Training Report
on
Cultural Heritage Protection

Training Course for Researchers in Charge of Cultural Heritage Protection in Asia and the Pacific 2008 –Cambodia –

18 November - 19 December 2008, Nara, Japan

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

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Asia / Pacific Cultural Centre for UNESCO (ACCU)

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Practical training on wrapping of *kakejiku*, a hanging scroll, at Asuka Historical Museum

Observing Naka-gusuku citadel sites in Okinawa Pref.

After the opening ceremony

Awarding a certificate of completion to each participant at ACCU Nara Office

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Preface

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.

Our office has been conducting two types of the training course: the group and the individual. The group training course offers the opportunity to 16 specialists for about one month with two themes on alternate year: "Preservation and Restoration of Wooden Structures" and "Research, Analysis, and Preservation of Archaeological Sites and Remains." Meanwhile, the individual training course is organised for a few researchers from one country on the specific theme according to their requests.

Three researchers of archaeology were invited to the Individual Training Course 2008 from APSARA Authority (Authority for the Protection and Management of Angkor and the Region of Siem Reap) in Kingdom of Cambodia. Each belongs to different department of APSARA and had been engaged in the conservation and management of the Angkor Archaeological Park. In response to participants' requests, this individual training course was organized so as to provide them with systematic knowledge and practical techniques for the management and

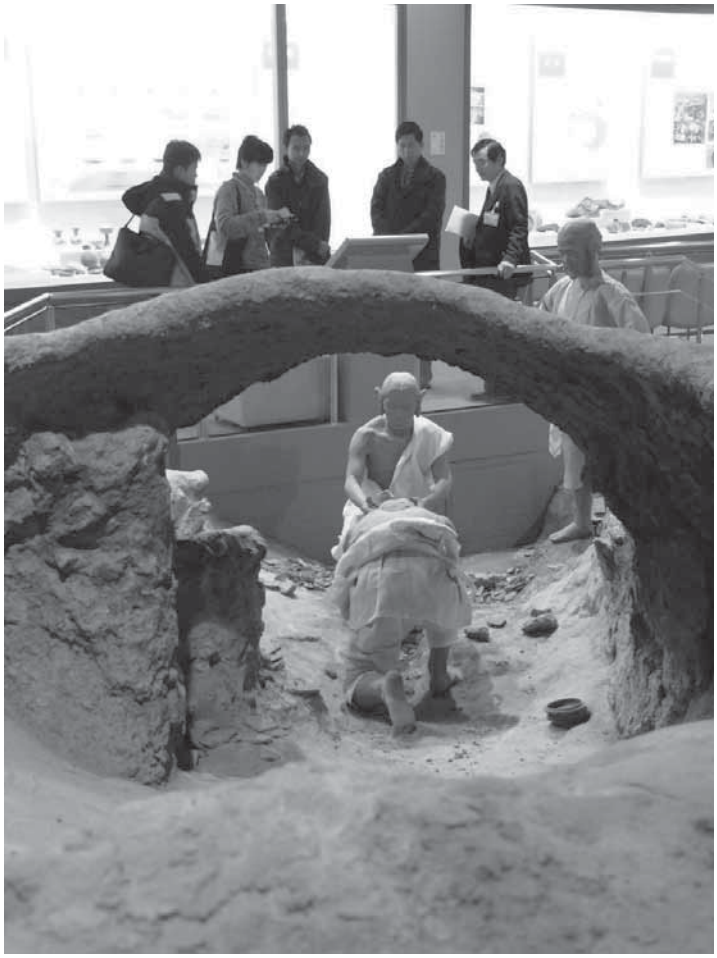
utilization of archaeological sites. Furthermore, participants had opportunities to visit on-site museums and observe many examples of site management for their future references. I am assured that they will make the best use of the training accomplishments in their cultural heritage protection activities back in Siem Reap, Cambodia.

Finally, I would like to express my sincere appreciation to the Agency for Cultural Affairs, Japan (*Bunkacho*), National Research Institute for Cultural Properties, Asuka Historical Museum, the Archaeological Institute of Kashihara, Suita City Museum, Chikatsu-Asuka Museum, Naha City Board of Education and other related organization for their cooperation and support.

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

I. Introduction

1. General Information
2. Programme Schedule



1. General Information

Training Course on Cultural Heritage Protection in Asia and the Pacific 2008 - Cambodia-

(18 November - 19 December 2008, Nara)

1. Organisers

The course is jointly organized by *Bunkacho* (Agency for Cultural Affairs, Japan); Asia/Pacific Cultural Centre for UNESCO (ACCU); and the National Institutes for Cultural Heritage, Nara National Research Institute for Cultural Properties.

2. Background

The Angkor complex of monuments, which is located in the suburbs of Siem Reap in the Kingdom of Cambodia, is one of the most significant archaeological sites in the South-East Asia with "outstanding universal value." Although various institutes in Japan such as JSA (Japanese Government Team for Safeguarding Angkor), the National Institutes for Cultural Heritage, and Sophia University of Angkor International Mission, have already contributed to the investigation and conservation of Angkor, it is still an urgent need to build the capacity in local researchers who are engaged in research and preservation of Angkor, where a huge number of sites are scattered about and magnificent sites extend to vast areas. When ACCU Nara implemented "The Workshop 2007 for Protection of Cultural Heritage at Siem Reap in Cambodia" in cooperation with APSARA (Authority for the Protection and Management of Angkor and the Region of Siem Reap), it was repeatedly requested to hold an additional or follow-up workshop in Cambodia for the human resource development. In consideration of their requests, the organizers have decided to invite three promising researchers from Cambodia to the above mentioned training course for the protection of cultural heritage in the country.

3. Date and Venues

Date: 18 November (Tue.) to 19 December (Fri.) 2008. [32 days]

Venues: Cultural Heritage Protection Cooperation Office, ACCU (ACCU Nara); Facilities and museums of cooperating organizations, etc.

4. Objective of the Training Course

The prospective participants in this training course belong to APSARA Authority and have been engaging in various aspects of protection work such as investigation, preservation, conservation, and utilization of the Angkor sites. Since maintenance and utilization of sites, in particular, will be the central issue in the protection of Angkor in the future, they have high expectation on acquiring systematic knowledge and techniques in that field. With such a background, a sequence of the individual training course aims at mainly providing participants

with the opportunity to master necessary knowledge and practical technique on site management and its utilization by learning from the accumulated experience as well as being exposed to many examples in Japan.

5. Training Curriculum

- Japanese Protection System of Cultural Properties
- History of Site Management in Japan
- Principles and Plans of Site Management
- Maintenance and Utilization of Archaeological Sites
- Governing Bodies for Site Management
- Practical Training at Excavation Sites
- Field-work: Management and Utilization of Archaeological Site in Practice, etc.

6. Participants

LIM Srou (Mr)

Archaeologist, Department of Conservation of Monuments in the Angkor Park and Preventive Archaeology, APSARA Authority

Date of Birth: 8 November 1977 (Age 31)

CHHUON Samedi (Mr)

Archaeologist, Department of Management of Territory and Housing in the Angkor Park, APSARA Authority

Date of Birth: 24 April 1983 (Age 25)

IN Sovann (Mr)

Archaeologist, Department of Conservation of Monuments outside the Angkor Park, APSARA Authority

Date of Birth: 18 December 1984 (Age 23)

7. Process of Invitation

H. E. Mr Bun Narith, General Director of APSARA Authority, recommended three applicants suitable for the above mentioned invitation programme as participants. Then ACCU Nara Office has determined to accept three applicants as participants through close examination.

8. Others (Past achievement to accept participants)

Since 2000 when the above-mentioned invitation programme started, twenty-nine participants from twelve countries have been accepted.

9. Certificate

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

10. Language

The working language of the course is English.

11. Expenses

Expenses for the training course will be borne by ACCU and comprise the following:

(1) Travel expenses:

Each participant will be provided an economy-class return air ticket between the international airport nearest to their residence and Kansai International Airport, and domestic transportation costs to and from the airports and between the training venues in Japan.

(2) Living expenses:

Participants will be provided daily subsistence allowances during the training course, beginning from 17 November (Mon.) to 20 December (Sat.) 2008. Arrangements for accommodations will be made by ACCU Nara.

12. Secretariat

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2. Programme Schedule

Date			Lecture		Venue
November	18	Tue.	Opening Ceremony /Orientation		ACCU Nara
	19	Wed.	The Museum and Archaeology		NNRICP, Asuka Historical Museum
	20	Thu.	Concepts of the Archaeological Site Museum		
	21	Fri.	Management of the Archaeological Site Museum in Practice		
	22	Sat.	The Future of the Archaeological Site Museum		
	23	Sun.			
	24	Mon.			
	25	Tue.	Introduction to Japanese Protection System of Cultural Properties	Introduction to the World Heritage Sites in Japan	ACCU Nara
	26	Wed.	On-site Lecture: Buddhist Monuments in the Horyu-ji Area (World Heritage Site)		Nara Pref.
	27	Thu.	On-site Lecture: Historic Monuments of Acients Nara (World Heritage Site)		
	28	Fri.	On-site Lecture: Historic Monuments of Acients Kyoto (World Heritage Site)		Kyoto
	29	Sat.			
	30	Sun.			
	1	Mon.	Introduction to the Organization of NNRICP and its Facility Tour	Practical Training at Excavation Sites	NNRICP
	2	Tue.	Practical Training at Excavation Sites		
	3	Wed.	Practical Training at Excavation Sites		
December	4	Thu.	History of Site Management	Principles and Plans of Site Management	NNRICP
	5	Fri.	Fieldwork: Management and Utilization of Archaeological Sites in Practice		Nara Pref.
	6	Sat.			
	7	Sun.			
	8	Mon.	Maintenance and Utilization of Various Archaeological Sites	Investigation and Maintenance of *Zuto* (a kind of stupa in Nara)	NNRICP
	9	Tue.	Fieldwork: Management and Utilization of Archaeological Sites in Practice		Osaka Pref.
	10	Wed.	Fieldwork: Management and Utilization of Archaeological Sites in Practice		Nara Pref.
	11	Thu.	Maintenance of Nara Heijo Palace Site / Various Governing Bodies for Site Management in Japan		NNRICP
	12	Fri.	Visit: Reconstructed Buildings and Historic Monuments in Nara Heijo Palace Site		NNRICP
	13	Sat.			
	14	Sun.	*<Travel from Nara to Okinawa (Naha city)>*		
	15	Mon.	Fieldwork: Management and Utilization of Archaeological Sites in Practice Visit: Main Citadel Sites (World Heritage) in Okinawa		Okinawa Pref.
	16	Tue.	Fieldwork: Management and Utilization of Archaeological Sites in Practice Visit: Shurijo Castle Park, the Imperial Mausoleum and Historic Garden (World Heritage) in Okinawa		Okinawa Pref.
	17	Wed.	*<Travel from Okinawa (Naha city) to Nara>*		
	18	Thu.	Writing Final Reports		ACCU Nara
	19	Fri.	Submission of Final Reports / Closing Ceremony		ACCU Nara

ACCU Nara: Cultural Heritage Protection Cooperation Office, Asia/Pacific Cultural Centre for UNESCO
NNRICP: Nara National Research Institute for Cultural Properties

Ⅱ. Summary of Lectures

Summary of Lectures

18 November (Tue.)

■ Opening Ceremony

The opening ceremony was held at ACCU Nara Office. Three participants from Cambodia, Mr Lim, Mr Chhuon and Mr In, had an orientation on the training schedule. After that, they moved to Kashihara city and visited the Museum, Archaeological Research Institute of Kashihara, Nara Prefecture.

Mr Nishimura, Director of ACCU Nara, welcomed three participants

19 November (Wed.)

■ The Museum and Archaeology <Mr Sugiyama and Ms Sato / NNRICP and Asuka Historical Museum>

- An explanation of the organization and role of the Nara National Research Institute for Cultural Properties (NNRICP) and the position of Asuka Historical Museum in NNRICP.
- Participants observed the display of the museum and galleries at the Department of Imperial Palace Sites Investigations (Asuka/Fujiwara) with detailed explanations and learned display techniques and the role of the display rooms.

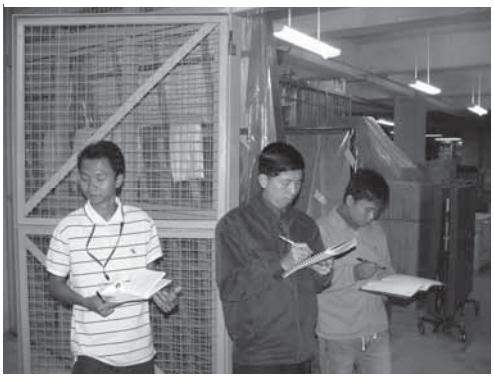
A lecture by Mr Sugiyama

20 November (Thur.)

■ Concept of the Archaeological Site Museum <Mr Sugiyama and Ms Sato / NNRICP, Asuka Historical Museum>

- An lecture on the National Museums in Japan
  - ▸ their outlines and the roles
  - ▸ Publicity activities and exhibition work
  - ▸ Effective methods for collection, storage, research and display of archaeological artefacts in the museum
- Ms Sato made a presentation on her research, “Analyses of Ceramics Excavated around the Post-Angkor Capital and Port of Ponear Loeu” and answered questions by participants.
- An introduction of the Cambodia Project promoted by NNRICP

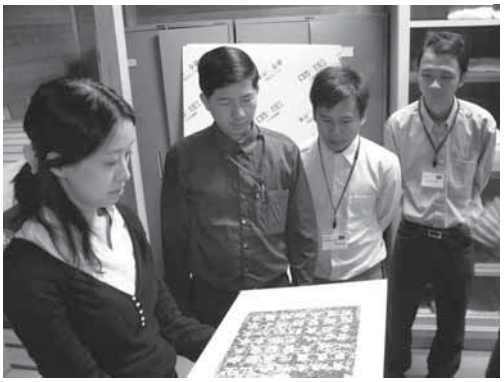
Observing the special exhibition at Asuka Historical Museum



At the storage of Asuka Historical Museum

Visiting the Asuka-dera Temple site

Practical training in wrapping the ink rubbings



Ms Sato showed a valuable ink rubbing, stored in the museum.

Discussion on the protection of cultural properties from the legal point of view

21 November (Fri.)

■ **Management of the Archaeological Site Museum in Practice** <Mr Sugiyama and Ms Sato / NNRICP, Asuka Historical Museum>

- Discussion on the current status of the museum in Cambodia and the future pictures of the museum in Cambodia based on the present situation
- Observation of excavation sites in Nara Prefecture
  - Asuka-dera Temple site by NNRICP: the progress of the research activities was explained by Mr Toyoshima and Mr Ichi.
  - Ishigami site by NNRICP: the research status was explained by Mr Aoki.
  - sites at Gose City by AIKNP: the overview of the structural remains at the site was given by Mr Motomura

22 November (Sat.)

■ **The Future of the Archaeological Site Museum** <Mr Sugiyama and Ms Sato / NNRICP, Asuka Historical Museum>

- Practical training in packing and wrapping archaeological artefact: wrapping *Sue* ware, unglazed stoneware from 5~6 C to 12 C, produced and used in Japan.
- Practical training in packing appropriate for storage:
  - paintings
  - ink rubbings of artefacts
  - replicas of artefacts
- A lecture was given on archaeological features and artefacts excavated from Asuka Pond site (7C~8C) at the Nara Prefecture Complex of Manyo Culture
- Visiting *Ishibutai* Tumulus: observation of the stone burial chambers with an explanation.

25 November (Tue.)

■ **Introduction to the Japanese Protection System of Cultural Properties** <Mr Nishimura / ACCU Nara>

Mr Nishimura lectured on the overview of the legal systems fro protection of cultural properties in Japan.

■ **Introduction to the World Heritage sites in Japan** <Mr Nakai / ACCU Nara>

Mr Nakai explained on the "Convention concerning to the Protection of World Cultural and Natural Heritage" adopted by the General Conference of UNESCO in 1972, and World Heritage sites in Japan.

Mr Nakai (left) lectured on the nomination process of the UNESCO World Heritage.

26 November (Wed.)

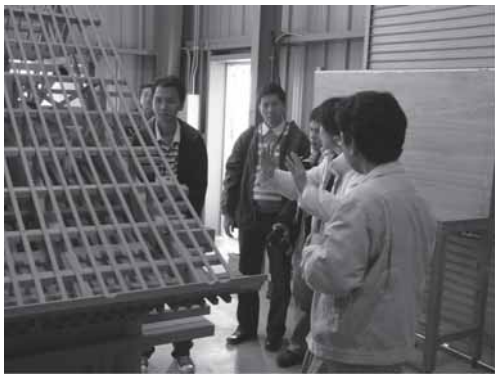
■ **On-site Lecture: Buddhist Monuments in the Horyu-ji Area (World Heritage site)** < Mr Yamada/ Mr Nakai>

A study tour of World Heritage sites in Nara Prefecture.

- Horyu-ji Temple: *Sai-in* (West Buddhist Monument), *To-in* (East Buddhist Monument) and *Hozo* (Treasure House)
- Yakushi-ji Temple: restored and reconstructed wooden structures
- Toshodai-ji Temple

At the Toshodai-ji Office of Cultural Property Preservation, Mr Yamada explained the structure and colouring of the *Kon-do* (Golden Hall) which he discovered in the work of dismantling repairs.

At Horyu-ji Temple, one of the oldest wooden buildings existing in the world



At the Toshodai-ji Office for reconstruction

27 November (Thur.)

■ **On-site Lecture: Historic Monuments of Ancient Nara (World Heritage site)**

<Mr Nakai and Mr Kinoshita>

A study tour of World Heritage sites and the National Museum in Nara Prefecture.

- Todai-ji Temple: *Daibutsu-den* (Great Buddha Hall), *Nigatsu-do* Hall, and *Kaidan-in* Hall.
- Kofuku-ji Temple: *Tokon-do* Hall, *Nanen-do* Hall, five-storied and three-storied pagodas.
- Nara National Museum: Buddhist statues of Japan.

In front of *Daibutsu-den,* the Great Buddha Hall

28 November (Fri.)

■ **On-site Lecture: Historic Monuments of Ancient Kyoto**<Mr Nakai>

Participants visited the World Heritage sites in Kyoto City, and observed how the sites were managed and viewed various prevention devices against fire.

- Kinkaku-ji Temple
- Nijo-jo Castle
- Kiyomizu-dera Temple

They were also guided to *Sannei-zaka* Street, one of the "Important Preservation Districts for Group of Traditional Buildings" designated by *Bunkacho,* and discussed on the preservation of the old street with traditional buildings alongside.

At the Kiyomizu-dera Temple

At the Nijo-jo Castle

1 December (Mon.)

■ **Introduction to the Organisation of NNRICP and its Facility Tour**

<Mr Inoue / NNRICP>

- A lecture on the basic structures of castles and its chronological changes in reference to citadel sites in the East Asia:
  - Fujiwara Palace Site and Heijo Palace Site in Japan
  - Chang'an Palace Site in China
  - Thang Long Citadel Site in Viet Nam
- Field study at the excavation sites under the guidance of Mr Inoue with detailed explanation.
  - site at the western hallway of *Daigokuden*, the first Imperial Audience Hall
  - the 440th excavation of Heijo Palace Site
- Preparation for the practical training of excavation in tomorrow

At the excavation site of Heijo Palace Site

2 December (Tue.)

■ **Practical Training at Excavation Sites** <Mr Ishimura, Mr Kunitake and Mr Imai / NNRICP>

Practical training at the 440th excavation site in the Heijo Palace Site. After the explanation of the structural remains there, participants excavated ancient column holes and unearthed buried artefacts.

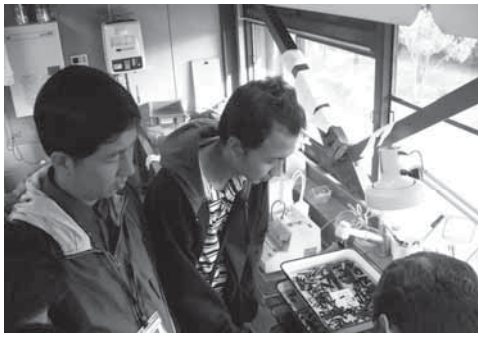
The 440th excavation site in Heijo Palace

3 December (Wed.)

■ **Practical Training at Excavation Sites** <Mr Inoue, Mr Ishimura, Mr Kunitake and Mr Imai / NNRICP>

- Visiting the 440the excavation site at Heijo Palace Site, participants observed how to take photographs of whole view of extensive archaeological sites.
- Museum tour of the Nara Imperial Palace Site Museum, while listing to the brief research history of the Heijo Palace Site and observing collections.
- A facility tour of NNRICP:
  - ▸ the storage rooms for wooden objects, roof tiles and earthenware
  - ▸ seeing how unearthed artefacts were organized at the Institute
  - ▸ the photo studio; overview of photography of archaeological artefacts

Standing on the scaffold for photography of sites



Observing how wooden artefacts are treated, organized and stored at NNRICP

4 December (Thur.)

■ **History of Site Management / Principles and Plans of Site Management** <Mr Hirasawa / NNRICP>

- "History of Site Management in Japan" which included the legal protection system of cultural properties, principles and planning for protection, and three principles for site management.
- A detailed explanation of techniques for

Mr Hirasawa lectured on Site Management

Observing a collection of cylinder *Haniwa, at the Museum of Arch. Institute of Kashihara*

At Karako-Kagi Archaeological Museum

Observing a replica of the stone chamber, reconstructed with original stones

Mr Uchida lectured on Utilization of Sites

preservation and utilization of sites; discussion on the management issues from every angle with reference to many examples of site management in Japan, sites of settlement and ancient tombs.

- Introduction of the reference book, *Guide for Management of the Historic Sites, etc. - for preservation and utilization-*, published under the editorship of *Bunkacho*, Agency for Cultural Affairs, Japan.

5 December (Fri.)

■ **Field Work: Management and Utilization of Archaeological Sites in Practice I**

Participants visited Umami Tumulus Park, and observed how ancient burial mounds had been preserved at the Nagareyama Tumulus. They also visited:

- the Museum of Archaeological Institute of Kashihara, Nara Prefecture, and learned the various display method of artefacts in the museum.
- the Hokenoyama Tumulus in Sakurai City, and observed the tumulus site management and its display boards.
- the Kurozuka Tumulus Museum in Tenri City, and observed the restored burial chamber and display methods of structural remains, and the explanation of tumulus site management.

8 December (Mon.)

■ **Maintenance and Utilization of Various Archaeological Sites** <Mr Uchida / NNRICP>

- A detailed explanation of diverse methods of site management, current issues of sites utilization, and challenges in management with reference to some representative examples of restoration: the kilm sites and temples site in Japan.

■ **Investigation and Maintenance of *Zuto*, Head Stupa** <Mr Uchida / NNRICP>

- Mr Uchida lectured on the restoration process of the *Zuto* Stupa, which was designated as a national historic site: from its excavation to the present status of preservation based on the restoration report.
- Visiting the *Zuto* Stupa while asking questions and discussing the preservation issues of the preservation of the stupas.

Visiting *Zuto*, Head Stupa in Nara

9 December (Tue.)

■ **Field Work: Management and Utilization of Archaeological Sites in Practice II**

<Mr Fujiwara / Suita City Museum>

- A presentation was given on the preservation and utilization of *Sue* ware kilns in Suita City.
- Detailed explanation was also given on dismantlement and reconstruction work of the 34th kiln site.
- Participants observed kiln site of Sue ware and roof tiles, displayed in the exhibition rooms as well as other unearthed artefacts.
- They also visited the 34th kiln site which had been dismantled and reconstructed outdoors of the Suita City Museum, and discussed on management issues of the kiln site after reconstruction.

Display of the kiln site, reconstructed in the Suita City Musem

<Mr Morita and Mr Kanegae / Historic Sites in Takatsuki city>

- At the Archaeological Research Center of Takatsuki city, a lecture on the investigation process and preservation of Shin-ike *Haniwa* Kiln site, was given: its challenges and management issues.
- They toured the *Haniwa* Factory Park on the Shin-ike site, designated National Historic Site, and observed the current status of site management; how Haniwa Kiln site was displayed; and the reconstructed *Haniwa* Factory.

At the reconstructed *Haniwa* Factory at the Shin-ike site

Observing the 34th Kiln site

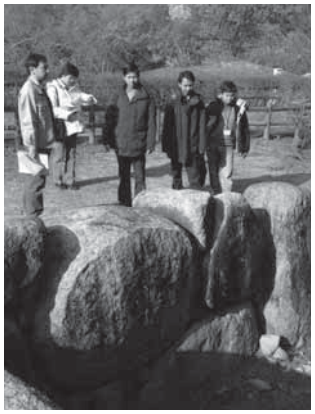
10 December (Wed.)

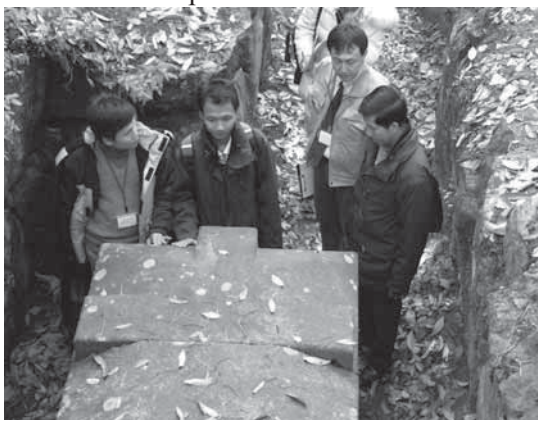
■ **Field Work: Management and Utilization of Archaeological Sites in Practice III**

<Mr Hirose / Chikatsu Asuka Museum>

- A facility tour at Chikatsu Asuka Museum, which specialized in the *Kofun* period in Japan (from third to seventh century) with detailed explanation.
  - ▸ practical operations
  - ▸ management principles
  - ▸ display methods
- Participants also visited the Ichisuka *Kofun* Group which consists of about 260 tumuli in 23 groups in the historic park around the museum and observed the preservation status of them.

Guided tour by Mr Hirose at Chikatsu Asuka Museum





Observing a corridor-style stone chamber of the Ichisuka *Kofun* Group

The reconstructed wooden frame of the well in the Heijo Palace Sites

Observing reconstructed *To-in* Garden in the Eastern Palace

11 December (Thu.)

■ **Maintenance of Nara Heijo Palace Site**

■ **Various Governing Bodies for Site Management in Japan**

<Mr Awano / NNRICP>

- A lecture on site management of the Heijo Palace Sites with detailed explanation and various examples of other historical site management system in Japan.
- An explanation of various governing bodies for site management such as:
  - ▸ Yoshinogari Archaeological Park in Saga Pref.
  - ▸ Heijo Palace Sites in Nara Pref.
  - ▸ Pompeii Sites in Italy
  - ▸ the Archaeological Park in Xanten, Germany
- Under the guidance of Mr Awano, participants toured the Heijo Palace Sites while hearing issues of site management and restoration, and examined how structural remains were displayed there.

- They also visited the Garden in the Eastern Palace, which had been excavated and reconstructed with detailed explanation of the management issues of gardens and reconstructed buildings.

12 December (Fri.)

■ **Reconstructed Buildings and Historic Monuments in Nara Heijo Palace Site**

<Mr Shimizu / NNRICP>

- Mr Shimizu lectured on the principles and practical techniques of reconstruction of structural remains, taking *Daigoku-den* (the First Imperial Audience Hall) which is currently being reconstructed as an example.
- They toured the construction site while hearing explanations of the work process: from its excavation survey; manufacturing the miniature reconstruction model; and to making the reconstruction planning for the work.

Mr Shimizu showed around storage facilities at NNRICP

- Observation of restored structures of Yakushi-ji Temple and Chukon-do Hall of Kofuku-ji Temple that is currently being restored.
- At Kofuku-ji Temple, a preliminary lecture on the outline of reconstruction plan was given by using the scale models of the wooden structures to be reconstructed as teaching materials, and then they toured the site where the foundation of the building was being reconstructed.

At the reconstructed site of *Daigoku-den*, the First Imperial Audience Hall

14 December (Sun.)

■ **Fieldwork: Management and Utilization of Archaeological Sites in Practice** <Mr Miyagi Hiroki, Mr Ikeda and Ms Sato / Okinawa Pref.>

- Under Mr Miyagi's guidance, participants toured Nakijin-jo Castle with explanations:
  - ▸ Excavation of the citadel sites
  - ▸ Situation of site management
  - ▸ Practical techniques for reconstruction of structural remains

At the Nakijin-jo Castle

- They also observed excavated artefacts displayed at the Nakijin Hsitoric and Cultural Center.

On the structural remains of the Katsuren-gusuku Castle

At stone-wall restoration site in the Naka-gusuku Castle

Observing the Shuri-jo Castle site, guided by Mr Uezu

Outside the huge stone-walled enclosures of Tamaudun site

15 December (Mon.)

■ **Fieldwork: Management and Utilization of Archaeological Sites in Practice** <Mr Nakasone, Mr Miyagi Shin-ichi, Mr Kinjo, Mr Tokuchi, Mr Ikeda and Ms Sato / Okinawa Pref.>

- At Zakimi-gusuku Castle in Yomitan-son Village, Katsuren-gusuku Castle in Uruma City and Naka-gusuku Castle in Nakagusuku Village, lectures were given on:
  - An overview of the citadel sites
  - Various restoration methods of the sites
  - Utilization of the sites
  - Restoration work of the collapsed stone-wall structures of castles
  - Display methods of structural remains
- Participants visited Okinawa Prefectural Archaeological Center, and toured the organization section, the management section and the storage.
- They also learned a series of research operations: from excavation of the site to the documentation in the form of archaeological reports.

16 December (Tue.)

■ **Fieldwork: Management and Utilization of Archaeological Sites in Practice** <Mr Uezu, Mr Hayashi, Ms Futenma, Mr Ikeda and Ms Sato / Okinawa Pref.>

- At Shurijo Castle Park, Mr Uezu lectured on an outline of the site, challenges in site management and utilization methods while touring around the restored castle site.
- At Tamaudun, a mausoleum in Shuri, Mr Hayashi lectured on the site management of Tamaudun.
- At Shikina-en Garden, Ms Futenma explained an overview of the garden and introduced the disaster prevention systems.
- They also visited the Okinawa Prefectural Museum and viewed exhibitions from ancient times to the modern period.

17 December (Wed.)

■ **Observation Tour of Museums and Sites** <Mr Ikeda and Ms Sato / Okinawa Pref.>

- Visiting the Naha Municipal Tsuboya Pottery Museum and viewing the exhibitions and relocated kiln sites, participants deepened their understanding of Okinawa's ceramic industry.
- They also visited preservation facilities of *Nobori-gama* and *Fuenu-kama,* both of which were designated as Cultural Properties by Okinawa Prefecture; and the traditional pottery craftman's house, Arakaki House, which is the National Important Cultural Property with kiln sites.

At the *Fuenu-kama* kiln site

18 December (Thur.)

■ **Writing Final Reports**

Participants wrote final reports for the individual training course.

19 December (Fri)

■ **Submission of Final Report / Closing Ceremony <**ACCU Nara**>**

Mr Nishimura, Director of ACCU Nara awarded a certificate of completion to each participant with words of congratulations and appreciated their participation with keen interest in the training programme. He also wished their experience in Japan would significantly contribute to the area of site management in Cambodia.

Mr Nishimura, Director of ACCU Nara, awarded the certificate of completion to each participant praising their efforts in the training course.

Ⅲ. Participants' Country Reports

Country Report

LIM Srou
Conservator
Department of Conservation of Monument in Angkor Park
and Preventive Archaeology, APSARA Authority

Efforts to Preserve Angkor Park

1. Efforts to Preserve the Park

The civil war of the last three decades not only left Cambodia with social instability, a shortage of national experts, and insufficient financial support for conservation and research projects, but it also left many remote historical and archaeological sites unprotected in the jungle, for example the monumental complex of Prah Khan Kompong Svay.

Historically, preservation and restoration work in Cambodia may be regarded as having started around the mid 10th century, in the reign of Rajindravarman II (944 to 968 A.D). The earliest known example is a record of the king's restoration of Yasodharapura (Angkor City), when he returned the capital there from Koh Ker. King Jayavarman VII completed the restoration of Srah Srang, along with some other monuments and parts of the social infrastructure, at the end of 12th century in the vicinity of the Yasodharapura, after the invasion of Cham around 1177. Moreover, in the 16th century, some four hundred years after the construction of Angkor Vat, a certain Queen Mother gave honor to her royal son named Chey Chettha I, who undertook the restoration of Preah Pisnulok (Angkor Vat temple). This was mentioned in an inscription as follows:

> I was struck by the work of my royal child who, full of devotion, restored this Preah Pisnulok [Angkor Vat] of old Cambodia to its true ancient form. At this sight I was overcome with joy (Ang, et al., 1998: xvi).

Furthermore, some evidence remains of conservation work done at Angkor Vat. As one illustration of this, we see that square columns on the third floor (Bakan) were replaced with round ones removed from lower floors. Based on inscriptions and such examples, it is evident that Khmer people in the past already knew how to preserve or restore their ancient temples.

After the treaty between France and Siam in 1907, returning Battambang, Sirei Sophoun, and Siem Reap to Khmer territory, French researchers realized that all kinds of archaeological and historical sites must be preserved and restored through the efforts of the international community. Since then many monuments in the Angkor area have been the subject of preservation and restoration efforts.

After Cambodia gained independence from France, the then prince Norodom Sihanouk paid a visit to Angkor in 1960. Thereafter, he expressed his interest in protecting the national cultural heritage, for the sake of Khmer nationalism. He established the Royal University of Fine Arts (RUFA) in 1965, in response to the necessity of protecting heritage through the hands of the nationalists.

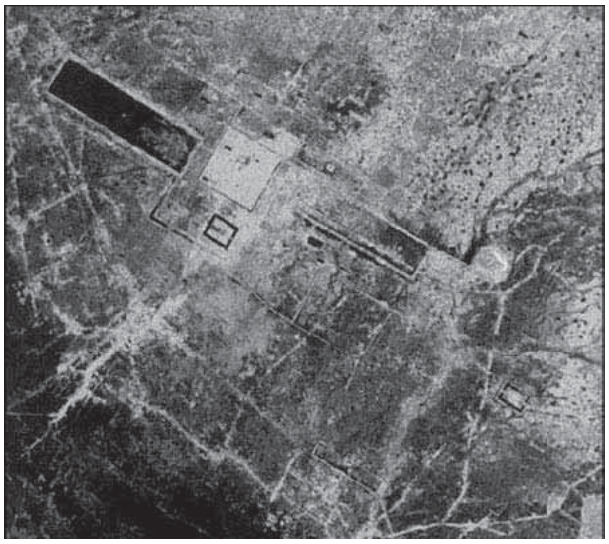
Many Cambodian students advanced their studies in archaeology and architecture at the bachelor level, while some also proceeded to master and doctoral studies abroad. Others have been working at the archaeological sites of Angkor, in the fields of restoration, ethnology, archaeological investigation, etc. This promotion of RUFA prospered until 1975, the year of darkness under the occupation of the Khmer Rouge. The Faculty of Archaeology and Architecture were closed for almost 20 years during the war, until its reopening in 1989.

At the time of the overthrow of the Khmer Rouge regime in 1979, only a few Khmer conservation employees had survived. Some national properties as well as valuable documents had been destroyed. Fortunately, many documents, reports, images, and illustrations were still available in France, through which we can conduct research.

In 1984, the Government of Cambodia (the Revolutionary Party of the People's Republic of Kampuchea) declared that "Culture Renaissance" was a major policy for the reconstruction of Cambodia (Endo, 2006: 1). Moreover, in May 1988, Prime Minister Hun Sen declared that "culture renaissance" was a pillar of rehabilitation of Cambodia (ibid). With these declarations the government appealed to the international community in the field of culture to save Angkor, which was in danger. India was the first nation that came to save Angkor.

Then in 1989, His Majesty King Norodom Sihanouk appealed to UNESCO for urgent assistance for the protection of Angkor. While this call voiced a concern long felt by and for the Khmer people, it also resonated in a greatly changed context (Ang, 2000: xvi). Meanwhile, once Cambodia became accessible to the international community from the early 1990s, many international institutions from Europe, Japan, the United States, and other Southeast Asian nations came to help Cambodia with various aspects of safeguarding the historical complex of

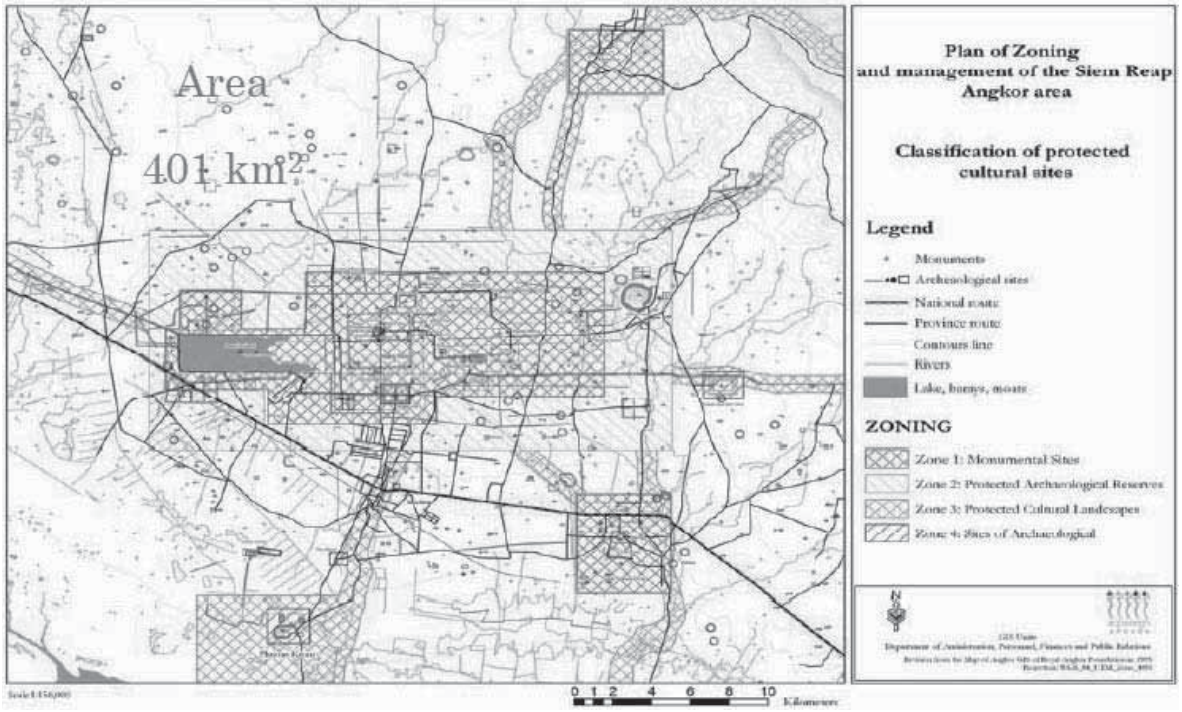
Angkor, such as restoration, preservation, and research, etc. Angkor is a special region of monuments and a large area of cultural properties. Moreover, after the Angkor Park had been registered as World Heritage in 1992 and after the new government was formed in 1993, a national institution named the APSARA Authority[1] was created by Royal Decree signed by His Majesty the King of Cambodia in 1995. The APSARA authority is responsible for managing the policies and techniques, as well as for overseeing the administration and finances for the vast area of 401 km^2 spreading over the Angkor plain between the Kulen plateau to the north and the Tonle Sap on the south, encompassing over 500 sites of archaeological, anthropological, or historical interest.



Angkor Park

This image was acquired by the Spaceborne Imaging Radar-C/Xband Synthetic Aperture Radar (SIR-C/X-SAR) on the 15th orbit of the space shuttle Endeavour on September 30, 1994. The image shows an area approximately 55 by 85 km that is centered at 13.43° N.

[1] APSARA is Authority for the Protection and Management of Angkor and the Region of Siem Reap.



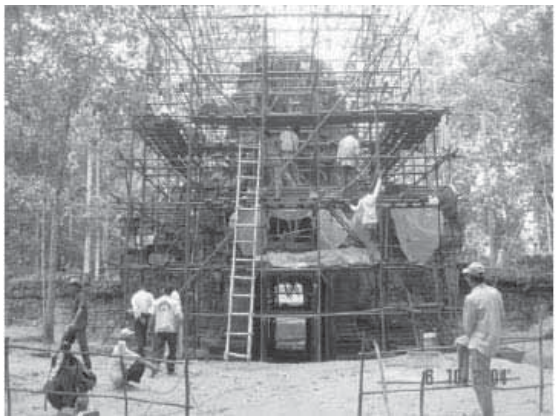
2. Internationally-supported Preservation of the Angkor World Heritage

2.1. Restoration Work to Date

This section outlines the work done at the Angkor World Heritage Site which has been initiated by international organizations, and conducted since Angkor was inscribed as World Heritage in 1992. Today in Angkor Park, several international institutions continue this work on the maintenance and restoration of the temples.

- The Indian team came to Angkor once again to restore the temple of Ta Prohm (the project of the Indian team at Angkor Vat had finished before 1993). India sent the first international research team to Angkor after the fall of Khmer Rouge. The work of this team at Angkor Vat, begun under the post-1979 government and without concerted national or international collaboration in project formulation, was completed in the early 1990s (Ang, 2000: 161).
- The Indonesia team worked at Angkor over a period of four years to restore each of the entrance gates to the Royal Palace, and the team also progressively transferred technical skills and project management responsibilities to its Khmer national partners.

- The Baphuon complex was restored by a team financed by the government of France. Other restoration work by the Ecole Française d'Extrème Orient (EFEO) was conducted on the sector of the Royal Terrace of Angkor Thom, which had been partially restored before the war. EFEO was also involved in the inventory of art objects stored in the Angkor conservation facilities of Siem Reap.
- The Japanese government team for Safeguarding Angkor (JAS) has been taking care of three temples, including the Bayon and the northern library of Angkor Vat.
- The Sophia University Angkor International Mission (another Japanese team) has been carrying out a series of archaeological investigations at Beanteay Kdei temple and the Tani kiln site. Apart from the research projects mentioned above, Sophia has a project dealing with restoration work on the western causeway of Angkor Vat, and some maintenance work at the Banteay Kdei temple.
- The government of the People's Republic of China (PRC) has undertaken restoration of Chau Say Tevoda temple.
- The World Monuments Fund (WMF) continues to provide maintenance work at the temples of Preah Khan, Tasom, and Bakheng.
- The German Apsara Conservation Project (GACP) is involved with a research and restoration project on the sculptures of the Apsaras in Angkor Vat. This project is one of the most interesting, because they are using chemical products to treat different problems of the stones.
- An Italian team, in cooperation with the APSARA Authority, completed its restoration of the Pre Rup temple and the southern exterior moat's staircases of Angkor Vat.
- A Swiss government team, in cooperation with the APSARA Authority, is conducting the conservation and research project of Banteay Srei temple.



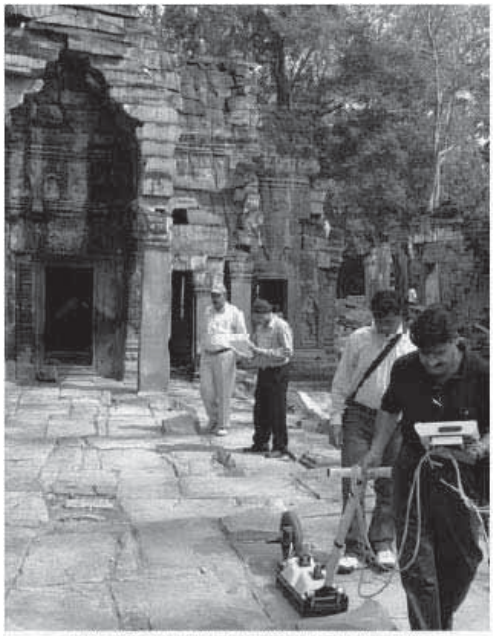
Ta Som temple, WMF / APSARA

Baphoun temple, EFEO

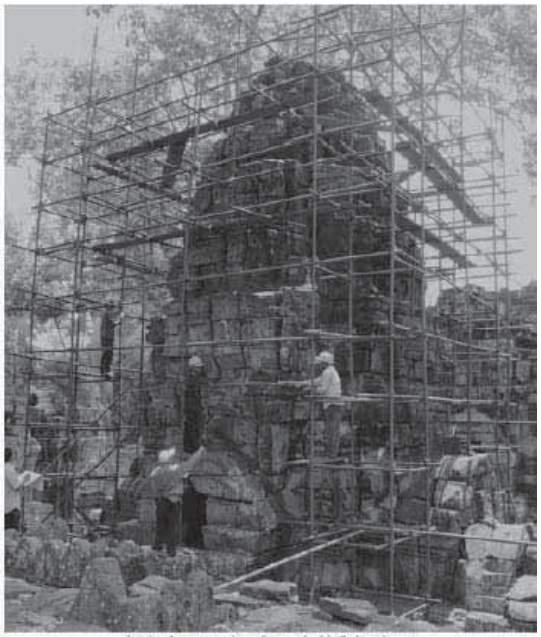
Western causeway of Angkor Vat project, Sophia / APSARA

Banteay Sri temple conservation project, Switzerland /APSARA

Preah Ko temple, GACP / APSARA



G.P.R. SURVERY FOR DETECTION OF TREE ROOTS UNDER FLOOR



In-situ documentation of tower inside 3rd enclosure

Archaeological Survey of India (ASI) conservation and restoration of Ta prohm temple

2.2. Collaborative Research

In addition to conservation and restoration work, the APSARA Authority and its partners have established collaborative projects promising to significantly broaden understandings of Angkor history. One such project in collaboration with other international organizations is the EFEO research program on the history of Angkor Thom. The French government FAC project, in collaboration with APSARA, has unearthed a series of previously unrecorded religious foundations and structures. This project aims at understanding the evolution of urban development at Angkor Thom, from its beginnings to the enclosure of the city under Jayavarman VII, and to the period following the move of the Khmer capital out of Angkor. Another project concerning the evolution of urban development of the Angkor region has been carried out by EFEO, APSARA, and the University of Sidney (at Prei Kmeng temple).

An additional collaborative project has been established between APSARA and the University of Otago (New Zealand). This project concerns the prehistory of the Angkor region. The area selected for this research was at the foot of Baksie Chamkrong temple.

Research on the Khmer ancient kilns at Tani village has been conducted by the Sophia University International Mission and the Nara National Research Institute for Cultural Properties team, in collaboration with the APSARA Authority. The research was aimed at understanding the history of the Khmer ceramic industry in the Angkor period, and included

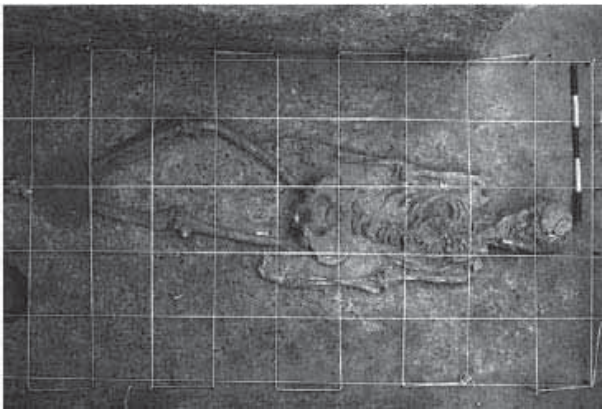
work to reinforce the structure of kiln A6 and reconstruct kiln B1, to protect these ancient kilns.

In another project, the Japanese National Research Institute for Cultural Properties, Tokyo, is responsible for research examining temple environments, as well as methods of cleaning and protecting stone. The project selected the Ta Nei temple as its experimental center.

Apart from these projects, there is a new stage of archaeological research called LARP, Living Angkor Road Project, which is a collaborative project of the APSARA Authority and Silapakorn University. The project is investigating the royal road from Angkor to Phimai, taking inventory of all ancient structures along the way, conducting cultural studies, and in the last stage, combining all data to make a digital map of all information identified between Angkor and Phimai.

Besides the above collaborative research, through friendly cooperation between the APSARA Authority, Sophia University, and the AEON 1% Club of Japan, an archaeological museum has recently opened at Angkor Park. The museum is officially named the Preah Norodom Sihanouk-Angkor Museum. It is enriched with a large collection of Buddha statues, architectural elements, and bronze objects excavated in 2001 from Banteay Kdei temple, one of the well-known Buddhist temples built by the last Angkorian Great King Jayavarman VII in the late 12th century. There are 274 sculptures stored inside the museum, of which 120 items of different styles and periods are exhibited to the public.

Excavation work at Baksie Chamkrong
(Otago University /APSARA)



Excavation work at Prei Khmeng
(EFEO/APSARA)

Excavation work at Banteay Kdei Sophia University

Excavation work at Tani kiln site (NARA/ APSARA)

Living Angkor Road Project Silapakorn University

Preah Norodom Sihanouk-Angkor Museum (Angkor Park)

3. Work Conducted by the APSARA Authority

This section outlines the work which has been conducted at Angkor Park by the APSARA Authority. These activities represent great efforts to preserve Khmer cultural heritage. Despite the support for preservation and restoration received through collaborative research projects as described above, which help achieve the dual goals of promoting the cultural heritage itself and human knowledge about Angkor, the Apsara Authority alone has responsibility for the protection and management of Angkor and the region of Siem Reap. Based on this duty APSARA has undertaken policies concerning maintenance, restoration, and tourism development in Angkor Park, and urban development in the town of Siem Reap.

3.1. The Training Programs

In order to help achieve its goals APSARA has created the Ta Nei Training Programs to provide knowledge in the field of cultural heritage management. These training programs last for five or six months, and participants are graduates from different departments such as archaeology and architecture of the Royal University of Fine Arts, the National Institute of Management and the National Institute of Technology, or the Faculty of Law and Economics at Maharushi Vedic University. The Ta Nei graduates are recruited by APSARA. They join new technical teams operating throughout Angkor Park, including a unit for the conservation of Angkor Thom, a maintenance unit, a village and temple research unit, and a cultural heritage inventory unit, etc.

In addition, the APSARA Authority leads students of the Department of Archaeology (Royal University of Fine Arts) on a fieldtrip to Angkor every year. During this study trip, students explore civilization at Angkor from pre-historical to modern times, with particular emphasis on the Angkorian and post-Angkor periods. APSARA contributes to this study trip by providing teaching, logistic, and financial assistance.

Additionally, the APSARA Authority collaborates with the Ministry of Tourism to provided short training sessions for tour guides. The participants are selected from different tourist agencies, catering to French, Japanese, and English speaking tourists.

3.2. Maintenance Work

Today, some of the most difficult and expensive problems are presented by monuments that are part of Angkor Park. Many have suffered from catastrophes; they are broken, they have collapsed, and are at risk of further collapse in the near future. Frequently the problems can be traced back to poor site maintenance, which resulted from the abandonment of the site for a long time due to the war, providing some remarkable examples of the effects of vegetation, particularly from numerous trees and bushes that have grown on the periphery and within the complex itself. Thus daily maintenance is one way to help lessen the amount of serious damage to the temples. Accordingly the maintenance team takes on tasks such as building wooden scaffolding to support some temples which are on the verge of collapse. Additionally, when there is heavy rain, blocks of stone/brick often fall from the temples. In order to prevent their collapse, the maintenance team is constantly intervening with temporary supports that are inserted as stopgap measures until permanent restoration work is possible. Besides such

intervention, the maintenance team at Angkor Park has other important tasks to do every day, such as cutting, removing, and killing the roots of small trees that grow on the temples, and cutting and removing dead tree branches which could fall on the temples, plus removal of trees which storms have brought down. Trees growing on the stones must be removed before they grow too big and cause serious damage to the structures.

3.3. Conservation Work

Some of Angkor's monuments are at risk from multiple threats. These arise in part from damage caused accidentally or unwittingly, and has been unchecked for a long time. Faced with the duty of managing Angkor Park, the APSARA Authority has many tasks requiring action. The daily management of Angkor Park has progressively widened, to include work such as the conservation tasks carried out in the Angkor Thom compound. The team is preparing a new pedestrian path along Angkor Thom's enclosure wall, from the South to the West Gate. Along the three-kilometer wall visitors can see the Run Tadev (waterwork) as well as the Presat Chrung located at the wall's southwestern corner. Additional guards have also been assigned to Angkor Thom. Mobile guards now cover different areas requiring the most protection within Angkor Thom.

Bearing in mind the site security arrangements, particularly given the dangerous condition of some parts of the monuments, it is necessary to think about the safety of visitors, whether tourists or local people, and the site staff has placed protective barriers at the temple to discourage visitors from standing on certain structures or touching the sculpted relics. To some degree security issues dealing with these various problems overlap, but it is helpful to look at each problem area separately.

The supervision program calls for systematic protection of the visitors and temples. Signboards have been posted to help enforce these rules. It is important that the safety of visitors and temples be carefully considered, especially in areas of the monumental structures that are dangerous. The signboard method is also necessary for giving information to help visitors understand the monuments' conditions and the rules at the site. This method is used at various monument sites in Angkor Park.

Conservation at the Kbal Spean-Banteay Srei group consists of delimiting the areas accessible to visitors. These emergency measures for the protection of this site and temples have already been enacted. They aim primarily to save the site and temples from further

damage cause by unregulated tourist flow. Temple guards and workers have also been assigned to this area. The addition of a bridge and stairs, among various small improvements, facilitate the visit without intruding into the natural environment. Barriers have also been erected to discourage visitors from walking on the riverbed reliefs.

Conservation of Rolous has been carried out with the stationing of guards at the area. In order to preserve remote sites, guards are also be provided for lesser known temples such as Prasat Trapeang Phong, Prasat Prei Monti, and Prasat Totung Thngai. From now on the visitor can easily spend a full day appreciating the area's heritage. Beside the daily maintenance, a joint project between APSARA and GACP is being conducted. The restoration worksite is the Preah Ko temple. APSARA is responsible for providing and paying local and technical workers as well as purchasing necessary equipment available in the country. GACP provides technical consultation and makes available necessary equipment which cannot be bought in Cambodia. Today, the Preah Ko worksite is overseen by two Cambodian technicians who are responsible for a team of 20 skilled workers.

The Jayavarman VII conservation project has been carried out with the provision of guards to manage a group of sites which were all built under the reign of Jayavarman VII: Ta Prohm, Banteay Kdei, Srah Srang, Neak Pean, Krol Ko, Prasat Prei, Ta Som, etc. As the first step, the team has begun to improve pedestrian access where it is needed most, and to assign guards to ensure protection and sanitation as much as possible; another task is the responsibility for daily maintenance of the temples at the sites.

The efforts as mentioned above at these sites are part of a high level supervision program to ensure high standards of site maintenance responsibility by the APSARA Authority and international organizations. They are intended to draw attention to the present state of development of the preservation activities for cultural heritage in the Angkor World Heritage Site.

4. Toward the Preservation of Monuments and Sites Still Overlooked

Despite these efforts to preserve a number of monuments and sites of interest by the Authority and international organizations, such work does not cover all of Angkor Park, where many other monuments and sites still require measures for their preservation. Some of these monuments and sites are at risk from multiple threats, having suffered the same conditions already described: catastrophes, poor site maintenance resulting from long-term abandonment

of the sites, and the adverse effects of vegetation, leaving many structures broken, partially collapsed, and at risk of further collapse in the near future. The emergency consolidation work needed at the site is to stabilize the structural monuments. Thus, we should urgently take them into consideration, prevent further damage, and protect these monuments and sites in order to preserve them.

What would be the best way to achieve the preservation of these monuments and sites? There are many strategies for this, including for instance preservation in a form that resembles the original appearance, or passive management with little intervention that might change the site.

However, it is important to consider these alternatives carefully, since a mistaken decision could cause harm to the sites. To minimize the risk of any wrong decisions we need to consider why these sites are important and worth preserving, and accordingly, the value of the sites should be taken into account. These are the values associated with the sites as heritage resources, providing justification for their protection and conservation. These include cultural identity and other contemporary socio-cultural values. The assessment of such values is a subjective matter for society and the experts involved. Therefore, it is necessary to consider and weigh conflicting values, for value judgments may naturally change over time in accordance with socio-cultural conditions.

As part of the maintenance activities, the first step is to construct visitor path access to the temples, but planning has to be adapted to the environmental surroundings of the monuments and sites.

For preliminary maintenance work at the sites, we have to clear the entire monument and site surface, and particularly remove seedlings and brushwood by using the methods and materials of the country itself. The cleared area, when maintained and protected either as a grassy area or with low forms of ground cover vegetation, provides for the safeguarding of the foundations of the structures and enables the built components of each site to be better appreciated. This approach to vegetation clearance has already been adopted at some temples in Angkor Park. In some cases, limited productive use of certain selected areas, typically remote ones, could provide an appropriate secondary use that has the advantage of ensuring that the vegetation is kept under some form of control.

Meanwhile, persons involved with maintenance work should visit all the monuments once a month and uproot plants as they appear, before they grow too big and encroach upon the

structural monuments, since the growth of vegetation and bushes can cause great damage to the structure of the sanctuaries. The process of removing the vegetation helps to minimize over time the speed of decay of the monuments, which cannot be neglected in temple conservation work. The removal of undesirable vegetation on the physical structure of the monuments is undertaken using carefully targeted application, to cut the top growth, and where necessary, to treat by applying small quantities of chemical herbicide to the cut stumps. It is noteworthy that the present regular maintenance work practices at some monument sites, such as at Preah Khan, Bayon, Banteay Srei, and other temples within the park of Angkor, already include the use of this methodology to control the growth of vegetation from the physical structure of the monuments. Review of this experience is necessary; the potential benefits have to be reviewed periodically for the wider adoption of this method.

Moreover, the reinforcement of structural elements will take the preservation program a stage further, as it will involve the careful dismantling of certain structural elements that are threatened with collapse, and restore them after carefully recording their structure prior to any intervention. Consolidation efforts are considered here, and priority is given to emergency stabilization rather than complete restoration work, by using supports such as provisional emergency wooden propping or scaffolding, to strengthen the monumental structures wherever they are cracked, deformed, or are at risk of collapse. This structural consolidation is a necessary objective contributing to emergency measures to save the structure of the monuments and for their stabilization, until urgent and priority operations are undertaken. Moreover, emergency consolidation should be a daily duty of the maintenance team. The team is to be gradually reinforced with additional laborers and technical supervisors. Additionally, to ensure daily technical maintenance, the team should respond to urgent problems as they arise. This is to be done considering the extent of the site and the fragility of the monuments, particularly during the rainy season. When there is heavy rain, blocks of stone often fall from some of the monuments. In order to stop their collapse, there should be constant and immediate intervention with temporary supports that are inserted as stopgap measures, before permanent repairs and restoration can be made. Daily maintenance is one way to help lessen the amount of serious damage to the temples.

This is a very simple and effective method for the reinforcement of failed structures, due to the fact that bending typically causes a vertical creak to appear midway along the span. Also, some less visible cases of intervention include the removal or replacement of individual

stones, while broken construction elements should be tied together.

A combination of different methods of consolidation and strengthening is recommended for the reinforcement of structural elements of the monuments, depending on the degree of damage and whether a temporary or permanent solution is required.

The strategy for the protection and preservation of the monuments and sites still overlooked is an essential step towards ensuring the proper preservation of these sites. Because they includes both physical and non-physical cultural heritage, we need to protect, preserve and minimize damage or destruction to the values of the sites, which make them culturally significant. This is done by control of the elements that make up their physical condition, and also the social environment of the sites, such as the safety of visitors, etc.

Less visited temples that do not get international attention for preservation in the Angkor area include those shown in the photographs below.

Chao Srei Vibol temple

Banteay Ampil temple

Banteay Prei temple

Kraol Ko temple

Beanteaythom temple

Taoun temple

Leakneang temple

Pnombok temple

Pnomkrom temple

Prasattor temple

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Country Report

CHHUON Samedi
Special Staff
Department of Land and Habitat Management
in Angkor Park, APSARA Authority

Present Situation and Needs for Cultural Heritage Preservation in Cambodia:
Understanding the Scope of Preservation and Management of the Living Cultural Heritage in the Angkor Region

1. Introduction

Angkor is first and foremost a unique cultural heritage of the Cambodian people. The expanse of magnificent monumental remains, situated in modern-day Cambodia's northern province of Siem Reap, have for centuries been the foundation of Khmer identify.

After several decades of war, Angkor was in danger. Thus, through collaboration between Cambodia authorities and the international community, committing their efforts in preparation to fulfill the conditions of UNESCO, Angkor was inscribed on the World Heritage List in December 1992.

The protected zones for the Angkor site have been designated in five categories with different levels of protection as shown as below (see also Fig. 1).

Zone 1: Monumental Sites are areas which contain the most significant archaeological sites in the country and, therefore, deserve the highest level of protection.

Zone 2: Protected Archaeological Reserves are areas rich in archaeological remains which need to be protected from harmful land use practices and the consequences of inappropriate development.

Zone 3: Protected Cultural Landscapes are areas with the characteristics of a landscape that should be protected on account of its traditional appearance, land use practices, varied habitats, historic buildings, or man-made features from the past or of recent origin, which contribute to the cultural value or reflect traditional lifestyles and patterns of land use.

Zone 4: Sites of Archaeological, Anthropological or Historic Interest include all other important archaeological sites, but of less significance than Monumental Sites, that need to be safeguarded for the purposes of research, education, or tourist interest.

Zone 5: The Socio-economic and Cultural Development Zone of the Siem Reap/ Angkor Region, which covers the whole of Siem Reap province.

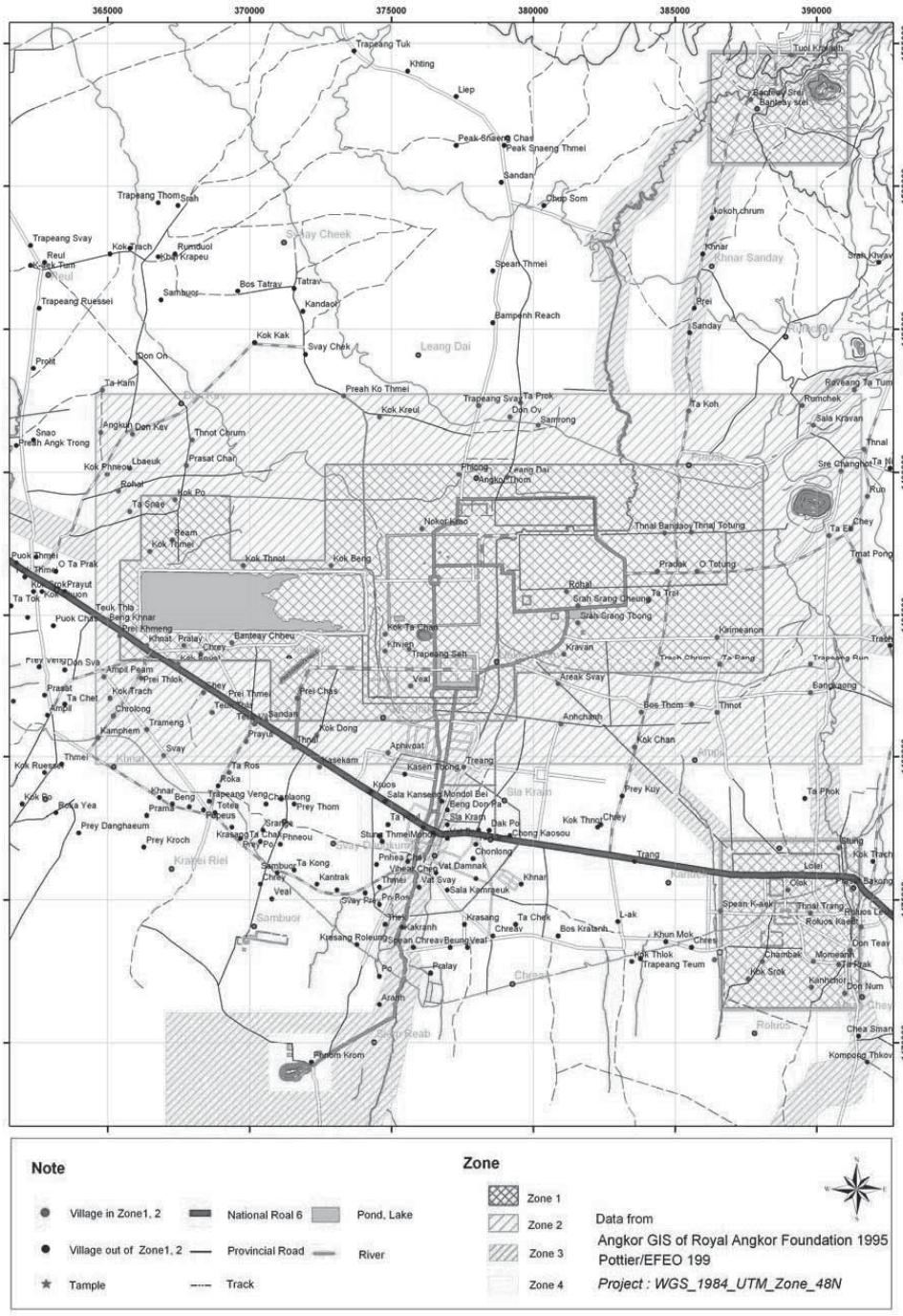

Fig. 1. Map of protected zones for the Angkor site

To fulfill the conditions for inscription on the World Heritage List, and to promote laws for the protection of cultural heritage, the APSARA Authority was created by Royal Decree in 1995, and is the principal authority for the oversight and management of the Angkor World Heritage Site.

The council of Ministers provides technical supervision, and the Ministry of Economy and Finance provides financial supervision for the APSARA authority. All of APSARA is under these leadership agencies, and is responsible for: protecting and enhancing the culture, environment, and history of the Angkor region; refining and applying the master plan on tourist development, according to the five zones defined for the protection and management of the archaeological site of Siem Reap; supporting the poverty reduction effort of the Royal government; cooperating with the council for the development of Cambodia on investment and projects related to the mission of APSARA; working with ministries, funders, government and non-governmental organizations on all projects related to its mission.

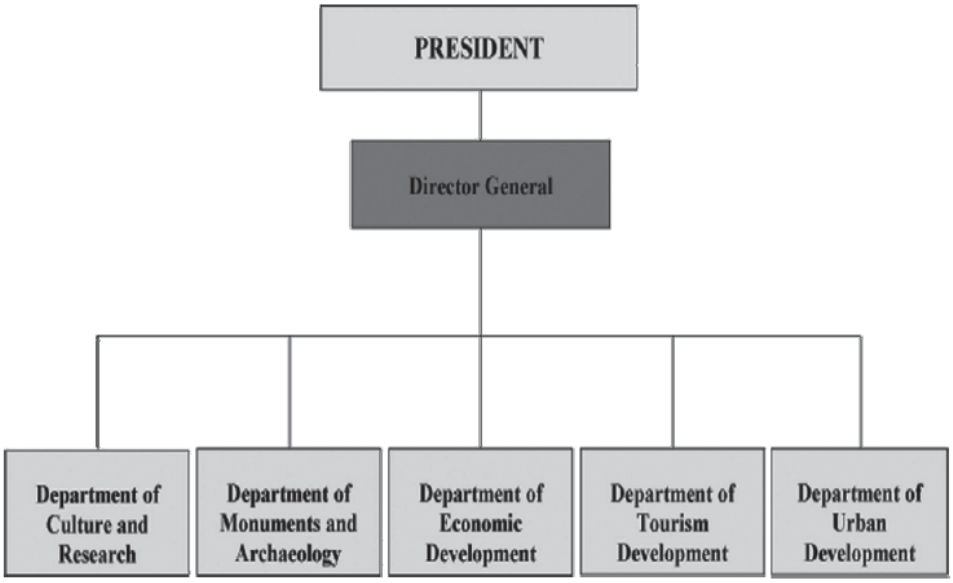

Fig. 2. APSARA Authority organization chart (1995)

2. History of the organization

The executive direction of APSARA as created in 1995 called for the implementation of policy in collaboration with the appropriate Ministry and five operational departments:

1. Department of Culture and Research
2. Department of Monuments and Archaeology
3. Department of Urban Development
4. Department of Tourism Development

5. Department of Economic Development

Currently, in order to extend its highest protection and management, the APSARA Authority has created additional departments, and in 2008 has been completely reorganized as show in the chart below (Fig. 3).

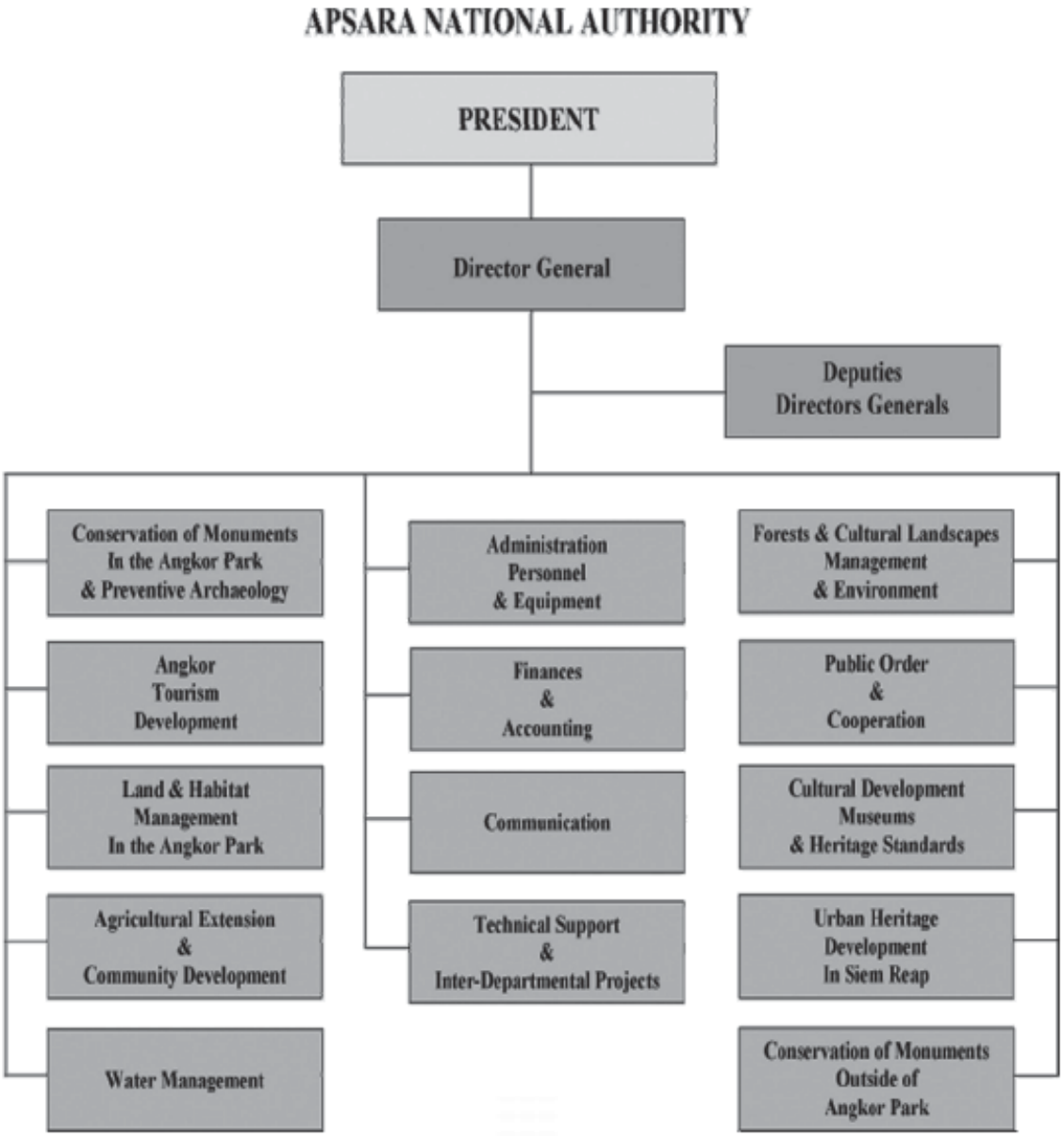

Fig. 3. APSARA Authority organization chart (2008)

3. Objectives of the Department of Land and Habitat Management in Angkor Park

3.1. Purposes

The exceptional wealth of the Angkor region is not limited to its singular archaeological and artistic remains, but includes a living cultural heritage of inestimable importance in anthropological and linguistic terms. Siem Reap's rural population is known to be particularly conservative with respect to ancestral traditions, and a great number of archaic cultural practices that have disappeared elsewhere continue to be performed in its villages. What is more, many of these maintained traditions are only found here, reflecting the specificity of the Angkor region's rich historical legacy. The operational department that monitors its preservation and conservation was created in 2004 as the "Department of Monuments and Archaeology 2" (DMA-2), but recently was changed to the "Department of Land and Habitat Management in the Angkor Park" in 2008.

3.2. Main objective

Along with the other departments, our objective is to protect the area's traditional appearance, land use practices, various habitats, historic buildings, and environments from the past or of recent origin that contribute to the cultural value or reflect traditional lifestyles and patterns of land use. By the way, land and habitat management are subject to regulation controlling harmful disruptive activities.

3.3. Scope

Following the guidelines of UNESCO, the Angkor region has to be protected with its variety of value, and thus our main scope is to provide and establish procedures to give the local villagers in the protection zones priority in matters of site management and preservation work. Furthermore, we aim to achieve the following:

- To preserve all the old villages, residences, pagodas, bridges and public buildings.
- To control and prohibit the expansion of built-up areas.
- To ensure that any new development of existing residences and properties conforms to traditional styles (acceptable style is detailed in Section 4).
- To manage unauthorized residential and territorial use activities.
- To analyze and assist local villagers who should be given a residence for their relocation to a new development zone, in particular by providing them with land and building materials for their houses and community facilities. For

example, according to the statistics recorded by our department between 2006-08, 94 cases have been priority-relocated to APSARA's development zone "RUN TAEK," a large program undertaken by APSARA specialists in aiming to assist the development of essential community facilities and encourage small-scale tourist facilities linked with village life (Fig. 4).

- Recently, a population statistics project has been undertaken. It is essential to calculate and manage the numbers of local villagers and land use activities, in order to formulate a site management plan for the future. All data are GIS-based.

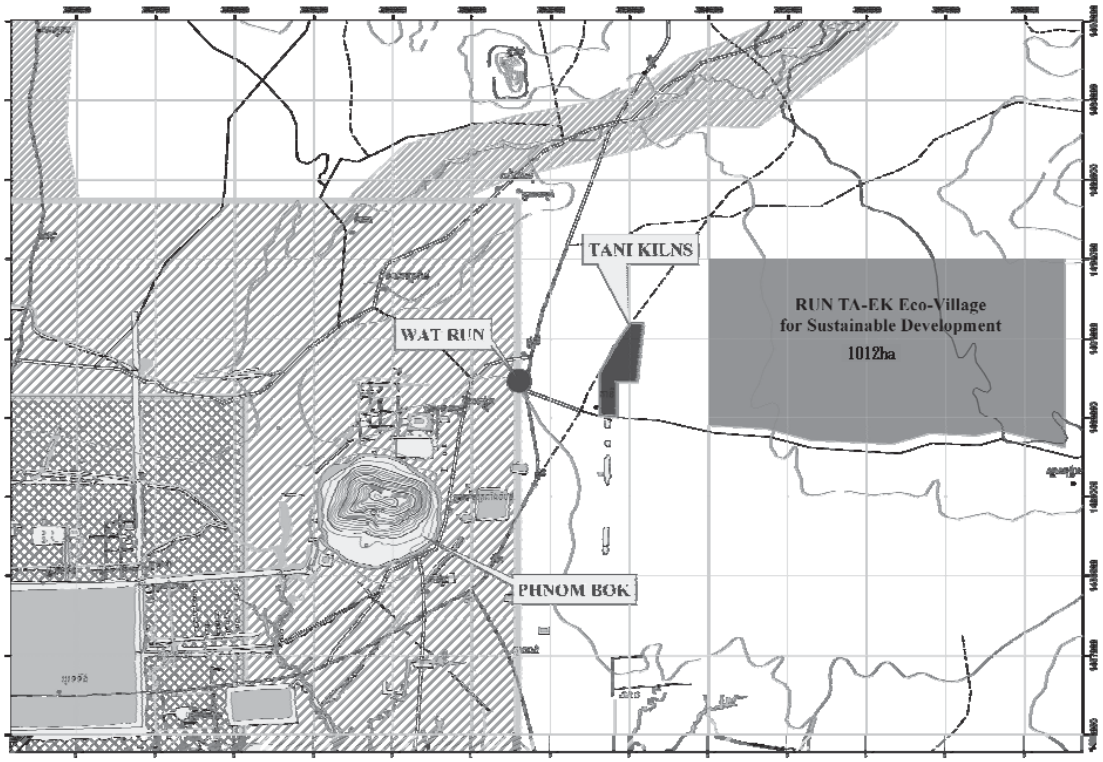

Fig. 4. RUN-TAEK Eco-development Village

4. Traditional appearances of buildings in the Angkor region

4.1. Identification of traditional houses

The APSARA Authority allows only new development of existing residences that conform to traditional styles of the ancestral culture.

Traditional Khmer houses have five particular styles: Kantang house (Fig. 5), Pit house (Fig. 6), Rong Dol house (Fig. 7), Rong Doeurng house (Fig. 8), and Khmer house (Fig. 9).

All residences are wooden, except for the ground floor which may be brick and cement, and in the proper size. For example, the total height of each house is approximately 7.5 m from the base of the columns to the roof. The roof is allowed to be covered with tiles, either zinc-colored blue, red, or green. White is prohibited.

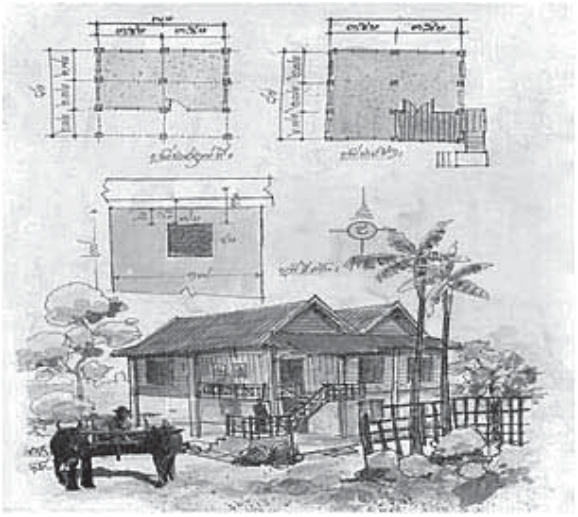

Fig. 5. Kantang house

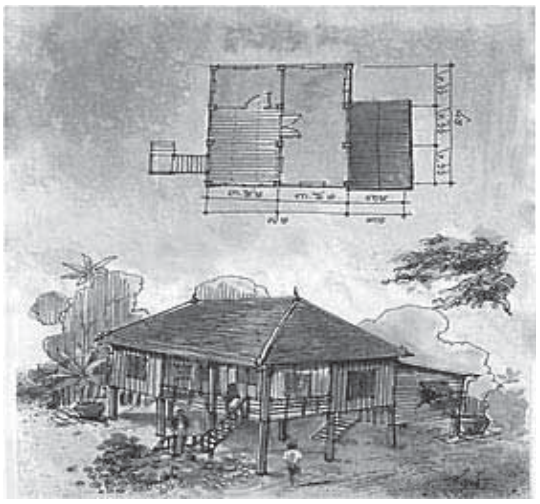

Fig. 6. Pit house

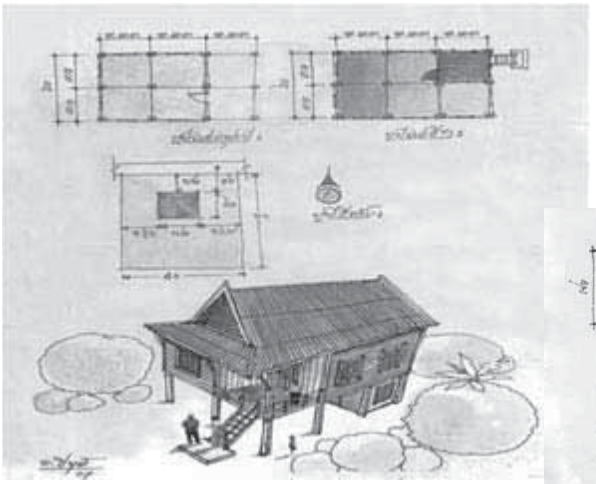

Fig. 7. Rong Dol house

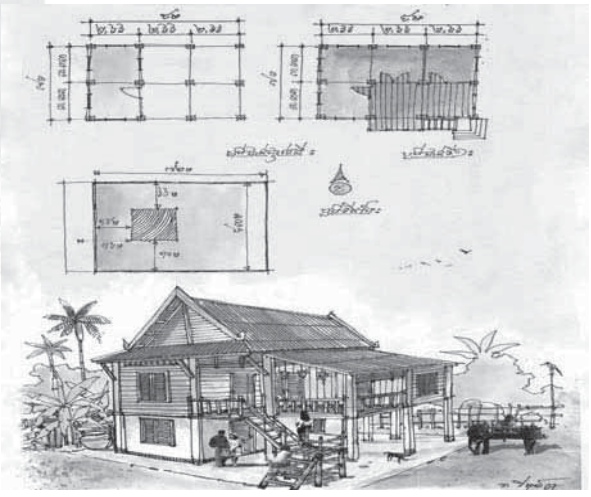

Fig. 8. Rong Doeurng house

Fig. 9. Khmer house

4.2. Protective wall

Three standard types are allowed to be built in the villages.

Type1: Natural wall with fruit plants or flowers that make for a good appearance and environment (Fig. 10).

Type2: Wood or cement column wall with wire, preferably accompanied by trees or fruit plants (Fig. 11).

Type3: Brick wall with or without iron, 0.75 m tall. If the front is along the road, it should have trees or fruit plants outside (Fig. 12).

Fig. 10. Natural wall

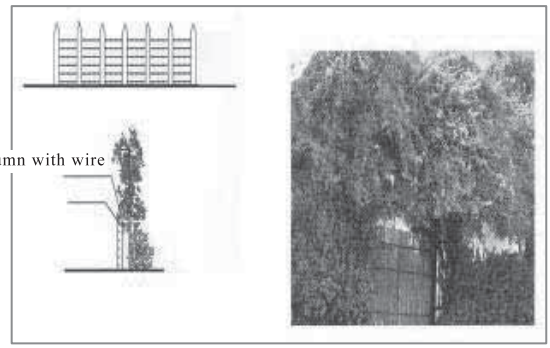

Fig. 11. Column wall with wire

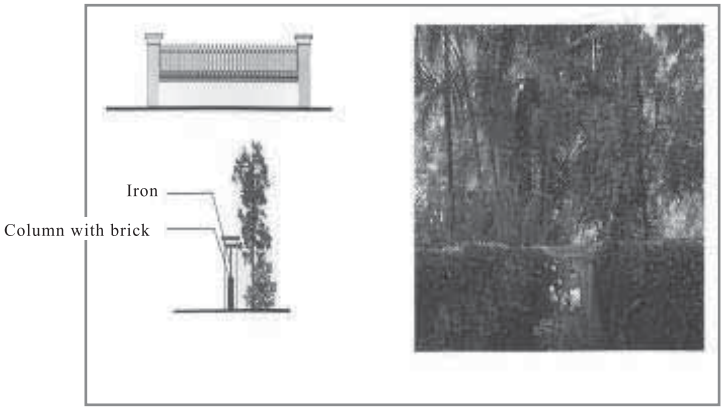

Fig. 12. Brick wall

4.3. Public buildings

In Zones 1 and 2, large and heavy buildings are prohibited due to the underground basement that adversely affects the ancient remains. In contrast, only removable buildings are allowed. This means that the bases of columns rest on the ground, and are easy to relocate if necessary.

Fig. 13. Sala Chor Tearn (building used for the distribution of gifts to beggars)

4.4. Pagodas

Generally, all ancient pagodas are being preserved and protected. Through cooperation with specialists, a number of pagodas in Angkor park have had repairs, such as to ancient wall

paintings or the structural parts of buildings that had been destroyed by weather and aging, and we are continuing to search out ways to protect buildings from damage, with the aim of protecting the cultural heritage so that its value is conveyed to the next generation. Furthermore, we monitor and strongly restrict building on the existing base or structure. In case of repair for protection, we have to study that structure in every detail, such as the architecture and decoration, and through archaeological excavation, in order to avoid of any loss or damage to the historical data. For example, Wat Prasat Bakong, located in Rolus park, which was repaired through cooperation between the APSARA Authority and the HOLCIM project.

Fig. 14. APSARA-HOLCIM Project for the Preservation of Wat Prasat Bakong

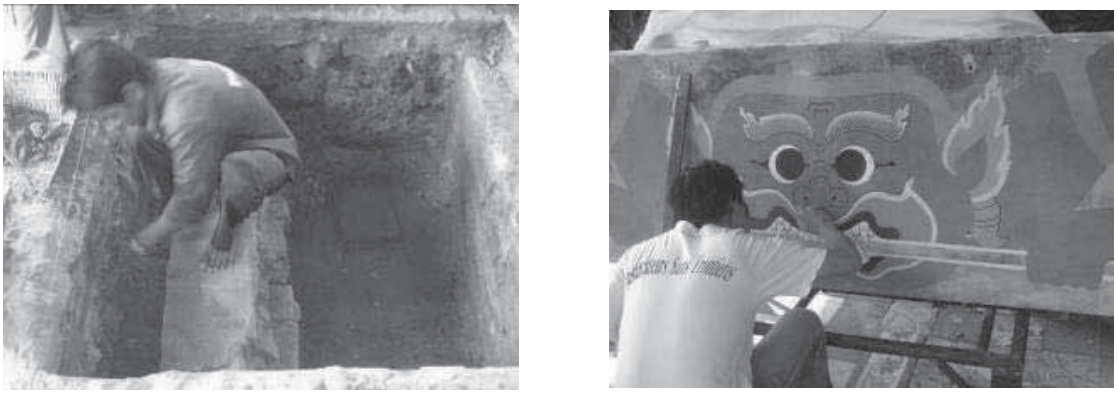

Fig. 15. Excavation of basement (left), and repainting (right) at Wat Prasat Bakong

4.5. Administration buildings and others

The procedures and processes do not differ from the points mentioned above. Those buildings include schools, hospitals, bridges, and roads.

4.6. Colors of buildings

All buildings are prohibited from using any kind of light, bright color in Angkor park. Only colors that are shown to be warm and traditional, such as very dark red (Fig. 16), wooden (Fig. 17), and dark grey.

Fig. 16. Dark red colored house

Fig. 17. Wooden colored house

4.7. Decoration

Any kind of modern exterior decorative items are prohibited, such as those for doors or window panes, but interior decoration is excepted. Only wooden items are allowed.

5. Conclusion

As shown above, until now the APSARA Authority has tried its best to preserve and protect all cultural heritage, not only archaeological sites, but also aims for the protection of living cultural heritage that forms the daily life in the area of these monumental sites.

In order to ensure effective protection for the various historical sites, which often contain several monuments, the people living there, and their beliefs, and which cover a wide area or the territory, and possess unique historical, architectural and scientific value, it is important to take specific protective measures by law. However, while the state is given exclusive land rights, the villages which are now in the protected zones do not constitute a danger for these zones, which is why all activities of land use or building should be advised by the authority. Because these villages are essential for the perpetuation of the religious use of numerous temples, their continued presence is encouraged.

Therefore, to carry out its obligations for permanent inscription as world cultural heritage with UNESCO, APSARA has to take actions as necessary to fulfill these obligations and commitments in collaboration with other national scientific institutions, as well as with international scientific institutions that have recognized skills, experience, and the necessary financial resources, in order to develop its own human resources to become skilled in their respective fields.

Country Report

IN Sovann
Technical Staff
Department of Conservation of Monument
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Toward the Preservation of the Koh Ker Historical Site

I. Introduction

The Kingdom of Cambodia is one of the countries in Southeast Asia on the Indochina peninsula, and lies between the latitudes of 10° and 15° north, and the longitudes of 102° and 105° east. Covering an area of 181,035 km^2, Cambodia has boundaries with Thailand to the west, Lao PDR and Thailand to the north, Vietnam to the east, and the Gulf of Thailand to the south.

Geographically, Cambodia is dominated by the lowlands along the Mekong River and Tonle Sap (Great Lake), which are the sites of most of the population and agriculture, and three mountainous regions in the southwest, north, and northeast, which are the less populated and rich in forest resources.

Koh Ker archaeological site location (Tin Tina, PhD Thesis, 2007)

II. History of the Koh Ker Complex

Geographically the site is situated at approximately 15.28347° N and 104.50706° E, in Koh Ker village, Srayang commune, Kulen district, Preah Vihear province, in northern Cambodia.

The site itself is located between the Dangrek mountain and the plain of the Angkor Park. It is approximately 120 km north of the Angkor Park. During the war in the 1970s and 1980s, resistant forces were based at the Koh Ker site, and for that reason it was adversely affected and virtually abandoned. In the beginning of 1999, this place was opened to the public after the Khmer Rouge had integrated with the government.

Koh Ker was once the heart of the ancient Khmer capital city for 23 years in the second quarter of the 10th century, when King Jayavarman IV moved the capital from Yasodharapura (today's Angkor) to the area.[1] The original name of Koh Ker, written in an inscription, was "Chok Gargyar" (the pond of Koki), and it was also called "Lingapura" (Au Chhieng, 1974:148). The modern name of Chok Gargyar means the Island of Glory (Lewitz, 1967:433).[2]

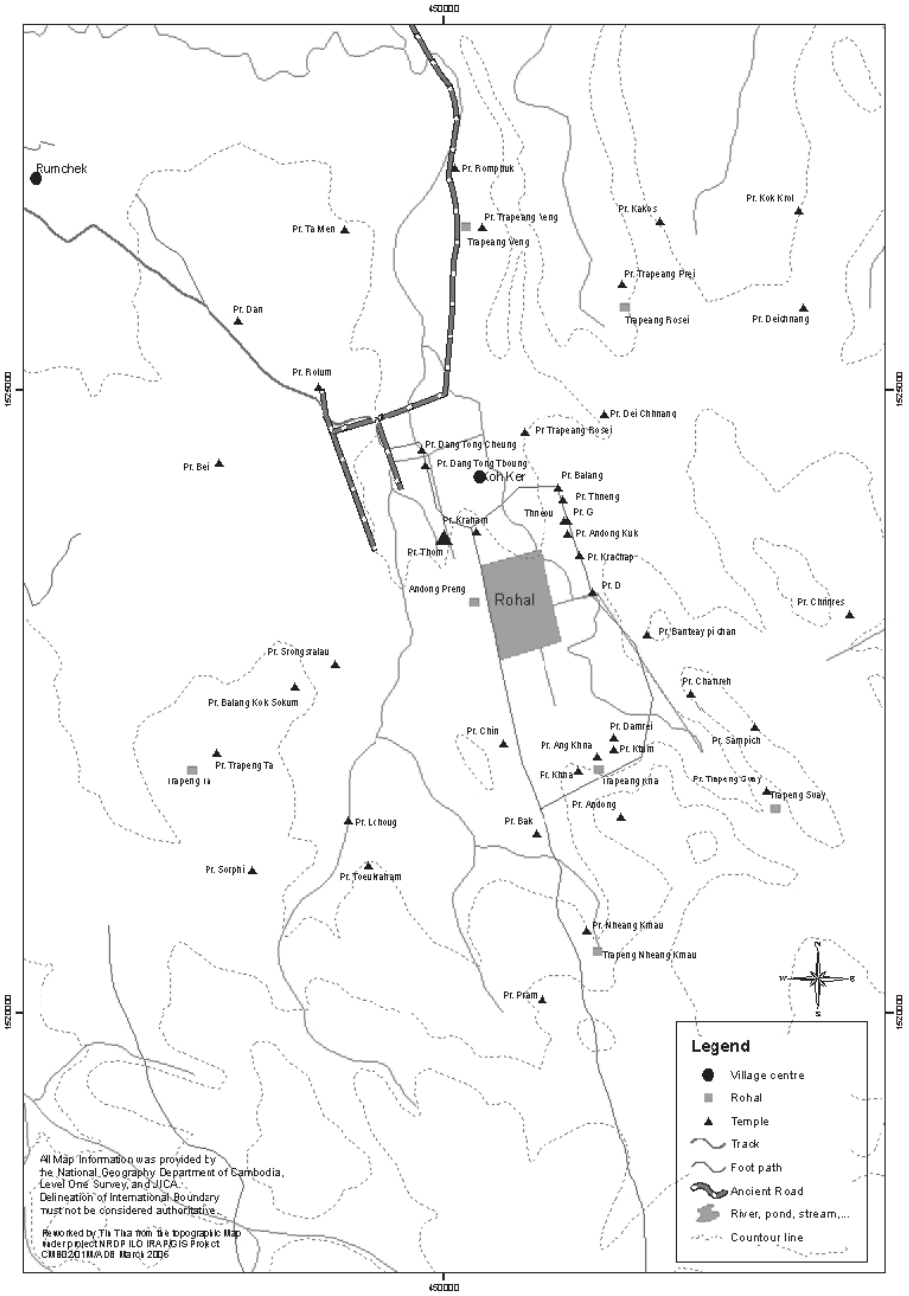
The site was associated with the great civilization of Angkor. The capital city occupied an area of about 5 x 7 km (35 km^2), oriented north-northwest to south-southwest (Claude Jacques, 1990:67). In the city, King Jayavarman IV built the city infrastructure and religious temples. The layout of his court center at Chok Gargyar carried on the evolution in the spirit of Angkor, but with local variations. It had a characteristic architecture, and sculptures that were developed in size and esthetics.

From where did king Jayavarman IV originate? In 921 A.D., after the reign of King Hasavarman I, Jayavarman IV moved from Yasodharapura to Chok Gargyya. He brought along the State Linga (*kamraten jagat ta raj*) to Chok Gargyya, and a cult priest named Isanamurti was also persuaded to lead the *kamraten jagat ta raj* cult in 921. Meanwhile, the small *kamraten jagat ta raj* was also revered with the help of a priest-leader named Kumrasvami, who used to work for Hasavarman I in 922, and later worked for Isanavarman I from 925 to 928. This means the country was separated into two territories, one controlled by the kings in Yasodhorapura, and the other controlled by a king in Koh Ker. This conflict was caused by Jayavarman IV, Hasavarman I, and Isanavarman II. However, between 910 and 928, the official power was still under the control of Hasavarman I and Isanavarman II in Yasodharapura. The two kings were crowned successively, Hasavarman I either in 900 or during the period from 912 to 922, and Isanavarman II during the period from 912 to 922 (M. Giteau, 1996:23). In 928 Jayavarman IV became the official king with full power over the country, after the death of

[1] Two decades later his successor King Rejendravarman II returned to Yasodharapura and abandoned the Koh Ker capital.

[2] Today Cambodian people know the site as Koh Ker.

Isanavarman II (Vann, 1999:79). As the only king in the country, Jayavarman IV established a new rule in order to change Koh Ker into a capital city. He built many temples in this new capital city, such as the pyramidal structure Prasat Thom, plus a row of towers to the east of Rohal (a freshwater reservoir) and oriented on its axis; there are also several towers along a straight road running roughly southward from the southern end of Rohal, plus Rohal itself on a scale of about 560 x 1200 m, for supplying water to the paddy fields. Many small ponds were also constructed.



Archaeological features at the Koh Ker Site (Tin Tina, PhD Thesis, 2007)

King Jayavarman IV passed away in either 941 or 942. His posthumous name was Paramesvapada. The successor was his son, Hasavarman II, who was still young. He disappeared soon after he was crowned, and ruled for only two years. Rajendravarman II was the king who moved the city back to Yasodharapura.

Throughout the present day area of Koh Ker there remain many ruins of ancient religious monuments, irrigation systems, roads and other public works.

III. Factors Contributing to the Deterioration of Monuments

Due to the factors of time, nature, social instability, and the economic situation, the Koh Ker monument has been damaged through the decades. The present state of some monuments at Koh Ker reveal multiple signs of weakness, such as the monuments' foundations having cracks, breaks, being undermined, or leaning. But more serious damage, such as flaking or the collapse of some parts, seems likely in the immediate future due to the following factors.

Natural Catastrophes

This category includes all natural events of a violent and unforeseen nature, such as storms, lightning, and heavy rains which sometimes occur in Koh Ker. For example, in 2006 a heavy rainstorm swept through the Koh Ker compound causing damage to the east gate of Prasat Thom, and the north and west gates of Prasat Banteay Pi Chan.

A temple standing on the ground is surrounded by a particular microclimate, and is constantly influenced by a variety of interacting factors which include microorganisms, plus physical and chemical factors. Physical factors include temperature and water, which contribute to other future effects. The site is located in the highland area where the temperature in March and April is high, and the lowest temperatures are in December and January. The rainy season, from June to October, has an average annual precipitation of 1,100–1,800 mm. The physical action of high temperature and sunlight causes the expansion of the stonework, while low temperatures at night also affect their condition. The outer surface of the stone is exposed, and this causes the surface to disintegrate, resulting in the loss of decorations. However, the laterite block is still stable and of good quality, between its dry and wet state (Moriai et al., 2001:269). Laterite is used extensively as a foundation material as well as for structural support, often behind stonework. Its structural condition cannot be assessed other than through its failures, which become visible in the outer stone covering. Apart from

temperature, rain water, moisture, and underground water, the masonry becomes humid as a result of percolation, absorption, and condensation. The effect of capillary absorption, which is sometimes seasonal, might provoke chemical and static damage, soaking the structures and subjecting them to an overload. This is the case for many structures, such as Prasat Bak, Prasat G, Prasat Andong Kuk, Prasat Krachap, Prasat Dam Rie, Prasat Pram, Prasat Chin, etc.

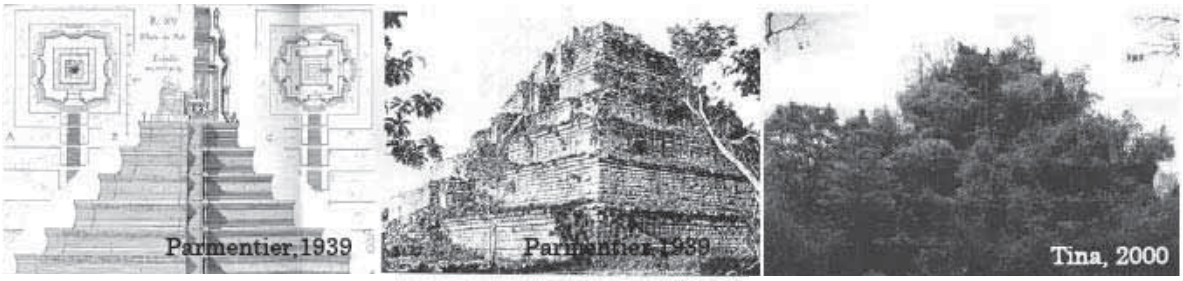
Furthermore, most of the temples have been severely damaged by trees and various types of microorganisms, such as fungi, lichen, and grass. Microorganisms, which transform the inner constitution of the brickwork, become active and start developing as soon as conditions of humidity and temperature favorable to their growth occur. It has been found that microorganisms are greatest in number during the rainy season. Due to the porosity of the bricks and the ease with which moisture can percolate through its fabric, these microorganisms take root and grow, and the brick structure is thus subjected to considerable damage. In addition, some temples have become covered with high trees and vegetation, whose roots penetrate towards the interior and grow slowly inside, separating and undermining the structural elements of the stone or brick, causing cracks.

Man-made Causes

At the time of the political upheaval lasting from the 1970s to the 1990s, the Koh Ker site was abandoned without preservation, and bit by bit the site was damaged or destroyed as can be seen in the present day. For a long time during the period of warfare, this area with its abundance of cultural heritage sites had been a base for resistance forces and a battlefield. Heavy military equipment, operated near the temples or inside them, caused the temples to vibrate. Moreover, some of the artifacts became targets for treasure hunters. It is evident that several standing icons were removed completely, and where the size or weight defied the looters, they did it by removing the heads or limbs, abandoning the torsos. In addition, visitors often take away stones and bricks as souvenirs, and scribble graffiti on the stones and inscriptions, and there are also problems such as littering, etc. Similarly, the villagers themselves have taken stones from the temples to use for their cooking, for the basements of their houses, and for sharpening their knives or other metal blades.

We can hypothetically distinguish between man-made damage for the purpose of trade, when heritage is carved away for selling to archaeological tradesman abroad, and damage that simply destroys, leaving many items in pieces scattered near the temples.

In sum, through examining the causes of deterioration of the monuments at the Koh Ker site, we have learned that human factors causing damage to the temples are a serious obstacle that is still in existence (the digging and looting of artifacts). This may lead to the eradication of some of the temples. Other causes of deterioration are natural factors (including vegetation and microorganisms). Among these factors, some are the outcome of social incompetence in providing security, and careless preservation efforts.



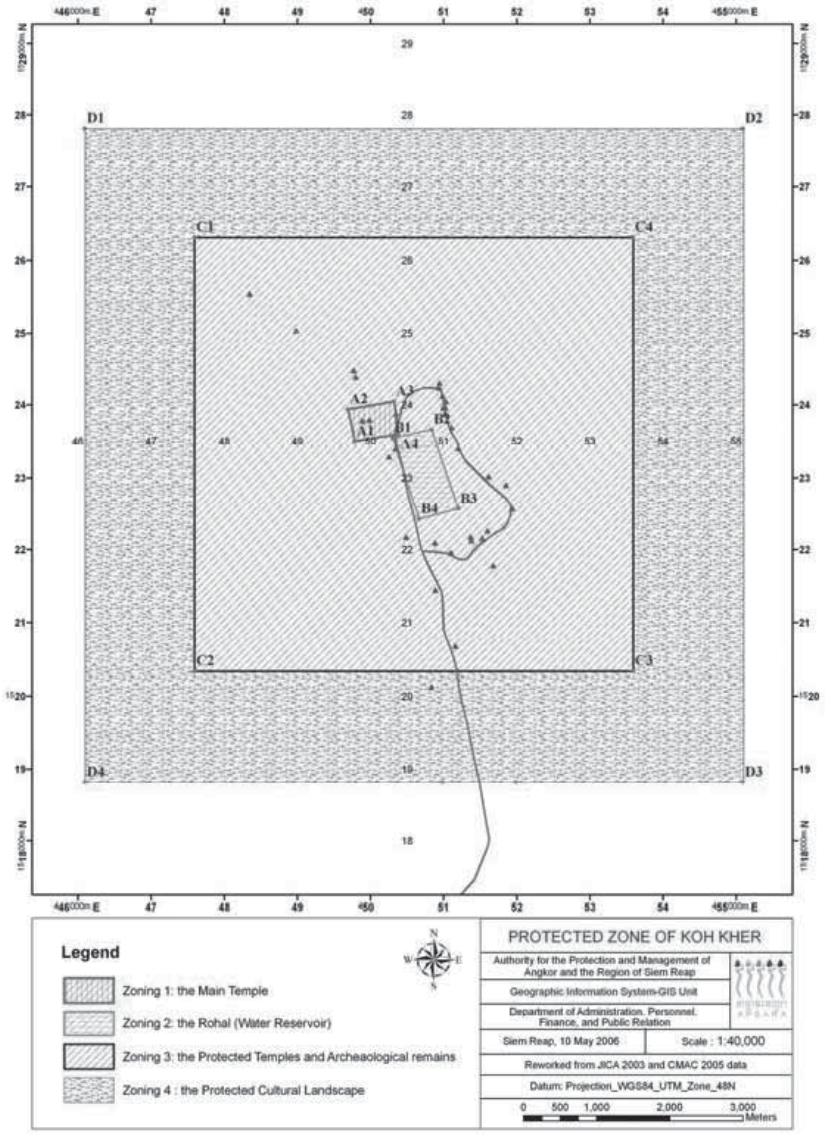
Prasat Thom

Prasat Thom **Looter's hole at Prasat Thom**

Prasat Kraham

IV. Efforts to Preserve the Site

Because of the war from the 1970s, the Koh Ker site was left untouched until early 2001. With no ongoing maintenance and restoration activities, the archaeological features once again became vulnerable to the encroaching jungle. Although the site has reopened, efforts to take up the work of preserving the site are severely hindered by the lack of funds, manpower, and technical expertise. As early as 2004, in order to preserve the Koh Ker historical site, the Cambodian Government officially classified it as a "Protected Site" with a total area of 9 x 9 km (Royal Decree, NS/RKT/0504/070, 2004). The site has come under the direct control of the Ministry of Culture and Fine Arts, and is divided into three main protection zones: the core zone, buffer zone, and satellite zone.



Protected zones of the Koh Ker Site

(Royal Decree, NS/RKT/

1. Core zone. This is divided into two parts, the region of Prasat Thom called the "protected A" area, and the Rohal area, called "protected B." These areas, receiving a high degree of protection, are 92 and 62 hectares.

Protected A lies within the coordinate points A1 (450190, 1523180), A2 (450100, 1523620), A3 (450730, 1523730), and A4 (450790, 1523280). Protected B is within the coordinate points B1 (450710, 1523226), B2 (451245, 1523343), B3 (451608, 1522253), and B4 (451071, 1522106).

2. Buffer zone. This zone of protected temples and archaeological remains is an archaeological park, including both remains above ground, and those below the soil which archaeologists have yet to discover. The zone of protection extends across approximately 3,500 hectares, within the coordinate points C1 (448000, 1520000), C2 (448000, 1526000), C3 (454000, 1526000), and C4 (454000, 1520000) lying outside the protected A and B areas. There are no areas of development within the zone.

3. Satellite zone. This is the zone of the protected cultural landscape, an economic and development area consisting of a corridor 1500 m wide surrounding the buffer zone. This zone also has protected cultural and natural heritage, including forest and animals.

The Royal decree is meant not only to restore and preserve the archaeological features, but it is also a call for preserving the natural landscape. Since the launching of the site the Cambodian Ministry of Culture and Fine Arts, with the support of the UNESCO, has only done preliminary work on small-scale maintenance projects, namely clearing and small-scale works such as building a wooden stairway to replace the original staircase of Prasat Thom, and installing wooden supports to prevent the collapse of broken parts of temples, etc., which were begun by the temple guards of the Angkor Conservation office.

During the war the site was one of the bases for the resistance forces and a battlefield for along time, and for that reason thousands of land mines and unexploded ordnance (UXO) have been left scattered across the site. Before any kind of work could begin at the site this major obstacle was the first priority to be considered. Dealing with this problem in 2001, the Cambodian Mine Action Center (CMAC) has been proceeding with mine clearing programs, and large-scale land mine and UXO clearance has been carried out at the site.

On July 17, 2005, the Government approved plans for control of the site and delegated control to the APSARA authority (Royal Decree, NS/RKT/0705/323, 2005). In order to

conduct the process of site preservation, the Authority has employed a number of temple guards to strengthen the monitoring. Realizing the importance of the establishment of an APSARA guard system, forty-two guards have been stationed at the Koh Ker site since February 2006 (APSARA Authority, RP.SSR/138/06, 2006). Most of them are villagers who have been living near the site. These guards are responsible for ensuring that trash is properly disposed of in new waste bins and that visitors act with respect toward the temple structures, and they are also responsible for cleaning and daily maintenance inside and around the temple.

On March 28, 2004, to ensure the physical protection of the site, the Ministry of Interior sent the Cultural Heritage Police Corps to be stationed at the site. This special corps consisted of sixty policemen divided into five groups. These groups have to control the area of the Koh Ker site. This special corps is to work in collaboration with the APSARA and provincial authorities. The duties of the Corps are as follows: they are responsible for the Koh Ker monuments, the forest resources, and the safety of visitors in the park. Since the deployment of the Cultural Heritage Police Corps in the area, day by day illegal activities have decreased.

Apart from the APSARA Authority, the private company of Kham Someth has been given authority by the Royal Government to invest in the Koh Ker historical site and to receive an entrance fee from foreign visitors. All foreign visitors have to pay the entrance fee of 5 USD per day, unless they are foreign students, researchers, and delegations that are allowed to visit without payment. In the meantime the company has put in an effort to preserve the site by clearing the vegetation and small trees around the temple, especially earlier in March 2006, when the company had to remove about 35,000 m^2 of vegetation and weeds from the moat of the Prasat Thom complex.

V. Work Conducted to Date

Since the opening of the site the APSARA Authority has done preliminary work on maintenance projects, and the range of work is from maintenance to archaeological research at the site. The first step is to take care of the most important work. This includes controlling the vegetation and reinforcing structural elements.

However, in order to run the process of site preservation, the Authority has employed a number of temple guards and workers to strengthen monitoring. Realizing the importance of the establishment of an APSARA guard system, some seventy temple guards and eighty workers have been stationed at the Koh Ker site, under the control of a technical staff of five,

since 2006. Most of them are villagers who have been living around the site. These temple guards and workers are responsible for ensuring that the trash is properly disposed of in new waste bins and that visitors act with respect toward the temple structures, and they are also responsible for cleaning and daily maintenance inside and around the temple.

Controlling the Vegetation

Today, the vegetation is the most difficult and most expensive problem facing the monuments. Many structures have suffered from serious damage, and are broken, partially collapsed, and risk further collapse in the near future. Frequently these problems can be traced back to poor site maintenance, which resulted from the abandonment of the site for long time, permitting many instances of adverse effects of vegetation, particularly from numerous trees and bushes that have grown on the periphery and within the complex itself.

The emergency consolidation work needed at the site is to stabilize the structural monuments. In order to provide for the stability of the monuments we have to clear the entirety of the monument site surface, and particularly remove seedlings and brushwood, using the methods and materials of the country itself.

In other words, as part of the maintenance activities, among other works we have the removal of vegetation and weeds lining the moat surrounding the Prasat Thom complex. This ancient irrigation system has been neglected for a long time, and thus needs to be cleared for landscape improvement as well as for the use of water for human living and for the vegetation.

Reinforcing Structural Elements

Due to the lack of daily maintenance over the decades, archaeological and other ancient features are badly threatened. From the results of recent surveys of the site, we found that most of the monuments are endangered by nature, and that the structures of the monuments are affected. Faced with a series of new supervision and management problems at the relatively isolated site of Koh Ker, we suggest that emergency consolidation be provided at this site. The reinforcement of structural elements is aimed to prevent some of the weakened monumental structures from further decay caused by natural and man-made causes, in order to protect the monuments themselves and guarantee safety for visitors.

In order to avoid the complete collapse of the monuments, and to keep the visitors safe, priority in consolidation efforts here is given to emergency stabilization rather than complete

restoration work, by using supports such as provisional emergency wooden propping, to strengthen the monumental structures wherever they are cracked, deformed, and are at risk of collapse. This structural consolidation is a necessary objective of emergency measures to save the structure of the monuments and for their stabilization, while urgent and high priority operations are undertaken. For example, in cases where doors and window lintels are endangered, we are using timber supports to reinforce the falling or broken structures. This is a very simple and effective method for reinforcement of the failed structure.

Site Security Arrangements

The supervision program calls for systematic protection of visitors and the site staff. Educating visitors about the risks, which are not always obvious, and indicating prohibited activities by the use of signs on the site is very helpful. The installation of safety signs is an essential method to help them avoid dangerous places and the collapse of loose stones. This method is also necessary for giving information to visitors regarding understandings of the monuments' conditions, the accidental collapse of stones, the scattering of stones, etc. Therefore, our department has been posting signboards in areas of the monumental structures that are dangerous. The information on these signboards contains warnings, such as KEEP OUT, DANGER and NO ENTRY, at unsafe places where access must be restricted.

Prasat Thom after a collapse from the fourth tier

In addition, much of the accidental damage occurs through visitors' lack of knowledge of the significance of the site. In the case of Koh Ker, we have to protect the area of the Group of Lingas and a stone carved with unusual scenes, which are located near Prasat Damrei, by using rope barriers made with wooden poles placed in front of these carvings.

Stone Removal

Since 2007, we have removed many stones and statues that had fallen down from the temples and were spread around the temple compound, or were considered as being in eminent danger of partial loss or damage by having people around them, or tourists walking on them. At first, we decided to move stones from the presence of danger in two blocks in making a detour for tourists to go around and outside the second enclosed wall of Prasat Thom. The protected statues and stones in danger of damage from being walked on by tourists (at present, many statues and stones are smooth and have lost some parts), and those in danger from lichen in the rainy season include items in the western part of the second enclosed wall, and the northeastern part of the third enclosed wall of Prasat Thom.

This case was very complicated, involving many large and small stones at diverse locations. We have removed 179 stones from their original places, including lintels, pilasters, and basements, and after a collapse from the fourth tier at Prasat Thom, columns, door fames, and some statues (but the 14 largest stones were left in place because they were close to the wall and safe), to be put up near the entry of the temple from west to south.

Stone before removal (Prasat Thom)

Stone after removal (Prasat Thom)

Fire Management

Other problems of concern arise in part from the damage done by vegetation and weed fires gone out of control in some parts of the Koh Ker site, although such fires are commonly of a much lower intensity. Burning has been used by local inhabitants and temple guards, and

careful burning can in fact contain the damage that may be caused by fires that are started by visitors and have gone out of control. From the maintenance viewpoint, the difference in habitats between burned and unburned areas helps to sustain a diversity of flora and fauna.

The traditions of the local villagers who live around the site were thus used as a means of managing food resources and for the clearance of vegetation and weeds surrounding the monuments. At the same time, these might have directly provided foodstuffs for human consumption, as it may have provided food for animals that foraged on the growth. The evidence suggests that burning was widespread, and today some parts of the monument land area are treated with controlled burning. Thus, in order to minimize threats to the site, we permit local people to continue burning vegetation in the area near the monumental structures, and we also retain temple guards who use fire as a method for clearing vegetation and weeds at the site. This is a value system very different from that of the legislation for site protection.

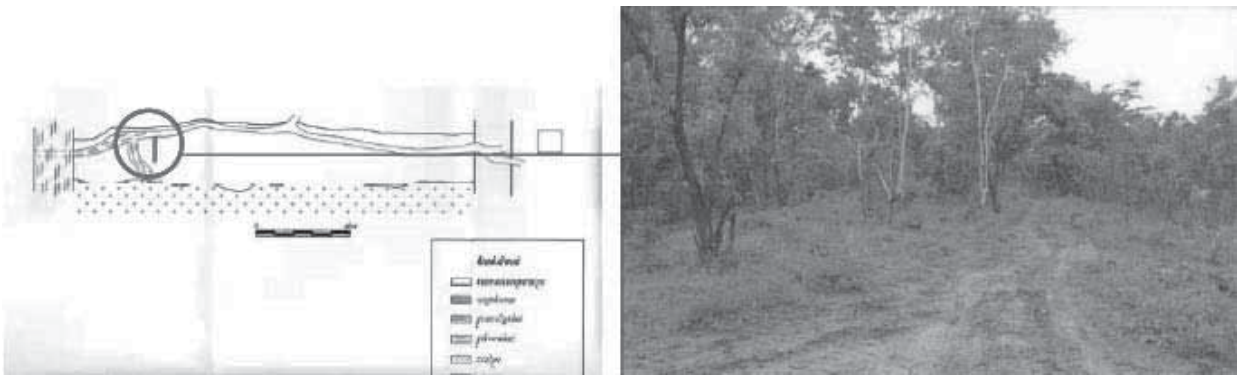
Burned field in zone protection of Koh Ker

Excavations

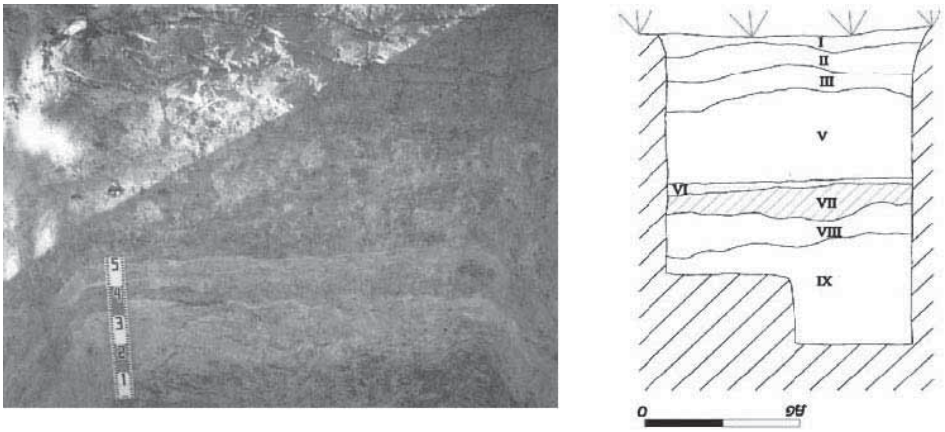
In 2007, on the basis of ad hoc and UNESCO advice, we conducted salvage excavations at the Koh Ker site in three places for two weeks, accompanied by Dr. Ly Vanna and Mr. Ea Darith, to discovery any temples structures and rescue such remains before development, with the following results.

1. North of Trapeng Sre (rice pond). Excavation was conducted because of a plan to create a new street as a detour for residents into the village, to replace the old street near the temples.

Before excavation we thought the deeper strata of this area may have been related to the temples of the same period. During the excavation we did not find many artifacts there. We discovered two pieces of earthenware pottery, which we could not identify. But we identified this place through analysis



Plan and Photo of the Trapeng Srei site

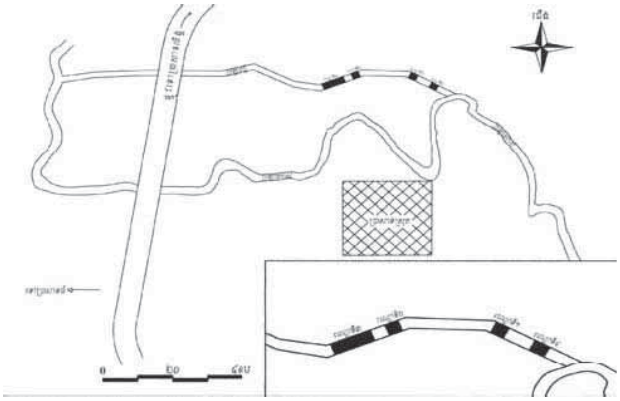


Stratigraphy of the Trapeng Srei site

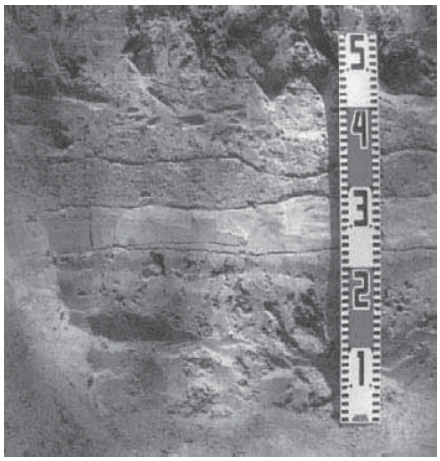
of 10 layers of the stratigraphy. In conclusion, this site was not related to any temple; it consists of water-borne deposits that had eroded from other places nearby.

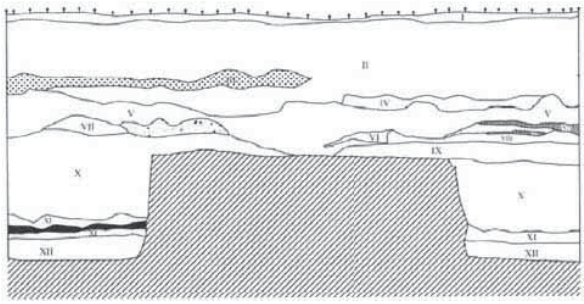
2. Canal near Prasat Srot. The foundation and basement of Prasat Srot were unstable, with deterioration caused by the flow of water into the old canal near the temple. Accordingly our department needed to construct a new canal to draw water away from the old canal.

In this site we found 143 of fragments of ceramics (hard, soft, glazed, and unglazed) related to the surrounding soil and canal. We identified the following by shape, glaze, and decoration: for unglazed ceramics there were 5 pots, 3 bases of pots, 92 roof tiles, and 37 unknown items; for glazed ceramics, 3 roof tiles, 2 bases of pots, and 1 pot cover.



Plan of the excavation at Prasat Srot

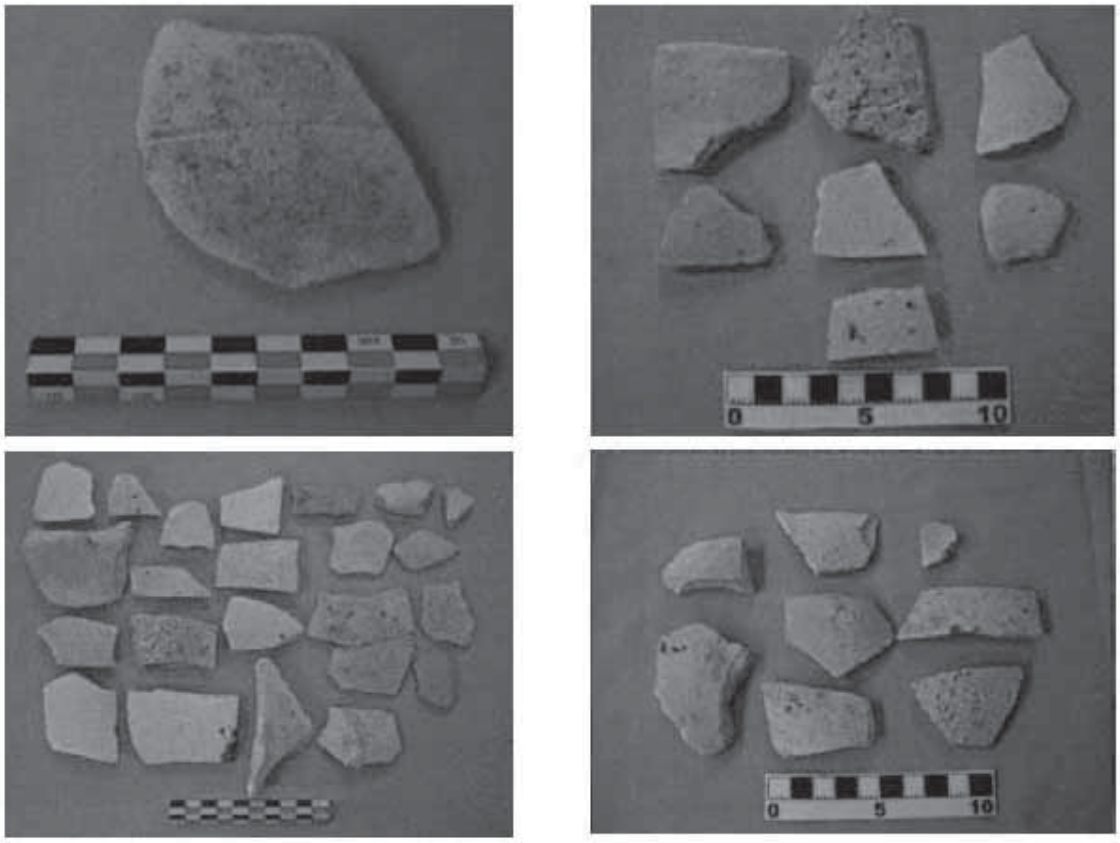




Stratigraphy of the Prasat Srot site

Based on analysis of the stratigraphy to a depth of 225 centimeters, the upper strata (from layers 1 to 3) were naturally compacted soil, and the lower strata (layers 4 to 11) might have been compacted by human action, because the hardened soil was mixed with ceramic fragments, sand, and pebbles, but was not water eroded. They might be the bank of ancient canal.

3. Dam in the North-East Rohal. This was an old dam built with sandstone and laterite, and cemented together in French colonial times, but nowadays has been ruined by water pressure. We excavated this site to reconstruct a new dam for the water reservoir for the villagers around here. Also, we wanted to know about the infrastructure of this site in relation to the temples and Rohal. We excavated three trenches, with the following results.

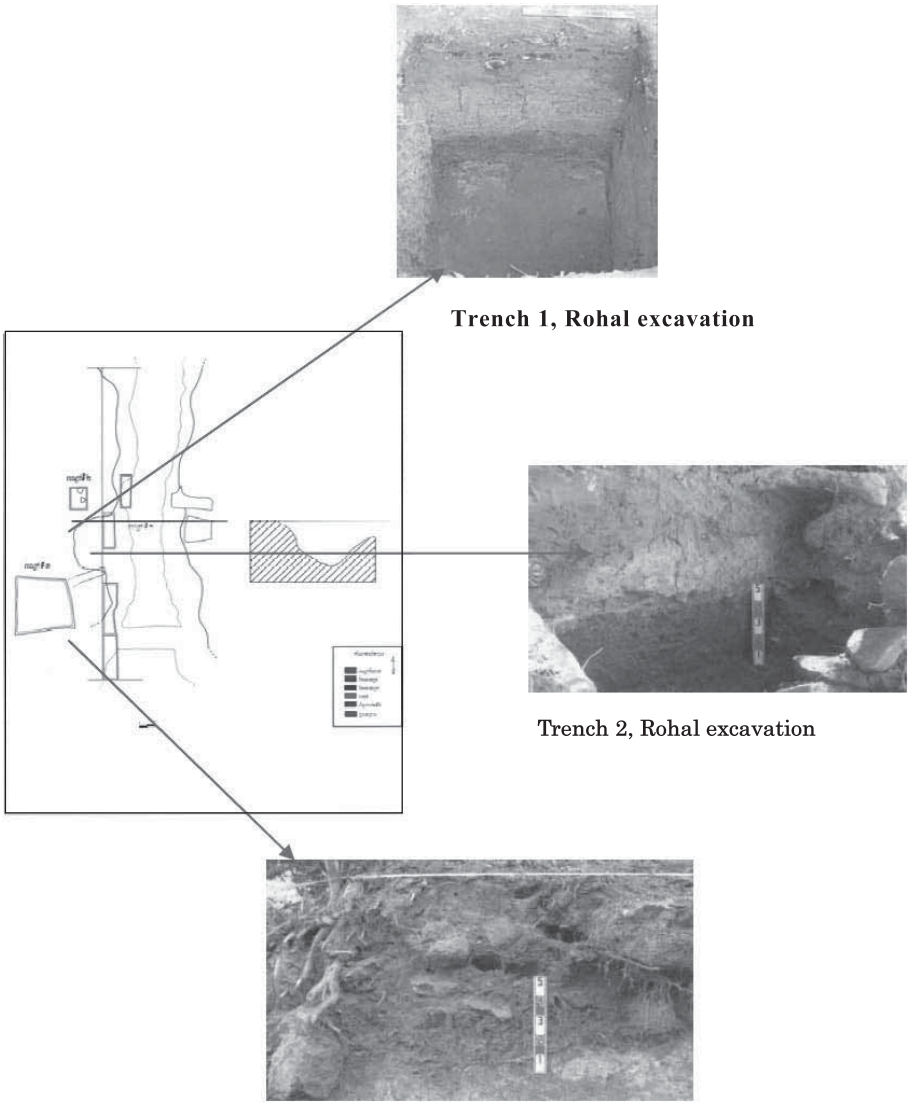


Pottery fragments found at the Prasat Srot site

Trench 1: We discovered the structure of the top of the dike, which was apparently constructed in two parts. The first (Part 1) is a structure of laterite blocks in the middle of Rohal compacted on a line of sandstones and continuing to Part 2. The second (Part 2) consists of compacted soils on the ancient dike and a laterite arrangement like Part 1, but is constructed near the bank of Rohal and was compacted by combining fragments of laterite and sandstone chips, after a laterite arrangement on the upper part.

Trench 2: We discovered a line of laterite blocks continuing from Trench 1 (in the western wall).

Trench 3: A compacted layer of laterite fragments, 40 cm deep, lay on the clay soils. Moreover, it was compacted with fragments of sandstone on a laterite line like that of Part 2 in the first trench.



Trench 1, Rohal excavation

Trench 2, Rohal excavation

Trench 3, Rohal excavation

VI. Conclusion

According to the research results stated above, the recent condition of the Koh Ker complex is seriously damaged. The deterioration of the temples has been caused by human and natural factors (rapidly changing weather, strong winds, plants, rain water, lichen, insects), and the situation has suffered from a lack of management, and also a lack of experts. The combined effects to the temples include movement, disturbance of the foundation soil, cracks, fallen stones, breakage, collapse, and decay of the stone elements.

The APSARA authority has planned restoration and maintenance work, and supports have been installed in very dangerous places with wooden shoring and steel pipes inserted to prevent crumbling and collapse. However, all of our work is not enough for conservation because our finances are still inadequate. APSARA needs to have the cooperation of other organizations to support this work in the future.

Ⅳ. Participants' Final Reports

Final Report

LIM Srou

I. Introduction

This Training Course is jointly organized by Bunkacho (Agency for Cultural Affairs, Japan), Asia/Pacific Cultural Center for UNESCO (ACCU), and the National Institutes for Cultural Heritage, Nara National Research Institute for Cultural Properties. It was very useful for the three participants from Cambodia to have this opportunity to participate in the Training Course on Cultural Heritage Protection in Asia/Pacific Region, 2008 (Individual Course), from 18 November to 19 December 2008.

II. The training course focused on:

A. Museums and research institutes

1. Outline of the museum in Japan

a) National Museums in Japan

(1) Tokyo National Museum

(2) Kyoto National Museum

(3) Nara National Museum

(4) Kyushu National Museum

b) Museum management concerns

(1) Research

(2) Storage

(3) Exbition

(a) Permanent

(b) Special

2. Nara National Research Institute for Cultural Properties

a) Structure of the Institute

(1) Department of Culture Heritage

(2) Department of Heijo Palace Site Investigations

(3) Department of Asuka/Fujiwara Palace Site Investigations

(4) Asuka Historical Museum

(5) Center for Archaeological Operations

b) Cambodian projects of the Nara Institute

(1) Western Top temple. This project is collaborative work between the Nara National Research Institute for Cultural Properties and the

Department of Conservation of Monuments in Angkor Park and Preventive Archaeology of APSARA Authority.

(2) Tani kiln site. The Tani kiln site is an ancient Khmer kiln located at Tani village. This is a collaborative research project of the Sophia University International Mission, the Nara National Research Institute for Cultural Properties, and the APSARA Authority. The study aims to learn about ancient Khmer ceramics, and includes work to reinforce the structure of kilns, and the construction of a site museum in the future.

B. Preservation and utilization of cultural properties

1. The system for protecting and preserving cultural heritage in Japan
   a) The Law for the Protection of Cultural Properties in Japan
   b) History of site management in Japan
   c) Protection and management of cultural sites
      (1) Principles and planning
      (2) Concepts of preservation and utilization
      (3) Examples of site management in Japan
         (a) Settlement and ancient tomb sites
         (b) Preservation and restoration work for the ruins of kilns at Hatanohara, a historic site in Nagasaki Prefecture
         (c) Investigation and maintenance of Zuto (a kind of stupa in Nara)
2. International documents related to cultural heritage
3. International organizations related to cultural heritage

C. World Heritage

1. Sites in Japan on the World Heritage list
   a) Buddhist Monuments in the Horyu-ji Area, Nara prefecture (1993)
   b) Himeji-jo, Hyogo prefecture (1993)
   c) Shirakami-Sanchi, Aomori and Akita prefectures (1993)
   d) Yakushima, Kagoshima prefecture (1993)
   e) Historic Monuments of Ancient Kyoto (Kyoto, Uji, and Otsu cities), Kyoto and Shiga prefectures (1994)
   f) Historic Villages of Shirakawa-go and Gokayama, Gifu and Toyama prefectures (1995)
   g) Hiroshima Peace Memorial (Genbaku Dome), Hiroshima prefecture (1996)
   h) Itsukushima Shinto Shrine, Hiroshima prefecture (1996)
   i) Historic Monuments of Ancient Nara, Nara prefecture (1998)
   j) Shrines and Temple of Nikko, Tochigi prefecture (1999)

k)Gusuku Site and Related Properties of the Kingdom of Ryukyu, Okinawa prefecture (2000)

l) Sacred Sites and Pilgrimage Routes in the Kii Mountain Range, Mie, Nara, and Wakayama prefectures (2004)

m) Shiretoko, Hokkaido (2005)

n)Iwami Ginzan Silver Mine and its Cultural Landscape, Shimane prefecture (2007)

2. Tentative list in Japan

a) Asuka-Fujiwara: Archaeological sites of Japan's Ancient Capitals and Related Properties (30/01/2007)

b)Churches and Christian Sites in Nagasaki (30/01/2007)

c) Fujisan (30/01/2007)

d)Hikone-Jo (castle) (01/10/1992)

e) Historic Monuments and Sites of Hiraizumi (06/04/2001)

f) Jômon Archaeological Sites in Hokkaido, Northern Tohoku, and other regions (05/01/2009)

g)Main Building of the National Museum of Western Art (14/09/2007)

h)Ogasawara Islands (30/01/2007)

i) Okinoshima Island and Related Sites in Munakata Region (05/01/2009)

j) Temples, Shrines and other structures of Ancient Kamakura (01/10/1992)

k)The Modern Industrial Heritage Sites in Kyushu and Yamaguchi (05/01/2009)

l) The Tomioka Silk Mill and Related Industrial Heritage (30/01/2007)

3. Sites in Cambodia on the World Heritage list

a) Angkor, Siem Reap Province (1992)

b)Prah Vihear Temple, Prah Vihear Province (2008)

4. Tentative list in Cambodia

a) Group of Sambor Prei Kuk, Kampong Thom Province (01/09/1992)

b)Sites of Koh Ker, Prah Vihear Province (01/09/1992)

c) Sites of Kulen, Seim Reap Province (01/09/1992)

d)Sites of Angkor Borei and Phnom Da, Takeo Province (01/09/1992)

e) Sites of Oudong, Kampong Spoeu Province (01/09/1992)

f) Group of Beng Mealea, Siem Reap Province (01/09/1992)

g)Group of Prah Khan Kampong Svay, Prah Vihear Province (01/09/1992)

h)Group of Banteay Chmar, Banteay Meanchey Province (01/09/1992)

i) Group of Banteay Prei Nokor, Kampong Cham Province (01/09/1992).

D. Practical training sessions and study tours

1. National Research Institute for Cultural Properties
   a) Practical training at an excavation site (Heijo Palace site)
   b) Practice activity in laboratories at the Nara Institute (in Nara)
   c) Practice activity in the storage room of the Asuka Historical Museum
2. Study of construction to conserve the sites of ancient kilns. The methodology of how to remove and reconstruct a kiln site was studied at the Suita City Museum and Haniwa Factory Park.
3. Visits to World Heritage Sites, archaeological parks, other museums in various places

III. Training results that are expected:

A. This training course will help in the creation of policies for the management of the Angkor Archaeological Park. This policy will not only serve as a guideline for the Angkor Park, but it also can be applied to other sites in Cambodia.

B. This training has provided us with better methodology for preserving and conserving valuable cultural heritage in a manner that will permit these rich cultural resources to contribute to the present and future socio-cultural development of our country.

C. The knowledge gained through this training will be conveyed to Cambodian students who are involved or interested in cultural resource management as part of our efforts to develop badly needed human resources.

IV. Conclusion

I am very fortunate that my institution has selected me to attend this training course on Cultural Heritage Protection in the Asia/Pacific Region, 2008 (Individual Course) held in Japan, which is widely considered to be one of the most developed countries in the world.

Through the training, internship and research experience I have obtained at various heritage institutes and sites in Japan, I have been extremely excited by what I have studied, and wish to find out more about preservation and research again in Japan, so that I can further improve my knowledge to use for similar studies in my country.

To date, the ACCU has consistently paid great attention in cooperating with my country and especially my institution, the APSARA Authority, in dealing with training our staff and much other technical assistance of importance that is beyond description. I promise that I will spread in my country the knowledge and experience that I have obtained during this training in Japan, especially in the Angkor Siem Reap area, to help make it become an area that is as well preserved as those of Japan. I firmly hope that the ACCU will continue this good cooperation

with Cambodia, and that many other Cambodian experts will have the same chance to study all of these important subjects in Japan as well.

All in all, I would like to say thank you to the government of Japan, and particularly to the ACCU, which has organized this training and provided young Cambodian specialists this opportunity to study the international standards upheld in Japan.

Sayoonara, Arigatoo gozaimasu **ACCU**

Final Report

CHHUON Samedi

Introduction

The individual training course, 2008, has been jointly organized by Bunkacho (Agency for Cultural Affairs, Japan), and the Nara National Research Institute for Cultural Properties, a member institution of the National Institute for Cultural Heritage.

H.E. Bun Narith, General Director of the APSARA Authority, recommended three applicants as suitable participants for this program by invitation. The ACCU Nara Office then determined to accept the following three applicants as participants.

- Mr. LIM Srou, Archaeologist, Department of Conservation of Monuments in the Angkor Park and Preventive Archaeology, APSARA Authority
- Mr. CHHUON Samedi, Archaeologist, Department of Land and Habitat Management in the Angkor Park, APSARA Authority
- Mr. IN Sovann, Archaeologist, Department of Conservation of Monuments Outside the Angkor Park, APSARA Authority

From November 19 to December 20, 2008, as one of the above three individuals selected by the APSARA Authority, I joined in the training course based at the ACCU Office in Nara. I am pleased to have had the chance to attend this training course.

The individual training course aims at mainly providing the participants with an opportunity to master necessary knowledge and practical techniques regarding site management and its utilization. The objectives and scope of the training course include the following.

- Japanese system of protection for its cultural properties
- History of site management in Japan
- Principles and plans of site management
- Maintenance and utilization of archaeological sites
- Governing bodies for site management
- Practical training at excavation sites
- Fieldwork: Management and utilization of archaeological sites in practice

Content of the training course

ACCU, Nara, gave the participants the chance to gain hands-on experience in the fields of preservation, management, and utilization of sites. Participants were provided with an opportunity to work with historic preservation researchers at various institutes, and local site specialists, and were given constant attention and care. Training activities consisted of lectures and discussions, and practical experience including on-site field study.

Lectures and discussions. Specialists having great amounts of experience offered lectures, explaining through examples and sites of the best practices that have been successfully done to date in Japan. They shared their experience and good advice, in terms of ideas and technical skills for the participants to put into practice in their own country when the situation is similar.

Practical experience and on-site field study. Much of the training was hands-on experience at historic sites and monuments, museums, and archaeological sites, etc., including a study tour of Okinawa. These activities and the facilities visited are summarized as follows.

- Historic monument sites: Japan has many monument sites, including wooden structures such as temples. Specialists explained about the foundation systems and techniques that were utilized in wooden architecture in the ancient period, and how nowadays specialists include new techniques for preservation and safekeeping in the reconstruction of monuments. We also learned about site management, the most important aspect of which being the provision of a master plan, and the identification of limits to areas for permanent development.
- Museums: Museum maintains permanent exhibits of materials (painting, calligraphy, ceramics, archaeological artifacts, etc.). The museums also have special exhibits. The materials are arranged and classified by period and type of cultural property. There are panel displays, learning areas, book collections for students and the public to get knowledge easily.
- Burial mounds: *Kofun*, especially the keyhole-shaped tomb mounds, are among the most famous monuments of ancient Japan. This kind of tomb mound was built for the leaders of ancient powerful clans or emperors. In the Kofun period, local leaders held religious authority. Gradually the powers of these leaders increased with their leadership skills. When a leader died, people hoped he could continue to protect their lives through his magical power. It is therefore possible that the *kofun* was a symbol of this religious or magical power. In the keyhole-shaped tombs, coffins were used for interring the dead. They are classified into the several types by their materials, and include wood, stone, *haniwa*, and earthenware coffins. They are also classified by

shapes, as house- or boat-shaped coffins. The keyhole mounds show differences in shape from the Early Kofun period to the Late Kofun period.

- Kiln sites: Kiln sites are typically located on a hill or the side of a mountain, as seen in the excavation at Shin'ike, where one of the oldest and largest *haniwa* factories was found dating from about the 5th - 6th centuries, extending over about 30,000 m^2. There were 18 kilns, 3 workshops, and 14 houses for *haniwa* craftsmen discovered.
- Okinawa: Japan basically lost all of the territory it acquired after 1894. Okinawa, controlled by the USA after 1945, was returned to Japan in 1972. Okinawa Island, the main island in the chain and the former center of the Ryukyu Kingdom, is home to more than half of the prefecture's population, as well as the prefecture's capital of Naha, and US military bases. In the 11th century, numerous *gusuku* (castle) came into existence in Okinawa. Generally, the word "gusuku" is written using the Japanese characters for castle. Gusuku take various forms, and some sites are very large. In terms of Ryukyu history, they mark the Gusuku Era.
- Libraries: These facilities store documents, classified historically, for the benefit of researchers with facility in the Japanese language.
- Laboratories
- Photography studios
- Excavation practice: We had the opportunity to excavate at the Nara Palace site after some classroom learning. The research, and collection of data, generated by the Nara National Research Institute for Cultural Properties, provide a complete understanding of the history of buildings at the site, its present condition, and viability for future use.

Summary of Information and Understanding about Japan

Here is a summary of my basic understanding about Japan, in terms of its location, religion, history, and cultural properties and heritage management practices, based largely on this training program.

1. Location of Japan

Japan is located in Eastern Asia and forms an island chain between the North Pacific Ocean and the Sea of Japan, east of the Korean Peninsula. The capital is Tokyo and the climate of Japan is basically temperate and moist. Japan is extremely volcanic, and prone to earthquakes and tsunamis.

2. Religion in Japan

Japanese religion is an amazing assemblage of various traditions with a history going back over two thousand years. These diverse religions are organized with their own distinctive administrations, carnivals, and celebrations.

Indigenous Japanese religion is formed around natural manifestations in Japan's geological location and in nature. Religion in Japan has also been immensely influenced by other Asian religions, especially those entering by way of China and Korea. As a result, the most eminent religions in Japan are the native Shinto and the foreign Buddhism.

The term Shinto means the "way of the gods." Shinto manifests the indigenous beliefs of the Japanese people from ancient times. This is considered Japan's most famous religion after Buddhism. The Shinto religion is strongly rooted in local religious traditions, and thus is not based solely on an integrated set of sacred writings. Shinto gods are known as *kami*. They are sacred spirits which take the form of things and concepts important to life, such as wind, rain, mountains, trees, and rivers.

Japanese religion has had a great and significant influence on the development of Japanese history and civilization.

3. Prehistory and history

The first historical mention of Japan is in Chinese texts referring back to the 1st millennium BC, but recent surveys have shown that mankind inhabited the Japanese islands back in the Paleolithic age. The next two periods, the Jomon and Yayoi, both derive their names from the pottery of the age. Each period is marked however with its unique characteristics which set it apart from other periods, besides making important contributions to Japanese history.

The Jomon period lasted from 13000 to 300 BC. The term Jomon means a pattern made with a plaited cord, found on some of the earliest pottery belonging to this era. The period is today remembered mostly for this Jomon pottery, but the following period is much more significant.

The Yayoi period (300 BC to 300 AD) is notable for two landmark contributions to Japanese culture. One was the importation of a better way of farming, and the use of bronze and later iron, into Japan from Korea. The other was the rise of social classes.

The Kofun period followed the Yayoi period and lasted until 538. It takes its name, which means "old tomb" (*kofun*) from the period's rich funerary rituals and distinctive earthen mounds. The mounds contained large stone burial chambers, and many were shaped like keyholes, some of which were surrounded by moats. By the late Kofun period, the distinctive burial chambers, originally used by the ruling elite, were also were built for commoners.

After the Kofun period came the Asuka period, the Nara period and the Heian period. During all these eras Japan went through a series of developments that saw the emergence of the traits of civilization. The Asuka period is the period in Japanese history occurring from 538 - 710. The arrival of Buddhism marked a change in Japanese society and it affected the Yamato government as well. The Nara period covers the history of Japan from 710 to 784. The Empress Gemmei established the capital at Nara, also known as Heijokyo.

The Heian period, the last division of classical Japanese history, runs from 794 to 1185. The Heian period is considered the peak of the Japanese imperial court and noted for its art, and especially its poetry and literature. The name Heian is a word that means “peace” in Japanese. The Heian period began with the movement of the capital of Japan to Kyoto in 794.

4. Cultural properties and World Heritage Sites in Japan

Cultural properties and heritage in Japan are preserved and utilized under the Law for the Protection of Cultural Properties and other laws enforced by the national and local governments, in other to contribute to the advancement of the nation. Categories of cultural properties include:

- Tangible cultural properties (paintings, archaeological artifacts, historical materials, sculptures)
- Intangible cultural properties (craft techniques, music, drama, film)
- Folk cultural properties (houses, tools and implements, techniques related to religious faith)
- Monuments (ancient tombs, shell mounds, bridges, sites of palaces, gardens)
- Cultural landscapes (water ways, natural villages, terraced rice fields)
- Groups of traditional buildings (post towns, farming villages)

World Heritage Sites are a special subset of the Japanese heritage. The World Heritage Convention was created by UNESCO in 1972, and has been accepted by 183 States Parties, including Japan. Following the creation of the convention, sites of cultural properties of universal significance have been increasingly inscribed on the World Heritage List. The following are the World Heritage Sites of Japan.

- Buddhist Monuments in the Horyu-ji Area, Nara prefecture (1993)
- Himeji-jo, Hyogo prefecture (1993)
- Shirakami-Sanchi, Akita and Aomori prefectures (1993)
- Yakushima, Kagoshima prefecture (1993)
- Historic Monuments of Ancient Kyoto (Kyoto, Uji and Otsu Cities) (1994)
- Historic Villages of Shirakawa-go and Gokayama, Gifu and Toyama prefectures (1995)
- Hiroshima Peace Memorial (Genbaku Dome), Hiroshima prefecture (1996)
- Itsukushima Shinto Shrine, Hiroshima prefecture (1996)
- Historic Monuments of Ancient Nara (1998)
- Shrines and Temples of Nikko, Tochigi prefecture (1999)
- Gusuku Sites and Related Properties of the Kingdom of Ryukyu, Okinawa prefecture (2000)

- Sacred Sites and Pilgrimage Routes in the Kii Mountain Range, Nara, Wakayama and Mie prefectures (2004)
- Shiretoko, Hokkaido prefecture (2005)
- Iwami Ginzan Silver Mine and its Cultural Landscape, Shimane prefecture (2007)

5. Preservation and utilization of heritage

The preservation of cultural properties and heritage is essential for accurate understanding of the history and culture of Japan. It is accordingly extremely important to preserve and utilize such cultural properties. Under the Law for the Protection of Cultural Properties, the national government designates or selects the most important cultural properties. The government also implements diverse measures necessary for the preservation and utilization of the cultural heritage. These measures include preservation because in the modern period this has become increasingly necessary due to threats by land development and changes in lifestyles in recent years. Aspects of preservation and utilization are discussed here under the topics of repair and restoration, reconstruction, and the involvement of local residents and students.

Repair and restoration. The materials from excavations of archaeological sites are analyzed and classified according to type or material, such as ceramic, stone, wood, metal, painting, sculpture using clay, and so forth. All of the items that need restoration are provided with careful repair, so they may be used in case studies and research, because artifacts can show us aspects of various cultures, periods, artistic techniques, and other values regarding their production.

Reconstruction. Through excavation, the foundations of structures are revealed in the unearthed layers, and archaeologists with experience on sites start thinking about making reconstructions of the structure along the same lines as the ancient period, because it is very important for describing and showing the public about the history and function of the building or structure being excavated. However, only outstanding results of archaeological fieldwork are reconstructed.

Involvement of local residents and students. The World Heritage Sites and national cultural heritage properties in Japan often have projects for students and local residents as activities to gain knowledge, by making something that the ancients left behind at the site, or celebrating their ceremonies, playing games, etc.

The above activities are a part of the conservation and preservation of the cultural heritage, so that it may continue to remind people of what happened at the places of monuments and ancient sites.

Comparisons with Cambodia

Cambodia, also known for a time as Kampuchea, is located in mainland Southeast Asia between Vietnam, Laos, Thailand, and the Gulf of Thailand. Here I will briefly outline the history of Cambodia, describe its World Heritage Sites, and discuss differences with Japan in the protection of cultural properties.

1. History of Cambodia

In the history of Cambodia it is often noted that the identity of Khmer civilization, from its origins before the six century up to the present day, has been forged through dynamic tension, and in the delimited space between the mountains and the water. Angkor is the perfect example, situated on the Siem Reap plain bounded to the south by the vast Tonle Sap lake, and to the north by the Phnom Kulen mountain plateau.

We can divide the historic era in Cambodia into three periods, the Pre-Angkor, the Angkor, and the modern. The Pre-Angkor Period, which lasted up through the 8th century, is subdivided into two phases, the first named for the Funan Empire (1st century AD - 613). The actual name of this nation is not known, but in the Chinese chronicles of 2nd century AD it was called Funan. In fact, the word "Funan" is the Chinese pronunciation of the common place-name "bnam" (or "phnom" in modern Khmer) which means "mountain." Its location is thought to be centered in the Mekong Delta, and it encompassed the southern coast of modern Cambodia and Vietnam. There is evidence that Funan had once been a strong maritime state, actively involved in overseas trade. During excavation at the ancient port of Oc Eo in southern Vietnam, archaeologists found many artifacts which were trade goods and products from India, China, and even as far as the Roman Empire.

The second phase is named after Chenla (550 – 8th century), a more direct ancestor of the Khmer Empire. "Chenla" also comes from the Chinese pronunciation of its name, which is "Kambuja" in Khmer. It first appears historically in Chinese chronicles as a vassal state of Funan's which gained its independence from Funan around the year 550. Within the next 60 years, Chenla succeeded in conquering its predecessor Funan, and gradually absorbed its people as well as inherited from it the influence of Indian culture.

The first capital of Chenla, named Isanapura, was established around 613 at Sambor Prei Kuk in Kompong Thom province of modern Cambodia. Later on Chenla was divided into northern and southern states, of which the Chinese chronicles refer to as "Chenla of the Land" and "Chenla of the Sea," respectively. The center of the northern Chenla was at the Champassak province of today's southern Laos, whereas that of the Southern Chenla occupied the former territory of Funan along the Mekong Delta and the coast. In 715, both Chenla states further broke down into several smaller states.

The Angkor Period lasted from the 9th to the 15th centuries. During this time the Khmer Empire extended its sway far beyond the country's present boundaries. This period produced the glorious temple complexes and royal palaces at Angkor.

The period after the decline of Angkor (15th century to present) saw the loss of Khmer influence at the expense of its more powerful neighbors, Siam and Vietnam, leading ultimately to its status as a French colony before restoration of its sovereignty in 1953.

2. World Heritage Sites in Cambodia

World Heritage Sites belong to all the peoples of the world, irrespective of the territory on which they are located, and are our legacy from the past, what we live with today, and what we pass on to future generations.

The United Nations Educational, Scientific and Cultural Organization (UNESCO) seeks to encourage the identification, protection and preservation of cultural and natural heritage around the world considered to be of outstanding value to humanity. Subsequent to the creation of the World Heritage Convention by UNESCO in 1972, two sites in Cambodia have been inscribed on the World Heritage List.

- Angkor: Angkor was inscribed on the World Heritage List in 1992 by UNESCO as one of the most important archaeological sites in Southeast Asia. Stretching over some 400 km^2, including forested area, the Angkor Archaeological Park contains the magnificent remains of different capitals of the Khmer Empire, from the 9th to the 15th centuries.
- Temple of Preah Vihear: Situated on the edge of a plateau that dominates the plain of Cambodia, this temple is a unique architectural complex of a series of sanctuaries linked by a system of pavements and staircases on an 800 meter-long axis, and dates back to the first half of the 11th century AD. The temple is an outstanding masterpiece of Khmer architecture, in terms of plan, decoration and relationship to the spectacular landscape and environment, and is dedicated to the Hindu deity Shiva. The temple was inscribed on the World Heritage List in 2008 by UNESCO.

3. Differences between Japan and Cambodia

Throughout the training in Japan, we observed that Cambodia has differences in its methods for preserving cultural properties because the protection system of cultural properties is not the same. The monuments in Cambodia still remain because they are made of sandstone, so the temples just need preserving, with a little conservation and of restoration parts that have been lost. There is no need for full-scale reconstruction, because we offer the value of architecture and its decoration that have passed down to the present, which we are maintaining, including the cutting of trees which helps with the preservation also.

We are preserving and providing protection for the Angkor site, which has been divided into five zones with different levels of protection:

- Zone 1, Monumental Sites: These are areas which contain the most significant archaeological sites in the country and, therefore, deserve the highest level of protection.
- Zone 2, Protected Archaeological Reserves: These are areas rich in archaeological remains which need to be protected from harmful land use practices and the consequences of inappropriate development.
- Zone 3, Protected Cultural Landscapes: These are areas with the characteristics of a landscape that should be protected on account of its traditional appearance, land use practices, varied habitats, historic buildings, or man-made features from the past or of recent origin, which contribute to the cultural value or reflect traditional lifestyles and patterns of land use.
- Zone 4, Sites of Archaeological, Anthropological or Historic Interest: These include all other important archaeological sites, but of less significance than Monumental Sites, that need to be safeguarded for the purposes of research, education or tourist interest.
- Zone 5, Socio-economic and Cultural Development Zone of the Siem Reap/Angkor Region: This region covers the whole of Siem Reap province.

Conclusion

Even if Cambodia has differences in its system and methods for the protection of cultural properties compared with Japan, the techniques and some of the experiences of Japan in terms of excavation, preservation, restoration and maintenance, and field management of sites can be applied to Cambodia. At present the APSARA Authority still needs specialists with experience to work in helping conserve World Heritage Sites in Cambodia, and it needs to cooperate and share in the experiences, ideas, and high-level techniques brought by international organization working in Angkor area.

On this occasion, I would like to express my thanks to ACCU, Bunkacho (Agency for Cultural Affairs, Japan), and Nara National Research Institute for Cultural Properties of the National Institute for Cultural Heritage, for making this program of individual training available for the benefit of Cambodia. This is the first time for an individual course to be offered to the APSARA Authority and it is very important to get best experience from the course. I will share these experiences in my country, and especially will apply then soon in the operation of the Tani kiln museum.

And with utmost sincerity, I would like to thank the Professors, researchers, and staff specialists who providing the training, although I expect to make many mistakes that will need to be fixed.

Final Report

IN Sovann

Training Course on Preservation, Utilization and Management of Cultural Properties in Japan

Introduction

Within the framework of cooperation between the APSARA Authority and ACCU Nara, I obtained the opportunity to participate in this individual training course that was organized by the Agency for Cultural Affairs, Japan, the Asia/Pacific Cultural Centre for UNESCO (ACCU), and the Nara National Research Institute for Cultural Properties from the 18th of November to the 19th of December, 2008, in Japan.

During this course, I learned much about the preservation and restoration in Japan of archaeological artifacts taken from excavation sites. I also had the chance to visit with and obtain a great amount of knowledge from Japanese specialists at national and local museums, and World Heritages and other sites in Nara, Kyoto, Kashihara, Osaka, and Okinawa, knowledge that I will put to practice in my country in the future.

Part I: Preservation of Japanese Cultural Heritage

1. Archaeological Artifacts and Features

Most artifacts, such as roof tiles, pottery, metal or stone tools, etc., are found in excavations of sites, along with structural features such as ancient foundations, and sometimes wooden columns, walls, or other structural parts of temples or other buildings. In relation to the preservation of all of these materials, I learned through this course about the following activities: (1) excavation, (2) research, (3) conservation, and (4) presentation.

1.1. Excavation

Japanese law requires salvage or research excavation for all development projects conducted at places where buried cultural properties have been found. As part of this training, I have had the opportunity to visit many such excavation sites in Kashihara and at the Heijo Palace site.

In one particular case, I participated in this training on one of the excavations at the Heijo Palace site. Through my experience at that site I learned about a number of differences from excavations in Cambodia, such as: the structure of site was very complicated; the soils could be very hard, sticky, or sometimes sandy; and some of the methodology used by experts to take photographs at that site was different.

1.2. Research

Many Japanese archaeologists conduct research about ancient temples and other structural remains from one site to another, while bringing to these task examinations from a variety of perspectives based on Chinese documents, Japanese chronology, Japanese literature, Japanese painting, and also material analysis.

1.3. Conservation

Most Japanese temples and architectural elements in Japan were constructed from wood. In conservation activities, Japanese experts consider such factors as the effect of regular changes in climate through the seasons (including the drier seasons and the rainy season). Moreover, lightning presents a serious risk of fire at wooden temples.

In order to protect wooden temples from such risk, especially in the dry season, Japanese experts set wires to conduct lightning away from the temples, and they also set up water gun systems around the temple buildings for protection should fire break out under bad circumstances.

On the other hand, for conservation in the rainy season, Japanese experts attach protective roof tiles to prevent rainwater from seeping into the temples.

1.4. Presentation

The main goal of presentation is the display of archaeological artifacts and features from excavated sites to the public, especially for education so that researchers, students in junior and senior high schools, and foreigners can know about Japanese culture and ancient Japanese life.

I could observe Japanese examples of heritage presentation, as I had the opportunity to visit many places where I improved my knowledge about Japanese history and cultural heritage, such as:

- Museums**:** Asuka Historical Museum, the exhibitions at the Department of Asuka/Fujiwara Palace Site Investigations facility, the museum of the Archaeological Institute of Kashihara, Nara National Museum, Heijo Palace Site Museum, and other site museums in Osaka.

- Site visits**:** excavation sites in Kashihara and at the Heijo Palace, burial mounds in Osaka.
- World Heritage sites**:** Todai-ji temple, Toshodai-ji temple, Yakushi-ji temple, Katsuren castle, Nakagusku castle, Shuri castle, Zakimi castle site and so on.

2. Restoration of Archaeological Materials

After excavation of a site is done, the archaeological artifacts are classified based on differences in the kinds of materials, sources, and the needs for and techniques of restoration. The research institutes in Japan have the responsibility to restore and study all such materials in the laboratory, such as artifacts made of stone and wood, pottery and roof tiles. In the study of these activities, I had the opportunity to visit some of the laboratories at the Nara National Research Institute for Cultural Properties to broaden my knowledge about such laboratories, and also about the storage of artifacts after collection from the excavation sites around the Heijo Palace.

Most artifacts which are found in these excavations are made of wood, including items such as pillars and other architectural members of wooden structures and their roofs, and *mokkan* (wooden documents). Some of the artifacts are stored at controlled temperatures to minimize deterioration for the purpose of preservation.

Part II: Utilization of Cultural Properties

This aspect of cultural property management has always been closely related to the preservation and protection of sites, site museums, and historic monuments. Japan has adopted many laws and other measures, such as the Law for the Protection of Cultural Properties and the Nara Document on Authenticity, regarding the utilization and conservation of cultural heritage (tangible and intangible), places of scenic beauty and natural monuments, and cultural landscapes and groups of traditional buildings. Under this legal framework, researchers and experts can employ all of the regulations for utilization and maintenance work on ancient structures wherever they are discovered in Japan. However, at times some people, who were unaware of issues in the protection and preservation of historical sites, have not abided by the law and destroyed sites by development.

Part III: Management of Cultural Properties

The management of cultural properties combines aspects of work for their preservation and utilization together in planned fashion. Moreover, for the management of a single site, we have to consider in turn the three steps of concept, planning and design, and technique.

- Concept**:** This is based on a consideration of the material contents remaining at the site; all new concepts are created after analysis of the value of the site and its archaeological or historical materials.
- Planning and design**:** This is done based on the situation of the materials, and involves deciding how to present the site to the public.
- Technique**:** This includes handling of the materials which was are unstable and unsafe. There are many techniques involved in conservation and restoration based on differences in the materials and their conditions.

Part IV: Conclusion

As a result of this training course, I have learned that the situation of archaeological sites in Japan is mostly in stable, and not at serious risk from the effects of weather like the archaeological sites in Cambodia. The management of artifacts places concern on standards of conservation of the materials, and is also more secure than the situation in Cambodia.

After this training course, I expect to put the theories and techniques from archaeological sites in Japan into practice in my country in ways such as the following.

- Share my knowledge from the training course with other colleagues in my department, so they may get know about the differences with the situation in Japan.
- Put some principles into practice at sites under the responsibility of my department, such as: Koh Ker complex, Beng Mealea temple, Kbal Spean site, and Chao Srey Vibol temples.
- Use theories about site museums and museum management to revolutionize the museums in Cambodia in all possible cases.
- Examine the differences in legal rules between Japan and Cambodia for regulating archaeological remains.

In the end, I would like to express my thanks to all the professors and experts who spent their valuable time to instruct and accompany me on visits to many archaeological sites in Japan in this training course, from the first day until the finish.

V . Appendix

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2. List of lecturers and Interpeters
3. Staff Members ACCU Nara

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