can not be separated from this interaction. Archaeological sites are not isolated depictions of human behaviour on a landscape where the known extent of a site is the only representation of the behaviour of people in the past. Archaeological sites describe what resources people brought back from the landscape and how they made their living from the surrounding environment. These actions may have not left obvious physical evidence on the landscape but this relationship with the land can not be separated from a site. The LPCP 2005 amendment seeks to protect such a Cultural Landscape for future generations to understand and enjoy.

In New Zealand the most immediate risk to Cultural Landscapes are wind farms which, although a green form of energy, have a significant effect on the landscape. The Otago/Southland Regions, which fall under my area of concern for the Trust, contain large open hill and mountain ranges where few people permanently live and which are prime locations for wind farms. However, although these areas are isolated, they are also areas of past and present cultural activities which are valued by locals and by visitors to the regions.

The largest wind farm proposed for New Zealand at present is the Project Hayes Wind Farm in the Lammermoor Range in Otago. The area of land to be developed has an extensive history dating from when Maori occupied rock shelters here between the 14<sup>th</sup> and 19<sup>th</sup> centuries, to the early European farmers from the mid-19<sup>th</sup> century until the present and when the gold miners traversed the famous Old Dunstan Road through the range in the 1860s. This long human interaction with this land can be seen as sites scattered in a landscape of snow tussocks on rolling hills. The proposed wind farm may see 176 wind turbines and their access roads be placed on this landscape significantly impacting on the cultural heritage.

When a Resource Consent was applied for to the local Council by the wind farm developer, the Trust presented evidence opposed to the wind farm at the Resource Consent hearing. The Trust won its argument in terms of the negative impact of the wind farm on the archaeological cultural landscape. However, there is no legal protection of Cultural Landscapes in the HPA or any other legislation, and so although the Trust's argument was recognised, no legal backing could be used to support the Trust's position. At present, only Councils in New Zealand can recognise and define a *Significant Natural Landscape* in a District Plan but historic resources may or may not be considered part of the "natural landscape".

The recognition of Cultural Landscapes in the LCPC is therefore a powerful tool for the protection of

Japans archaeological heritage and it is this aspect of Japanese law which is directly applicable to New Zealand. This type of legislation should be incorporated into the HPA and I will be using this aspect of the LCPC in my future submissions to Councils and Government in supporting the protection of significant Cultural Landscapes in New Zealand.

One additional aspect of the LCPC which would be of advantage to the protection and management of New Zealand archaeological artefacts is the way in which all artefacts are protected, not matter what their origin. This is particularly important in regard to the conservation of the artefacts. In New Zealand, only Maori artefacts are the responsibility of the Crown where if a wooden item is uncovered, the Ministry of Culture and Heritage is informed and conservation discussed. Pakeha (European origin) or Chinese artefacts are the property of the landowner who may do with the artefact as he/she wishes. These artefacts are only protected from export. This presents problems in New Zealand as only one cultural group therefore has its portable heritage directly protected for the nation. In Japan, all artefacts from an archaeological site are protected from the outset and then the system determines protection and ownership. This system at least gives any artefact a chance of becoming conserved for the benefit of the people. This aspect of the Japanese LPCP should also be introduced into New Zealand legislation under the *Protected Objects Act 1975* and I will be advocating through the Trust for this change to be adopted.

### **3.2 Archaeological Sites and Remains: Government & Council (Prefecture) Funding and International Co-operation**

The differences in how the conservation of archaeological sites and remains are funded in Japan and in New Zealand are considerable. From the course presentations and site visits it is clear that the Japanese Government and the Prefectures directly fund conservation work on sites and artefacts and the reconstruction of past built heritage. In Nara, the NNRICP facility has an impressive array of analytical equipment, laboratory space and range of skilled people with this activity being Government funded. At the Kyushu National Museum, equipment, facilities, storage areas and staff are also supported by Government funding. Although most of the countries on the course have problems with Government funding, such as not enough finances being available for the ongoing management of sites (for example the gardens site at Nara Heijo Palace requires ongoing management funds as degradation of this site since its construction is apparent), in New Zealand there is no direct Government funding for archaeological conservation, restoration or research or a dedicated national centre for this work.

Although the Trust is New Zealand's lead heritage advisor, no conservation or restoration funding of archaeological sites and remains is available to the Trust so as the Trust may be directly involved in preservation projects. There is no direct funding of archaeological site investigations nor is the nationally important New Zealand Archaeological Association Site Recording Scheme, this database being the only one of its kind in the world, funded by Government or Council.

From discussions with other countries in the course, New Zealand appears to be the only country without direct funding by Government for the conservation and preservation of archaeological sites and remains. This issue needs to be addressed in New Zealand using the Japanese system as a guide for what funding and facilities are required.

New Zealand also needs to look overseas to other countries to share in projects in the preservation of its archaeological sites and remains. Various countries at the course are working with the Japanese Government and heritage specialists in joint projects to conserve particularly significant heritage sites. As New Zealand is a country with a small population and limited funding resources, it needs to seriously consider working with countries that have additional expertise and also where many visitors from that country come to New Zealand to experience its natural and historic heritage. The Japanese represent a large proportion of tourists to New Zealand but few actually experience its historic sites due to a lack of knowledge about them and the limited facilities provided for the visiting of the sites. Co-operation with Japan where a heritage project is chosen which will benefit both the archaeological site and also visitors to the site would be advantageous to both countries. Such a project with Japan may be a first for New Zealand and sites near locations where many Japanese already visit, for example Queenstown which is surrounded by the internationally important Otago Goldfields, should be considered.

Government funding and international co-operation are two issues from the training which I will be advocating for through my work at the Trust. These issues have a significant role to play in heritage protection in New Zealand and directly affect all other aspects presented in this training.

#### **4. Relevance of the Training Programme to Cultural Heritage Conservation Work in New Zealand**

##### **4.1 Conservation Science of Archaeological Sites and Remains**

This aspect of the training course had a direct relevance to New Zealand archaeology as, like Japan, archaeological evidence from sites is often only shown by postholes, in ground brick or stone arrangements and artefacts. Whereas many other countries have extensive above ground stone or earth works associated with its archaeological sites, such as in Cambodia, Iran, Indonesia, Uzbekistan to name only a few, Japanese and New Zealand archaeologists often must look for the subtleties in changes in soil colour during excavation to determine the structural evidence from many of its sites. In New Zealand, this is particularly true for Maori sites. Historic or ethnographic sources are also required to determine the nature of Maori structures depicted by post holes as is also essential in Japan for interpreting its archaeological evidence.

The conservation of this evidence after excavation is vital and, as with New Zealand, where possible Japan buries its archaeological remains so as developments can occur above. This method is the most practical and effective to conserve such sites, and if the archaeological evidence is required to be investigated at a later date, then the evidence is still present. The more complex surface archaeological sites in New Zealand such as Maori pa (fortifications) and Pakeha and Chinese goldfields sites, for example, are left exposed and undisturbed in New Zealand and good reason is required for their excavation. This is the same for Japanese sites such as for the numerous tombs which can be seen in the cities visited during the training course.

Considering the conservation of archaeological remains, the most relevant aspect of the conservation training was the conservation of wooden items. Wooden artefacts are the most common items from New Zealand archaeological sites which require conservation and knowing how to deal with these remains on site immediately after excavation and how to store the artefact in preparation for treatment is vital. Determining the best method of conservation is next most critical as aspect. Although wood conservation has been utilised in New Zealand for some years, only one facility and practical specialist is available, and so the additional conservation expert advice and shared experience presented during this laboratory was very helpful.

#### **4.2 Maintenance, Management and Utilisation of Archaeological Sites**

After conservation of the archaeological remains by re-burial, how the story of the people who occupied the site in the past is presented to the public has always been a question of debate in countries where no highly visual archaeological structures are evident, as is the case in Japan and New Zealand. In Japan, three methods for the on-site presentation of evidence from archaeological sites are used for public interpretation: 1) the indication of archaeological features through above ground structures eg. the locations of buried post holes using posts or plantings; 2) the permanent exposure of the site under a covered roof; 3) reconstruction of the past structure determined by the archaeological evidence and historic resources. Many examples of these types of presentations were shown during the fieldtrips during the course. None of these methods are used for New Zealand archaeological sites except for two sites where wooden structures are preserved under glass for the public to see with a third site also currently being planned for such presentation. It is difficult to determine whether methods (1) and (2) described above would be viewed as an acceptable way of presenting an archaeological site to the public in New Zealand. Certainly in the late 19<sup>th</sup> and early 20<sup>th</sup> century, various exhibitions in New Zealand did reconstruct Maori pa for the public to experience what these structures originally looked like, and these reconstructions were popular. I believe there is a place for this type of reconstruction in New Zealand possibly at a Maori pa site so as to inform the public what these sites were like during the sites occupation. Good on site interpretation of what is being presented is critical to the success of such a project, but this aspect of explanation of the past life ways of Maori should be considered.



### **4.3 Archaeological Prospection and Dendrochronology**

The training on Archaeological Prospection highlighted the need for more of this non-intrusive investigation method to be used in New Zealand. Prospection is not commonly undertaken in New Zealand even though the archaeological evidence being sought is similar to that in Japan. In addition, only one method is commonly used in New Zealand, that being the Magnetometer. This training illustrated the need for a least two methodologies of prospection to be used on archaeological sites in New Zealand prior to excavations, these quite probably being GPR and Magnetometry.

Dendrochronology has been little used in New Zealand for the dating of historic sites. Only recently has research into applicable tree species for the dating of historic buildings been applied in New Zealand, the first paper on this method being presented to the archaeological community this year at the New Zealand Archaeological Association Conference. From the data presented at the training, this dating method appears to have been under utilised in New Zealand and may be able to be used more widely.

## **5. Conclusions**

This training course has been of great value to me in my professional development as an archaeologist in New Zealand. The presentations, workshops, site visits and discussions have all provided me with new information on how archaeological sites and remains are managed in Japan. In addition, the information I have gained from the other participants on how heritage is managed in their countries has been invaluable. The final two days with Gamini Wijesuriya from ICCROM were particularly interesting with the discussions amongst the countries on World Heritage and what sites mean to people being very interesting and enjoyable. It is only through training courses such as this where countries can come together and contribute information and ideas freely about heritage, that solutions on the preservation of archaeological sites and remains can be more readily found.

## **Acknowledgements**

I wish to thank all the staff from ACCU, ICCROM and Nara & Tokyo NRICP who were involved in this training course. In particular I would like to thank Mr Nakai Isao for keeping us all on time and making sure we were all comfortable during our stay in Nara. Thank you also to Ms Hata Chiyako for her superb interpretation and all the tutors.

## **Recommendation**

One recommendation I would like to make is for a presentation in the first week of the training course which covers the archaeology of Japan from the Palaeolithic period, to the Jomon, Yayoi etc. through to the restoration in 1868. This would provide a better understanding of where the sites visited during the course lie in the history of Japan.

## **Pakistan**

### **Muhammad Asim DOGAR**

#### **Introduction**

This is the ninth training course on cultural heritage protection in the Asia/Pacific region that has been organized by the Asia/Pacific Cultural Centre for UNESCO, held from 9 September to 9 October 2008, in Nara Japan. A total of sixteen participants from fifteen countries participated in this course. This year's title was "Research, Analysis and Preservation of Archaeological Sites and Remains." The opening ceremony for the course was held at the ACCU office and a welcome party for the participants was arranged in a hotel nearby. The course was held mainly in the city of Nara, which has a very important place in the history of Japan as an ancient capital of the nation, and some very important sites and monuments are located there. These sites are well maintained and are well managed by the authorities concerned. With the presence of so many historical sites it would not be wrong if we say that Nara is still the cultural capital of Japan.

#### **Presentation of country reports by the participants**

The session for presentations of country reports was held on the 11th and 12th of September, with Ms. Claire Smith and Ms. Inaba participating. Before the presentation session, Ms. Smith, President of the World Archaeological Congress, gave a lecture about the "Global Trends in Conservation of Archaeological Sites," and her work on the indigenous community in Australia. Her lecture was very informative and gave us knowledge about worldwide trends regarding conservation, and her work on indigenous people was the first time I have heard about heritage leveling relations between peoples. During the discussion Ms Inaba also shared her knowledge about intangible culture heritage.

This session provided opportunity for the participants to get information about the sites and monuments of different countries, and the problems they are facing in preservation and conservation. During the discussion of the country reports, different solutions to these problems were also suggested. Some problems were common to almost every country, such as a lack of awareness among the public regarding cultural heritage, insufficient budget for conservation, need for proper legislation for the protection of sites and monuments, and uncontrolled growth. Saltpeter in the soil and high water tables that are destroying archaeological sites and monuments in some countries was also discussed during the course of the presentations. In this session participants had the chance to give presentations in front of many experts, enhancing their confidence, and it was the first time that I had the opportunity to discuss problems of the Harappa site at this level.

#### **The cultural properties protection system in Japan**

The lecture by Mr. Ichihara was very informative for me, as he explained about the evolution of legislation and amendments made over time. The system in Japan is different from the system that

we have in Pakistan. This system is good in a country like Japan where people have a good degree of awareness about their cultural heritage, but in underdeveloped countries, in addition to bad economic conditions, low rates of education and lack of awareness about culture heritage are major hurdles for the development of such a system in which people voluntarily help the government in the protection and preservation of culture heritage. However, the lecture by Mr. Ichihara gave me the opportunity to understand the cultural property protection system in Japan.

### **Scientific dating methods and environmental archaeology**

In my country the determination of the date of an archaeological site is usually made by comparison of its archaeological materials with other sites for which the dates are already known, but foreign archaeological missions working in Pakistan have used C14 and other modern methods. Although I was familiar with the C14 method, in this course I had the chance to learn about other scientific methods that are very useful. The C14 method can only be applied when we have materials like charcoal from good contexts, but if do not find charcoal etc. then we can use other methods, though it is always good to cross-check the date of a site by using other methods. Environmental archaeology is a very good way to obtain knowledge regarding the eating habits of the inhabitants of a site, and also to learn the botanical environment of the era when site was in use.

During course I got the chance to learn about dendrochronology and when we can apply it in archaeology to get more data. At this time it is not possible for us to use all modern scientific methods in our country, but gradually we can improve our research by using more of these methods.

### **Study tours of archeological sites, monuments, and museums**

During the training course we had the chance to visit many archaeological sites and monuments not located in Nara prefecture but in Kyoto, Kyushu, and elsewhere. In my country traditional conservators do not like reconstruction, and I myself was not in favor of this. I think we should first preserve what we have, and if it is necessary then we should conserve with the same material only the affected portion of a structure. But here in Japan the situation of archaeological sites is different than in Pakistan. Wooden structures are not found preserved in excavations, but only the postholes. The Japanese archaeologists and conservators reconstruct wooden buildings after a complete study of the architecture at contemporary sites and gain some information from written sources if available, but they do reconstruction only when it is necessary. Another aspect I would like to mention here is the utilization of a historic site as a historic park. This use of a site inspired me a lot. I would definitely like to apply this for some suitable sites in my country. In museums the displays of objects, showcases, lighting systems, diagrams, and presentations of different archaeological features was really amazing.

### **Practical workshops and lectures**

During the training course participants had the chance to participate in practical workshops, on topics such as the conservation science of archaeological sites and remains, documentation of archaeological

artifacts, and photographic documentation of sites and remains. These workshops gave us first-hand knowledge in these fields. I learned much about the photography of archaeological sites, monuments, and objects. For the recording and documentation of an archaeological site photography is very important. After taking photographs, who keeps the record is more important. The way the Japanese keep these records that has been shown to us was very good and informative. Besides photography we gained knowledge about the drawing of objects and pottery, conservation on site, and we also had the chance to visit laboratories with modern equipment.

### **Introduction to the archaeological prospection of sites**

The introduction to archaeological prospection by Mr. Nishimura was an interesting and informative lecture. He began with a quotation that excavation is a kind of destruction of a site. Yes, it is true but debatable, and I would like to say something in this regard.

Excavation of an archaeological site is the first step of exposing ancient remains. Without excavation we cannot present any structure to the people who come to the site to appreciate antiquity. Conservation of archaeological remains comes after excavation. Science has made much progress and modern equipment can help archeologists to determine the orientation of buried remains. We can also map many minor details by using such equipment, but there are many other objects buried with structural remains which help archaeologists in interpretations of a site. A minor object found from the kitchen of a house can give us information that we cannot understand by observing the complete layout of the site on paper. Besides architecture, nowadays the expertise of many fields of research is also applied during excavation. For example pottery found from a site gives information about the skills and esthetic sense of the inhabitants; bones, botanical and many other materials that we cannot get without excavation are very useful for reconstructing the environment of the ancient world. It is moreover true that many important sites that attract millions of people are the result of archaeological excavation. But it is also true that the maintenance and conservation of archaeological sites is a big issue in every country. A structure buried in the ground is preserved, and when exposed by excavation to elements such as sunlight, air, etc., its deterioration begins. Chemical treatment and conservation must be started right after excavation to minimize the process of deterioration. The problems do not end here but continue, so maintenance and conservation are necessary to keep the site in presentable condition. All these things require huge budgets not every country can afford, so many sites are in danger.

In my view the methods described in this lecture are useful and should be applied at every site before excavation; after doing this one can understand the nature of similar sites without excavation. Excavation should only be conducted in areas where it is very necessary, by using these survey techniques and excavation of some parts of the site, so we can manage the site better and gain maximum information to interpret the site in the right manner. The equipment required for this type of survey is very expensive and many countries cannot afford it. Here I would like to suggest that countries like Japan, which has all the necessary equipment and expertise, should help other countries which cannot afford such equipment. Although Japan is doing some of this, the need is greater.

### **Future issues on the preservation of sites and remains: Lectures and discussion**

Mr. Gamini Wijesuriya gave lectures about “Future Issues on the Preservation of Sites and Remains,” and we had useful discussion about this subject and on world heritage. During the discussion we covered different challenges that we have in our countries, such as low awareness among the public about the need to protect culture heritage. We all agree that we should educate people, especially the younger generation, about the importance of culture heritage. We also discussed conservation problems, legislation for the protection of cultural heritage, and the utility of having dialogue between different groups in society in order to develop awareness regarding the protection of culture heritage. Participants were also briefed about different organizations of the world working for the protection of culture heritage, such as ICOM, UNESCO, and the World Archaeological Congress, etc.

### **Discussions and exchange of information**

During the lectures, workshops, study tours, and discussions, I gained much knowledge about archaeology and conservation, but this course also gave me a chance to meet experts in my field who are working in different countries of the Asia/Pacific region. We often discussed problems that we have in our countries and tried to find solutions. These discussions were held during the short breaks between lectures, and also at our hotel where we stayed together. Living and traveling together for about one month gave me a chance to develop friendship with my colleagues who work in different countries of the Asia/Pacific region. Before coming to Nara I had knowledge only about my country, but now have some knowledge about different countries of the region concerning problems common among us, and how they are working to improve the situation. I discussed conservation problems of the site of Harappa, where I am working, with my fellow participants, and they give me many practical and valuable suggestions that I would like to try in my country after going back.

### **Conclusion**

In the end I would like to say that this training course was first one that I attended abroad, and it was my first experience to travel outside my country. It was also first time that I got the chance to participate in a training course in which experts in the cultural heritage field of different countries participated. This was a unique experience for me. At the end of this training course I feel myself that I obtained much knowledge about archaeology, conservation, preservation, and international trends in cultural heritage, but I need to learn more. However, when I will go back to my country this knowledge help me to perform my duties in a better way. I was very inspired by the way in which the ACCU people organized this course – all the people worked very hard for the success of this course and the hospitality and kindness they extended to us was a valuable experience that I am taking with me.

### **Acknowledgments**

I would like to say thank you to Mr. Nishimura, Director of ACCU, for providing me the chance to

participate in this training course. I am thankful to Mr. Dr. Fazel Dad Khan Kaker, Director General, Department of Archaeology and Museums, Government of Pakistan, for nominating me for this training course. I am thankful to Mr. Muhammad Hassan, Curator, Mr. Habib Ahmad, Conservation Assistant, Archaeological Museum of Harappa, who helped me a lot in the preparation of my country report, and in the end I would like to say thank you to all the staff members of the ACCU office for their cooperation and help whenever I requested it. Thank you very much.

## Palau



**Calvin Taurengel EMESIOCHEL**

This final report is a mere glimpse onto a once-in-a-lifetime experience of the enrichment of knowledge that expands the flexibility of planning for, and of technical measures that can lead to the useful utilization and protection of, the fragile, priceless and valuable cultural heritage sites of one's country. The goal of the Training Course on Cultural Heritage Protection in the Asia/Pacific Region 2008, based on the theme of "Research, Analysis and Preservation of Archaeological Sites and Remains," is not an easy issue to deal with, but needs a lot of attention, critical planning and proper approaches that will vary in different countries.

Therefore, before I talk more about the technical or scientific methodology covered in the course, the leadership and kindness of the individuals who made this program possible should be mentioned.



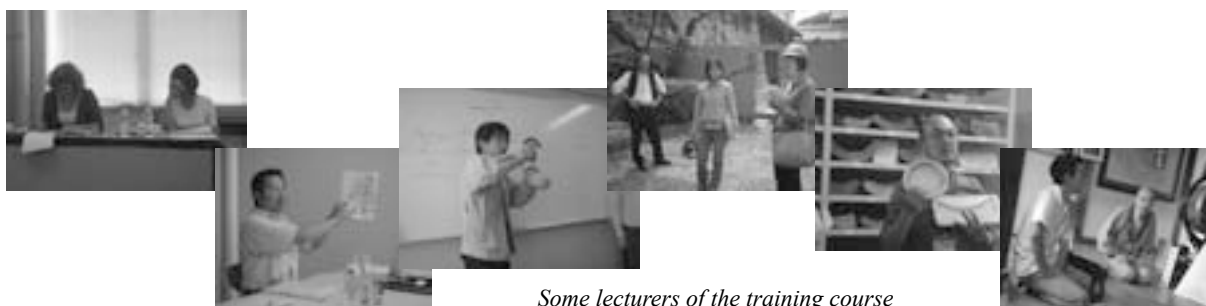
First of all, I would like to take this opportunity to represent the people and the Republic of Palau in expressing my deepest appreciation and gratitude to the organizers of the training course, who gave me this great opportunity to be one of the selected participants.

*Organizers and trainees*

Secondly, many thanks are due to the Director and all the kind staff of the ACCU Office for preparing the materials and scheduling, as well as for comforting us during our stay in Nara, Japan. Finally, I would like to extend my appreciation to all of the lecturers and instructors, as well as the government officials of Japan, Nara prefecture, and the municipalities, for sharing their precious knowledge and methodologies that will provide important measures for improving the conservation and preservation of Palau's cultural heritage sites.



*ACCU staff*



*Some lecturers of the training course*



As participants in this training, we were all exposed to our different countries' situations in preservation and conservation, as well as the challenges and problems that each of us are facing. Some are quite similar while others are very unique and isolated cases. Perhaps there are many different factors that contribute to the cause of such problems. The most common factor mentioned in all presentations is the lack of enough funding and inefficient policy. Of course, these are the main factors that determine the effectiveness of the whole system of operation.

Despite the weakness in policy and lack of enough funding, the Palau Bureau of Arts and Culture continues to foster its mission based on all its existing capabilities combined with other methods and techniques that I have been introduced to during this training. Of course, not all the methods and techniques that I have learned during this training are possible or effective in my country, but there are those that are quite different in terms of cultural perspectives. I believe that these vary from country to country because they have strong implications based on ethnicity and community values. There are also things that can be utilized in my country perhaps in the future, if we can overcome the lack of resources, training and funding.

Therefore, I will begin by giving a brief overview of the training course, and then refer to aspects that can be useful to the current situation in my country. I will also talk about those approaches that are quite different in terms of values, then continue on to explain those methods and techniques that are of course very effective and useful in my country but cannot be applied soon due to the funding shortage as well as the lack of training and resources. Finally I want to make a few comments regarding the training course that may help provide an insight for future improvement of the training.

The training course was conducted to provide participants with knowledge of the principles and methodologies of protection, conservation, preservation, utilization as well as recording and analyzing sites and artifacts, including networking and sharing information internationally. The topics covered during the training course include:

- Global Trends in Conservation of Archaeological Sites
- Cultural Property Protection System in Japan
- Conservation and Utilization of Cultural Heritage Resources
- Maintenance and Management of Archaeological Sites in Practice
- Introduction to Scientific Dating Methods
- Introduction to Environmental Archaeology
- Conservation Science of Archaeological Sites and Remains
- Documentation of Archaeological Artifacts
- Photographic Documentation of Sites and Remains
- Introduction to Archaeological Prospection of Sites

- Introduction to Dendrochronology
- Future Issues on the Preservation of Sites and Remains

The course began by presenting us with an overview of world archaeological trends in the conservation of sites. It went on to portray the effectiveness of Japan's cultural protection system and how it works based on different techniques and methods, using specialized modern technologies of research, analysis, conservation, and the protection of Japanese heritage sites for the benefit of preservation and education. Experiencing the effectiveness of modern technologies and how they work proves that Japan has elevated its cultural protection system to a high degree. I am truly amazed and at the same time very happy to bring back home and apply what I had learned in this training.

The specific aspects of the training that Palau can implement based on its present situation are the methods and techniques of archaeological documentation and the conservation of artifacts and storage. What we have been practicing is recording artifacts on site and leaving them as they are because we do not have the capability of conserving artifacts, and there is a lack of appropriate storage space in our office. But the problem we are facing is that the artifacts continue to deteriorate or sometimes disappear. Since the most important thing in conservation is trying to keep an item in its original state or condition when it was found, then we will consider getting those artifacts specific attention according to their condition.



*Documenting artifacts by drawing*



Of course, this will involve detailed documentation, including close observation, drawing and describing all necessary information about each artifact. The techniques I have been exposed to in the drawing of artifacts are essential tools that I will apply to my work. This will be very valuable for the conservation process and for analysis of changes in the artifacts over time. This information can be shown to the public instead of the original artifact. This way the original will be kept in protected storage for preservation.

The other method of record keeping that is essential, and which amazed me in the techniques employed, is the photographing of artifacts. This is visual documentation that provides good representation of the form and shape of an object in a two dimensional medium. As I mentioned earlier, we left artifacts in situ, meaning that photographing also took place in situ. We usually used sunlight as the light source. Now, I will set up a small area for photographing those items that we bring from the sites to



*Photographing an artifact*

the office.

All these types of documentation of artifacts are necessary to the situation in Palau for both our survey and inventory projects, as well as for integration into our requirements for project review and compliance for development that is affecting cultural sites. The more reliable and precise techniques and methods of documenting archaeological artifacts will improve our archaeological database, which will help lead to good planning for future conservation and protection as well as development.

On the other hand, there are other methods introduced during the training that employed a much different approach as compared to my country's situation. One that is quite interesting was the utilization of cultural properties in Japan. There seems to be a strong force in society dictating the utilization of sites. Perhaps this is an effective way to get community support for cultural properties, and why during all the on-site lectures and observations, there were many different approaches based on what is appropriate for the community. This is quite different as compared to the situation in Palau because we believe that to introduce anything that was not actually part of the original cultural property will alter the authenticity of the site. So what we do is try very hard to educate the community on how essential it is to keep the original condition of such property. I think the utilization of sites can be a compromise in a good way to some extent, but should have limitations. A good example is the Yoshinogari site. It is a remarkable park with community volunteer opportunities, and shows a strong ethic for educational purposes at the site. I personally think that the planning for the site was excellent, because it serves those purposes while being an important cultural property that needs to be conserved and protected for future generations.



*Yoshinogari activities*

However, if utilization goes beyond those limits, then the site is considered altered. One such example, at least based on my personal opinion, is the train track dissecting the heart of the important cultural property of the Heijo Palace site. It somehow seems an eyesore and I feel that it lowers the value of the site. Perhaps it was made prior to the designation of the site, so I hope the committee for the Heijo Palace site will look for alternatives and decide on a good option in the near future about the train track.

Again, there were other techniques and methods introduced to us during the training, including different types of advanced technological devices as well as treatments and other applications that are all essential for the Palau Bureau of Arts and Culture in order to elevate its performance in protecting and preserving cultural properties, but due to lack of funding and training, can only be part of our future planning to improve our capabilities. Of course, not all this equipment may be possible for us to utilize. I am positively sure that I myself will not be able to see some or most of this equipment in

actual operation during my years at the Bureau of Arts and Culture.

The equipment includes:



*Feature detector*



*Feature detector*



*Feature detector*



*Environmental conditions measurement*



*Infrared equipment*



*Infrared scanner*



*X-ray*



*X-ray*



*Wooden treatment machine*



*PEG application*



*Storage area*

The techniques and methods that this super high-technology equipment does provide to the conservationist and preservationist include more advance ways of obtaining precise information about important cultural assets, and helping to foster dissemination of the data to the general public through educational media, as well as provide incentives for future planning of protection and utilization.

Even though I had mentioned that it will take our office some time to be able to invest in some of this useful equipment, seeing the power of these devices working during the training made me think about how to utilize some of the methods through an indirect process, by either incorporating them as part of our requirements process or maybe creating good international cooperation with another country like Japan for assistance. This of course will not stop us from planning to purchase some of the equipment, but instead provide us with the same accuracy of information without having the actual equipment.

Finally, there were a few things worth mentioning with the intent to provide an insight for future training courses. One is the lecture on radiocarbon dating. The materials and lectures were complicated and technical and I was not able to follow or understand most of the terminology. I felt that it should be simplified more to make it understandable for non-specialists. Again, it would also be helpful if further explanation were provided on the process of how to get and prepare the right samples to be sent for radiocarbon dating analysis. Lastly, PowerPoint presentations are an excellent part of information dissemination through visual means, so I think it would be wise if the presentations were all in English.

All in all, the entire training program was successful and unforgettable. Of course, each and every one of us is very proud to be part of this training because we all have learned a lot and will be able to help our countries regarding the conservation, preservation and protection of our cultural heritage sites for our people and future generations. I for one think that this was a one-time opportunity for me to experience the high level of techniques and methods that Japan has employed on its important cultural properties, let alone gain exposure to Japanese culture and food. This special knowledge that I obtained during this one-month training course will be shared with my colleagues, including recommendation and priority planning for implementation of such skills that I have acquired.

In conclusion, I would like to once again express my great gratitude to all the people who contributed in various ways to the success of such an important training course that provides assistance to developing countries in the Asia/Pacific region. I hope that this will be the beginning of international relationship and cooperation between our countries and a means for us to assist each other to improve the protection, preservation and conservation of our important cultural heritage sites.

Thank you.

## **Philippines**

**Edwin Winston Agito VALIENTES**

### **Learning the ‘Japanese way’: Training course on heritage management in Japan**

#### **Introduction**

I am greatly honored to be part of this year’s ACCU training course on cultural heritage. Coming from a country whose history of archaeological research and heritage management is relatively recent, this program has given me a good opportunity to expand my knowledge (theoretical and technical) in the analysis and preservation of archaeological materials and sites. Japan, as everyone knows, has a long and rich tradition of managing heritage places and maybe at present, one can safely assume they are one of the world’s leading countries in the science of conserving cultural properties. To have this opportunity to learn from their experiences and current practice is therefore helpful for improving the way I can approach heritage management in my own country.

In this short report, I would like to share some of the things that I have learned from the training course, some points in the lectures that struck me most and my personal takes on them, some impressions on the practice of heritage management here in Japan, and a short discussion of ways in which I can apply the things that I have learned in this training course in light of the issues and concerns that currently confront the protection and conservation of archaeological heritage in the Philippines.

#### **The role of archaeology among indigenous peoples**

As a student of anthropology and archaeology, and as a member of an indigenous community in the Philippines, I was particularly interested in the talk given by Prof. Claire Smith on indigenous archaeology and the role of heritage to protect and promote native culture. As we probably all know, archaeology per se is a ‘western discourse’ and a ‘western approach’ to the study of the past. Most indigenous people, I presume, do not actually have a tradition of going out with trowels and digging up objects from the distant past to know something about their ancestors. They know and inscribe their history through the stories and songs and dance and visual art that they have learned from their ancestors. For them, the past is not permanently inscribed on material things that can decay in the course of time; the past is in the stories and traditions that they relate in their everyday lives. The past is also not a static and passive knowledge that you can dissect and classify into different parts and periods as practiced in archaeology; the past for them is a knowledge that is alive, that you constantly engage with, and keep recreating and renegotiating over the course of time. The past is in the present.

But given its ‘foreignness’ in the context of indigenous experiences and traditions, archaeology as one

approach to the study of the past can still hold great potential for enriching their culture. This is the reason why I was most attracted to the idea of indigenous archaeology discussed by Prof. Smith. As she mentioned, we can no longer talk about a single kind of archaeology but multiple archaeologies, and here, we can look at indigenous archaeology as just one of the many archaeologies that we practice today. But what makes indigenous archaeology indigenous is still unclear to me. Is it in the methods, in the area of research, or in the approach to interpretation? Is it necessarily an archaeology that must be conducted by indigenous people? If yes, then if an indigenous archaeologist is trained in western archaeology and employs western concepts in research, can you still call it indigenous? What about foreign archaeologists conducting research for the 'benefit' of indigenous people, can you also consider them indigenous archaeologists?

For me, I would like to think of indigenous archaeology as a research strategy driven by indigenous people to achieve their own research goals. But I would also like to view it as an archaeology that explores and incorporates indigenous concepts of the past in interpreting archaeological materials no matter who is doing it, outsider or insider. This might entail a veering away from the orthodox methods of western archaeology taught to us in schools towards a more contextual kind of archaeology, one that is based on indigenous ways of looking at and interpreting material culture. I do not know how this would fare in light of conventional theories and methods employed by those who tend to view archaeology as science or as an objective way of studying cultures in the past. But I am optimistic that, given the kind of plurality that exists in our societies at present, indigenous archeology would gain a respectable place in the general field of archaeology if pursued seriously.

### **To be a World Heritage Site**

I was also interested in the discussions led by Dr. Germini Wijesurya of ICCROM. He talked about the challenges confronting heritage management in different parts of the world and how these challenges are actually rooted in our differing views about heritage (what constitutes it and for whom) and heritage management (conservation, preservation, and utilization). He said that there is no single recipe in managing heritage sites; each heritage place has its own problems and needs that can only be approached in the context of the place and situation in which those problems and needs arise. This entails understanding the internal nature of the site, its historical development, its significance, and its function in the lives of the people who live at or use the site.

In the discussion, I mentioned the need to shift from a top-down to bottom-up approach in managing heritage sites. In the Philippines, heritage management is mostly done by the state through their designated experts in conservation, using a single approach to address the conservation needs of all designated heritage sites in the country. Because some of the strategies do not always fit local situations and problems, they often bring little impact for the conservation of heritage places and the communities in which those heritage places are located. I like the idea of decentralizing the

management of heritage sites, although this does not mean there will be no support from the national government. I would like to think that heritage management should be conceptualized at the local level, taking into consideration the points of view of all interest groups such as the stakeholders themselves, archaeologists, historians, architects, and other specialists dealing with heritage conservation. The role of the national government should be more in giving financial assistance when needed during the implementation of the management plan.

Dr. Wijesurya also opened up an equally interesting discussion on the concept of world heritage and the possible advantages and disadvantages of being inscribed on the UNESCO World Heritage List. Since its inception, many countries around the world have wanted to inscribe their heritage sites on this prestigious list. One main attraction is the potential financial support coming from international organizations such as UNESCO for conservation (which, according to one participant, is actually hard to get). Another attraction is tourism; when a place is inscribed in the world heritage list, tourism increases in the area and the local economy grows. The downside of it, as experienced by other countries, is that it may lead to overcrowding by tourists which causes damage. In some countries, to be a World Heritage Site is a source of pride in their culture. To be recognized on a worldwide scale is a great honor especially for small communities which long to be part of 'world history'. But on the other hand, this new symbolic value, when added to nationally important heritage sites, can also turn them into potential targets of terrorist attacks, as happened in Sri Lanka.

But what does it mean to be world heritage? Or is there really such a thing as 'world heritage'? A lot of people contest the idea of world heritage, dismissing it as a modern way of displaying the cultural superiority of western societies over the rest of the world. World heritage sites tend to concentrate more among countries in Europe than in Asia, and particularly more than in third world countries. While UNESCO is seriously taking steps to resolve this issue, such as taking into consideration the values of living heritage by introducing the idea of 'cultural landscapes' as one category for nominating sites, there are still some major inadequacies in the process that hinder some countries in inscribing their heritage sites on the list. According to Dr. Wijesurya, the World Heritage List has now become a major international institution to legitimize the values of heritage sites around the globe, and whether we like it or not, it is here to stay. The challenge now for young heritage advocates is not to turn their backs on it but to continue engaging and debating and refining the basic principles guiding the operation of the World Heritage List in order to make it somehow more sensitive to the diversity of cultures and heritage places around the world, and make it more meaningful to the people.

But given all its shortcomings and Eurocentric tendencies, I would also like to think of it in a positive way, especially in the case of the Philippines. Coming from a country that puts heritage conservation as one of its lowest priorities, such distinction can actually spawn government support. I would like to cite the Ifugao Rice Terraces, one of the World Heritage Sites in the Philippines as a case in point. It



was not until UNESCO placed it on the List of World Heritage in Danger that the government began to intervene seriously and implement emergency measures to save the area. International pressure, through world heritage inscription, can in some instances induce national governments to take action in protecting important heritage places in their respective countries.

### **Site management and archaeological conservation**

This training course has also introduced me to the various ways in which heritage management can be practiced based on the experiences of Japan. Archaeological and historic sites in Japan are managed by the national and local governments through their various cultural agencies and research institutes. In Nara alone, two research institutes are in place to oversee the management of archaeological sites in the area. These research institutes are the ones responsible for undertaking conservation and restoration of historic places such as ancient palaces and temples. They are staffed by specialists and well funded to undertake the kinds of research they need to do. If heritage places are on private properties, the government may purchase them for protection. This kind of system I can only admire at the moment. My country does not have enough money to run research institutes and purchase lands and undertake conservation and restoration programs for archaeological sites on such a wide scale. But there are certain aspects of Japan's system from which I think we can draw inspiration in the Philippines, such as the process by which they designate and register heritage places. We still lack a systematic way for identifying potential, and registering known, archaeological and historical sites for the national or provincial governments to manage. By thinking carefully about the current situation of heritage places in the Philippines, we can apply some of the principles that underlie the Japanese system to make the management of our heritage sites more effective.

This training course also introduced me to many new technologies in conservation science that I learned of and saw for the very first time. I admire the Japanese government for giving so much priority to heritage conservation by giving their research institutions enough funding to develop or acquire these new technologies to address the conservation needs of their archaeological sites. I do not know if my country can ever afford to buy such technologies in my lifetime. But I would not like to see the lack of these technologies be a hindrance to research and proper management of heritage sites in the Philippines. I agree with what one of the Japanese lecturers said to us at the Kyushu National Museum, one does not need to be rich and have the capacity to purchase all these hi-tech facilities to conduct high levels of archaeological research and conservation, one only needs to cooperate and develop partnerships with other countries such as Japan who have these technologies.

I also admire the passion of Japanese archaeologists who shared their knowledge and expertise with us regarding archaeological analysis and conservation. We do not have such highly specialized persons in the Philippines to attend the conservation needs of our archaeological sites. According to my professors in the university where I study, Japanese archaeologists are the most meticulous when

it comes to mapping and documenting archaeological materials. As someone interested in ceramic research, I found the seminar on pottery analysis most interesting and helpful to me. In the area where I am planning to conduct archaeological research in the future, the majority of the materials found by previous research are pottery remains. It most likely will be that when I do my own research there I will encounter the same kind of situation. While it would very hard for me find complete pots like those found here in Japan, the system of documentation of pottery that I have learned here in Japan is still going to be useful to me when conducting pottery analysis.

### **Japanese heritage**

Aside from the new research methodologies and conservation techniques that I learned from this training course, I also gained a good glimpse of Japanese history and culture through the site and museum visits that we made. I found it interesting to see Chinese and Southeast Asian elements in some of their architectural traditions. Previously, my idea of Japanese culture was one that is homogenous, distinct from other cultures of the world. But through these excursions, I realized that it is a composite of different influences from different cultures and what we know today as a unique Japanese culture is the result of the fusion of those different elements.

The Buddhist temples and palaces are really among the most amazing places that I visited here in Japan. They truly deserve their world heritage distinction. The visit to the Yayoi settlement site (300 BC – 300 AD) in Kyushu was most interesting to me, not only because the reconstruction at the site was truly impressive but also because Yayoi is the period where I see many similarities in terms of material culture between Japan and the Philippines. I am tempted to think of the people who lived in this area as part of a cultural sphere where the Austronesian-speaking societies of Southeast Asia and the Pacific belong. The double-jar burial is very similar to those I have found in the Philippines. The reconstructed wooden houses at the site are very Southeast Asian or ‘Austronesian’ in their characteristics. Pre-colonial historical accounts in the Philippines mention similar fortified settlement sites, raised wooden houses, and special areas for burials and elite residence. A deeper comparative study between the Yayoi period in Japan and the Neolithic and the protohistoric period in Southeast Asia might reveal a direct cultural link between them in the past.

### **Concluding note**

Let me conclude this short report by thanking ACCU Nara for inviting me to participate in this year’s training course, especially Dr. Yasushi Nishimura, ACCU Director, who also gave a wonderful lecture for us on archaeological prospection, and the staff of ACCU – Mr. Isao Nakai, Ms. Yasuko Otani, Mr. Wataru Kinoshita, Ms. Kaoru Tanda, and Mr. Tsutomu Yamashita. I would also like to thank our interpreter for the entire duration of the training course, Ms. Chiyako Hata, and the following assistants/tutors who have been always kind, patient and attentive to our queries and needs: Mr. Eisuke Nishikawa, Ms. Tomomi Itaya, Ms. Rie Tanaka, and Ms. Kanda Hiroko.

***Maraming salamat sa inyong lahat! (Thank you very much to all of you)***

# Republic of Korea

HAN Min Su

## I. Introduction

Cultural heritage is essential for accurate understanding of the history, culture and spirit of each country; it is also a cultural foundation for the past, present and future.

Therefore proper research, analysis and preservation of archaeological sites and remains are required for us to keep important cultural heritage safe for the next generation, and accordingly ACCU Nara, in partnership with ICCROM and the Agency for Cultural Affairs, has organized this training course titled the “Training Course on Cultural Heritage Protection in the Asia/Pacific Region.”

In 2008, its subject was “Research, Analysis and Preservation of Archaeological Sites and Remains,” and the program consisted of presentations, discussions, lectures, workshops, and study tours of cultural heritage.

Through this training course I learned how Japanese heritage is protected, and equally important, exchanged experiences with participants from other countries. With the new knowledge gained through this training, I am hoping for a marked improvement in conserving Korea’s archaeological sites and remains.

## II. The Training Course

*1. Global Trends in Conservation of Archaeological Sites.* The meaning of cultural heritage is physical structures and products that transfer memory; reminders of people, events and associations; and shapes of national and cultural identity. Accordingly, every valuable historic object can become part of the cultural heritage. In recent years, many efforts are observed for protecting cultural heritage, such as those of the World Archaeological Congress and other advocates of cultural heritage protection.

One such effort is the repatriation of heritage. It is a worldwide trend and its reasons are as follows. First, the return of heritage of other countries means international legality in the present. Second, these heritage remains must be in their countries of origin because they are very important historic items representing the spirit of those countries. Another effort is to improve the means of heritage exhibition. A common mistake is to dissolve the divide between art and science, thus confusing the viewers. For example, the “Discourse of Colonialism,” which used “open storage,” thus dissolving the divide between art and science, plus indigenous systems of classification, minimal use of labels, and no meta-narrative, creating confusion.

*2. The Cultural Property Protection System in Japan.* Cultural properties are divided into three categories as follows. Designation is done by the Agency of Cultural Affairs and is mostly for sites that are over 50 years old. This offers the strictest protection and most financial support and depends on the owner’s permission. Registration can protect sites less than 50 years old, and people can apply

to register sites of cultural property for protection. This also depends on the owner's permission, and is not as strict as designation and there is less financial support. Selection is used for important groups of historic buildings and important cultural landscapes. These kinds of properties are vast in area, and would require getting permission from many land owners. Accordingly, if it is of worthy importance from the view of Japan as a country, it will be selected by the government. In Japan, the designation, registration, and selection of cultural properties are carried out by the Minister of Education, Culture, Sports, Science and Technology on the basis of reports submitted by the Council for Cultural Affairs in response to ministerial inquiry. Also, cultural properties are divided into eight categories in all.

*3. Conservation and Utilization of Cultural Heritage Resources (Cases in Japan).* First, the Law for the Protection of Cultural Properties has been continuously revised by the government and concerned parties. It has become a foundation for the conservation and utilization of cultural heritage resources.

Second, interpretation with concern about preservation and utilization is a good tool for making connections between historical sites and citizens. This process has two parts, one involving systems and the other involving shapes. Concretely, systems are workshops, idea competitions, building by citizens, and maintenance by citizens. Shapes are mixtures of contemporary art, applications of high technology, and the integrity of landscapes. For example, the preservation and utilization of important historical site in machizukuri projects integrate these techniques: analysis of future population and traffic, design of buildings and streets, analysis of structural techniques, and realization.

*4. Maintenance and Management of Archaeological Sites in Practice.* Research, restoration, maintenance, and management of the Nara Heijo Palace site has three basic principles. One is to present the Nara capital to the public through excavation of the site. Another is to preserve the site. The third is to restore, preserve, and conserve the archaeological site and remains using state-of-the-art techniques. A significant aspect of this site is not only preservation but also the development of new techniques. Furthermore, the basic concept is changing according to the reconstruction plan and nationalization of the site. Preservation of structural remains is divided into un-excavated and excavated areas. Preservation of the former is by leaving them untouched, and of the latter is to rebury the archaeological remains under soil. Also, there are many maintenance principles. First, maintenance as sustainable conservation is to maintain, preserve, and provide facilities for this site. Second, maintenance as an expression of the site is through two-dimensional displays, partial three-dimensional displays, and reconstructions. Third, maintenance of service facilities as a public space is through public facilities for display, restaurants and coffee shops, souvenir shops, restrooms, and parking areas. But the realities of management involve problems including vegetation, structures and buildings, opening of displays to the public, utilization, providing guides and events.

The Asuka and Fujiwara regions have many historic sites. The master plan for restoration of these sites was established by the government, and many specific plans are being made. While some sites are being restored by the Nara National Research Institute for Cultural Properties, nobody knows

when these projects will end because restoration at some sites has many problems, such as purchasing land from owners, funding, etc. Funding is especially a very big problem. Presently, one basic concept of restoration is to use flowers. Its advantage is being very cheap and easy to manage. In using flowers, mixing varieties which bloom in the spring, summer, autumn, and winter is emphasized. This activity is being applied at the Fujiwara palace site after the restoration method of reburial, as done at the Nara palace.

*5. Introduction to Scientific Dating Methods, Environmental Archaeology, Archaeological Prospection of Sites, and Dendrochronology.* Scientific dating methods, which can be divided into numerical and relative methods, are one set of age determination methods in archeology. First, numerical methods can be sub-classified as radiometric and non-radiometric. Radiometric methods use radioactive isotopes and radiation damage. The former are radiocarbon, potassium-argon, argon-argon, and uranium series, the latter are fission track, luminescence, and electron spin resonance. Non-radiometric methods which use chemical change are amino acid and obsidian hydration. Secondly, relative methods include archeomagnetic dating based on paleomagnetism, dendrochronology, and fluoride dating. Several scientific methods are based on a particular principle and careful evaluations are required.

Environmental archaeology asks “what do plant and organic remains tell us?” Pollen analysis is a widely utilized method for identifying plant remains in archeology. Other methods include the identification of seeds and fruits, identification of tree species, analysis of plant opals or silicates, analysis of diatoms, and the analysis of parasite eggs. These methods are used to study the environment, vegetation, and ancient eating habits at archaeological sites and remains.

Archaeological prospection promises a change for archaeology itself, to more non-destructive methods of investigation, such as the identification of archaeological features by detecting anomalous physical and chemical properties in the soil. The objective of prospection is an improvement in the direction of acquiring historical data without excavation using non-destructive methodology, and preserving archaeological sites. Archaeology as a whole will also apply more scientific methods for dating, for the study of palaeoenvironments and palaeobiology, for biomolecular analysis, and biological resource exploration.

Dendrochronology was originally developed during the first half of the 20th century by the astronomer A. E. Douglass. Recently, this analysis of ancient wooden cultural properties is applied to a wide range of materials, including archaeological artefacts, building components, wooden sculptures, works of art, and handicrafts.

*6. Study Tour:* Himeji castle is a World Heritage Site with well preserved buildings and other remains. The World Heritage Committee of UNESCO has placed especially high value on traditional wooden architecture in Japan, and many tourists visit this castle, in addition to Horyuji temple and other wooden structures.

Kyushu National Museum was opened in October 2005 as the fourth national museum of Japan.

This museum is particularly well equipped with facilities such as advanced storage, scientific study and research divisions, and conservation and restoration sections for the cultural properties in this museum.

The Yoshinogari site, located in the Saga prefecture, is one of Japan's largest Yayoi period moat-enclosed settlements, and is of extremely high educational value because it affords a superb opportunity to discern the formative process of a primitive state after the start of rice cultivation. After several excavations, this site has been extensively restored along the lines of its initial status.

The Korokan was a diplomatic place of strategic importance for early Japan going back at least to the eighth century. A part of this archaeological site has been excavated and restored.

*7. Workshops and Discussions.* (1) "Conservation Science of Archaeological Sites and Remains." Conservation treatment reduces the speed of deterioration of cultural property as much as possible. The treatment is in four parts, which are rescue, examination, treatment, and check up. In these processes, the objects have to be stored under appropriate conditions before conservation treatment, but the most important point is that when an excavation is carried out with the intent to preserve and organize the site post-excavation, conservation technology becomes involved in a variety of forms. From the same viewpoint, environmental research is needed to learn the geographical conditions of archaeological sites as well as the status of preservation of remains. Additionally, we need analysis of remains for good conservation and restoration, but what we want to know is the important point.

(2) "Documentation of Archaeological Artefacts." There are a variety of kinds of archaeological artefacts: ceramics including pottery and roof tiles, wooden items, etc. Especially, one important part of the documentation of archaeological artefacts is drawing. Basically, there are two kinds of drawing needed in order to express an archaeological object of three dimensions through drawings in two dimensions, and these kinds of drawing are combined. These artefacts provide a wealth of information on archaeological sites, and we have a system for use in the documentation of this information. First, observe the condition of the material, its characteristics and other information. Second, conserve the artefacts for preservation over a long time. Third, present to the public all data on the artefacts.

(3) "Photographic Documentation of Sites and Remains." There are a variety of photographic techniques for the documentation of archaeological materials. But we must understand why photographs are necessary for recording archaeological sites and remains. Generally, professional photographers say that photographs can record and communicate more detailed information to a third party than verbal descriptions and drawings can provide in archaeology: the texture of the artefacts, configurations and positions of features, the atmosphere and sense of reality of the site. Additionally, we should recognize some important points for the role of photographs as archaeological records, the general principles for archaeological photography, the requirements for the ideal photograph, and for the storage of photographs.

(4) "Future Issues on the Preservation of Sites and Remains" (Risk Management, and Utilization for Public). Risk management is a very important topic, because when cultural heritage is exposed it may face dangerous situations or damage. We must plan carefully how to manage and conserve

for such situations. However, viewed from a different standpoint, such risk is shared with other peoples blessed with cultural heritage. Of course, there are many international organizations, such as UNESCO, ICCROM, and ICOMOS, but these groups just present worldwide basic regulations, and it is very difficult to devise special techniques of risk management because each country has its own remains, conservation environment, and popular sentiment.

Utilization for the public is also an important topic. When local residents and people of the entire nation are blessed with the benefit of utilization of cultural heritage, all citizens should be enabled to receive equal benefits, and most of all communication with local residents is very important for the conservation and restoration of cultural heritage. That is why it is most important to communicate with the local citizens concerned to preserve and restore cultural heritage ruined by time and other factors. Additionally, in the case of the restoration of heritage, relevant information should be prepared to make visitors understand the situation, and most of all, through these activities a sympathy for preserving and sharing heritage must be nurtured.

### **III. Status (or Problems) and Applications (or Solutions) for the Conservation of Archaeological Sites and Remains in Korea**

I gained important information through this course, and have thought about the present situation and problems of Korea. I have developed some ideas to apply to improve the system for conservation and preservation of our cultural heritage. These are as follows.

Generally, our country has low recognition of recent cultural heritage because of the great number of cultural properties and our long history. But we must try to preserve everything that has meaning, either ancient or more recent, and this progressive thinking is the worldwide trend in the conservation of cultural heritage.

Recently, many countries have been returning the cultural heritage of other countries, and we have taken advantage of this worldwide trend of repatriation of heritage to get back some of our own. But first of all we must ask ourselves, “Why do we need international organizations to protect cultural heritage?”

If we find important archaeological sites or remains through excavation, we often build a special exhibition building, but these cases have some problems or issues, such as the shape and position of the exhibition building, or the space and amount of remains that can be exhibited. Moreover, this exhibition is held to present specific cultural property to visitors, but sometimes that needs to be managed by several curators. So we often see inadequate utilization for aspects of the exhibition. If we want to utilize our cultural properties well, the persons concerned with the exhibition should supplement with relevant information about the cultural remains of that region, and should indicate the characteristics which allow for the classification of the heritage in question. This also includes providing labels, which is important because unfamiliar data can be explained and put in order with them. Of course, we have particular ways of dealing with our cultural heritage that are unlike the situation in Japan, but some parts of the Japanese example should be accepted, such as the utilization

of exhibition.

The conservation policies for archaeological sites and remains in Korea are very similar to Japan but some parts are different. First, the utilization of archaeological sites and remains should be implemented to make more information available for various persons interested in culture, including visitors and local residents. This part relates to the purchase of historical sites from landowners. Second, for continuous conservation of archaeological sites and remains, the central government should be more closely connected with regional cities through feedback systems after the master plan has been established, and facilitate both visitors and citizens. Third, the process of examination, verification, and application for conservation and restoration of archaeological sites should be done more slowly. It is not only a problem of money but also the importance of cultural heritage. After we examine the results of conservation and restoration for one of the historic sites, we can apply them to other sites. Additionally, we should think more about convenience facilities for visitors and local residents such as vending machines, smoking areas, and restrooms.

Although scientific dating has been used in age determinations in archaeology, stratigraphy and typology are relied on in many countries. The important point, as stated by M. J. Aitken, is when we use any type of scientific dating technique, whether the measured sample represents the age of the archaeological event or the materials of interest. Scientific age dating has advantages, and if we carefully use the method, there are no problems. But we additionally need to perform cross-checks of data with another country's laboratory. Accordingly, careful consideration is needed when using scientific dating results to determine the age of archaeological remains. So if we use it to check the typologies in our country, this scientific method can be a powerful tool.

Pollen analysis, together with the identification of seeds, fruits, tree species, etc., has been used in Japan to obtain very important information in many archaeological studies. Although these methods are useful for research in environmental archaeology, they have some problems such as the availability of fundamental data on ancient plants and the environment. Accordingly the application of some of these scientific methods will be restricted within narrow limits. That is to say, we must recognize the weak points, and establish many standards for widespread use in order to extract valuable information from archaeological sites through methods such as pollen analysis. If such standards are established, we can use them for environmental archaeology. In particular, the analysis of seeds, and of parasite eggs for identifying ancient toilet sites, can be applied more widely than just our country. Of course, we have always been using some of these methods, but standardized data and a wider array of methods must be applied more deeply to research in the archaeology of our country.

Additionally, our country requires training courses for non-professional photographers such as cultural properties specialists working at archaeological sites, and conservators at laboratories for cultural properties.

#### **IV. Conclusion**

This training course has been very useful for many participants, and provided opportunities for the



study of conservation and restoration methods of cultural heritage in other counties. Above all, it helped me reach the following conclusions.

In the conservation of cultural heritage, we should first of all always inquire of ourselves what is important about the matter at hand. For example, what kind of visitors to target, what are going to show to visitors along routes of exhibitions, and how to utilize buildings. And in the conservation and preservation of archaeological sites and remains, the significant problems for conservation and preservation of these materials in the present should have priority over all other things.

Additionally, we must take part in world committees and international organizations for the conservation and protection of cultural heritage. This has real meaning for the conservation of valuable cultural heritage.

In conclusion, it is extremely important to preserve, restore and utilize archaeological sites and remains appropriately, because they are possessions of great value to the people in every individual country, so we must conserve important information and artefacts of the ancient past through more processes and techniques which can be derived by scientific methods.

## **V. Acknowledgments**

First of all, I want to thank the organizers for their time and efforts in providing this training course, beginning with Mr. NISHIMURA Yasushi, Mr. TAROUDA Akinori, Mr. NAKAI Isao, MS. TANDA Kaoru, Mr. KINOSHITA Wataru, Ms. OTANI Yasuko, Mr. YAMASHITA Tsutomu, Ms. NISHIDA Michiko, Ms. HATA Chiyako, and all other staff members of ACCU, Nara.

I also would like to thank ICCROM, ACCU Tokyo, the Ministry of Foreign Affairs of Japan, the Nara prefectural and municipal governments, and the Nara National Research Institute for Cultural Properties.

I am also thankful to my government, my director, and to all the other participants in this training.

Again, I am really grateful to all parties concerned, and I look forward to sharing this knowledge with my institute and associates upon my return to Korea, and to continue communication and joint steps with all of the participants.

## **Samoa**

### **Tautala Silaulelei ASUA**

#### **Introduction**

Being a part of the 2008 training course on “Research, Analysis and Preservation of Archaeological Sites and Remains,” in Nara, Japan has provided me with a wealth of knowledge. The entire curriculum offered during this one-month course was extremely relevant to the current needs for the conservation and preservation of cultural properties in Samoa. An additional bonus of this training was meeting other participants from the fields of archaeology and conservation architecture. This provided for me an opportunity to be able to really engage and discuss with participants on how cultural heritage is working and being managed in their countries. Unlike the already established systems in each participant’s country where conservation and preservation of archaeological sites are a significant issue, Samoa is very different. This is mostly due to having no well-established system in place for legislation on, the administration and research of, and storage facilities for cultural properties. In spite of small provisions existing in a few legislative acts of some ministries in Samoa, these are not implemented, nor strong enough to ensure full protection, documentation, or conservation of cultural property.

The way in which preservation and conservation of cultural properties in Japan works seems to be successful because it is modelled around what is appropriate and suitable for Japanese culture. Another advantage is the amount of historical information they have to assist in their reconstruction projects, as well as the technical equipment and skills available to conduct such work. This entire training has been a wonderful learning experience which has broadened my view and given me more information to make much better decisions for any type of development that will occur in my work in Samoa. The remainder of this report will provide overviews on specific aspects from this training which I feel are applicable to the needs of my work in Samoa.

#### **The cultural properties system in Japan**

The administration and management of cultural properties in Japan, such as the designation, registration, and selection of cultural property, is an interesting system. Each municipal and prefectural government manages its own heritage, which is a realistic approach as it gives responsibility to local government for managing cultural property. The presentation of it becomes meaningful to that particular community. It also ensures proper management. The only issue I was not really comfortable with concerned the matters on cultural properties of national value recovered from privately owned land and the processes involved in securing the land for the sake of protecting cultural property. It was not clear to me how private landowners are compensated, and if such compensation is sufficient if the land they have is their only means for subsistence, and whether owners are willing to let go of property which may have been in their family for generations. The only reason why this particular point stood

out for me is due to it not being able to work in Samoa if such a process was in place, because a large percentage of land in Samoa is privately owned, and ownership is based on the traditional genealogical and chief system in Samoa.

However, this type of model does have potential for Samoa though it would need to be modified to suit the current resources available and utilise existent traditional cultural systems. However, before reaching this level, our main priority is to set up a nationwide survey for archaeological sites, which can be achieved through research-based projects from the programme at the National University of Samoa. The information gained from the system in Japan (and other countries) will assist greatly in the near future in planning for cultural property protection in Samoa.

### **Overview of site visits**

The sites we visited offered opportunities to see the implementation of the cultural property system in Japan. The archaeological excavations at the Nara Palace site were impressive, and even the system Japan has for training and hiring local people to assist in the excavation work is a really good model in providing employment opportunities for and getting support from the local community. Such a system would also be useful in Samoa.

The practise of reconstructing sites above the original archaeological remains is also another interesting way for preserving a site. This raises many questions such as how decisions are made in choosing to reconstruct a site, and whether this decision outweighs costs for the future maintenance of the reconstructions, or the decision of just reburying sites. For countries like Samoa where we lack the facilities and resources to conduct such work, the option of reburying is the best way for preservation. Concerning reconstruction, this too may pose a challenge if authenticity is to be a deciding factor because of the lack of reliable written documents and illustrative examples depicting past structures. The advantage for Japan is its rich evidence in the written and historical records to assist in such reconstruction and design of buildings. What was amazing to see on most of the site visits was the numbers of local visitors to sites, which confirms that the method Japan has for presenting the archaeological record to the public is very successful. When compared to the educational value and promotion of public awareness among communities it is evident that such physical presentations are important in encouraging community support and interest.

### **Importance of conservation**

The lectures and site visits dealing with conservation issues provided me with valuable knowledge about the conservation of cultural properties. It also has made me aware of the need to incorporate conservation planning in any archaeological research. Samoa's prehistory extends at least to about 3000 years ago, and the types of cultural properties we have range from pottery, stone artefacts, stone monuments and earthen mounds (the development of these last two structures may have occurred at least a thousand years ago). No reports of wooden materials have been recovered from archaeological contexts due to the acidity of soils. However, Samoa does have wooden buildings of historical value

constructed in the early 1900s which are part of Samoa's heritage. The lack of facilities we have would make conservation a challenge. However, the basics of conservation can still be implemented until such facilities can be developed. What was encouraging during these lectures was the alternative and cost-effective methods the lecturers provided for people who would not have the facilities to conduct such specialised work, and the opportunity to have collaboration with institutions in Japan. The knowledge given on the essential basics of conservation can be applied and adapted with existent traditional cultural practises of conservation in Samoa.

### **Concept of historical parks**

The visit to the Yoshinogari site in Kyushu was my first experience to see an archaeological site utilised as a historical park with full-scale reconstructions and exhibitions. There are many benefits of this kind of concept, because it enables a reconstruction of the natural surroundings with a time period of Japan's history such as the Yayoi period. The educational value of this type of presentation seems to be a success in Japan in terms of the amount of visitors each year to this site. Such a concept would be successful in Samoa with careful planning which incorporates and utilises the strengths of Samoan culture. The advantage of this type of presentation is in the visual and educational impact it would have on communities and young children.

### **The Kyushu National Museum**

This visit was surprisingly a huge highlight for me because it raised much awareness in me about the concept of a museum – and has somewhat opened my mind to the possibilities of designing a museum that is suitable to a cultural context. I was mostly interested with the design of the museum and the careful planning and considerations of storing, preserving, conserving and restoration facilities of cultural property (including the roof designed to maximise the natural resources in producing energy). The physical design of the Kyushu museum is an excellent model (in my opinion) to use and adapt accordingly to the natural and cultural strengths of countries. For the work that needs to be done in Samoa, a storage-type facility is more suitable for the current purposes of the work required. The advice and example of the storage area at the Kyushu National Museum was very valuable. Even the method of displaying cultural property for the public has a more interactive approach, making learning a memorable experience.

Concerning the presentation of cultural property for Samoa in a facility such as a museum, I believe this will require a reconsideration of what the concept of 'museum' means within the context of Samoa and for Samoans. This is mostly because living cultural heritage and historic cultural heritage are closely intertwined. However, the educational value of museums is popular amongst Samoan high school students, and the challenge will be in deciding how to maintain and continue increasing local interest in the present and future. The example of the Kyushu museum is worth utilising and considering for Samoa's case, so long as it is modelled within the interests of the Samoan community.

### **Country presentations, discussions and final week of discussions**

For myself personally, I found the country presentations to be excellent. To be able to learn from the other participants about their work and to see the problems and needs in their countries has provided me with very important things to consider in the development of archaeology and conservation of cultural properties in Samoa. The experiences shared by everyone have really helped me to be mindful of the potential problems that can occur and the need to have careful plans that will work for my country.

Concerning the lectures given by Professor Claire Smith and Dr Gamini Wijesuriya on the global trends and future issues in the preservation of sites, the themes raised in their lectures are very important. Their lectures encouraged a lot of dialogues and discussions amongst the participants (even after the lectures finished we would still discuss the topics). I believe that having such discussions in the beginning and at the end of the training is beneficial because it allows us to really apply the rest of the content from other lectures given by Japanese experts within the context of the global issues and within our own countries. It was very helpful to contextualise the situation in Samoa on a global level because it emphasises the need to ensure that the communities which archaeologists and conservationists serve really consider and communicate their needs – especially on the global level, because it allows room for learning and modifying global policies brought into developing countries to take place.

### **How I intend to use the knowledge gained from this training in my work in Samoa**

I am currently teaching archaeology at the National University of Samoa, which is a new programme. I will be able to share the knowledge and experiences from Japan with my students, particularly from all the lectures that were given, as these have enhanced my understanding immensely. In addition I hope to share with the government agencies I need to work with the applicable information we can use to begin moving toward creating foundations for protecting cultural property in Samoa. These are the following things I hope to do in Samoa based on the current needs in my country:

- Ensure that conservation plans are included in any archaeological research that takes place in Samoa.
- Emphasise the conservation and heritage aspect of cultural properties in the current archaeology courses I teach.
- Encourage and establish dialogues with existent agencies in Samoa who can help the development of heritage protection of cultural properties and eventually lead to legislation.
- Find ways that are cost-effective to implement the existent provisions to help move toward national recognition for the protection and conservation of archaeological sites and cultural properties.
- Really find out what heritage means from the Samoan point of view and use this to inform future developments for cultural property protection.

- To use parts of the cultural properties system in Japan as well as the models learned from other countries in this training, as examples for Samoa to consider and adopt and develop for what is suitable in Samoa, for Samoan people.

It should be emphasised that the development of cultural properties protection in Samoa is still in its infancy stage and has so much potential to become something that can be recognised and understood by all Samoans. The problems and issues shared by other countries and Japan will be used as learning experiences for Samoa to consider. This training has been of great value to me, as it has provided me with a special opportunity to learn from other countries and to be aware of the potential issues that could be encountered in the present and future. I am very excited to begin addressing these challenges with other agencies in Samoa, and especially with the new relationships I have made from this training.

## **Conclusion**

This training has broadened my view on many important issues. I am very grateful for the opportunity to be a part of this training and to have met such wonderful people during this month. I would like to thank all the organisers of this training for providing this forum for people working with heritage in the Asia/Pacific region. Coming from a developing country in the Pacific, I found this training to be of great use. It has expanded my knowledge on heritage and it has allowed me to adopt methods and ideas from other countries and modify them within a Samoan cultural framework. Even though it is true that Samoa is still in the early stages of protecting its heritage of cultural property, this training has given me so many things to really reflect on and try.

I would also like to thank all the lecturers and the experts, from Japan and other countries, and from the various agencies involved in the training, for sharing their time, their knowledge and experiences with us, and for enhancing my understanding on many topics and issues.

Also a special thank you to all the staff at ACCU Nara for all of your time, energy and happy attitudes in making all of us feel welcome. To all the new friends I have made through this training from the fifteen participating countries, I extend my sincerest gratitude to each of you for your kindness and friendship, and for sharing your knowledge, experiences and cultures with me. Your experiences and suggestions will have a valuable input in the work that needs to be done in Samoa. Fa'afetai tele lava☺!

## **Thailand**

### **Sermsuk PRAKITTIPOOM**

#### **Introduction**

This final report was produced as part of the participation in the Training Course in Cultural Heritage Protection in the Asia/Pacific Region 2008, on the theme of “Research, Analysis and Preservation of Archaeological Sites and Remains,” organized by the Cultural Heritage Protection Cooperation Office, Asia/Pacific Cultural Center for UNESCO (ACCU), in coordination with ICCROM and the Nara National Research Institute for Cultural Properties, and held in Nara, Japan from 9 September to 9 October 2008.

The aim of this report is to comment on how the knowledge gained of the subjects covered in this training course will be applied by the participants to our work as archaeologists in our countries of origin, or even on how it has refreshed the knowledge from college days of participants who have been working in the field for too long. This training course was mainly conducted through lectures, practical workshops, and field visits arranged to heritage sites such as the Heijo Palace excavation site and exhibition hall in Nara, the older capital sites at Asuka and Fujiwara, and sites on visits to Kyoto, Himeji, and Kyushu.

#### Course content

All topics presented during the training course, by specialists in a variety of fields, were well organized and highly relevant, focusing on Japanese archaeological research methodology and analysis of ancient remains. The lectures can be divided into broad categories in several issues, including the following.

- Legal protections for culture property
- Site management
- Conservation science
- Scientific methods in archaeology
- Environmental archaeology
- Archaeological recording and documentation
- Archaeological site presentation and utilization

To begin with, there was an introduction to the management of cultural properties in Japan, covering guidelines of management and funding in protection and conservation. There was an explanation of the system of Japanese legislation, and also of the international charters that have been declared for the protection and preservation of cultural heritage, and of the international organizations that are carrying

out these guidelines, and providing training, in the field of cultural heritage protection.

The management of cultural heritage sites begins with their excavation and research, both scientific and theoretical, in order to provide as much detailed information for future planning for promoting the site as a monument, and for academic frameworks. Then bringing scientific in preservation is necessary, especially for wooden remains and all other artifacts from archaeological excavation. During the lecture emphasis was given to alternative management strategies, such as site preservation in situ in which unearthed features are provided with a shelter to protect the site and provide for its utilization as well.

All the lecturers in the course are experts in their fields, especially the scientists in conservation. The training course provided new techniques involving specialized scientific equipment, for a variety of purposes in the study and analysis of remains. These included beginning the archaeological process with geophysical prospection by using radar, electromagnetic surveys, along with GIS and GPS to explore the potential of the site before excavation, so the work can be done more accurately. In the stage of conducting the digging in the field, scientific methods are still involved as in the case of environmental archaeology, which was covered in the course. This is one type of scientific interpretation of the evidence obtained from archaeological excavations. Other scientific methods include the age determination of artifacts, such as numeric methods including radiometric and chemical analysis, and relative methods such as dendrochronology and archaeomagnetic dating, which were some of the subjects of lectures.

Site and artifact conservation technology, the methods and techniques applied for the preservation of different materials such as wooden artifacts, metals and organic material remains, were covered. The different preservation techniques for wood, including the use of different chemicals, sugar alcohol acid ester method, vacuum freeze drying and alcohol methods, and epoxy resin methods, were taught during the lecture at the Nara National Research Institute for Cultural Properties.

The lectures and practical workshops on archaeological documentation and records gave the participants the opportunity to do drawing by measuring pottery, and to take rubbings of roof tiles. These methods are very useful for records during the archaeological research and investigations of a site, to get exact data from the archaeological remains. After collecting the data, as part as the archaeological process, they are published in documents about the field work as the legal and moral obligations of proper archaeological work.

### **Benefits acquired from the training course**

Altogether the subjects in the course were very interesting. But for a Thai archaeologist as me, the most attractive aspect of the course was the way Japanese put full resources into archaeological work



for both remains and sites, which has been neglected in the archaeological work in my country. But the main issue is to educate local people in Thailand to engage in understanding their past, and be part of the protective system in Thai society. The aim is to build knowledge of basic archaeology. The way to concentrate on that is to do presentations that explain the facts to the ordinary local resident who has interest in the field of archaeology, and the benefit of public education. Archaeology is the study of human activity in the ancient past. Therefore archaeological research has a more significant role than just the material study of ancient people; more than just work in that area it must also educate society. The conservation and utilization of cultural heritage impresses people much more than one can imagine.

One of the outstanding aspects of the Japanese is their emphasis on accurately understanding the nature of their own history and culture. They make it an important point to preserve and utilize appropriately most of their cultural properties, which are the heritage of all the people. The system aims for the processes of utilization to be ways to promote the understanding of the sites, to make people know and care about the richness and the value of their own heritage. Among the topics covered for helping people understand archaeological excavation was the technique of making transcriptions of soil profiles, showing different layers of soil in cross-section in the excavation trench, which can be used as a scientific record as well as for exhibitions in site museums so the visitors can understand the importance of the deposits in different layers. The importance of soil stratigraphy, applied to the proper preservation of the cultural heritage, can be very significant in conveying an image of the work.

The development and utilization of archaeological sites is a key focus of heritage management undertaken by various organizations. There are currently several archaeological site development projects underway. The major point of approaches to site utilization would be the reconstruction of the structures and archaeological remains, of particular interest as an example of similar projects at the completion stage. The various examples of site reconstruction also highlighted and reinforced the need for thorough historical and archaeological research in order to create the most accurate reconstructions possible.

Utilization requires a lot of creativity and wise choice. Especially relevant was an observation about the tension that can occur when trying to balance visitor needs with site preservation and integrity in the management of a site which may also fulfil a recreational role. The issue was particularly well highlighted by the utilization of field work. One way in which public education needs can be met while preserving a site's integrity and the visitor experience to the site, is where a museum and education centre have been created and given an appropriately creative exhibition site for an important cultural heritage. It is obvious that in the case of presentation of the site, by interpreting the remains to make people know and care about them, that the main concern is to give knowledge to all. The site managers will meet their goal if there is awareness by the people of the site as a part of their own history, and an

understanding of its value for preserving traditional wisdom.

Although not all of the ideas and techniques can be applied in all fields, all participants could learn and apply only what was suitable to their work. But the opportunities to learn and be part of this course were a good experience for all participants.

### **Acknowledgments**

Last but not least I would like express my thanks to the ACCU, the Japanese government, and ICCROM for offering this useful training course, and to the experts in all subject who gave the lectures and workshops. Also my grateful thanks to all the ACCU staff who organized this training course, and took responsibility to provide all participants with very good care. And to all of the participants who learned together in unity.

## **Uzbekistan**

**Djangar ILYASOV**

### **Introduction**

As I already mentioned in my country report, Uzbekistan is a country with very ancient and rich cultural heritage. Archaeological sites, ranging from Stone Age caves and Bronze Age settlements to medieval cities, have been objects of investigation since the last third of the 19<sup>th</sup> century.

The main building material for most archaeological sites is mud brick (khom ghisht in Uzbek) and/or beaten mud (pakhsa). After excavation these comparatively fragile materials are easily eroded by rain and wind, and the problem of protection arises.

Another problem is the methods and materials for cleaning, conservation, and restoration of archaeological artifacts, which are found during excavations.

As independent Uzbekistan is a very young state, many problems and questions concerning preservation of our rich cultural heritage are just now emerging.

The training course on “Research, Analysis and Preservation of Archaeological Sites and Remains,” jointly organized in Nara by Japan’s Agency for Cultural Affairs, the Asia/Pacific Cultural Centre for UNESCO (ACCU), the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), and the Independent Administrative Institution, Nara National Research Institute for Cultural Properties (Nabunken), gave the participants a very good chance to make an acquaintance with the rich Japanese experience in this field, i.e. with the latest methodology and technology on investigation, conservation, and management for utilization of archaeological sites. And I want to express my deep gratitude for the invitation to this training to Mr. Nishimura Yasushi (Director of ACCU), Mr. Nakai Isao (Director of International Cooperation Division, ACCU), Mr. Kinoshita Wataru (Associate Director of ICD, ACCU), and Mr. Gamini Wijesuriya (Project Manager, ICCROM).

### **Training Course**

Our training course, which was perfectly organized by the ACCU members and assistants, started on the 10<sup>th</sup> of September with a lecture by Ms. Claire Smith (Australia), President of the World Archaeological Congress. It immediately demonstrated to participants how seriously this training has been organized and how high the level of the specialists invited here as lecturers. In spite of some problems with Australian English at the beginning, from the lecture “Global Trends in Conservation of Archaeological Sites” we learned a lot about theoretical and even philosophical aspects of protecting Cultural Heritage, about the World Archaeological Congress and its activities, about new trends in the creation of the National Museum of the American Indian in Washington (“decolonising”), and about the study of heritage (namely, living heritage) of Australian aborigines and the looting of cultural heritage.

The second and third days of training were dedicated to country reports by participants. Sixteen members from fifteen countries, in alphabetical order, presented their countries' situations and principles of protecting cultural heritage in general, or through examples of particular archaeological sites. Without doubt, this part of training courses was the most stirring and interesting for all participants. For me personally it was a very informative two days, because it was the first time I met some people from places very far from my own country's part of the world. And I have a feeling that some of participants may have heard for the first time about Uzbekistan and its cultural heritage.

Subsequent lectures provided us excellent opportunity to learn about the topics of the "Cultural Property Protection System in Japan" and "Conservation and Utilization of Cultural Heritage Resources (Cases in Japan)" (Mr. Ichihara Fujio), "Maintenance and Management of Archaeological Sites in Practice," using the examples of the Nara Heijo Palace site (Mr. Shimada Toshio) and the Fujiwara and Asuka regions (Mr. Kurosaka Takahiro), "Scientific Dating Methods" (Mr. Nagatomo), "Environmental Archaeology" (Mr. Kanehara Masaaki), "Conservation Science of Archaeological Sites and Remains" (lecture and workshop, Mr. Kohdzuma Yohsei), "Documentation of Archaeological Artifacts" (lectures and workshops, Mr. Namba Yozo, Mr. Baba Hajime and Mr. Imai Koki), as well as "Photographic Documentation of Sites and Remains" (lecture and workshop, Mr. Nakamura Ichiro and Mr. Sugitomo Kazuki).

Important information about methods of archaeological prospection of sites was given to us in the lecture by Mr. Nishimura Yasushi. For me personally it was my first acquaintance with these advanced methods which are useful for the investigation of archaeological sites.

Very interesting and informative was the "Introduction to Dendrochronology," given to us by Mr. Okochi Takayuki. In Uzbekistan wooden structures and artifacts are usually not preserved at all (or they are in very bad condition), which means that using dendrochronological methods is very problematic. But in rare cases, for instance in mountainous areas, sometime we can find wooden artifacts or architectural remains. It means that this method can be used for dating our findings, as well as methods of conservation of wooden materials, which were demonstrated to us in the Nabunken laboratories, that could in some cases help preserve late medieval wooden structures, such as roof parts and columns of mosques, etc.

Very interesting and informative were our visits to the city of Uji and the study tour to Himeji castle and Kyushu. If Byodoin temple, Manpuku-ji temple, Ujigami Shrine and Himeji castle demonstrate the protection and utilization of remaining architectural monuments, the Yayoi site Yoshinogari is a very good example of the principle of reconstruction (in fact, of rebuilding), widely accepted in Japan, as one case of the successful utilization of an archaeological monument. I personally was very impressed by the successive realization of planned measures in Japan. When I visited the Yoshinogari site for the first time in October 1990, it was just opened to the public and only a small part of the remains had been excavated and reconstructed. Now we have a fully developed Historical Park with all the necessary access and infrastructure.

Very impressive also was our visit to the newest Kyushu National Museum. From the fantastic

building, so well harmonized with its environment, to the modern laboratories with fantastic equipment – all demonstrate again how the Japanese people and governmental agencies are guarding their cultural heritage.

At the end of the training course we enjoyed lectures by Mr. Gamini Wijesuriya on “Future Issues on the Preservation of Sites and Remains.” I think his own experience in protecting archaeological sites and architectural monuments in Sri Lanka, and different examples of achievements and problems in protecting cultural property elsewhere, which he also presented to us, as well as the discussions, in which we were all involved, made these last two days very interesting and fruitful.

Besides the lectures and workshops which were organized and assisted by ACCU members, I have used the weekends for visiting museums such as the Miho Museum (Shigaraki), Ancient Orient Museum (Tokyo), Sumitomo Collection (Kyoto) and the Kyoto University Museum, and for these possibilities I am also very grateful to the ACCU.

### **Conclusion**

In conclusion I want to note that the lectures and workshops which we experienced here in one month are only an introduction to the very rich Japanese experience in using advanced methods in the field of protection of cultural property. Certainly it is a big question which among these methods can the participants use in their own countries. It will be decided partly by our lack of practice and technical facilities (laboratories, equipment, etc.). But I am sure that the knowledge which all participants received in this training course will show us the direction in which we should try to be moving, and will help us in our work of protecting cultural heritage in different parts of the world.

## **Vietnam**

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### **1. Introduction**

I would like to thank Director Nishimura Yasushi and the ACCU officers, the lecturers (from ACCU, ICCROM, NNRICP), Japanese Professors, Director of my Institute and my Office who introduced, accepted, and gave me the good opportunity to join this training course.

I come from Vietnam – a country with a long history of many periods, from prehistory, to protohistory, to history. I am an archaeologist, working at the Center for Archaeological Studies (Southern Institute of Social Science – Ho Chi Minh City), and my research field is the prehistorical period of Southern Vietnam.

We have had some cooperative excavation programs with Japanese archaeologists at many sites in Vietnam for a long time. We have also gained useful knowledge and experience from those excavations, but it is only fieldwork and post-excavation skills. All archaeologists want to excavate archaeological sites in order to collect data for their research, but so many archaeologists lack knowledge of conservation and restoration. If they are trained in this knowledge, they would do their work better and more usefully.

I joined this training course in order to learn new methods, new research in other sciences, and new technology for archaeology from Japan. I found much important useful knowledge in this training course that will be useful in Vietnam.

### **2. ACCU 2008 – The chance for studying, sharing and connecting**

We spent 32 days, mostly in Nara, in this training course. In that time, we had 12 days in class with many lectures, 5 days on study tours, 4 days of presentations and discussion, and 9 days off for holidays. This was a very good time for us; we gained some new knowledge and awareness from the lectures in many fields of research: prospection methods, scientific analyses, documentation skills, and conservation and restoration science.

We shared the problems of our countries in presentations and discussions, which was helpful for us to compare the situation of each country and select the optimum solutions for our countries' problems.

The study tour was time we felt very important. It gave us vivid lessons to complement the lectures in class. We saw the works of Japanese conservators and their restoration in actuality. Moreover, there were many things we learned about management and utilization from the sites.

The holidays were a time to discover Japanese culture in Nara or some cities nearby, and experience the daily life of the people. We visited museums, temples, and other interesting places. At those sites, we saw that the Japanese people have a respectful attitude for the cultural properties of their ancestors.

It was also a time for sharing information about our countries with the other participants. One of the important things beside the knowledge in this training course is the network of connections between sixteen participants from fifteen countries of Asia, and the Nara ACCU association. In the future, this network will be useful and open for every researcher who has joined the ACCU program. We can share the information, the problems we will have in the future, and find out together better solutions than if we worked separately.

That is why I have called ACCU 2008 the chance for studying, sharing and connecting.

### **3. New methods learned from this training course**

There were so many lectures in this training course in different fields of research. Each participant also had a different field of research or work, but everybody found out something useful for their country from those lectures.



There were three types of lectures of particular interest to me: archaeological prospection, laboratory analysis methods, conservation and restoration methods.

I was very interested in archaeological prospection methods, because I am an archaeologist. In that lecture, I found solutions for the Cat Tien site and I could imagine clearly the capability of those methods and survey equipment (GPR, magnetometry, electromagnetic). In the future, my country could be equipped for our working with those machines. So we have to prepare by knowing about them now.

I was intrigued by the GPR (Ground Penetrating Radar) equipment in the lecture of Professor Nishimura, who said that archaeological prospection is very important before excavation. We could determine where we can get more information from a site for research. Moreover, we could prepare and plan for excavation better. Sometimes in my country we have excavated in the wrong place, outside of the archaeological site area. In that case, the excavation will affect the natural landscape.

The magnetometry and electromagnetic methods are applicable for archaeological prospection in Vietnam, but in the stone age (the period that I research) they may not be very useful.

The laboratory analysis methods were also interesting to me, especially the dating methods and pollen analysis. In Vietnam, we usually date by the 14C method, stratigraphic method, and typological method, and other methods are rarely used. We know there are so many methods that can be applied for dating an artifact or a site. I was intrigued by the luminescence dating method, because of in my country we rarely find charcoal (one material for the 14C dating method). With the luminescence method, we can use pottery, brick from architectural structures, or burnt stone, and as a dating analysis, it may be more accurate than the stratigraphic and typological methods we now use.

We also gained some skills in the documentation technique lectures (drawing, photography).

We learned how to make a good artifact drawing, how to take a high quality photo usable in scientific reports or publications.

The important point in the photography lecture that got more of my attention is storage conditions for film documents. Vietnam is a tropical country; the weather is always hot and the humidity high. With those conditions, film documents will be damaged after five to ten years. Therefore, we have to set up a small room with suitable conditions for storing our films as soon as possible.



The equipment for analysis and the laboratories of Japan are ideal for the analysis of many kinds of materials. I think it would be very difficult to set up a new laboratory system with such hi-tech analytic equipment in our country, and we also lack the technicians for those machines.

The risk prevention system (for fires, earthquakes) in most sites of Japan is a very important lesson for us when designing a master plan for our heritage sites.



The stratigraphy transcription method is a good way for making exhibits for the museum. In this training course, we learned how to make a replica of strata in an archaeological site. In my country, we

usually cut a wall of strata for exhibit in the museum, but it is very heavy and hard to preserve over a long time. Therefore, the stratigraphy transcription method is a better way for obtaining museum exhibitions from future excavations.

#### **4. Solutions for restoration and conservation of Cat Tien site**

After so many archaeological excavations conducted there, the Cat Tien site has become part of the National Heritage of Vietnam. In addition to the architectural features we have excavated, there are many auxiliary features unrevealed underground. That means we do not yet understand all about the Cat Tien site complex. There are many different opinions among the cultural property managers, conservators, and archaeologists. The archaeologists want to excavate for a more complete awareness of the Cat Tien site. The conservators are afraid of damage from the environment, and the cultural properties managers want to protect it and make public exhibitions. How to understand the site, public exhibition, and safety management for the Cat Tien site are difficult problems for us right now. I think the solutions below may be applied for the Cat Tien site case.



### ***Step one - for archaeologists (fieldwork)***

- Collect high-resolution aerial photos from government offices and analyze the ground surface and terrain in those photos. This is necessary because at human eye level when standing on the ground it is very difficult to recognize differences in the terrain.
- Mapping with high detail the Cat Tien site area, and locating all known architecture on this map for predictions about features still unrevealed. We know the distribution of architecture standing alone or in groups after they were excavated in years past. This step will help to predict the connections between architectures (perhaps internal roads, annexed architecture, surrounding walls, etc.).
- Combine the data we collect from aerial photos, maps and GPR (Ground Penetrating Radar) technology (if available) for surveying the unrevealed underground structures. After that, we will have all the data of the Cat Tien site area (layers of soil, structures underground, original terrain).
- From those data, we will decide which area to excavate continuously and which area we have to protect by not excavating.

### ***Step two - for archaeologists (analysis work)***

- With the luminescence method, we can use the brick of architectural structures for dating analysis. We could understand the dating and the order of building architectural structures, in isolated groups or at a highly complex site.
- We should use the pollen analysis method for awareness about the ancient environment. These data will be useful when we recreate the environment for a master plan for public exhibition in the future.
- In case we can find tombs, we should excavate in order to research the race of the ancient inhabitants. Human bones in those tombs are useful with DNA technology to answer the question “Who lived at and built the Cat Tien site in ancient times?”

### ***Step three - for conservators and restoration workers***

All of the architecture at the Cat Tien site had fallen down, and archaeologists have found only the foundations and fragmentary evidence of the upper structures. We do not understand about the shape and decoration of those structures. We can not compare them with other temples or towers because of very different designs for each. Therefore, restoration work in this site will face great difficulty.

Here are some opinions about conservation and restoration work for Cat Tien:

- Restoration of only the brick foundations of structures, fixing and stabilizing the extant walls and some corners with adhesive. In some corners that have been lost, we can restore by

comparison with other examples (the original plans of architecture in ancient times relied on symmetric designs).

- Build a protective wall surrounding individual structures or whole groups to prevent the floodwaters from the Dong Nai river from flowing up in the rainy season.
- Build a protective roof system that is large, stabilized, high, and well-aired in order to protect the structures from heavy rain and direct sunlight. The pillars of the roofs can be based on the protective walls – these walls will also indicate the observation routes for visitors.

#### ***Step four - for public exhibition***

- The Cat Tien site needs a master plan with the cooperation of government, scientists, archaeologists, architects, and conservators. In this master plan, we need a reasonable project, including the parking and exhibition areas, a museum, and annex buildings that are not only harmonious with the landscape but also useful for the visitors.
- Risk prevention systems and emergency plans for rescue at the site when disaster occurs must be an important part of the master plan. (Make in reference to some site in Japan)
- Build underground tanks in order to store water from the floods and reuse it in the dry season for watering plants or in some annex buildings. (Make in reference to the design of the Kyushu National Museum)
- Fit the solar panel system on the protecting roof of the structures for electric power purposes of the Cat Tien site. (Make in reference to the design of the Kyushu National Museum)



- Reconstruct models of the reburied structures underground (the original site) for exhibition purposes (tomb H2, architecture No. 7, Duc Pho, etc.). (Make in reference to some site in Japan)
  - Make small sized models, photos and 3D pictures for public exhibition.
  - Design observation routes for visitors to prevent damage to the site.
- Publish bilingual (Vietnamese and English) brochures for foreigner visitors in order to give them more information about the site.
  - Explain the importance and cultural value of the Cat Tien site to the local people through meetings, and provide training for the management staff, tour guides, for local collaboration with the protection and introduction of the site.

## **5. Conclusion**

The ACCU has provided a useful program for conservators, archaeologists, and cultural heritage managers. In this training course, we gained more knowledge not only in our own but also in many

different fields of work. Besides archaeological knowledge, I also learned about conservation, preservation, and restoration work. This will be useful for Vietnamese archaeologists. When we excavate an archaeological site in the future, I have to prepare plans for conservators for how to protect the site or artifacts.

I have to ask myself these questions beside the task of an archaeologist: “Is it necessary to excavate here?”, “How should architecture be restored from the evidence at the site?”, “Is in situ exhibition of the discoveries necessary?”, “How should we protect artifacts from the risk of damage?”. If I can answer those questions, it will be for the better in order to cooperate with conservators or restorers.

I am an archaeologist, and conservation and restoration are not my fields of research, but I think how to get data from the site and also protect the site is the most important thing because archaeology is special work. Only the archaeologists can read the data from their excavation - only just once - read and “destroy” (physical meaning) the data at the same time.



## **Appendixes**

- A. List of Participants
- B. List of Lecturers
- C. List of Tutors and Interpreter
- D. List of Staff Members, ACCU Nara



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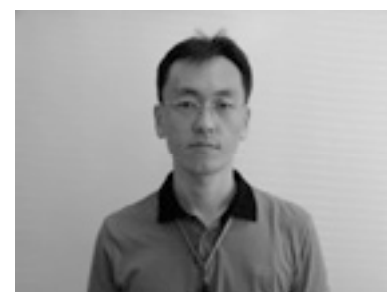


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