

KINGDOM OF CAMBODIA
NATION RELIGION KING



MINISTRY OF CULTURE AND FINE ARTS

SAMBOR PREI KUK, ARCHAEOLOGICAL SITE Representing the Cultural LANDSCAPE of Ancient Ishanapura

PROPOSAL FOR MANAGEMENT PLAN



Cambodian National Commission for UNESCO

Comprehensive Cultural Heritage Conservation Management Plan (SPK-CCHCMP)

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EXECUTIVE SUMMARY

State Party

Kingdom of Cambodia

State, Province, Region

Kampong Thom province, commune of Sambor, and district of Prasat Sambor

Name of Property

Sambor Prei Kuk Archaeological Site Representing the Cultural Landscape of Ancient Ishanapura

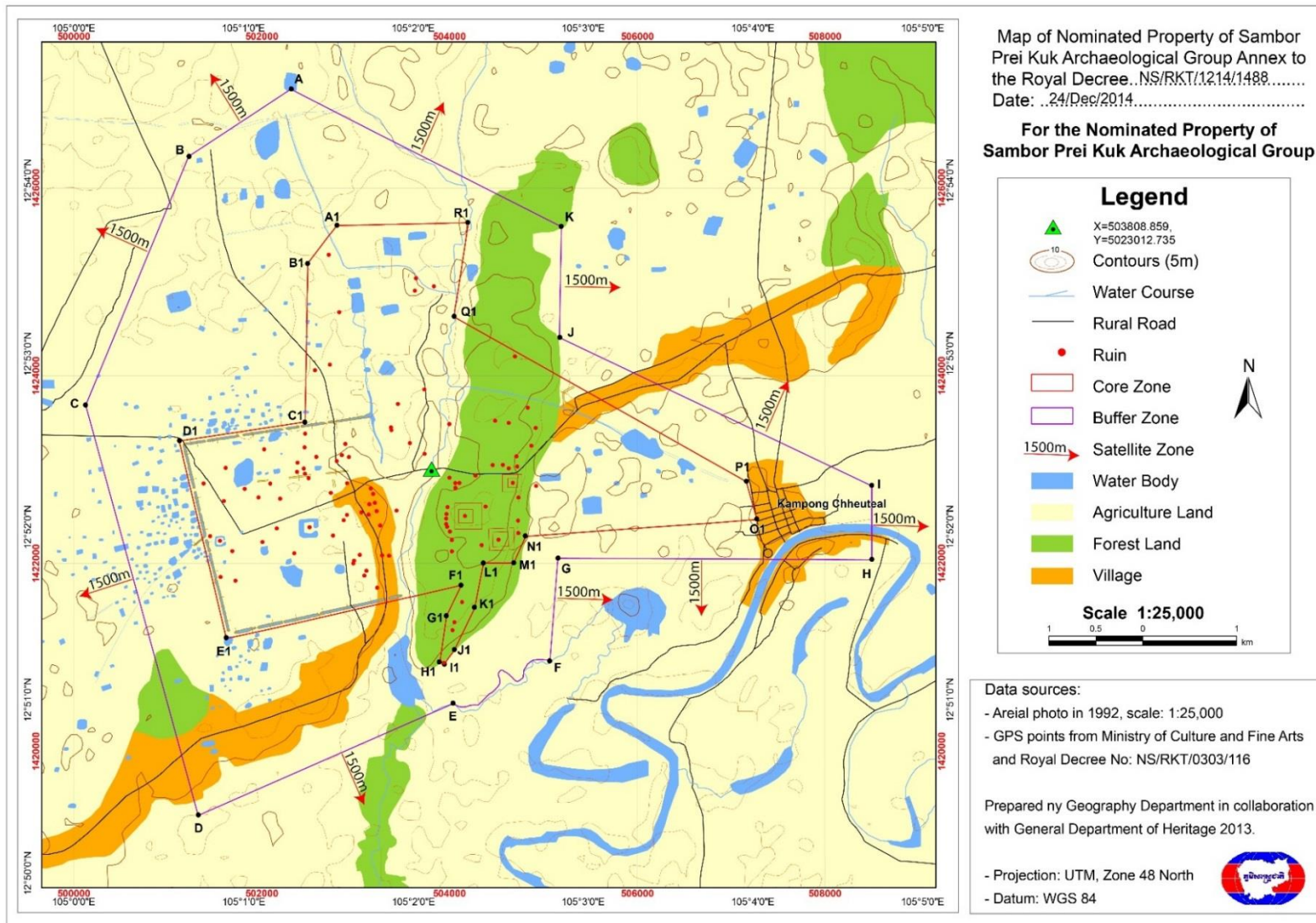
Geographic coordinates to the nearest second

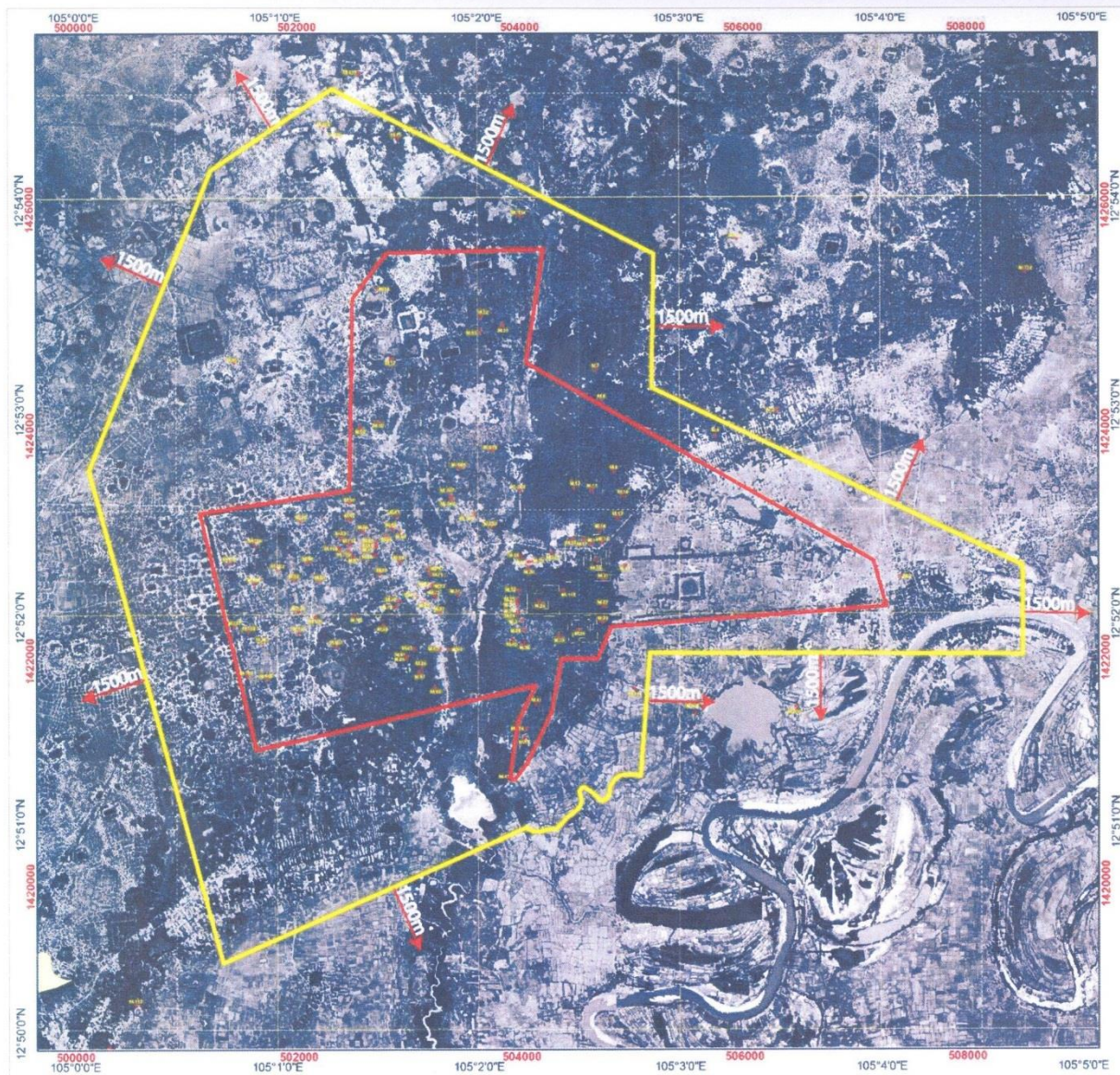
Point Zero: WGS84E 503808 - N 1423012. Point Zero is situated on the point at the approximate center of Prasat Tao Group or Central Group (C) of the much larger Sambor Prei Kuk Archaeological Site Representing the Cultural Landscape of Ancient Ishanapura

Textual description of the boundary of the nominated property

The 1354.2ha is located on the west bank of the Steung Sen (river) in an area that contains lowlands, a marsh, and plateau. The entire property is situated on a gentle incline from north to south in a relatively flat area with an elevation of 2 m to 10 m. Small rivers punctuate the lower areas. The place is a mixture of rice paddy, tropical forest, and subsistence habitation. The area comprises the cultural site of Sambor Prei Kuk Archaeological Group established by the Reform of the Royal Decree of 24 December 2014.

A4 size maps of the nominated property, showing the boundaries and buffer zone





Map of Nominated Property of Sambor
Prei Kuk Archaeological Group Annex to
the Royal Decree *NS/RKT/1214/1488*.
Date: *24 December 2014*.

For the Nominated Property of
Sambor Prei Kuk Archaeological Group

Legend

-  X=503808.859,
Y=5023012.735
-  Ruin
-  Core Zone
-  Buffer Zone
-  1500m Satellite Zone



Scale 1:25,000



Data sources:

- Aerial photo in 1992, scale: 1:25,000
- GPS points from Ministry of Culture and Fine Arts
and Royal Decree No: NS/RKT/0303/116

Prepared by Geography Department in collaboration
with General Department of Heritage 2013.

- Projection: UTM, Zone 48 North
- Datum: WGS 84



Criteria under Which the Property is Nominated

The Sambor Prei Kuk Archaeological Site Representing the Cultural Landscape of Ancient Ishanapura is nominated for the World Heritage List under criteria (ii), (iii) and (vi):

Criteria (ii): exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design.

Criteria (iii): bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared.

Criteria (vi): be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.

Draft Statement of Outstanding Universal Value

(a) Brief synthesis

The Sambor Prei Kuk Archaeological and Cultural Landscape of Ancient Ishanapura (first known as Bhavapura), ancient capital of the Chenla Empire, is the most important site for 6th -7th Century Southeast Asia, showing a very complex city planning on monumental scale (harbor, causeways, hydraulic structures, religious complexes introducing octagonal architecture and moated habitation zone) and a unique iconography currently known as the “Sambor Prei Kuk Style”.

Politically, administratively and spiritually, the capital resonated far beyond its borders with central rule (introduction of the King-God concept) and administration transferring the universality of the Sanskrit language to the distinct Khmer language.

It was a place where travelers and diplomatic missions from as far as China, India and Central Asia met each other and where a syncretism of Hindu and Buddhist religions was established through the introduction of tolerant and peaceful cults around Prahasiteshvara, Gambireshvara, Harihara and the Sakabrahmana.

The combination of these new and unique features would give life to a society that would form the basis for the much larger Angkor Empire a few centuries later. Many traits however, would live on till today.

(b) Justification for criteria

Criteria ii: The Sambor Prei Kuk Archaeological and Cultural Landscape of Ancient Ishanapura has a **unique architecture** and **town planning**, which is a distinct adaptation of Indian influence, introducing for the first time the octagonal building and translating itself in new aesthetic forms, such as the flying palaces and medallions, carved on the brick walls of temples and enclosures, stone lintels and sculptures currently known as the “Sambor Prei Kuk Style”.

The **landscape design** was carefully crafted and engineered to the needs of this large capital with the simultaneous introduction of three hydraulic systems to manage and control the water flow, providing a continuous water supply throughout the year.

Criteria iii: The civilization of Ancient Ishanapura underwent deep influences from the Indian subcontinent in the form of social institutions, religion and art which were assimilated into indigenous customs, ideology and artistic expressions. The Chenla Empire was a centralized state featuring a tolerant syncretism of Hindu

(Prahasiteshvara, Gambireshvara, Harihara and Sakabrahmana) and Buddhist religions, having a lasting impact on Southeast Asian society.

The religious complex was the largest pilgrimage center in Southeast Asia. All that remains architecturally of that civilization are its brick and stone structures, its spiritualism and language however, still live on.

Criteria vi: In Sambor Prei Kuk, we see the first official introduction of the Harihara and Sakabrahmana cults, both striving for the universal values of tolerance and peace. It also harbored the first inscription in Southeast Asia referring to the universal teachings of Buddhism.

Inscriptions also make use for the first time of the Khmer language next to Sanskrit referencing to its centralized system of rule, and introduction of the God-King concept, which will stay central in Cambodian society till the beginning of the 20th Century.

The bas relief of a lintel shows us one of the first representations of an orchestra and music instruments, of critical importance for the universal study of ancient and contemporary music.

Ancient Ishanapura thus embraced a language, religious ideas and concepts of governance of universal significance.

(c) Statement of integrity

The extent of the nominated property under Royal decree of 24 December 2014 (see annex VI) includes all the relevant historical, cultural, religious, secular, archaeological and environmental features and artefacts of the ancient complex, manifested through its moated city, three main temple complexes, hydraulic structures, monumental remains and pristine forested area from which the site bears its name. A LiDar survey carried out early 2015 assists in illustrating the state of conservation of the site (page 19, *fig. 2.5*).

The ancient hydraulic structures (see annex V) are still in use today and a large number of decorative elements have remained in situ. Some of the masterpieces have been stored or are on exhibit in museums throughout Cambodia (see annex III).

(d) Statement of authenticity

The Sambor Prei Kuk Archaeological and Cultural Landscape continues to be used for the purposes of human habitation, agriculture production, commerce and religious worship.

Most of the ancient temple shrines are still in use for prayers and the ancient site is also considered a dwelling place for powerful ancestral spirits, for which special rituals are still organized several times a year.

Low density villages with traditional gardens and tree cover largely retain the pattern of settlement that would have existed in the historic urban complex.

This manifestation of continued old practices, assisted to maintain and preserve the archaeological and cultural landscape.

(e) Requirements for protection and management

The Sambor Prei Kuk Archaeological and Cultural Landscape is strongly protected by the Royal decree (Preah Reach Kret) NS/RKT/1214/1488 dated 24 December 2014, and the Cambodian Heritage Legislation. Royal Degree NS/RKT/0715/810 dated 31 July 2015, establishes the organization and functioning of the National Authority for

Sambor Prei Kuk Archaeological Site Representing the Cultural Landscape of the
Ancient Ishanapura

the Protection and Development of the Cultural Site of Sambo Pre Kuk. A Sambor Prei Kuk National Authority will be guided by a Management Plan.

Name and contact information of official local agency

Sambor Prei Kuk National Authority (SPKNA)
Kingdom of Cambodia
HE Mrs. Phoeurng Sackona
Ministry of Culture and Fine Arts
227 KbalThnal, Preah Norodom Blvd, Sangkat TonleBassac, Khan Chamkar Mon,
Phnom Penh, Cambodia
Tel/Fax: (855) 23 218 146/147/148
sackonap@gmail.com
[http\:\: www.mcfa.gov.kh](http://www.mcfa.gov.kh)

1. Methodology of preparation

The methodology for the preparation of the Sambor Prei Kuk Archaeological Group Comprehensive Cultural Heritage Conservation Management Plan (SPK-CCHCMP) was determined by the significance of the Sambor Prei Kuk Archaeological Group, the nature of the historic fabric and its current management system. This section covers the process of research, survey and investigation of the site and its environs. The analysis of the data collected and recommendations are incorporated in Sections 8 and 10.

The plan is a joint effort of a multidisciplinary team comprising architects, surveyors, conservation architects, conservation landscape architects, art conservators, historians, material scientists, civil engineers, structural engineers, public health engineers, electrical engineers, rural planners, rural designers, and industrial and exhibition designers. Inputs were further sought from archaeologists, site interpretations specialists and risk management specialists. The plan is based on archival research and extensive fieldwork. The interplay of these two dimensions of knowledge forms the basis of the plan. The principal areas of work include extensive and intensive archival research; extensive fieldwork, preparation of survey plans and inventories; user need assessments and stakeholder consultations; documentation; investigations and analytical studies.

Documentation for studying the designed open spaces of the period and comparing them with the current situation was time consuming. Archaeological investigations undertaken in select areas by the MoCFA established the authenticity of the information. Of course, more investigative work needs to be done to develop detailed action plans for implementation in a phased manner.

Detailed Heritage Conservation Plans (DHCPs) have been prepared buildings/features located in the various precincts of Sambor Prei Kuk. These buildings and features are in the protected area. The conservation plans for these buildings and features were made with the objective of putting in place the method and setting standards and guidelines for the making conservation plans for the entire group. Guidelines and methods have been established for architectural documentation and condition mapping of the built structures. Standards and legends have been developed for documenting the decay in the built fabric as well as for decorative features. A format has also been developed for collecting and collating information on decay, possible cause of decay and recommendations for conservation. Areas of material investigation have also been determined. A special manual has been developed to identify types of degradation.

The documentation process takes the form of five levels that are designed to further enhance our knowledge and understanding of the built heritage that includes not only monuments but their surrounding features including dams, ponds, moats, and other significant elements of the site. Not all elements require the extensive analysis, and care must be taken to use wisely the limited resources to document. The description of the levels is as follows:

Level 1: Brief written description of the pertinent facts in an inventory format with photographs and hand drawings of features of interest. GPS location should be part of the description. Brief condition statement (risk)

Level 2: Additional photographs, current and historical, of both the interior and exterior of monuments, and features that are scaled in inventory format; detailed aspects of the art and architecture, construction, and materials. Scaled plans and additional descriptive information. Risk assessment detailed. Previous intervention.

Level 3: Detailed description of the monument or feature including measured drawing of all views, bibliography of previous research, historical significance, and detailed state of condition with comparisons to historical documentation. Detailed description of original usage intent and cultural significance. Detailed description of degradation.

Level 4: Three dimensional drawings and degradation counter measures proposals long term based on risk assessments. Document the association and orientation with other monuments and features.

Level 5: A hypothetical rendering of the building and the surrounding environment if possible in its completed state (i.e. 7th to 11th century).

While all five are recommended at least Level 1 documentation should be prepared for all monuments and features regardless of the state of conservation.

This methodology must be followed for the preparation of DHCPs for all buildings before undertaking any conservation works.

The SPK-CCHCMP, DHCPs and other documentation reports must be read in conjunction with each other as they are co-related.

The methodology for preparing the SPK-CCHCMP has been described in section 6.1 and for the DHCP in section 6.2.

1.1. Comprehensive Cultural Heritage Conservation Management Plan (SPK-CCHCMP)

1.1.1. Research

Extensive archival research was carried out over the entire duration of the project by a team of historians and conservation architects.

The archival research included studies of:

- Contemporaneous accounts by Chinese travelers and historians;
- Accounts of European travelers who visited Cambodia during various periods of history;
- Accounts of the period of colonial occupation;
- References to buildings, open spaces and gardens, features, landscapes in literature and poetry;
- Paintings depicting the various buildings and open spaces within the Sambor Prei Kuk Archaeological Group;
- Drawings showing changes made to the buildings and open spaces;
- Photographs of the early twentieth century in various archival records;
- Record of interventions made by various groups starting from the late nineteenth century.

Secondary sources included works of scholars who have written extensively on Sambor Prei Kuk. These provided interpretations ranging from the symbolism of artworks to the physical form and layout of the buildings and open spaces. Information was also gathered on the role of the site in the various periods of history. This research was used to determine the national and international heritage value of the site and the contribution of individual elements to this value.

1.1.2. Surveys

The project required numerous types of surveys to be undertaken. These included a total station survey (physical survey), inventories (building and open space surveys), visitor and user need surveys, surveys to assess the engineering systems (electrical, public health, safety and security), surveys of the space usage, etc. These have been briefly explained in the following sections of the document.

1.1.2.1. Total Station Survey

Total station survey was undertaken of Sambor Prei Kuk Archaeological Group and the buffer zone. The survey maps were integrated into one base map which provides comprehensive base information for the multi-disciplinary team. The layers of information in these maps include footprint of built fabric, vegetation, topographical details (contours and spot levels), services, pathways and road networks, open drains, and other features.

1.1.2.2. Historic Precinct Survey

This is the rural area around Sambor Prei Kuk Archaeological Group which has a significant relation to the historical sites. The scope of the survey included:

- i. Identifying and documenting of projects and activities that have direct/indirect impact on this region.
- ii. Preliminary research and survey of the area through photographic documentation and information available from other agencies.
- iii. Defining of 'criteria' for demarcation of the 'Sambor Prei Kuk Historic Precinct'. This survey formed the base information to develop a 'concept plan' for the defined region and identify within it the rural fabric, green spaces and primary buildings and structures of importance.

1.1.2.3. Inventories (building and open space surveys)

Research and fieldwork was compiled into two inventories: one for the historic built fabric and the other for the open spaces. The database of the historic buildings has been called the 'Historic Building Information System' (HBIS), while that of open spaces is called the 'Open Space Inventory' (OSI). The aim of the comprehensive survey was to ensure that the conservation plan evolved in a scientific manner. The conservation plan is based on an evaluation of the significance of the buildings and open spaces, their condition and numerous other factors which are incorporated in the inventory form. The basic forms have been described in the sections below. For the purpose of survey, documentation and organization of information has been divided into numerous precincts.

ARCHITECTURAL TYPOLOGY

The information in the HBIS and OSI contain information collected through archival research and fieldwork. This information enables the following:

- An understanding of the history of the Group.
- An understanding of various typologies of open spaces and buildings as they existed in the 6th to 14th century and the later periods.
- An understanding of the chronology of events that have shaped the buildings and spaces.
- An understanding of the various components of each building and open space.
- An understanding of the meanings and intents of the various buildings and spaces and of the design principles that were used in their planning.
- An understanding of the nature of transformations the buildings and spaces have undergone over the various periods of their history.
- An understanding of the physical layering of the various interventions in the buildings and spaces over the last 15 centuries.
- An understanding of the significance of individual buildings and spaces in each of the historical phases.
- A decision-making process regarding the nature and level of conservation interventions possible and necessary in these buildings and open spaces, including determining which aspects of each built component and space need to be conserved and highlighted.
- An understanding of the state of the buildings and therefore the urgency for conservation intervention.
- An exploration of the possibility of retrieving the physical forms in keeping with the original intent of the designer.
- An assessment of the building for possible future use by setting thresholds for of acceptable levels of intervention or change.
- Development of the maintenance systems.

1.1.2.4. The Historic Building Information System

The HBIS database contains archival information, description of the building and the embellishments, its present state of conservation, analytical information, broad based recommendations, and information on the current maintenance practices, date of survey, name of the surveyor and photo documentation. The archival information has been gathered and collated by a team of historians.

Fieldwork for the architectural description and the condition description has been undertaken by a team of architects and conservation architects.

Description and assessment of embellishments, structural condition and engineering services was undertaken and collated by specialists, art conservators, structural engineers, plumbing and public health engineers, electrical engineers.

The archival information helps in the assessment of significance of the building. The values and condition of the structure are the principle parameters for recommendations for conservation.

They help determine whether or not the building can be put to any use. This information is valuable for the phasing of the conservation activities.

The HBIS contains the first level of information required for documentation for the preparation of the Detail Conservation Plans.

This inventory system provides basic information about the site and the environment in which it resides. The informational categories are as follows:

- iv. Unique ID number
- v. Code number
- vi. HP number
- vii. CISARK number
- viii. IK number
- ix. Site name
- x. Importance in order of 1 to 4
- xi. Composition
- xii. Condition
- xiii. Environment location
- xiv. Dimensions
- xv. Inscriptions if present
- xvi. Decorative/architectural stone objects present
- xvii. Old photograph reference
- xviii. Drawing reference
- xix. Historical references
- xx. General remarks

These are necessary for planning purposes. The data was used by the specialist consultants to prepare the conservation and the revitalization plan. These numbers are used by the various specialists in the planning team each viewing the same resource but from different perspectives. Additional information is provided in other documentation, as are described as follows:

A. LOCATION (Approach/Orientation)

The location of the building or the structure in the context of the distinct features of the site namely landmark buildings, road or pathways, as well as the orientation of how the building has been described and taken into consideration in this part.

B. TYPOLOGY

Structural: The structural typology is an indication of the structural system of the building.

Architectural: The architectural typology is an indication of the architecture type of the building.

C. BUILT BY

The name of the patron builder is written in this section. This is necessary to assess the significance of the building or the structure.

D. OWNERSHIP

Building or structure ownership is mentioned in this section. This is among the first pieces of information necessary for the management plan.

E. PERIOD/TIME/DATE OF CONSTRUCTION (with reference and source)

This historical information is necessary to assess the significance of the building from the perspective of its antiquity and whether it belongs to the original design scheme or is a later addition. The source of this information is included in this section to establish the authenticity of the building, feature etc.

F. DESCRIPTION

a. Historical (with reference and source)

This information was sourced from archival records. A list of reference material was developed after discussions with historians. This list included primary and secondary sources. The material was researched chronologically. The text inserted in the form is verbatim from the sources and includes full reference details (author, publisher, year, and page numbers).

i. Building history

Building Use (archival)

Usage

Site No.

Date Use (in receding timeline)

The information on the use of the building is written in chronological order.

This section identifies the original use of the building, any changes in building usage, and any additions, alterations or renovations. This information is helpful in assessing the significance of the building and also throws light on any misuse and associated decay patterns.

ii. Association/ events (archival)

Association

Site No.

Date Description

As the earliest city of its size in Southeast Asia and an important regional center throughout the Angkor period, the Group was witness to numerous significant political events, and its buildings and open spaces have immense associational value. Some of these events led to changes in the historic fabric, for instance decorations were added, new buildings were built, new inscriptions were

installed etc. This section lists events in chronological order from archival sources.

b. Conservation interventions (archival)

Site No.

Date Intervention

The Group has a history of conservation interventions which were undertaken periodically. This information is available in archaeological records and has been organized in this section in a chronological order. This information is important to understand the state of preservation of the building and to be able to distinguish between original materials and materials introduced later as part of conservation and repair efforts.

G. ARCHITECTURAL DESCRIPTION (SITE OBSERVATION)

a. Summary of architectural description (building as a whole):

Overall image / form (of the plan, broad principles of form and design;

Spatial planning (overall and floor wise); Elevations (Top to bottom, North/ East/ South/ West); Structural System/ Material/ Decorative features/ additions.)

The use of a standardized glossary for this project is included in the Annex.

This section contains summarized information on the architecture as it exists today. The order of the information is prescribed to be given from whole to part, from the spatial planning and overall form of the building to individual elevations followed by construction materials and structural system.

i. Special Attributes (decorative features) description (building as a whole)

Here the decorative features are described in summary. Since these special attributes require art conservators for their conservation, this section has been filled by the art conservators who were part of the project team.

ii. Architectural description details:

This section contains floor plan information on the building

Name of the Structure

Number of Floors

Plan Form

Outer dimensions

iii. Interior: Floor Number

In this section each component or aspect of the interior is described, the materials used are listed and additions and alterations noted. Sorting the information about historic from later additions and alterations is necessary to make a clear assessment of the state of conservation of the original fabric of the building.

Floor Number	Description	Material used
	Addition/Alteration	

- i. Supporting /Spanning system
- ii. Openings
- iii. Roofing system
- iv. Flooring system
- v. Decorative Features

Description Material used Addition/Alteration

- vi. Columns (capitals, shafts, bases)
- vii. Beams/ Brackets

H. CONDITION OBSERVATION:

a. Summary of Condition Description (Architecture)

The condition of the building is summarized in this section and all the forms of decay are listed. This would include structural problems, later additions and alterations, vegetation growth as well as surface decay.

b. Summary of Condition Description (Decorative Features):

The condition of the decorative features is summarized in this section. This information has been filled by art conservators.

c. Use and Addition/Alteration analysis

i. Building Use

Site No. Location/

Reference number

Use Description Compatible/Incompatible

The building use as seen on the site is included in this section. A single building could be in use by multiple stakeholders, or being used by a single stakeholder for a variety of purposes.

ii. Addition/Alteration

Site Location/

Addition/Alteration

Sensitive/Insensitive

Reference No.

(Description) number

The use to which a building is put can entail additions or alterations to the structure. This information is given in this section alongside an evaluation of additions/alterations as sensitive or insensitive. This evaluation is necessary for conservation planning as it would in most cases be expedient to remove any insensitive interventions of modern times.

d. Condition description details:

The floor-wise condition of each of the façades is described in this section. Issues have been prioritized in the order in which they need to be addressed.

i. Elevations: Exterior

North/South/East/West

Description Recommendation/Priority

ii. Interior: Floor Number: Ground

The condition of each of the components of the interior of the buildings and the location of problems is given

in this section. Issues have been prioritized in the order in which they need to be addressed.

Architectural features:

Floor Description

Location Recommendation/

Number reference Priority

- a. Supporting/Spanning system
- b. Openings
- c. Ceiling
- d. Flooring

Decorative Features:

Floor number Description Location

Recommendation/reference Priority

- a. Columns (capitals, shafts, bases)
- b. Beams/brackets
- c. Ceiling
- d. Inlay work
- e. Paintings
- f. Inscriptions
- g. Plinth details
- h. Any other feature

i. Interior: Floor Number: First

e. Evaluation/Recommendation

The following is a tabulated analysis of the buildings of the Group on which the basis of this analysis recommendation for conservation and phasing have been made.

ii. Significance Evaluation

- a. Historical value: Unique; Average; None
- b. Associational value: Unique; Average; None
- c. Architectural value:
 - i. Spatial Character:
 - ii. Contextual location:
 - iii. Architectural characters of site:
- d. Artistic value: (Decorations/ embellishments)
Unique; Average; None
- e. Educational value: Unique; Average; None
- f. Visibility / Locational value: High; Medium;
Low

iii. Building Condition Assessment

Site No. Criteria/Parameter Status

State of conservation (structural)

Serious state of decay; Average state; Satisfactory

Surface condition (including decorative /ornamental features) serious state of decay; Average state; Satisfactory

iv. Recommendation

A recommendation has been made for future actions regarding each building, based on the evaluation of a building's significance and role in the overall site. There are three categories of recommended action: (a) retention; (b) no immediate action, with a future decision to be made to retain or demolish; and (c) demolition. All buildings with high value are to be retained, and the bulk of conservation efforts will be directed towards maintaining and/or improving their state of preservation. Buildings which do not exhibit a significant degree of architectural, artistic or spatial value will be subject to a decision-making process as to whether they should be retained or removed. Buildings judged to be of no value and which also mar the spatial character of the site, are in extremely poor condition, and/or will hamper future conservation work are recommended to be demolished. This latter category also includes buildings situated in locations whose archaeological potential outweighs any minor value that the buildings themselves may hold. Any demolition will be carried out using methods that preserve, as much as possible, historical building materials that may be useful for the revitalization of other buildings.

v. Phasing

Phasing Short term

(0-2 years)

Medium term

(3-7 years)

Long term

(8-10 years)

I. MATERIAL INVESTIGATION

Site No.

Reference No.

Material Test Recommended

The material investigation form is to be filled at the time of the preparation of the detailed conservation plan. This has been done for the buildings for which these plans have been prepared.

J. MAINTENANCE SYSTEM:

- i. Name/ Designation
- ii. Routine cleaning (tools/periodicity, etc.):
- iii. Procedures:
- iv. Personnel (with qualification):
- v. Any other

K. BIBLIOGRAPHY

Site No. Library/Collection Catalogue no. Book title, author, publisher, and year

L. DRAWINGS AND PHOTOGRAPHS

Site No. Collection/Archive Catalogue/ Description
Reference no.

M. NAME OF RESEARCHER/S

Site No.
Name
Qualification

N. NAME OF BUILDING SURVEYOR:

O. DATE OF SURVEY

The data in sections K, L, M, N and O are self- explanatory.

All this information is organized in the GIS database in order that the buildings and features can be sorted through queries for closer examination of the buildings and features for the required interventions.

The database is linked to the base map. This is a dynamic process, through which the site managers can periodically augment information, undertake analytical studies and use the database as a tool for site management.

The information generated in the HDGP will be linked to this database. This can be done when the conservation commences and the data and format in which it needs to be organized is determined.

1.2. Detailed Historical Conservation Plan (DHCP)

1.2.1. Research

The archival research and data collation work was divided into phases commencing with the preparation of a documentation framework in consultation with conservation architects and compilation of already available data in a prescribed format. Information collected ranged from firsthand accounts of the site by inscription, to contemporary technical reports and publications of other professionals and academicians. Of particular importance was information gathered from annual reports of conservation, restoration, and archaeological teams which contained an account of repairs and restoration carried out by the survey on buildings under its protection and maintenance.

The buildings were surveyed by a multi-disciplinary team of architects, conservators, engineers, etc. to identify and define the exact scope of work of

each specialist and record preliminary information. In the case of art features, only those identified as significant, reasonably extent or warranting intervention were recorded and assessed in minute detail. The remaining decorative and landscape features were appraised via representational documentation and evaluation.

1.2.2. Statement of significance/value

The statement of significance/value is the product of two complementary processes: a close analysis of archival information gathered for the historic building information database (HBIS) and extensive study of the architectural documentation. It is these processes that provide the basis for the conservation plan and the strategy for implementation.

It is imperative that the historic form, architecture, materials, techniques, special attributes as well as the intangible values of the buildings are not compromised in the course of conservation planning and implementation.

The statement of significance/value determines to a large extent whether a building can be put to some use or should it be preserved as an artifact for appreciation only.

The extent of intervention would also be determined by the statement of significance: that is to say whether a part of a building is to be preserved, restored or reconstructed. Archival research can yield information about the historic finishes of the buildings.

The architectural value of the building includes among other aspects its spatial character, the building materials and construction system. This is essential to bear in mind for determining the scope of detailed documentation and developing the conservation plan.

To ensure authenticity of conservation in buildings construction materials and systems in accordance with the original details and specifications must be used. It is imperative to recognize this value and ensure that conservation interventions do not alter this relationship between the various components of architecture.

The significance of the building and extent of decay has determined the scope of documentation required for the preparation of the HDCPs which in the case of buildings comprise architectural documentation, documentation of materials, decorative features, construction details and condition mapping.

1.2.3. Decay in Architecture and Decorative features

See Annex B for the Glossary of terms detailing the specifics to this section; a brief, but incomplete description is provided below.

Item Damage/Decay Form

Description Remarks

- A. Crack: Linear breaks visible on the surface. Further categorized as:

- a. Major – Macro cracks that are easily visible and are generally indicative of load bearing and/or structural faults
 - b. Minor – Micro or fine cracks of 1mm thickness or less
- B. Open joint: Separation of joints between adjacent stones leading to linear gaps
- C. Exfoliation: Separation of surface layers of stone, identified as scaling or delamination of layers from the stone surface. Degree of exfoliation further categorized as:
 - a. Slight – Localized surface delamination in small areas, no significant disfigurement
 - b. Moderate – Surface delamination in large areas, noticeable disfigurement of detail, localized delamination in moderate depth
 - c. Severe – Delamination in depth, acute disfigurement of detail or surface Extreme form can lead to total loss of decorative detail
- D. Loss: Interruption of the natural succession or unity of a surface includes mechanical damage and spalling due to expansion of dowels etc. does not include exfoliation but may include areas that are totally lost as a result of the same.
- E. Fill Area where the original is missing and the resulting area has been filled, either in antiquity or in the modern period, and include both inappropriate as well as compatible fills.
- F. Erosion: Change in the surface texture of stone or plaster due to weathering, leaching, wearing down, etc. (but excluding exfoliation which is distinct) Noticeable in the form of pitting or cavities on the surface.
- G. Defacement of the surface by human hand: including graffiti, manmade abrasions etc. either superimposed or causing loss of original material
- H. Efflorescence: Recrystallization of salt on the surface of a structure usually appearing as a white and crystalline powder-like substance.
- I. Bio-growth : Microorganisms; Small organisms of various colors and forms, living or dead, such as fungi, algae, lichens, mosses, or bacteria, which adhere to the stone or plaster surface
- J. Deposit: Drips Substances that obscure the surface, drips of lime, cement and other repair material
- K. Deposit: Bird/bat droppings Substances that obscure the surface
- L. Deposit Soiling: Substances that obscure the surface-dirt/dust mixed with smoke/grime/greasy substances/ carbonaceous particles and including general settlement of dust and dirt
- M. Deposit: Miscellaneous Substances that obscure the surface; any other unidentifiable superficial deposit
- N. Discoloration: Alteration of a surface characterized by a localized change in color Includes meaningful cause-related

discoloration that is causing decay and may need conservation intervention – such as inherent mineral stains causing pitting on the surface, staining by dowels or rings, staining by sandor or other colored material applied by some external agencies, tenacious grime/pollutant deposits in the form of crusts etc.

- O. Water stains: Visible water stains on a stone or plaster surface either due to rising damp or ingress from the roof, walls, etc.
- P. Coated areas where the original surface has received a superficial coating in the modern period (lime coating, etc.)
- Q. Insect Hives: Hives of different insects including termites

Decay in only architectural features

- R. Vegetation growth of trees, weeds, and shrubs in masonry, terraces and base of the building
- S. Animal, birds, bats resting place on any projected portion or interior of the structures.
- T. Vandalism graffiti marks, damage caused to the surface due to mishandling, misuse.

Incompatible addition and alteration

- U. Cement-based materials used for repair work and filling of joints and voids etc.
- V. Electrical Installation of lighting fixtures for illumination of structures hanging and exposed wires, iron girder, bars etc. fixed on the structure; installation of lights in iron boxes adjacent to the structures; digging of floors and making pits for sound & light show arrangements

Decay in only decorative features

- W. Inlay loss: Losses in stone inlay work
- X. Plaster loss: Visible rough plaster interruption of the natural succession or unity of a surface; Area where the fine top layer of the plaster is lost thereby exposing the rougher layer underneath
- Y. Plaster loss: Visible carrier interruption of the natural succession or unity of a surface; Area where rough plaster is lost thereby exposing the carrier (masonry/stone/brick) underneath
- Z. Gilding loss: Loss of gold leaf or gold colorant from a gilded surface
- AA. Flaking/ Delamination: Separation of paint layer from its substrate due to degradation of medium, action of external decay factors, etc.
- BB. Stucco loss: Losses in decorative stucco work
- CC. Paint loss: Loss of paint or superficial lacunae on a painted surface

1.2.4. Digitization of Decorative Features

In order to maintain a record of the decorative features in a permanent format of information for referral, interpretation and evaluation, their graphic representations have been digitized using rectified photographs and outline drawings as a base, onto which the type and extent of decay forms are overlaid and merged using appropriate software. Each individual significant decorative feature, be it a 'carved sandstone panel', 'painted stucco work in a cusp of an arch' or the 'parapet of a building' has been organized with its image and weathering forms available on a separate condition data sheet. A reference architectural drawing has been included on each data sheet to facilitate a correlation of the depicted art feature with the building and its location, and wherever possible the exact position has been marked by placing an illustration of the relevant elevation or plan on the sheet. The digitized condition data sheets record only the type, location and extent of the weathering forms, the intensity being separately noted in tabular format, but used with the former for conservation planning and analysis.

1.2.5. Material Investigation

As a preferred practice, analysis of representative samples of the buildings. The objective of this endeavor was:

- i. to identify the nature, composition and quality of the building materials of the various components.
- ii. to identify the possible causes of decay.
- iii. to find out the physical attributes of the composition of mortars and nature of aggregates,
- iv. to identify the presence of salts; ratio of soluble to insoluble salts.

The analysis of this data helps as follows:

- i. classifying cladding material, plaster mortars (whether it is pure, hydraulic, cementitious or composite)
- ii. identifying the different types and compositions of building limes, mortars, plasters, etc.

Samples from different areas of the same building were tested. The interpretation from the perspective of characterization, aggregate size, composition, classification, mineralogy remains to be undertaken. Pigment identification tests have been conducted using chemical microscopy, X-DR.

If a particular mixture of materials is the trademark of a particular area or a period by a master architect or group of artisans, these tests could reveal important information. Interpretation can also be attempted to decipher the technology of mortar preparation, plaster, and murals.

This information will help in the formulation of specifications for conservation works.

1.2.6. Conservation Analysis and Recommendations

A visual analysis of the weathering forms affecting the building and the decorative features and surfaces was undertaken by conservation architects, art conservators, material scientists, civil engineers and structural engineers to recommend scientific tests along a line of enquiry for substantiation of the hypotheses on the causes of decay.

Scientific investigations were carried out on samples from the historic building for civil work and for decorative surfaces. In most cases the same tests were required in both instances. Some specialized tests were, however, undertaken for art conservation only, for instance specific investigations of painted surfaces.

The causes of decay of the various components of the building were deliberated upon by the team and various hypotheses of the causes were noted in the relevant column of the table given below. This tabulation helped in reading the drawings that record decay types, its extent and causes.

Simultaneously, a condition assessment of art features on selected buildings was undertaken in conjunction with their architectural documentation.

The work entailed the preparation of a permanent record of the current state of significant extant decorative features and the study of their materials while examining the causes of decay, if any.

The assessment of the condition of the buildings and decorative surfaces also took into account available records of planned past interventions, historical references to the structures with special attention to their use (source HBIS) and other data made available.

Results of scientific investigations were linked to the recorded data to propose interventions and recommendations.

The analysis and recommendations give due weightage to the assessment of the buildings by other experts including a team of structural engineers that may have a direct or indirect bearing on the state of preservation of the buildings.

Information such as maintenance procedures and practices and available expertise and infrastructure has also been taken into account in the final set of proposals placed for consideration and implementation.

Name of the building:

Part of the building: Architectural documentation

Condition survey:

Item:

Number:

Element of structure:

Description of element:

Condition description:

Cause of decay:

Masonry:

1.3. Adherence to Standards

While standards have been established by the varied professions associated with SP-CCHCMP, the primary governing standards are as follows:

- Convention concerning the Protection of the World Cultural and Natural Heritage
- Venice Charter
- ICOMOS Ename Charter April 10, 2007
- Nara Document on Authenticity
- ICOMOS Historical Garden (The Florence Charter 1981)
- ICCROM Risk Preparedness
- ICCROM 1994 Management Guidelines for World Heritage Sites
- ICOMOS 2003 Principles for the Analysis, Conservation and Structural
- Restoration of Architectural Heritage
- ICOMOS 1996 Principles for recording of monuments
- ICOMOS 1994 Management Guidelines for World Heritage Sites (Bernard
- Fielding)
- Charter of Angkor (2012)
- Others as appropriate

2. Contemporary management structure

2.1. General

According to the Royal Decree on the establishment of the Sambor Prei Kuk Group NS/RKM/0303/116 dated 11 March 2003, the policies of the SCNC shall be implemented in order to ensure the management, maintenance and protection by allocating the responsibilities among competent institutions; whereas the Ministry of Culture and Fine Arts (MCFA) is responsible for policy implementation according to Article 5 of the Law on the Protection of Cultural Heritage, promulgated by Royal Kram (decision) NS/RK/0196/26 dated 25 January 1996.

As the nominated area and the buffer zone falls under the Protected Forest for the Conservation of Plant and Animal Genetics and under the environmental protection and natural resource management, the Ministry of Agriculture, Forests, Wildlife, and Fisheries and the Ministry of Environment will be major partners in management. The Ministry of Land Management, Urbanization & Construction, the Ministry of Tourism and other national and provincial authorities will also be involved in relevant aspects of the management system particularly within the buffer zone such as land-use, lifestyles, housing & construction, and farming to name a few.

The management plan for the nominated property (Core) and Buffer Zones should address, among other initiatives, the following categories:

- Conservation plans for the protected site
- Restoration of monuments and features
- Revitalization of the area
- Continuing research
- Tourism & visitor management both foreign and Cambodian
- Public awareness, interest & participation
- Educational programs
- Promotion & presentation
- Public & tourist services
- Public health, safety, and site security
- Economic and social opportunities for the community
- Sustainable management of natural resources
- Landing zone for helicopter for emergency situations
- Traffic, parking and transportation (construction of new roads)
- Public use for pilgrimage & religious activities
- Control of population & land use within the Buffer Zone
- Construction of buildings, utilities, and towers - type and size of constructions to include but not limited to height, typology, materials, and techniques.

2.2. Current ownership

The Sambor Prei Kuk Archaeological Group is owned by the Kingdom of Cambodia under the leadership and direction of the Ministry of Culture and Fine Arts. The General Department of Heritage of the Ministry is responsible for the overall management and protection of the site.

2.3. Protection and Planning Considerations

2.3.1. Legislative protection

The following are decisions, circulars, directives, sub-directives, and Royal Decrees governing historical and cultural property pertaining but not limited to the Sambor Prei Kuk Archaeological Group:

- a. Decision No. 1 dated January 6, 1996
- b. Royal Kram NS/RKM/0196/02 dated January 24, 1996
- c. Royal Kram NS/RKM/0196/26 dated January 25, 1996
- d. Royal Kram NS/RKM/1296/36 dated December 24, 1996
- e. Sub-decree No. 63 dated October 14, 1997
- f. Circular No. 3 dated February 18, 1999
- g. Royal Kram NS/RKM/0699/09 dated June 23, 1999
- h. Sub-decree No. 63 dated July 20, 1999
- i. Provincial decree No. 41 dated February 22, 2000
- j. Royal Kram NS/RKM/0801/14 dated August 30, 2001
- k. Directive No. 14 dated December 18, 2001
- l. Directive no. 5 dated March 27, 2002
- m. Sub-decree No.98 dated September 17, 2002
- n. NS/RKM/0303/116 dated March 11, 2003
- o. NS/RKT/1214/1488 dated December 24, 2014

The acts empower the MCFA and associated ministries and sub-departments to do the following in the interest of protection and preservation of sites and monuments of immense cultural significance across the Kingdom of Cambodia:

- a. To declare monuments, historic sites and features to be of national importance
- b. Rights to acquire sites and monuments for protection and preservation
- c. Undertake preservation and maintenance of the monuments and sites
- d. Regulate archaeological excavations
- e. Control the movement of antiquities

- f. Make regulations and guidelines for the enforcement of the 'protection' and preservation

Proclamations like the above are prohibitory in nature, protecting areas/ sites by disallowing unauthorized construction and excavation activities. In the case of antiquities, it prohibits unauthorized removal, maintaining them in situ. Public access to monuments is regulated, with MCFA retaining the authority to give conditional access. Holding of meetings, parties etc.; cooking and food consumption, hawking and selling are severely restricted. Activities like filming, excavations, mining and construction within protected areas are not permitted without specific written approval by MCFA in cooperation with the Council of Ministers. The MCFA, within the legal system, has the authority to recommend cancellation of licenses, remove unauthorized construction and impose penalties on these contravening the regulations.

2.4. Management structure

2.4.1. Executive structure

The management of the site vests with the Ministry of Culture and Fine Arts. The structure comprises the Minister of Culture and Fine Arts and the Director General of the General Department of Heritage.

2.4.2. Management Structure

The Ministry of Culture and Fine Arts is empowered to perform different tasks/ activities namely, archaeological investigations, conservation and maintenance of the historic sites, undertake chemical and art conservation, maintain records, site museums, provide for visitor amenities and administration of the above. The office is headed by HE Prak Sonnara.

2.4.3. Maintenance and Conservation

The Ministry of Culture and Fine Arts is accountable for administering the conservation works as well as maintenance of the site, and is assisted by conservation assistants who are responsible for preparation of the estimates and execution of conservation works related to the monuments.

Maintenance and management of the open spaces, is performed by Ministry of Culture and Fine Arts.

2.4.4. Security

Security at the site is performed by the Ministry of Culture and Fine Arts, with additional support from local and provincial police and military.

2.4.5. Engineering services

The services to the site are provided and maintained by multiple agencies. These include the Ministry of Tourism [etc.]

2.4.6. Visitor amenities

Parking and visitor venue for the visitors is provided Ministry of Culture and Fine Arts.

a. Ticket counter

The ticket counters are managed and maintained by Ministry of Culture and Fine Arts. The entrance fee for foreigners is currently \$3 USD with \$5USD proposed, payable either in US dollars or equivalent Cambodian riels. The entry is free for Cambodian citizens, people with disabilities, and foreign children below 5 years. Foreign VIPs and official and embassy delegations may also have the ticket cost waived (permission must be requested from MCFA in advance). The sale of tickets begins at 6:00 and ends at 17:30. The Group closes at 18:00.

b. Toilets

There are two large toilet complexes.

c. Food

There are proposed 5 facilities for food and beverage on the site

d. Sound and light show

To be determined

e. Shopping and curios

To be determined

2.5. Archaeology Database and information available in archives

Archival information was made available to the project team as a compilation by MCFA in the course of the preparation of the plan. This information comprised the following:

Annual reports/scientific reports/books and publications/ restoration techniques/archaeological reports/laws/decrees regulations /old photos/photos of items in the museums both in Cambodia as well as foreign/all data bases/planning documents/ all inventories:

3. Conservation and management: analysis and issues

3.1. General

The conservation and management issues for the site emerge from the concern to protect, conserve, present and transmit to future generations the outstanding cultural historical values of the Sambor Prei Kuk Archaeological Group. The issues if not addressed in a scientific and timely manner will have an impact on the future wellbeing and significance/value of the site.

3.1.1. Conservation approach

The most significant period in this narrative of the Sambor Prei Kuk Archaeological Group is the end of the 6th to 11th centuries, expressed through the architecture, the landscape features and the relationship between the architecture and the landscape. In order for the original concept to be experienced and understood, the harmony and integrity of the architecture will need to be restored and the physical and visual connections between the buildings on the one hand and between the buildings and designed landscape (open spaces, ponds, baray, dikes, walls, and gardens) on the other, recreated.

The various layers of history manifest with great clarity in the architecture, features, and open spaces. These layers have to be conserved in such a way that both narratives and their interplay can be experienced in a cohesive manner.

Numerous factors are interwoven in determining the implementation strategy for Sambor Prei Kuk Archaeological Group containing approximately 291 buildings plus numerous features. These factors include the range of cultural heritage (buildings, archaeological remains, open spaces and features), significance/value of the resource types, extent of decay, stakeholder concerns, visitor needs and expectations, available resources etc. The plan is therefore recommended to be implemented in three phases; short, medium, long term.

One of the fundamental principles of conservation is to ensure that buildings or parts of buildings which are in a serious state of disrepair (recorded in the HBIS) are conserved urgently so that they are not lost. In the case of the Sambor Prei Kuk Archaeological Group, conservation interventions have been classified in the HDCPs as required 'urgent', 'necessary' or 'desirable'. There are buildings that require investigation or monitoring before conservation interventions can be made. It would be prudent to have a conservation plan which works laterally as well as vertically: by addressing issues which are urgent in nature, regardless of the phases they fall under.

3.2. Historic Building Analysis and Issues

The Sambor Prei Kuk Archaeological Group has witnessed numerous interventions (harmonious and otherwise), including construction, alterations, renovations and demolitions over its 15 centuries of existence. As mentioned in Chapter 6 each of the buildings and structures was documented in a format called the Historic Building

Information System (HBIS). Detailed documentation and condition mapping was undertaken of the buildings.

The conservation issues of these buildings are representative of most of the problems of decay across the site.

Documentation and assessment of the entire Sambor Prei Kuk Archaeological Group has established the following guidelines for conservation:

- a. The issues of conservation can be classified into two categories, namely structural and surface.
- b. These issues can be classified into three categories on the basis of urgency of intervention: 'urgent', 'necessary' and 'desirable'.
- c. The buildings from the 6th to 9th century period, and renovations in the 11th century are of main consideration.
- d. With increasing visitation, the conservation plan needs to address issues that arise out of visitor access, needs and concerns.
- e. The conservation plan needs to simultaneously address historic buildings, open spaces and archaeological remains.
- f. The presence of modern elements provides a unique opportunity and challenge for revitalization of the site.
- g. The revitalization plan should be in harmony with the cultural significance of the site.
- h. The plan should ensure that the heritage resource of the site is not subjected to any risk through inappropriate use, overuse, insensitive management practices, and other disaster risks.

The built fabric was assessed for the purpose of revitalization. Subsequently the following categorizations of structures/ buildings were arrived at:

- a. To be retained
- b. To be demolished or retained (optional)
- c. To be demolished

The criteria for placing a structure/ building in a given category are as follows:

- a. Criteria for retaining a structure/building:
 - i. has historical significance
 - ii. has architectural significance:
 - iii. has a contextual location on site
- b. Criteria for retaining or demolishing a structure/building:
 - i. has no historical significance
 - ii. has no architectural significance
 - iii. does not hamper the overall character of a space
 - iv. Fair structural condition
- c. Criteria for demolishing a structure/building:
 - i. has no historical significance

- ii. has no architectural significance
- iii. impedes the character of a historic open space or neighboring buildings of significance
- iv. poor structural condition

Therefore, the strategy for conservation and phasing has been determined bearing in mind the correlation of multiple aspects:

- a. Cultural value (historic, architectural, arts and embellishments, associational, educational)
- b. Building condition
- c. Access
- d. Visibility and public opinion
- e. Stakeholder impact
- f. Time frame
- g. Resource management (time, skills, funds)

Conservation issues of historic buildings:

- d. There is a need for detailed documentation of the built fabric in a phased manner.
- e. Multiple ownerships and occupancy conditions in the past and to some extent in the present have impacted the condition of the buildings.
- f. Multiple organizations have jurisdiction over the buildings at different times. There is a lack of coordination and understanding of the common concerns amongst them.
- g. Incompatible uses.
- h. Many buildings are abandoned or in ruin.
- i. Repairs in the past have been undertaken with inappropriate materials.

3.3. Historic Landscape Analysis and Issues

The historic buildings are experienced individually and in conjunction with each other and the open spaces. The open spaces create the appropriate context for an authentic experience of history. The objective of preparing the inventory of open spaces was to establish the significance of each space and assess the types and extent of transformation therein (identification of issues). This was for planning the conservation interventions for each space.

The study of the open spaces was based on seven broad research directions:

- a. History of spatial planning and design: to understand the spatial and cultural significance of the open spaces.
- b. History of art and architecture: for understanding the design aspects and functions of the space especially in relation to the built form.

- c. Archaeological understanding: to comprehend the layers above and below the ground and apply the principles of feature archaeology.
- d. Conservation principles: to work within the framework of integrated conservation.
- e. Ecological understanding: to understand natural processes and ecosystems in the open spaces.
- f. Landscape design principles: to understand concepts of landscape planning and design.
- g. Horticulture data: to understand the attributes of plant life at the site

Five types of open spaces were identified:

- j. gardens/features (both existing and lost);
- k. courtyards of varying scales and importance;
- l. open spaces within and around buildings; and
- m. open spaces with the archaeology of built structures.
- n. ponds, moat, canal systems and baray.

All the spaces were found to have the following aspects of significance, though varying in degrees.

- a. Historical significance
 - Representative of spatial planning.
 - Valuable source of information about important periods of Khmer history
- b. Cultural significance
 - Events, developments, and phases significant in Khmer history
 - Spatial planning of open spaces, that reflects a distinctive way of life, customs, land use, functions or design
 - The spatial pattern and disposition reflecting a strong and special association with the life and works of important people
- c. Aesthetic significance
 - All open spaces, without exception, exhibited particular aesthetic characteristics now lost or on the verge of being lost.
 - The spaces demonstrate a high degree of creative achievement
- d. Educational significance
 - The spaces can greatly enhance an understanding of the cultural history if used as a research and teaching site.
- e. Technological significance
 - The open spaces display technical innovations of the time pertaining to town planning, water works, irrigation patterns and planting systems.
- f. Usage significance

- Historical hydrological systems served several functions, some of which continue to be significant today.
- Plant species at the site have culinary, medicinal and household uses; further research is needed to consider which of these represent intangible heritage values.

Types and extent of transformation:

An analysis of the types and extent of transformation that each space had undergone was undertaken to gauge the possibility of restoring some of the spatial forms that these spaces had during the period of occupation. Areas in which issues of transformation of open spaces have been observed are: usage; boundaries; spatial layout; planting pattern and plant material; architecture within; water works and services.

- a. Usage:
 - The nature of use of the open spaces has undergone a complete change as compared to the original intent.
 - Parts of the site were the exclusive domain of royalty. Today, tourists have access to many of these exclusive areas. Large portions of the site were historically residential, economic and agricultural zones used by the townspeople, but these are not currently accessible to the public.
- b. Boundaries:
 - While the boundaries and physical definitions of some of the spaces are intact, the boundaries of most of the other spaces as they were planned have been altered.
 - In many of the spaces there are no traces of the boundary definitions visible on the ground
 - Alteration and obliteration of the boundary definitions has also led to structures being built over the remains of the boundaries
 - New enclosures and enclaves using modern fences, roads, and gateways have been created over archaeological remains. This is true of the entire site and is visible more in the city precinct.
 - Removal and alteration of the boundaries has also meant a change in the spatial character and experience.
- c. Spatial layout:
 - Spatial layout of virtually all the spaces has been altered while the enclosures are intact the space is visually cluttered and transformed due to the treatment of the floor scape.
 - The spatial layout is completely transformed in all aspects of design; there is loss of axes, change in scale, alteration of form due to loss of boundaries, introduction of new gradients and levels, all of which have cumulatively resulted in a total loss of the distinctive design principles and aesthetics.
 - Similarly the loss of structures like gateways, walls, arcades and pavilions has also altered the character of most spaces.
- d. Architecture within:

- Much of the period architecture has been lost thus transforming the quality of spaces to a great extent.
- With the disappearance of enclosing walls, the sense of scale of various spaces has been completely lost.
- The removal of structures within the open spaces has diluted the reason for existence.
- The loss of structures which by virtue of their location gave a meaning to the open spaces has rendered many of these spaces anonymous. This is particularly true of the garden spaces enclosed by pavilions and walls.
- With the loss of architectural features such as gateways/gopuras there is today neither any sense of progression nor of connections between various spaces.
- The gateways that were an integral part of all spaces have been lost in most places
- New gates and fences in modern materials have been introduced in several places to enclose not only modern but historic buildings as well.
- New road networks have been laid all over the site which fracture and divide spaces visually and physically.
- The levels of the roads and open spaces have increased substantially changing the spatial character and the surface runoff patterns of the site.
- None of the historic pathways plans can be found anywhere on the site.
- Signage, lighting and litter bins have been introduced in a very ad hoc manner. Their design is not in keeping with the historicity of the site.
- With gradients having changed due to accumulation of debris, several areas tend to get waterlogged.
- There are few remains of the irrigation and drainage system that would have been integral to all the layouts.

3.4. Site Revitalization and Management: Analysis and Issues

3.4.1. Management

There are multiple organizations that have a role within in the management and maintenance of this site. The MCFA site management office is both the implemental authority and has managerial responsibility. The MCFA has primary site managers in whom the responsibility for protection and maintenance of the site rests by law.

Their area of responsibility includes both the buildings and monuments as well as maintaining the integrity of the boundary, including the buffer area needs. The MCFA is responsible for the following:

- Planning: in terms of site planning, MCFA requires proper showcasing of monuments, resolving parking issues and access to the site, as well as optimizing visitor movement and providing appropriate infrastructure in terms of amenities, book shop and souvenir shop.

- Management and maintenance: drawing from the above the site requires capacity-building of the staff, augmenting it appropriately, generating resources for garden projects, expanding the scope of activities in the complex, in terms of cultural events, exhibitions, crafts workshops, seminars and academic exchange, research activities etc.
- Coordination with other stakeholders: the MCFA are the primary Site Managers, a fact that accords them primary responsibility of coordinating the needs and requirements of the other agencies. They also have the authority to determine entry into the site, for visitors. This reinforces their seminal role in coordinating and facilitating the various procedures and assuming responsibility for activities in the site.

3.4.2. Stakeholders

In keeping with its stature as a national cultural and historical icon has an extra local significance, involving national and international agencies and people. This project proposes to adopt a combination of participatory research and consultations with representatives of each stakeholder group in order to gauge their needs vis-à-vis the space, its usage and projected utilizations. Within each group, there have been consultations with both the policy level as well as the operational level, to have a more diverse view of the multiple issues at various levels. The needs expressed by each group will be placed in relation to each other and priorities for action evolved through their interaction.

The important stakeholders in the site have been divided as below based on their level of involvement and dependence on the site as well as their vulnerability to changes due to management structures.

- Primary stakeholders: those who are most closely involved with the site, in terms of either depending on it for their livelihoods or having the greatest right of usage. Their interests are foremost in the project, e.g. tourists, shopkeepers, vendors, and tourist guides. This group also includes the most vulnerable and primary beneficiaries on whom the initiative is focused.
- Secondary stakeholders: those who are predominantly accountable for the site, i.e. Ministry of Culture and Fine Arts, also tourism operators, as well as the residents and local civil society organizations that can participate in its development and sustainability, form part of this category.
- Tertiary stakeholders: Government of Cambodia and the various Ministries, international normative agencies like ICOMOS, UNESCO, and ICCROM, conservation and development bodies, professional, educational institutions to name a few.

Below is a detailed look at the issues of several key stakeholder groups:

- a. Village Committee
 - religious access

- economic development
- social opportunities
- b. Tourist operators
 - site access
 - signage
 - visitor facilities; health and safety
 - food services
- c. Visitors

Tourist management plans will be addressed in the Visitor Facilitation Center plans.

3.4.3. Site Interpretation and Educational Outreach

There are currently some official tours offered and there are no official publications on the site. Materials should be created to communicate the significance of the site to the visitor. These materials should include digital and print publications, and signage installed at the site. A long-term strategy will be developed for the communication of the values of the Group to visitors, and for the promotion and facilitation of educational activities.

3.4.4. Museum and Information Center

The current museum facilities are in the town of Kampong Thom. Artifacts are satisfactorily maintained but are in need of better conservation. It is anticipated that the museum will be relocated to the Sambor Prei Kuk Archaeological Group in the three to four year timeframe in a location to be determined. This relocation will provide an opportunity for the refreshing and improvement of museum displays.

3.5. Engineering Services

3.5.1. Public Health and Sanitation

The issues arise from conservation of the historic systems, the assessment of the current system from the perspective of the current needs of the site as well as the needs that may arise out of the implementation of the proposed plan.

e. Water supply system

The analysis of the water supply system at the site required the detailed study of all historic and current water impounding structures (wells, shallow wells); bore wells, and water reservoirs. In addition, a study was undertaken of the river and canals. Current water supply systems, the following conservation issues emerged:

- i. The current system in the complex is being used and extended on an ad hoc basis. The water usage therefore cannot be regulated and there is substantial wastage.

- ii. Increased inhabitation and visitation will result in increased demand for water. Analysis is needed to determine the impacts on the site that might result from this increase.
- iii. Climate change may lead to changes in rainfall and river flow. Future planning needs to incorporate strategies for mitigation (see below 8.6.3).

f. Sewerage

- i. An individual septic tank and soak pit has been provided. It is planned to improve in terms of quantities and capacities.
- ii. For the laying of any new system, for reworking & upgrading of existing systems, and for plugging any new facilities in the trunk network, digging and excavation will be required; acknowledging the archaeological sensitivity of the site regarding any kind of digging, assessments will have to be made on a localized basis.

3.5.2. Drainage system

A comprehensive study of the drainage system at the site on the water filtrating structures, water reservoirs, general site topography, and architecture is required. The following issues emerged from the study:

- a. The baray and ponds are undergoing deterioration. If the continued use of these structures for rain water harvesting is required then adequate conservation measures will need to be taken.
- b. The drain off from the buildings is inadequate at places, due to alteration, degeneration of terrace slopes and broken spouts, resulting in dampness on facades and ceiling levels.
- c. Extensive and intensive investigation of the structures is necessary, especially of the routing of the underground pipes and the catch basin network.
- d. The function of the central canal is unclear; it may have been a water body, for visual relief, horticulture and also overflow. Further investigation and analysis is needed.
- e. There is a need to not only physically conserve the current network of catch basins on the site as masterpieces of architectural accompaniment but also as functioning water features that play an important role in preventing the waterlogging of the buildings.

3.5.3. Electrical Services

The existing power distribution has been developed over several years. The power distribution within the area is adequate for the needs of the new management office and visitor facility.

3.6. Risk Management

Based on the surveys and investigations, various risk factors have been identified. This section outlines various kinds of risks to the Sambor Prei Kuk Archaeological Group and its heritage components, and the underlying causes for the same.

These risks are recommended to be addressed through appropriate prevention and mitigation strategies and techniques, and emergency preparedness and response procedures based on the integrated risk assessment for the entire site (as an integral spatial entity) and its individual heritage components. This process will determine the management needs for the maintenance and monitoring of the Sambor Prei Kuk Group and its various heritage components.

While an overall movement plan has been developed for risk management of the site as a whole, planning for each of the buildings and component is recommended to be developed at the time of the preparation of the detailed conservation plans.

3.6.1. Disaster Risks

3.6.1.1. Earthquake Risk

There has not been any known seismic activity in the area that would affect the monuments and features. Risk none to rare.

3.6.1.2. Lightning Strike

Lightning strikes can occur and have at the site and have a noticeable effect. Risk is rare.

3.6.1.3. Wind

Strong winds can occur and be accompanied by rain and lightning. Winds can shift brick structures and create instability. Risk is slight.

3.6.1.4. Falling Trees

With the proximity of many large trees to standing monuments, the effects of strong winds and extensive softening of the soil by rain as well as the weakening of trees due to infestation of insects are a risk to the group. Risk is medium to high.

3.6.1.5. Risks from fire

The risk of fire is mainly confined to the burning of vegetation in and among the monuments and features. Risk is medium.

Lack of firefighting equipment and training. Risk is high.

3.6.1.6. Risk of Theft in Museums

Lack of alarms and insufficient security systems for buildings and collections in existing and proposed museums pose risk of thefts. This is more so because most of these buildings are not originally designed for this purpose. Therefore they require special safety provisions.

3.6.1.7. Risk of vandalism and theft in monuments:

Ministry of Culture and Fine Arts takes an action of security systems in the buildings to avoid vandalism.

3.6.1.8. Risk of explosive remnants of war (ERW)

The risk of explosive remnants of war in the populated areas and monument sites has been safe because of clearance mine by the Cambodian Mine Action Centre. However, the situation will be continuously monitored and assessed.

3.6.2. Risks during Emergency Situation

3.6.2.1. Safety and Security during Emergency

Although the site has some security, the site has been taken care of appropriate preparedness and response measures for the safety and security of the visitors and staff, as well as historic property within the complex during emergency situations.

3.6.3. Slow and Progressive Risks

3.6.3.1. Risks from Pollution

Ministry of culture has taken preliminary corrective measures.

3.6.3.2. Risks from weathering

One of the most difficult challenges as the delicate stone surface especially sandstone, brick and stucco is at risk of being significantly eroded due to general weathering. While this slow process of weathering cannot be stopped, adequate maintenance will ensure slowing the rate of deterioration.

3.6.3.3. Risks from climate change

The possibility of climate change, although not specifically proven, has also been considered when identifying potential risks. Changes in rainfall, wind, and other meteorological elements will be monitored over time. The Ministry of the Environment will be consulted for periodic input to the SPK management. The following should be used by SPK management to better understand the impacts of climate change:

<http://www.un.org.kh/undp/knowledge/publications/cambodia-human-development-report-2011-the-future-for-rural-livelihoods-in-the-face-of-climate-change>

3.6.4. Risks due to inappropriate/lack of usage

3.6.4.1. Risks to Archaeological Areas from inappropriate usage

Impact assessments of all the projects of revitalization including reuse of historic buildings, services in the ground and in the building, provision of visitor amenities and interpretation systems need to be assessed before implementation. Guidelines and

thresholds of acceptable change need to be developed to objectively assess the impact.

3.7. Outer historic environs

Numerous issues arise with the multiple projects that are at the various stages of planning and implementation in the immediate setting of the historic areas. The projects are being undertaken by MCFA and other ministries, and NGOs.

3.7.1. Lack of a shared vision for the historic environs

Ministry of Culture and Fine arts has cooperation with other institutions in undertaking various development activities in the Sambor Prei Kuk Group zones. Shared vision is currently under discussion.

3.7.2. Convenient access

Actually there is an absence of convenient points of entry for visitors, however future tourism enhancement will improve the situation.

3.8. Overview of Possible Conservation Techniques

The deterioration process of a monument can be delayed considerably when applying specially tailored preservation tools. Conservation and restoration plans have to consider all individual requirements. They have to be elaborated for each monument and necessarily combined with the subsequent maintenance. It is impossible, however, to stop deterioration processes completely.

All conservation interventions carried out on materials must be preceded by careful surveys including documentation and analysis of all materials apparent on site, their distribution and their state of preservation. The presence of damaging salts and moisture at the site has to be recorded. Formation of crusts, biological colonization and former conservation measures are important information. Furthermore, non-or minimally destructive investigations help to confirm the results of the visual survey. The design of preservation plans should follow a proven system. After the first planning, including visits and discussions on site, the examination starts with the preliminary case history. All available information on the monument and features including building and restoration history is collected.

3.9. Preliminary Case History

The preliminary case history is completed by analysis and diagnosis. The analysis covers all aspects of the condition and materials. It comprises of investigations into static problems, construction materials and the state of deterioration and into climatic, geological and environmental conditions. The condition of the monument or feature is documented through photography in detail. All important items have to be recorded and mapped. Thus, static problems, use of materials as well as the damage forms and their degree have to be registered and depicted.

After the analysis is completed and all results have been assessed, the design of the therapy is possible.

3.10. Therapy

At the beginning of the therapy phase, efficient interventions and materials are selected. Tests in the lab and on site are the next step. The materials and techniques

that are selected on the basis of the results of the research must in turn be tested both in a controlled environment and *in situ* on test areas. This is the only way to guarantee safe conservation methods and materials. No conservation interventions may cause any additional damage to the materials preserved, they must not introduce any additional damaging substances to the object or change the object materials' original properties. Some products may have negative side effects regarding compatibility or long-term behavior and may cause new damage to the material treated. Possible negative effects of new products must be considered. Tested interventions that have been proven to be successful are included into the preservation plan and executed. Conservation measures are tailored therapies designed for a specific material and a special situation that have been investigated in detail. Skilled and talented conservators are essential for the implementation.

3.11. Planning of Conservation Intervention

Conservation interventions need a careful preparation phase including documentation and scientific research. A detailed mapping and documentation of the materials, of the state of preservation and of former interventions are the first tasks.

Based on this first assessment a Risk Map of the monument is compiled. The Risk Map estimates the levels of danger of the different members, like carved surfaces. It plays an essential role in the first step of the planning and implementation of an effective conservation program. For successful conservation, a thorough knowledge of the material, its properties, and preservation condition is most important.

The Priority Map, part of risk planning, combines an estimation of the risk with the historical value of the monument and the importance of the individual members of a monument. In a Priority Map the order of restoration of the elements is defined.

Both planning tools, Risk and Priority maps, enable the implementation of a systematic conservation project for each monument.

3.12. Preliminary/Emergency Conservation Action

The emergency consolidation or preliminary consolidation is an essential preliminary phase and can have a determining effect on the success of the overall intervention. It can be carried out at the same time as all phases of the conservation intervention. Emergency interventions help to keep highly endangered pieces in place, in order to prevent total loss. Like all conservation activities it must be carefully planned and implemented. Emergency conservation activities have to be fully reversible, since the emergency stabilization is removed when the full conservation program is implemented. Emergency consolidation procedures may not impede the implementation of the final conservation program, methods and materials.

3.12.1. Cleaning

Stone Cleaning can be a necessary conservation procedure in the following cases:

- In the presence of damaging salt crusts.
- In the presence of dense layers on the stone surface.
- When the legibility of reliefs and architectonical elements is severely reduced.

- When the application of essential conservation methods and materials is impeded.

It is sometimes necessary to remove materials used during previous interventions that have proved to be damaging. Such materials include Portland cement repairs or reinforced concrete and coatings of acrylic resin.

For stone cleaning procedures different cleaning methods are adapted to the needs of the conservation. The decision for a specific method has to be based on previous examination on the situation on-site. Before any cleaning procedure can start it has to be confirmed that no polychrome layers or mural decoration are extant. These important pieces of Khmer culture would be destroyed by normal cleaning activities.

3.12.2. Removal of biologically harmful material

Although biological attacks can induce material deterioration, the protective versus destructive action of biological agents should be carefully assessed before considering their removal.

Organic and chloride containing biocides should be avoided in regard to their toxicity, missing long-term efficacy and possible nutritive effects for the remaining respectively reoccurring micro flora. In this regard the application of microbial resistant stone protective agents has to be ensured within international standardized testing and proper hygiene at the site.

3.12.3. Waterproofing

To protect building and decoration materials from rainfall there are different possibilities: Built shelters like roofing, repair of existent roofs, metal coverings etc. or impregnation with a water-repellent agent. The first possibilities should always be preferred. Water repellent impregnation aims at the reduction of water uptake without influencing the water vapor diffusion behavior of the materials. It is important to know that only capillarity is impeded, other damaging influences like salt contamination or hydric swelling are not reduced by this treatment. Today, the most common water-repellents used are based on different formulations of silicone. A water repellent treatment may only be considered after strong damaging effects caused by rain water and sufficient capillarity of the stone has been proved. Hydrophobic treatments are not long-lasting. The impregnation has to be repeated after a few years.

For a decision in favor of a water repellent treatment several preconditions are mandatory:

Preconditions concerning the building materials:

- No presence of expanding or swelling components e.g. clay minerals.
- No presence of dense surfaces due to sinter, salts, crusts or intensive bio-colonization.
- No presence of hygroscopic salts.
- No contraindication due to former conservation interventions or decorations.

Sambor Prei Kuk stone materials contain swelling clay minerals and therefore bear a high risk of sequential damage after treatment with water repellents. Many surfaces are dense due to various degradation and decoration impacts. Salt load is ubiquitous in the building and decoration materials.

Water infiltration is omnipresent and uncontrolled in the temples; this is due to the construction method of the Khmer temples with false vaults and low foundations. The situation of the temples renders them sensitive to frequent raising damp. Large bat populations, which produce damaging salts, have led to a high contamination of the building structures with soluble salts. Khmer temples generally cannot fulfill the requirements for a safe water repellent treatment.

3.12.4. Washes

It is sometimes necessary to smooth rough, deteriorated surfaces in order to reduce the reactive surface area of the materials and this can be done through the application of specially prepared thin washes. Washes are very thin, around 5 millimeters, mortar coatings that protect and sometimes also consolidate the weathered stone surface. They do not conceal the visual appearance of the underlying stone substrate.

Washes can be used to stabilize flaking and sanding surfaces and to reduce weathering by reducing the reactive surface. Normally, they are applied as the last step of a stone conservation intervention in order to protect and equalize the properties of the surface.

4. Conservation management policies, guidance, and guidelines

4.1. Intent of conservation management policies, guidance and guidelines

The intent is to provide a logical approach to making decisions and guidance on a consistent basis about all aspects of the historical cultural environment, and for balancing protection with the economic and social needs and aspirations of all stakeholders.

The Principles are primarily intended to assist the management entity to achieve consistency of approach in exercising the statutory role for which it has been assigned.

4.2. Principles

The Principles provide the rational for the policies, guidance, and guidelines framework for sustainable historical conservation management.

4.2.1. Principle 1.

The cultural historical environment is a shared resource shaped by people responding to their human activity, and is a unique record of a full range of urban and rural activities. The environment reflects current day culture and heritage and is a source of identity. The laws and decrees extend the necessary protection that public interest justifies for this and future generations.

4.2.2. Principle 2.

Contributions to the sustainability of heritage sites can be made by everyone. Understanding the heritage makes for decisions that are inclusive and informed. Learning is essential, and experts have an obligation to encourage others to learn the values, and to assist people in articulating the values they attach to a heritage site. Sustainable management emphasizes the participation of a wide and diverse group of concerned citizens. Specialized skill sets require development and progression to future generations.

4.2.3. Principle 3.

Understanding the cultural heritage values is essential. Any part of the historical environment can be considered to have a value. Understanding the fabric, the components of the historical environment, and their interactivity is important. The degree of understanding and the associated values determine protection if any that will be afforded the heritage.

4.2.4. Principle 4.

Conservation is managing change in such a way as to sustain the significance of the built heritage, building and features, and natural environment of the heritage site. Changes in the historical environment happen whether by natural processes or people. Conservation is achievable by everyone. Actions taken to counter harmful effects of natural changes or minimize the risk of change should be timely, proportional to the risk with proven consequences understood for the long term.

4.2.5. Principle 5.

Decisions concerning intervention, conservation, restoration must be reasonable, and consistent. The application of appropriate expertise in the decision making process is vital. Conflicts in the decision making process should be minimized by seeking the least harmful intrusive means.

4.2.6. Principle 6.

Records of decisions and their cumulative outcome concerning intervention (including archaeological), conservation, and restoration should be maintained. Regular evaluation of the effects of all actions and their responses should be used to shape future policy and decisions.

4.2.7. Principle 7.

An acknowledgement of cultural and natural heritage values must be considered in parallel thus creating a bonded relationship between all stakeholders. Beyond heritage designators and in the wider context of total environmental management and spatial planning, an understanding of the cultural heritage value for each stakeholder should be the basis for sound decisions now and in the future with the understanding that the cultural historical environment is a resource that should be sustained for the benefit of all in both the present and future.

4.2.8. Specific Principles

While seven general principles have been elucidated, there are several specific principles that are extremely important to include in a view of conservation management. Additionally these specific principles provide the building blocks for better understand of requirements and associated options. Some of these specific principles may appear redundant with the seven general principles, however they only reinforce, reiterate, and strengthen the conservation requirements, and fill-in the answers to many concerns.

- f. Conservation, reinforcement and restoration of architectural, feature, and archaeological cultural heritage require a multi-disciplinary approach.
- g. The value and authenticity of architectural, feature, and archaeological cultural heritage cannot be assessed with set criteria as each culture, even within different timeframes, is different and has to be respected as such, and requires its physical heritage be considered within the cultural context it belongs.
- h. The peculiarity of heritage structures, with their complex histories, requires the organization of studies and analysis following steps: analysis, diagnosis, therapy, and controls. In practice, these steps respectively correspond to: the condition survey, the identification of the causes of damage and decay, the choice of the measures to remedy these issues and the control of the achievements of the interventions.
- i. A full understanding of the structural behavior and the characteristics of the constituent materials is essential for any conservation and restoration project. Research should be carried out on the original and earlier states of the structures, on the building techniques and construction methods used, on subsequent changes, on the various

- phenomena that impacted the structure, and finally, on its present state.
- j. Before taking any decision on structural intervention, it is indispensable to first determine the causes of damage and decay, and then to evaluate the present level of structural safety.
 - k. Adequate maintenance can limit or postpone the need for subsequent intervention.
 - l. No actions should be undertaken without demonstrating that they are indispensable.
 - m. The design of any intervention should be based on a full understanding of the kinds of action or agents that have caused the damage or decay and of those that will act in the future.
 - n. The choice between “traditional” and “innovative” techniques should be determined on a case-by-case basis with preference given to those that are least invasive and most compatible with heritage values and consistent with the need for safety and durability, as well as availability of means for its maintenance.
 - o. At times it may be advisable to take an incremental approach to conservation, beginning with a minimum level of intervention, with the possible adoption of subsequent additional or corrective measures.
 - p. The characteristics of materials used in restoration work and their compatibility with existing materials should be fully established. This compatibility must include long-term effects.
 - q. The distinguishing qualities of the structure and its environment that derive from its original form and any significant subsequent changes should not be destroyed.
 - r. Each intervention should, as far as possible, respect the original concept, construction techniques and historical value of the structure and the historical evidence that it provides.
 - s. Repair is preferable to replacement.
 - t. When imperfections and alterations have become part of the history of the structure, they should be maintained providing they do not compromise safety requirements.
 - u. Dismantling and reassembly should only be undertaken when required by the nature of the materials and structure and/or when conservation by other means is more damaging.

4.3. Essential Values

The cultural heritage site and its components possess six essential values: historical, associational, architectural/design, artistic/aesthetic, educational and locational. One essential element is sufficient to satisfy the essential value test, but ideally all six are present. Additionally, the site as a whole has the potential to achieve the economic and

social value (benefit) that accompanies a well-organized cultural heritage management executed plan. These values are delineated in Chapter 10 of this document.

4.4. The Strategic Objectives of Sambor Prei Kuk Archaeological Group

The conservation management policy guidelines propose some strategic objectives to guide future decision making and action. These objectives seek to ensure the protection of the outstanding universal value of the Sambor Prei Kuk Archaeological Group as also address the opportunities and challenges currently faced by the site.

4.5. Conservation of the historic fabric

At first glance the built fabric of the Sambor Prei Kuk Archaeological Group looks fragile, but the ground is solid and capable of bearing the footfall of very large numbers of visitors. Building materials decay over time from the effects of erosion and pollution. The areas of extreme vulnerability include the embellishments on the buildings, and areas exposed to water.

From the archaeological perspective the complex is susceptible to erosion resulting from processes of repair and renewal, replacement and from building activity requiring ground disturbance and other interventions for research purposes. In the case of archaeological deposits of national importance, efforts should first be made to preserve them in situ; only where this is not possible should recourse be taken to preservation by record.

The Sambor Prei Kuk Archaeological Group has vast spaces that can accommodate large numbers of visitors, and internal spaces that are currently restricted in use. Visitor amenities within these areas need to be enhanced greatly. It is however necessary that the signage, hardware and services required for visitor comfort do not impinge on the historic character of the site.

There is a need for putting in place a program for periodic monitoring, inspection and review of the historic built fabric. Under this program, conservation works, both minor and major, could be carried out. For instance some minor works are necessary because of past neglect and the detrimental effects of past works such as application of cement based mortars for repair, etc. Major works would include projects such as conservation of the major temples. Demands arising from visitor pressure will always present the need for effective use of open spaces and for adaptive reuse of the historic areas.

Guidelines need to be established for archaeological deposits as well. This applies equally to the floor-scape of the open spaces and temple interiors. An assessment needs to be made of factors such as the balance between soft paving and tarmac, and the desirability of having more or fewer trees.

The built fabric of the Sambor Prei Kuk Archaeological Group is a historic document with potential to display its origin and evolution and thereby demonstrate its significance. The tangible aspect of the site is of immense cultural significance and communicates directly to the visitor.

The building activity varies in degree of significance. This aspect determines the interventions and acceptable degree of change.

Proposed changes should always be subject to cultural impact assessment. Regular maintenance and minor repair, alterations associated with larger projects, etc. should

always be undertaken after consideration of the significance of the building and detailed studies and investigation of history, development, construction and material studies. Removal of historic material must be avoided or kept to a minimum; such material should also not be subjected to unconsidered disposal. New work must be in appropriate materials and, construction systems and where possible, be reversible. Full records must be kept of all works containing appropriate details, both to inform the history of the fabric and for future reference for conservation works. These records should be maintained in the archives/library of SPK site office and at the MCFA office.

Excessive visitor movement can be detrimental to the historic fabric. There is therefore a need to determine the carrying capacity of the various features of the site.

The Sambor Prei Kuk Archaeological Group needs preservation in perpetuity.

This principle however does not mean that the site must be preserved completely unaltered. Over its long history, the Group has been a dynamic site subject to change of use. The plan ensures that changes do not detract from the significance but retain, and where possible enhance, it. Any developments, no matter how small, must therefore meet stringent design and heritage criteria and be in line with the objectives of the plan.

The broad conservation and maintenance guidelines could be common to the entire SPK Group; detailed plans for interventions would need to be developed for individual areas/buildings and incorporated in the conservation plans of these areas/buildings.

Regular inspections and planned maintenance are prerequisite for effective management of the site. The plan stresses a need for a sensitive approach in future. It recommends the removal of intrusive or redundant items as part of the implementation of the conservation plan.

4.6. Conservation of historic gardens, ponds, baray, and open spaces

The gardens, ponds, baray, and open spaces within the Sambor Prei Kuk Archaeological Group originally had a distinct cultural identity. Thus the conservation of these gardens, ponds, baray needs to comply with the international conservation standards. The Florence Charter on historic gardens (adopted by ICOMOS in December 1982) is one of the key documents containing the principles for historic garden restoration. The objective should therefore be to follow the Florence Charter in spirit and content. This will ensure that the historic gardens, ponds and baray are conserved at all levels—form, shape, and above all spatial aesthetics. Paddy fields were an integral part of the historical low-density urban complex of the Group; present-day ricefields are considered as part of the living heritage of the site, and are permitted as long as they do not encroach on other aspects of the historical fabric. Continued non-commercial harvesting of non-timber forest products for local household use shall be permitted, provided that such harvesting is compatible with the sustainable management of the garden and forest areas.

4.7. Preservation of the archaeological deposits in the SPK Group and the environs

Excavations undertaken have revealed invaluable remains in the SPK Group. These remnants are of great significance for their potential to reveal aspects of history of the site. These excavations endorse authenticity.

Non-invasive techniques for archeological investigations must be preferred over invasive. All archaeological works should be documented in appropriate detail and these records be maintained in the archives/ library of the SPK site office and at MCFA office.

- 4.8. Protection of the traditional uses with reference to rights and responsibilities of stakeholders and caretakers of the SPK Group in the management system

There has been a demonstrated traditional use of the property by the local community. While not undermining the intent, the SPK management must work in concert to ensure religious freedoms while at the same time chartering the local community with the health and welfare/protection of the site in its entirety.

- 4.9. Sustainable visitor management

SPK is high national icon, and is becoming increasingly popular of international tourism destination. Given the large numbers of expected visitors, it is imperative to minimize their impact on the historic fabric of the Sambor Prei Kuk Archaeological Group and at the same time provide them with a high quality experience. Monitoring of visitor flows within the Sambor Prei Kuk Archaeological Group is necessary to ameliorate congestion when it arises.

In coordination with tour operators and tourism companies, timed ticketing for tourist groups may be considered to alleviate the problem of long queues. Though the free flow nature of the site allows the visitors to explore alternative areas once they enter the central area there is a possibility the area could be overused and congestion can arise in certain areas. The distributed nature of the site also poses challenges for visitor supervision and safety.

It is recommended that varied areas of interest be developed across the entire Sambor Prei Kuk Archaeological Group through a program for use to prevent points of congestion and overuse. This program may also include the development of suggested routes through the site, with the aim of distributing visitor numbers. Such routes could also provide visitors with a structured narrative, enhancing the interpretation of the site.

- 4.10. Improvement of visitor amenities

Catering, toilets and other facilities for visitor comfort need to be appropriately located, designed and maintained. It is recommended that guidelines be developed for the appropriate location, design and maintenance of visitor facilities which have no detrimental impact on the historic fabric. Current facilities which have a negative impact on the historic fabric or disturb the visual qualities of a historic space or a building are recommended to be carefully removed.

- 4.11. Improvement and augmentation of public access and movement

There are problems faced by visitors coming to the site by both public and private vehicles. Vehicular and pedestrian access to the site is currently highly inconvenient. Vehicular access is not recommended.

It is recommended that the access be improved and movement between the parking (currently under construction) be organized for visitor ease and safety.

4.12. Interpretation strategy for the Sambor Prei Kuk Archaeological Group and its environs

Interpretation is a key contributor to the experience of the site. A proper appreciation and understanding of the layers of history of the site and coexistence of parallel narratives of the site and its setting can come only through high quality interpretation. This would entail clear and accurate explanations, in multiple languages and address the needs of the diverse types of visitors including the disabled and elderly.

A formal interpretation strategy for the Sambor Prei Kuk Archaeological Group and its environs needs to be prepared and adopted. It is recommended that the formal interpretation strategy should first set its interpretation objectives, leading to themes and stories, presentation style, medium options and so on. The strategy should be that of integrating history with the site features.

This strategy needs to include:

- a. Provision at the place of arrival for displaying information on the history and evolution of the site, and its relationship with Angkor, My Son, and other monument groups.
- b. A narrative to establish the relationship between the buildings and spaces of the same period and between buildings and spaces of different periods.
- c. Live interpretation including tours, talks and events; audio interpretation, particularly for foreigners; as well as appropriate interpretive material for those seeking more in-depth information.
- d. Opening of more areas and buildings for an enhanced experience and understanding.
- e. Avoidance of onsite clutter of information and signage, beyond that which is necessary to orient and direct visitors.
- f. The site interpretation techniques and systems should be time tested and great care taken to ensure that the techniques and systems to be used are in no way archaeological remnants.

4.13. Protection of the site from hazards

4.13.1. Prepare a comprehensive and an integrated risk management strategy for Sambor Prei Kuk Archaeological Group:

The Sambor Prei Kuk Archaeological Group is vulnerable to many natural and human induced hazards such as fire, terrorism and theft besides slow and progressive hazards such as pollution, weathering and vandalism.

These would have detrimental effects on various heritage attributes of the site. Risk assessment, prevention and mitigation measures should be incorporated in the periodic maintenance and monitoring systems for the site. An integrated risk assessment for museums is also necessary to determine the

needs and priorities for structural and non-structural mitigation of the museum building and its objects. The operational guidelines would be determined based on a comprehensive assessment of needs and challenges of the various attributes of the site.

4.13.2. Need for an emergency preparedness and response plan

This plan needs to be put in place through the engagement of various internal and external stakeholders including fire services, police, and health services through effective coordination. The focus of the plan should be on ‘operational procedures’, which are regularly rehearsed and tested through drills and other exercises. Though protection of lives is the first priority, the plan should strive for salvaging and protecting heritage fragments/objects from further damage or destruction during the disaster situation. The recovery plan should include provision for storage and treatment of damaged historic structures, fragments and objects.

4.13.3. Safety during special events

Safety is a major issue in the site. It is also important to ensure that these safety arrangements are not visually overwhelming for the visitors to the site.

4.13.4. Training and capacity building for coordinated action.

Maintaining and reviewing appropriate emergency and security plans as a coordinated process between security and the site managers are a priority for the site.

4.14. The setting of the Sambor Prei Kuk Archaeological Group

4.14.1. Reintegrate the Sambor Prei Kuk Archaeological Group with its setting, restating critical physical, visual and historic linkages.

The reintegration of the Sambor Prei Kuk Archaeological Group with its setting should reflect:

- a. The intrinsic visual-interest qualities and the immediately surrounding heritage features.
- b. The visual relationship and historic associations of the SPK Group with the character of the wider surrounding townscape/rural landscape.
- c. The visual relationship with the features of the current surrounding landscape which protect the site and contribute to the historic integrity of the setting.
- d. Convenient public accessibility (safe access from the public parking, safe access for those traveling by various modes of public transport—both fast and slow is important).

It is recommended that the strategic planning framework for the SPK Group include the following:

- a. A positive and coherent strategic planning framework to ensure consistent advice and context for local planning authorities,

developers and influence over the dynamic processes of change in the urban/rural environment.

- b. A coordinated strategy which gives the cultural heritage values of Sambor Prei Kuk Archaeological Group and its setting a greater significance/value and relevance to the life of the wider community.
- c. Seek to promote greater coherence in the definition, adoption, application and monitoring of the national, provincial, and local planning policies and mechanisms. It is important to ensure that all future development appropriately takes into account the historic, townscape, rural landscape and environmental and river context.

4.14.2. The Sambor Prei Kuk Archaeological Group and its environment improvement principles

- a. To rediscover the relationship between the Sambor Prei Kuk Archaeological Group and its setting (the historical precinct).
- b. To improve visitor approach.
- c. To improve access to the buffer zone of the Sambor Prei Kuk Archaeological Group for the various modes of transport—both private and public.
- d. To create a convenient and comfortable civic space.
- e. To preserve the biodiversity and environmental values of the Group.
- f. To encourage uses of land and vegetation that reflect historic elements of the site, and that enhance the visual setting of the monuments and features.
- g. To maximize visitor enjoyment and understanding of Sambor Prei Kuk Archaeological Group and its relationship with its setting.
- h. To give first right of use of the buffer zone to pedestrians.
- i. To have regard to the cultural, commercial and security interests and requirements of the site managers.
- j. To ensure that the site development plan provides adequately for the special requirements during the activities held in the buffer.

4.14.3. Ensure protection of the significant views

The management plan recommends protection of the significant views. It is recommended that all building and landscaping activities must ensure that these views are not impacted adversely by any development works.

4.15. Local Planning

At the local planning level, this management plan therefore endeavors to:

- a. Stimulate the preparation of specific planning policies and supplementary guidelines to protect the Sambor Prei Kuk Archaeological Group and the adjoining 'Historic Precinct', and ensure that the development proposals are carefully scrutinized for

their likely effect on the site, wider setting and cultural context in the longer term;

- b. Ensure that plan's objectives are enlarged through a vigorous process of public participation and that this process is enshrined in the development plan;
- c. Establish a cohesive approach to the implementation of planning policies and supplementary guidelines across all the relevant organizations to promote consistency;
- d. Encourage periodic review of planning policies and guidelines across all the relevant organizations and introduce coordinated mechanisms for amendment and improvement of the policies and programs.

4.16. Achieve a high quality environment for the Sambor Prei Kuk Archaeological Group by promoting the highest standards of new development

There are sites and buildings around the Sambor Prei Kuk Archaeological Group which have a major impact on the setting. All necessary steps must be taken to ensure that the unique character of the Sambor Prei Kuk Archaeological Group and its setting is preserved when development proposals are considered within this area.

The Management plan implementation framework seeks to ensure:

- a. The preparation and submission by the developers/designers of design statements, photomontages and other illustrative material to evaluate proposals for development located close to Sambor Prei Kuk Archaeological Group.
- b. Cultural and environmental impact assessments of the proposed projects.
- c. Creation of design briefs and supplementary guidelines by the local planning authorities, in consultation with MCFA for sites where major development is anticipated or important opportunities are identified for environmental or rural design improvements.

4.17. Reduce the impact of water and of air pollution

Sandstone with calcareous cementing material seems to have been affected by hydrolytic processes i.e. hydration, dehydration, oxidation (clamps, pin, etc.), hydrolysis, leaching, etc. leading to exfoliation of slabs, efflorescence, loss of adhesion/cohesion, loss of resistance to abrasion, physical-mechanical and micro-biological growth etc.

At what stage gaseous pollutants initiate their characteristic deterioration is difficult to understand. In all decay processes water which acts both physically and chemically plays the most important role (reaction between cementing material and water or capillary water). Joints form a very sensitive part to change by water or gaseous pollutants. From the data available it is observed that SO² concentration levels remain low during cooler months while mono-nitrate oxides at some stage exceeded a number of times and may result in conversion from carbonate to nitrate (plasters, mortars, joints and calcareous cementing materials of sandstone) which is soluble and may result in voids, leaching, gaps. This holds good for all concentration levels. It is possible to reduce this rate of deterioration of physical parameters i.e. shelters, screen,

and trees. Water repellency, reduce the penetrating water, the use of consolidates and surface coats to reduce the chemical reaction of pollutants etc. is not advisable without adequate research. One important point to keep in mind is that even if we eliminate the air pollutants entirely; stones, plaster, mortars exposed to outdoor environment will continue to decay because of wind, temperature, physical stress, chemical, and biological factors etc.

4.17.1. Recommendations:

- a. Whatever conservation technique is used for stone preservation in the monuments, it is difficult to change the damaging effects of the environment. However the life of the materials can be enhanced by the use of techniques along with the improvement in the ecosystems around the Sambor Prei Kuk Group. It is important to set up an observatory cum monitoring station that will help to analyze the air profile and thus suitable measures can be taken accordingly.
 - Regular inspection by visual examination.
 - In depth inspection every year
 - Continuously monitoring in respect of SO², mono-nitrate oxides, moisture, rainfall, Relative Humidity (RH), temperature.
 - Undertake photographic documentation annually.
- b. A long term conservation strategy is essential where deterioration is governed by many factors and takes a long period for effect to be visible.
- c. The nature and percent composition through analyzed procedure in respect of pH, total soluble salts, inorganic insoluble materials, volatile substance, salts acid insoluble; etc. along with cations should be done.
- d. A physical barrier should be created between the complex and the surrounding roads by planting species in groves, which can filter out sand and other high diameter particles, absorb salts/ moisture, SPM and minimize the wind velocity and abrasion rate.
- e. Low level pollution strategy is to be worked out and mechanism should be identified on priority basis.

4.18. Detailing and Implementation of the 'Comprehensive Cultural Heritage Conservation Management Plan' and Detail Conservation Plans, in phases.

The SPK-CCHCMP recommends an integrated and a phased program for conservation of historic buildings, open spaces, historic gardens, and adaptive reuse of historic buildings, site interpretation and improvement of visitor amenities. The conservation projects are required to be undertaken at multiple levels to include research, documentation, investigation, conservation planning, project implementation. This is to be followed by monitoring and maintenance.

Detailed conservation plans for buildings and established standards and methodology for documentation and conservation planning for all buildings in the complex is required.

The conservation plans are yet to be prepared for the open spaces and space between these buildings.

The phasing for implementation was done on the basis of significance, building condition, vulnerability, visibility, access, budget and trained personnel.

4.19. Archaeological and Building Research

This section is to provide for an overall management of the site and assist the site manager and the Ministry of Culture and Fine Arts to make informed decisions concerning the conduct of archaeological and building research. The aim is to provide policies, standards, guidelines in a general format that are aimed to facilitate the mitigation of site impacts and to define a process for incorporating assessment and appropriate management of archaeological values into an appropriate management tool. On a general basis this management tool will help to ensure that standards and procedures are in place to minimize loss of important archaeological information and provide the SPK-CCHCP with certainty in the planning, development, and implementation of any archaeological and building research project.

4.19.1. Preparation for archaeological research

4.19.1.1. Research Plan is a methods statement geared to a fully controlled archaeological investigation.

Research design is a part of the plan that deals specifically with the archaeological investigation process. It should contain a detailed description of the proposal and clearly explains the objectives of the archaeological research and demonstrates that there are sufficient resources to achieve the research aims. A research design should, at a minimum, contain the following steps:

- a. Define meaningful research questions: the proposed research questions should address relevant problems in the understanding of cultural development. Answering the questions should add substantially to archaeological or historical knowledge. The research design should outline the data that is needed to answer each question.
- b. Outline the research program: outlines the steps involved in the research, and describes the arrangements and resources necessary to carry them out. The research program should cover ethics, consultation, approvals, project personnel, equipment, logistics, funding arrangements, timeframes for the various stages, and an outline and schedule of the deliverables.
- c. Define the practical methodology: clearly state how data and material will be collected and handled during the project. Detailed procedures for invasive and non-invasive investigations including areas to be surveyed, excavated or sampled, site preparation, safety, and other fieldwork elements.
- d. Explain the analytical and interpretative procedures: outlines the ways the data will be used to answer the research

questions, and indicates the kind of statistical analysis or other means that will be used to convert data into archaeological information. It also clearly states how data and test results will be managed, stored, and made available.

- e. Project deliverables: outlines what is expected in the way of technical reports. The report should include but not limited to an account of the research aims, methods, results, data and interpretations, and conservation outcomes, and should be published within a reasonable time.

4.19.1.2. Rehabilitation and conservation provides for a plan for conserving or rehabilitating the excavation site, and managing recovered materials. It should outline the strategy; identify the parties and resources that will be required for conserving, or rehabilitating any disturbed areas, and for the appropriate treatment and curating of recovered fabric or artifacts.

4.19.2. Undertaking the Research

As close as possible the research plan should be followed and monitored by responsible personnel of SPK-CCHCM. However there may be times when the research plan requires modification to account for new evidence or logistical issues. Modifications are expected to be approved and attached to the original approved plan.

4.19.3. Plan Finalization

Finalizing the plan will entail completion of all the steps outlined in the Research Plan and any other conditions placed on the project by the Ministry of Culture and Fine Arts or SPK-CCHCM organization. In accordance with Ministry of Culture and Fine Arts, Department of Cultural Heritage the following should be submitted:

- a. Project technical report containing:
 - Executive summary
 - Detailed account of aims, methods, results, data and interpretation of the research.
- b. Account of all conservation issues and outcomes
- c. Thematic summary of the research, placing the questions within the context of Khmer history, and culture
- d. Project archive information and should include the following:
 - Copies of original project records such as survey, excavation sheets, notebooks, drawings, photographs, maps, analytical data, published articles or media, and an index and cross reference with project technical reports.

To summarize the specification or research plan it should contain, as a minimum, the following specific elements:

- a. non-technical summary

- b. site location including map and description
- c. context of the project
- d. geological and topographical background
- e. archaeological and historical background
- f. reference to legislation
- g. general and specific aims of the fieldwork
- h. field methodology
- i. collection and disposal strategy for artifacts and eco-facts
- j. arrangements for immediate conservation of artifacts
- k. post-fieldwork methodology and report preparation
- l. method of report preparation
- m. publication and dissemination proposals
- n. archive deposition
- o. timetable
- p. staffing
- q. health and safety considerations
- r. monitoring procedures
- s. contingency arrangements

4.20. Statutes of the Sambor Prei Kuk Conservation and Development Community
Kampong Thom Province April 2004

*Statutes of the
Sambor Prei Kuk Conservation and Development Community*

Kampong Thom Province

April 2004

Chapter I

Purpose

In order to contribute to poverty reduction in Cambodia and to the conservation and development of the Sambor Prei Kuk cultural and historical tourist site by building on the relationship between human settlements, ancient monuments and nature, thus improving the living standards of the people, a consensus was reached to set up a development community to ensure the effective implementation of this initiative.

The Development Community to be set up is called the “**Sambor Prei Kuk Conservation and Development Community**”
The main objectives of the development community are as follows:

- Article 1:**
- Ensure the sustainable conservation and development of national cultural heritage, forests, natural environment, traditions, customs, ethnical cultures and settlements.
 - Participate in the implementation of the Government’s policies on cultural heritage management.
 - Participate in the elimination of looting, destruction and illegal exporting of cultural heritage property from this area.
 - Assist the community members through awareness-raising regarding the value of national cultural heritage.
 - Promote the protection of the existing national cultural heritage and the natural environment around the Sambor Prei Kuk monuments.
 - Participate in the development of agriculture and household economy.
- Article 2:**
- This development community shall be known as the “**Sambor Prei Kuk Conservation and Development Community**”.
 - Endeavor to raise the living standards of the people living in the villages around the monuments through independent income generation based on three sources:
 1. Income from selling hygienic food and handicraft souvenirs to national and international tourists.
 2. Income from services provided for tourists.
 3. Income from agricultural production in the framework of household economy.
 - Endeavor to make the relationship between ancient monuments, nature and human settlements as the foundation for the sustainable conservation and development of Sambor Prei Kuk, a cultural and historical site.
 - Ensure the phased-in implementation of this development activity:
 - Implementing a bottom-up development approach
 - Promoting cooperation between farmers, producers and other stakeholders
 - Stimulating agricultural development and household economy through natural principles based on a self sufficient approach and the creativity of the community members.

Chapter II

General Activities of the Community

Article 3: The conservation and development community shall be independent and non-governmental; its establishment shall be based on the consensus of the villagers; and it shall not be for the profit any political organization or any person. Nevertheless, this community shall abide by the government's laws that concern the preservation and management of national cultural heritage.

Article 4: The conservation and development of Sambor Prei Kuk shall include:
Ancient monuments, artifacts and natural resources in the Sambor Prei Kuk site such as buried stone blocks, stone blocks laying on the ground, ancient ponds, ancient mounds, any statues on the ground or buried that exist on the Sambor Prei Kuk site shall be considered national property under the administration and conservation of the community.

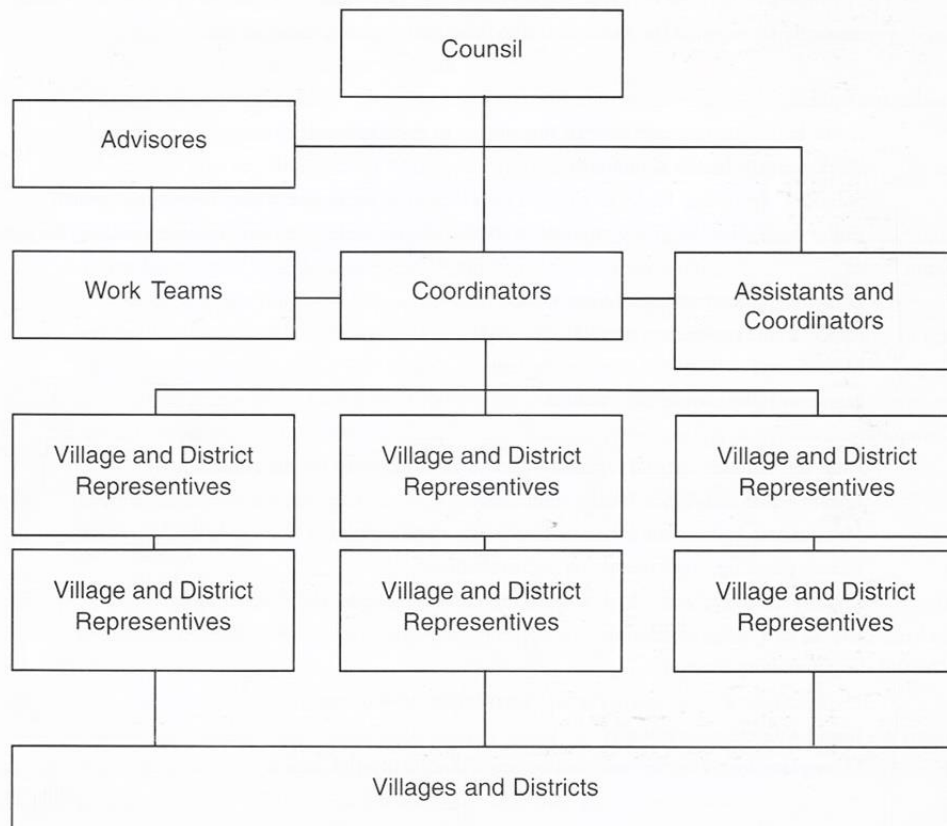
Article 5: The community council shall give approval for any celebrations and determine the places for such, in harmony with the technical institution.

Article 6: Team divisions to manage the national cultural heritage on the site shall be defined by the community council.

Chapter III

Structure, Positions and Rights

Article 7: The structure of the Sambor Prei Kuk Conservation and Development Community shall be defined as follows:



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Sambor Prei Kuk Archaeological Site Representing the Cultural Landscape of the Ancient Ishanapura

Structure of the Community

Article 8: The conservation and development teams of Sambor Prei Kuk shall be established by the Sambor Prei Kuk Conservation and Development Community.

Article 9: The Sambor Prei Kuk Conservation and Development Community shall be headed by one director selected by the community council or elected by the members.

Article 10: The status of community sponsors (supporters) shall be available on a volunteer basis to State institutions, local authorities, international or national organizations, non-governmental organizations, Buddhist monks and other charitable people who are interested in the community.

Article 11: Terms:

a) The duration of the Sambor Prei Kuk Conservation and Development Community Council shall be three years, with a new council established by election at the end of each three-year term. The new chief and new deputy chief of the council shall be selected from the members of the new council. In case a chief or deputy chief resigns, dies or is dismissed, the council shall select a replacement.

b) Meetings of the community council:

The community council shall hold a meeting every month. The meeting shall be organized by chief or/and deputy chief who invites the members to attend. In the absence of the chief, the deputy chief shall chair the meeting. The meeting shall be attended by all community members and the local authorities shall be invited to attend the meeting. In urgent cases, the committee shall be able to hold the meeting before the schedule.

Article 12: Membership:

The members of Sambor Prei Kuk Conservation and Development Community shall be all villagers who permanently live around the monument and voluntarily work without wages.

a) Duties and rights:

- Abide by the statutes and internal regulations of the community
- Work actively for the community
- Stand for election as leader or share in the election of the leader of the community council
- Enjoy the right to lodge a complaint or request the termination of any member violating the statutes

b) Team leader:

- Lead the implementation of team work
- Report to the community council
- Monitor and evaluate the work of the team
- Liaise with the community council

c) Community council:

- Draft the statutes, internal regulations and legal documents for the community
- Ensure peace and justice for the community
- Monitor and address any issues arising in the community
- Ensure planning, implementation and evaluation
- Investigate and prevent any law-breaking in the area under their supervision
- Report to relevant institutions

d) Chief of the community council:

- Lead the overall activities and chair the meetings of the community
- Liaise with other institutions
- Make plans for the community in keeping with equality and justice

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e) Deputy chief of the community council:

- Provide assistance to the chief
- Represent the chief during the absence of the chief
- Handle the income and expenditure statements and other documents of the community

f) Community members:

- Equally participate in any decision-making of the community
- Attend the meetings of the community in accordance with the invitation of the chief or deputy chief
- Assist the team leader to work properly
- Stand for election as the chief or deputy chief of the community council or share in the election thereof

g) Sponsors/supporters or advisors:

- Provide information, experience and advice to the community
- Facilitate liaison between the community and other institutions or agencies
- Coordinate and guide any decision-making process of the community
- Coordinate any work requested by the community

Chapter IV *The Sambor Prei Kuk Temple Complex*

Article 13: The Sambor Prei Kuk temple complex is a site of great historical and cultural interest for tourists and needs to be preserved by all means based on the following references:

- Sub-decree No. 63 អនក្រឹត្យ dated October 14, 1997 on the organization and implementation of the Ministry of Culture and Fine Arts.
- Decision No. 01 អនក្រឹត្យ dated January 6, 1996 of the Ministry of Culture and Fine Arts on the determination of the three other temple areas to be protected in provinces/ municipalities outside of the Siem Reap / Angkor area.
- Circular No. 03 អនក្រឹត្យ dated February 18, 1999 of the Royal Government on strengthening safeguarding and public order in the Kingdom of Cambodia.
- Directive No. 14 អនក្រឹត្យ dated December 18, 2001 of the Royal Government on strengthening and promoting tourism development in a new manner.
- Directive No. 05 អនក្រឹត្យ dated March 27, 2002 of the Royal Government on preventing commercial excavations for and destroying artifacts.
- Sub-decree No. 63 អនក្រឹត្យ dated July 20, 1999 of the Royal Government on the creation and implementation of the Ministry of Land Management, Urban Planning and Construction.
- Royal Government implementation sub-decree on safeguarding cultural heritage
- Royal Decree No. ៩៧៣៣០៣/១១៦ dated March 11, 2003 from the King of the Kingdom of Cambodia on the determination of Sambor Prei Kuk as a tourist site area.
- Provincial decree No. 41 អនក្រឹត្យ dated February 22, 2000 from the provincial governor of Kampong Thom on the conservation of areas with historical cultural heritage as national property.

Article 14: Digging for and destroying artifacts, deforestation, clearing land intentionally for ownership shall be considered as a violation of national cultural heritage and shall be punished according to the law.

Article 15: No one shall have the right to dig for stone blocks, statues, sculptures, etc. under the ground or on the surface on the Sambor Prei Kuk site for commercial purposes without authorization from the competent ministry.

Article 16: It is prohibited to remove bark from valuable trees on the historical site of Sambor Prei Kuk for personal commercial purposes that causes such trees to wither. Barking for household consumption such as picking leaves for greens, picking fruit, picking dead branches for firewood, picking mushrooms, traditional medicine, picking vines and wild flowers that shall not cause trees to wither shall be allowed.

4.21. The Importance of the Role of Community as Stated in the Kyoto Vision of 8 November 2012

We reiterate the important role of communities, including local communities and indigenous peoples, in the implementation of the World Heritage Convention, in accordance with one of the five strategic objectives, the fifth “C” adapted in 2007, and the Strategic Action Plan 2012-2022.

The Convention, in its Article 4, places the responsibility for ensuring the identification, protection, conservation, presentation and transmission to future generations of the cultural and natural heritage with the State Parties (Cambodia). At the same time, if one of the aims of the Convention is to “give heritage a role in the life of the community” (Article 5), then the concerns and aspirations of the communities must be centrally involved in conservation and management efforts.

Only through strengthened relationships between people and heritage, based on respect for cultural and biological diversity as a whole, integrating both tangible and intangible aspects and geared toward sustainable development, will the ‘future we want’ become attainable.

Such strengthened relationships should be grounded in a “multi-disciplinary and participatory approach to heritage conservation, which would integrate the consideration of social, economic and environmental dimensions, paying particular attention to vulnerable groups respecting all relevant international standards and obligations. Unless such a sustainable development perspective is integrated in the World Heritage property, it will be difficult in the long run to insure the convention of its Outstanding Universal Value.

Thus, benefits derived from well-protected cultural and natural heritage properties should be equitably distributed to communities to foster their sustainable development and there should be a close cooperation with management bodies and experts. At the same time, attention should be paid to the evolving character of culture and social contexts relevant to World Heritage, which will inevitably lead to the emergence of new groups of interest and concerns.

This new approach and these considerations will require the building of capacities and education of relevant actors, from institutions and policy makers to heritage practitioners and communities and networks. Communities, in particular, should be empowered to harness the benefits of heritage to society through specific awareness-raising initiatives, skills development programs and the establishment of networks. They should be fully involved in management and conservation activities, including in reducing risks from disasters and climate change.

Attention should also be given to the development of sustainable tourism as one of the sources of economic benefits and empowerments for local communities, and the appreciation of cultural diversity by visitors.

5. Comprehensive Cultural Heritage Conservation Management Plan for Sambor Prei Kuk Archaeological Group

5.1. Conservation and Revitalization Plan

5.1.1. Historic Buildings and Landscape Conservation

The historic buildings and landscape conservation component of the proposed conservation and revitalization plan focuses on both the macro and micro built environment. The plan addresses large-scale buildings and landscapes and small-scale decorative features. It is recommended that MCFA develop guidelines and implement policies that ensure that the conservation of the historic built fabric is undertaken in conformity with the best internationally accepted standards.

The conservation plan attempts to retrieve the footprint and spatial boundaries of the historic 6th to 11th century. The Plan therefore requires excavations in selective areas that are thought to contain the remains of foundations and plinths of the arcades and walls from period structures.

Archaeological evidence is anticipated to exist in the many diverse areas of SPK Group. Because of the fragile nature of these remains, no active use is proposed in these areas. The exposed remains are recommended to be interpreted with appropriate signage.

Many structures and artifacts were destroyed during the period when roads, paddy fields, and new structures were constructed. Likewise past archaeological surveys further disturbed the existing fabric of the Group. These periods of activity further disturbed any archaeological evidence that would have survived. The proposed plan identifies these areas as areas of disturbed archaeology as distinct from the open areas which have not been built over. It is recommended that these areas accommodate a more active usage and a more unrestricted movement of visitors, but that does not preclude additional research.

The recommended program for historic building conservation emerged after correlating the values of buildings with documentation and condition assessment for religious and decorative surfaces as part of the detailed conservation plan (see section 6.2). It is important to note that each building received two assessments: the value and condition of its physical structure, and the value and condition of its decorative surfaces (see section 6.1). Both assessments have been considered when preparing the program and priority for action plans. For example, a building might require immediate work on the conservation of its decorative elements, while its structural conservation may be undertaken at a later phase. Therefore, the historic building conservation plan outlines a conservation methodology for buildings and one for decorative surfaces. Risk assessment is another important factor that is contributing to the conservation plan and its implementation.

5.1.1.1. Conservation methodology for civil works

In order to propose an appropriate conservation plan for the historic built fabric of the site, all buildings, and features were researched, surveyed and documented to determine their historical, associational, architectural, artistic, educational and locational values. For each value, the buildings have been given a rating of 'unique', 'average' or 'none'. The classification of values is briefly described below

a. Historical value:

Historical value relates to the connection with the past fabric of the place or people. The purpose the monument is currently used for may be a contributing factor to historical value if there are sufficient verifiable links to the past. The illustrative value is particularly important if the structure is innovative in construction, technology or design or if it the last or only surviving model. Historical value is sufficient if the monument is associated with a famous person or event. Authenticity is important.

Religious buildings and special features were rated as unique while partially (60 percent+) degraded buildings and features as average, and totally destroyed buildings and features as having no current obvious historical value.

b. Associational value:

Buildings that housed religious activity and those that have direct association and/or were the venue of significant historic events, the buildings that were the site of special cult worship much like the framework of historical value, are rated as unique. The commemorative and symbolic values of past generations and civilizations linking to the present provides for a strong associational value within the community, as well as those values that are seen to be of similar substance and form in other regions of the world.

c. Architectural/design value:

Multiple criteria were used to assess the architectural value of buildings. Given that the site has buildings which belong to varied periods, the architectural value of a given building has been determined by its authenticity; whether it is representative of a certain style; its contribution to an understanding of a particular period of architecture; its relation to the earlier layers of history (whether it disturbs the architectural or the spatial character of an important component of the site. Design values relate to artistic and aesthetic and in most cases interwoven in the decoration, detailing and craftsmanship. The combination of architectural innovativeness, quality of design, craftsmanship, rarity, construction elements/use of materials and completeness provide for the value statement.

d. Artistic/aesthetic value:

Artistic and aesthetic value relates to the sensory perceptions that are derived from the monument and environment. Aesthetic

values tend to be culturally specific, but not necessarily exclusive. A monument and its decorations do not necessarily require beauty, but a sense of wonder, inspiration or surprise.

Assessment of the artistic/aesthetic value of buildings is based on a survey and assessment of their decorative features and the surroundings in which they exist. Artless beauty derived from the natural surroundings such as trees, algae, or patina from degradation form part of the intrinsic beauty of the environment. Decorative elements need not be from the original period of construction of a building to receive a 'unique' rating. For example, decorations introduced in a later period or as part of renovation activities of the 14th-17th century or unique tree growth may all constitute a unique artistic/aesthetic value.

e. Educational value:

The educational value of a building has been determined by how the building contributes to the overall significance of the site and how it can be used to tell the multi-layered history of the site. Educational value has not been determined by the age of the structure or the elements that constitute the structure. Buildings from all periods have an educational value. All buildings with educational value should be incorporated into the site interpretation plan.

f. Locational value:

Locational value has been determined by the location of the building and features in relation to visitor movement. Buildings and features that are currently situated in key visitor areas, as well as those that lie in area that will be accessible to visitors in the future have a higher locational value than those that will not be seen by visitors.

g. Social and economic value (benefit)

The above six heritage values provide the basis for a stand-alone social as well as economic value added. The generation of tourism and economic investment in conservation and management in both monetary and personnel terms provides the perception of quality and uniqueness that reflects favorably on the community, regional and central governing authorities.

5.1.1.2. Conservation plan

The detailed conservation plans for the three groupings at Sambor Prei Kuk have determined the steps that are necessary for the preparation of the conservation plans for the various buildings and features. These steps include:

- a. Research
- b. Documentation
- c. Investigation
- d. Analysis
- e. Conservation planning
- f. Implementation
- g. Post-conservation monitoring

h. Post-conservation maintenance

These steps are recommended to be undertaken for the conservation of all buildings and features of significance.

5.1.1.3. Classification of conservation issues

It is recommended that the issues of conservation in the Sambor Prei Kuk Group be classified in the following four categories:

A. Urgent

This category includes buildings and features that require emergency work to stabilize the structure. This category also includes the list of immediate work recommended by the expert committee constituted by the Minister of Culture and Fine Arts and the Council of Ministers

B. Necessary

This category includes buildings and features in need of conservation work to protect, preserve, and/or enhance their value. These buildings and features are not at risk of collapse and are not in need of immediate stabilization.

C. Desirable

This category refers to work that is not time sensitive, though if undertaken would enhance the experience of the site.

D. No action

This category refers to those 'monument features' and features which no action is anticipated other than investigative and documentation. Their present condition and location are inconsequential to visitor expectations, and the overall fabric of the group.

5.1.1.4. Demolition of insignificant modern buildings and features

It is recommended that certain modern buildings/ features be demolished in order to recover and recreate the footprint of the 6th-11th century plan. Only buildings of no historical, associational, architectural, artistic, educational, and/or locational value will have been slated for demolition. Before undertaking demolition, the building must be thoroughly documented and feasibility studies conducted.

5.1.1.5. Adaptive reuse of historic buildings and features

Studies must be undertaken to determine the threshold of acceptable change so as to ensure that the significant aspects of the buildings and features are not compromised in the process of revitalization of the site through adaptive reuse of historic buildings and features for religious purposes.

5.1.1.6. Conservation methodology for decorative surfaces

It is recommended that conservation works, including cleaning of surfaces, be carried out by trained conservators only. For painted surfaces conservation work should preferably be done by art

conservators. Crafts persons can be employed for other restoration work.

The work of all crafts persons, however, must be carried out under the strict supervision of trained conservators. A technical approach, backed by scientific studies, must be adopted for the conservation of decorative features and the work is managed by a single department, preferably the Ministry of Culture and Fine Arts (Department of General Heritage). All interventions must be recorded in detail. In the case of decorative features the exact location of the surface/decoration/area worked upon must be identified in the documentation. It is recommended that condition report forms with graphic representation of the features (and the decay forms) being conserved is retained as part of site records. The results of scientific studies and tests carried out from time to time must be made available for comparison, research and referral purposes. Appropriate cleaning and maintenance procedures at predetermined intervals have to be devised for the cleaning of decorative surfaces, especially in routine maintenance. The use of large volumes of water, unskilled/untrained human resource and incorrect material/methods for cleaning must be avoided at all costs. A manual for routine maintenance should be developed for reference of all.

Enhanced security measures and physical presence of guards at nodal points is needed to control the possibility of vandalism and defacement of decorative surfaces. Similarly, visitor movement must be regulated at key areas. Barriers, if any, must be aesthetically compatible with the surroundings and not ad hoc arrangements. A few features seem either incongruous or incorrectly placed. The appropriateness and correct positioning of features in the buildings is essential and should be done on the basis of further art historical studies.

It is recommended that a systematic sampling and examination of all materials be carried out (as detailed below) instead of looking for individual materials and problems. The strategy of analysis can be categorized into three main types: microscopic-mineralogical analysis (general analysis), chemical analysis (specialist analysis) and physical-mechanical analysis (performance analysis).

Type/Sub-types Information gained:

- a. Petrography, mineralogy
- b. Stratigraphic details, mineralogical identification, nature and type
- c. Microscopic mineralogical analysis used for all material types) Bulk analysis (XRD, SEM)
- d. Detailed identification of minerals, chemical composition of natural materials and deteriorating agents, e.g. salts, pollutants, reaction products, etc.
- e. Chemical analysis

- f. SEM-EDX, ICP-MS, AAS, chromatography (GC, HPLC, LC),
- g. Chemical composition of materials, binding media, decay products, salts, etc.
- h. Physical-mechanical analysis
- i. Porosity, water absorption, compressive strength, grain size distribution of aggregates in mortars, plasters, renders
- j. Durability and performance information

Exceptional art features must be treated at par with artifacts. These features must be recorded and monitored periodically so that any losses or change in condition is noticed immediately. To ensure accountability, all such features must be handed/taken over with recorded graphic condition so that the responsibility for any loss can be pinpointed. All work (in all art features) must be monitored at regular intervals to check for losses or pilferage. All extant work in each of the buildings must be documented in order to record their current state as of date.

In general, as most of the buildings are exposed to environmental hazards, including pollution, it is recommended that additional protective measures be explored to contain the settlement of grime/tarry matter/dust/dirt on the decorative surfaces. These measures could involve the use of “authentic” awnings, transparent barrier, screens, and plantation and should be installed in a manner so as to not detract from the aesthetics of the decorative surfaces.

Investigations and scientific tests that must be undertaken for a better understanding of the site and which should form part of the conservation planning are outlined as below:

- i. All recorded major cracks must be monitored at regular intervals by telltales using small POP bars or thin glass slides. A more precise way would be to monitor cracks using a Whittemore gauge, a mechanical instrument that measures changes in length between two points that are permanently affixed to the material, one point on either side of the crack to be monitored. The Whittemore gauge can be removed and replaced to measure the width of the crack as frequently as desired and are accurate to read crack width increases of as little as 0.0001.
- ii. The presence of dowels beneath each of the cracks must be investigated to rule out the possibility of their corrosion/expansion being responsible for the same. Portable X-ray units (or GPR) can be used to locate iron dowels in masonry, though the high conductivity of iron means that it is an excellent reflector of radar waves and would make it difficult to see details beyond the dowels, especially if the dowels are present in multiple layers. The performance of GPR/ X-ray unit can be improved by combining it with a Covermeter, a device used in the construction industry to locate rebar and to measure the concrete cover of rebar.

- iii. The presence of soluble salts must be investigated in order to eliminate the possibility of salt action being wholly or partially responsible for exfoliating stone surfaces. Wherever salt efflorescence is present, it can be carefully scraped off the surface and an XRD analysis can be carried out for mineralogical identification. In case of sub florescence, salt analysis can be carried out on drilled powder samples (micro-drilling) or on samples extracted by paper pulp. Also, core drilling should be done wherever possible to ascertain the bedding plane of exfoliating stone slabs. Adequate measures should be adopted to prevent the roosting of birds and bats, including the use of no electrified wires, anti-roosting spikes and netting. Sonic and ultrasonic auditory and visual scare devices could also be tested onsite, although the rapid adaptation of certain species to these systems makes them less effective in the long run. The installation of such devices requires the careful study of the nature and habitat of birds and bats.

A policy decision consistent with conservation norms and ethics must be taken for the reconstruction of decorative features, including replacing decorative features, filling of losses with a material similar to the original or recreation of lost painted details/stucco. It should be mandatory that all such work be undertaken based on strong scientific data and historic evidence and should not disturb the remnant original material/decorative feature in any manner.

In order to ensure smooth implementation of the proposed conservation plan, the following policy decisions should be made:

- i. Policy on restoration of lost decorative elements
- ii. Policy on restoration of lost stucco
- iii. Policy on restoration of painted surfaces
- iv. Policy on removal/treatment of corroded iron dowels (if treatment necessitates dismantling of stonework/cladding)
- v. Policy on restoration of losses on stone (brick/laterite/sandstone)

5.1.1.7. Historic Landscape Conservation

The same principles and values of historical, associational, architectural/design, artistic/aesthetic, educational, and locational apply to the historic landscape.

The proposal for landscape conservation is based on archival research. Additionally, thought was given to conservation policy, design and planning theory (including an analysis of views, sight lines, spatial experience and the application of design principles in the restoration exercise), cultural perspective (a study of the meanings and symbolisms aimed at continuing with the narrative expressed in the site layout), and how ecological and environmental conditions have changed through the centuries.

In light of the above the following degrees of intervention are considered appropriate:

A. Preserve/ Retain

The rationale in selecting features of buildings and open spaces to be retained is:

- Keep all features that are historically authentic.
- Retain features that would help interpret the site.
- Keep all features that help understand the various layers of history of the site.
- Retain all features like the historic boundary walls that help understand the space spatially.

B. Policy on reconstruction of lost areas in the absence of historic evidence

- The missing door, gate, and walls may be constructed to match the surviving examples.
- Ceremonial opening and closing of gates could form part of the proposed revitalization activities.

C. Compatible land uses.

- Retain all trees known to belong to the period (by species) even if their location is not authentic.
- Retain all healthy trees.
- Retain the modern water supply system where appropriate and in good condition, and augment it if required.
- Expose and retain the foundations of the various boundaries of spaces.

D. Restore.

The rationale in restoring the various aspects and features is:

- Restore wherever there is evidence on site and in archival sources of features having existed.
- Restore the boundaries as footprints for the entire site and as structures wherever there is evidence to create an authentic experience of spatial experiences as they existed.
- Restore the floor scape in areas with the objective of bringing back the spatial character.
- Restore pathways to ensure that present-day tourist movement follows the old routes. This pertains specifically to treatment of surfaces.
- Restore the water channel profiles as it is an important aesthetic feature of the space.
- Restore the original ground levels.
- Locate and restore historic wells.

E. Remove

The rationale for removing the various features within the open spaces is as follows:

- Remove features that are disturbing the spatial experience.
- Remove all incompatible land uses.
- Remove all planting vocabularies of design that do not help interpret the site or interpret the site wrongly.

- Remove all of the modern structures as part of a process to partially restore the spatial character of the site.
- Remove roads networks wherever they are fragmenting the historic open spaces.
- Remove ill-designed lighting fixtures and junction boxes.
- Remove modern fencing and gates.
- Restore water channels.
- Remove modern structures that are disturbing the historic boundaries.
- Remove all fencing that is spatially fragmenting the large spaces.

F. Reconstruct/Recreate

The rationale in reconstructing and recreating the various features within open spaces is:

- Reconstruct the boundary walls at selective points where they help form enclosures.
- Recreate pathways to bring back the spatial character.
- Recreate the floor scape with paving patterns using appropriate materials compatible with the historicity of the site.
- Subtly mark entries into the various spaces through floor scape treatment.
- Recreate pathways to direct visitor movement.
- Reconstruct features to help interpret the site better.

G. Additions

The rationale in adding various features within the open spaces are:

- Add rest furniture where it helps interpret the site.
- Add plantation to help recreate historic enclosures where it is not possible to restore or recreate the boundary walls.
- Add new pathways to access areas currently inaccessible.
- Add new signage to help interpret the spaces.
- Design rest furniture that helps enhance the experience of various spaces
- Design and locate litter bins at strategic yet discreet points.
- Re-grade the ground without disturbing the archaeology of the site.
- Introduce an efficient surface drainage system with proper gradients.
- Introduce subterranean services in a manner that does not disturb the archaeology of the site.
- Introduce low-key and subtle landscaping in the form of ground cover that helps in the interpretation of the site but does not destroy the archaeology of the site.

5.1.2. Site Revitalization

The objective of the proposed revitalization plan for the site is to recommend future uses of the complex that will enhance its value to stakeholders (see section 6.1.2.7) as well as visitor experience while respecting the conservation plan(for buildings, decorative features and landscapes). Recognizing that the site exists within a larger historical and cultural context, the proposed plan recommends integrating the site with its current larger rural layout. The plan celebrates the site's historic value and proposes ways to

integrate it with the current needs of both the site and the larger rural setting, thereby creating yet another chapter in the site's rich history.

5.1.2.1. Zoning

The site is delineated into three areas:

- A. Temple Complex area
- B. City Complex area
- C. Dike/moat/pond/baray area

The revitalization plan for the Temple complex has been conceptualized on the basis of zones. These zones are not delineated by boundaries or edges. The positioning of zones for cultural activity, institutions and site management has been determined through investigation of any impacts on the archaeological significance of these areas. Any area considered as having high archaeological potential is included within the cultural heritage zone. The use and program of each zone has been determined after considering the value, condition, levels of acceptable change and the potential for reuse. Issues of accessibility and proximity of parking facilities have been the other criteria. The descriptions of the zones are given below:

A. Cultural heritage zone

The principal use of the zone is determined by the rich cultural resources located within it. The zone comprises structures, open spaces and archaeological areas.

B. Cultural activity zone

It is recommended that structures in this zone be used for cultural activities and visitor amenities, including:

- Museums and site interpretation centers
- Facilities, including, but not limited to, restaurants, bazaars, craft workshops, and performance areas

C. Institutional zone

Institutional activities, including offices, archives, research areas and museums, are given an important place in the complex. The presence of these institutions allows the site to function as an educational institution, accessible to the public and residents and beyond. Vehicular access is recommended to this area along with the parking facility. Care must be taken to ensure that the parking facility does not should not conflict or disturb visitor movement in or around this zone.

D. Site management zone

This zone can accommodate the following uses:

- Maintenance and service activities such as power houses, waste management, fire and emergency equipment. These facilities are concentrated in this area with consideration to easy accessibility and parking facilities.

- Security personal accommodation, mess and other facilities are proposed to be within the facilities within the complex.

5.1.2.2. Stakeholders

In order to facilitate use of the site, it is critical to work with all stakeholders to apprise them about the significance of the site, to inform them of the proposed conservation program, and to engage them in interpretive and outreach program. Rapport sessions with the stakeholders are recommended so that these groups and individuals will understand their role and feel ownership of the site, thereby ensuring its sustained maintenance.

Below are specific issues related to key groups of stakeholders.

A. Village Council

The needs of the village council are reflected in the proposed site revitalization plan. An appropriate upgrade of the space, in terms of signage, infrastructure and improved access for goods is important for this historic site. It could contribute to the up gradation and maintenance of a larger area, by providing resources for landscaping and maintenance of the historic areas as well as signage and visitor amenities in and around the historic area.

B. Tour Operators

This group will benefit from the enhanced tourist numbers and improved infrastructure. They can be anchored to the site and made accountable through an organized system of accreditation/affiliation, through which they may be monitored. A visitor facilitation center along with parking for coaches could provide the necessary linkage between the complex and the operators.

C. Visitors

The proposed revitalization plan for the complex captures the historical, cultural and social significance of the site. The plan recommends various activities and functions that not only welcome the one-day tourist but also attract residents and nearby areas to return to the site to participate in new programs, observe ongoing conservation efforts, and discover new dimensions. It is intended that the complex become a destination for local residents.

In order for visitors to better understand the history of the site, on-site museums should focus the sites significance, address conservation needs, and explore the larger rural context. Changing exhibitions will target repeat visitors. The proposed site revitalization plan addresses visitor movement. Multiple visitor flow patterns are recommended. Visitor

amenities, signage, facilities and the interpretation plan are reflected in these flow patterns.

Summary of recommended actions:

- Creation of tourism hub and parking
- Opening of alternative entry/exit
- Creation of alternative visitor routes in the complex
- Amenities to be augmented: seating, toilets, dustbins, cafes, souvenir shops
- Recreation areas for families

Below are recommendations for improvements in visitor amenities which have been incorporated in the plan:

- a. Facilitation Center is in progress and is recommended (See Annex for full details). The center would house all basic amenities, including toilets, drinking water, first aid kits, a cloak room, information kiosks, publication materials about the site, and a ticketing zone.
- b. Entrance and exit
 - Facilitation Center should remain the only entry point for visitors during daytime.
 - It is proposed that Facilitation Center be an entry point for visitors during evening hours for performances and other special programs. As is the current policy, this gate will be an entry and exit point for administration staff only during both daytime and evening hours.
 - Exit from the monuments will be from the Visitor Facilitation Center through the secure zone, allowing visitors to retrieve checked coats and baggage and to pick up publications and information on other sites.
- c. Information system/signage

Improvement of signage to better communicate the significance of the site in clarity to the visitor and to enhance visitor experience in terms of comprehensive understanding of the site, security within the site, take-back-memory qualities, quality of oral propagation and identity of the site and clarity of actions is necessary.

Below are signage design principles:

- All signage should be in English and Cambodian scripts. It is recommended that interpretive signage also be in Korean, Chinese, and Japanese script due to the large number of visitors.
- Signage must not adversely impact any buildings, monuments and landscapes of significant value or interfere with (a).
- Signage must be situated so as not to physically impede the visitor and not be a safety or security hazard.
- Aesthetically harmonized information points must be provided within the historic places to facilitate a visitor-friendly environment and to link the individual site to the other historic places and the entire circuit. Interpretative

material must not adversely impact the features of significant value in the historic place.

- Determine a cultural calendar of events linked to the site and disseminate this information to the visitors. Information should also be provided on any culturally sensitive behaviors that need to be respected at these times.
- Visual interpretation of the site should be responsive to the chronology and itinerary of visitor plans.
- Site interpretation components should be compatible with the character and architecture of the individual building as well as, to the extent appropriate, with other historical edifices in the place. This is particularly important for historic buildings and features. The addition or replacement of visual interpretation for buildings not having notably historic or architectural features should still be carefully considered and be seen as an opportunity to significantly enhance the appearance of the buildings and their visual presentation.
- To design a visitor environment, it is mandatory that the design briefs address the upfront needs and should not conflict to the visitor mandates.

Below are types of signage that are recommended to improve visitor experience in terms of way finding, directional and information signage:

- **Visual Directional Signage:**
A sign erected on a pole, or a pylon independent of any building, provided it is not designed or used as a poster panel (billboard). This signage should indicate the direction of visitor movement towards the important facilities and places of interest. The signage should contain only textual information with direction signs. It should be located at crossroads of facilities, bifurcating points, parking and pedestrian intersections within the site. The signage should be bi-lingual (English and Cambodian).
- **Way Finding Signage:**
A sign mounted on built structures or freestanding on low single post (below eye level) should be installed. The signage should display the name and direction of the particular facility located near to its installation place. The signage should be placed at a point where the visitor might end up in a multiple facility-zone and be able to identify the route from there to the specific service. The signage should be bi-lingual (English and Cambodian).
- **Visitor Amenities Signage:**
A sign painted on or attached parallel to the wall or window of a building indicating the name of the service or amenities like toilets, drinking water, restrooms,

handicap information, first aid facility, rain shelter, phone charging deck, ramps, staircase, etc. The signage should be bi-lingual (English and Cambodian).

- Statutory Signage:
Signs required or specified by statute: signs relating to safety of pedestrians, traffic signs, warning signs, prohibition information, refraining activities, etc., according to conventions and text information only if required.
- Temporary Signage:
A sign displayed for a total of more than five days but less than four months in any given year. This signage is for caution or notice to visitors regarding maintenance or repair works being carried out in the site. It should be portable and non-descriptive and small in size. The signage should be at least bilingual.

While designing the permissible signage, the following criteria have to be considered:

- Aggregate number of signs on the building to be minimized
- Compliance with required objectives of this Design Guideline
- Consideration of existing signs, including signs on buildings and outdoor uses that constitute a sign
- Dimensions and location of the sign
- Content and style of the sign
- Historic cultural values of the building
- Impact of the sign on pedestrian and traffic safety
- Compatibility with surroundings
- While designing a signage, the designer has to follow the conventions or standards of graphic design for the following components:
 - Signage design process in consultation with the client
 - Appropriate signage orientation
 - The type of location and mounting
 - Considerations demanded by the viewer
 - Viewing distances in the foreground of the signage
 - Determining the number of signs permissible for business
 - Signage legibility and viewing clarity for better interpretation
 - Following standards of layout and minimum clear space
 - Standards for reserved layout and design for handicapped
 - Preferred color selection for aesthetic purposes
 - Permissible and mandatory script type
 - Range of wording and typeface permissible in the layout
 - Defined arrow styles
 - Size of the signage that is not overwhelming
 - Shape of the signage whose design should not be out of local context

- Construction material used in the signage should be vernacular
 - Provisions for authority or endorsement within the layout space
 - No distortion in the original style and type of the significant symbol or logo
 - Standard pictograms that adhere to international styles
 - Finish of the signage should consider local weathering conditions, ease of assembly and installation, and chances of vandalism
- d. Parking
- Battery-operated autos/vehicles are recommended to pick up visitors at parking facilities and drop them off at the Visitor Facilitation Center, to be located within 2km of the Sambor Prei Kuk North group of temples adjacent to the road.
- e. Access and amenities outside the complex
- Signage and information about the site is recommended to be provided at all transportation points in the outlying vicinity of the site.
 - Signage is recommended be installed indicating vantage points for viewing the site and taking photographs.
 - Removable bollards can be used to direct and control visitor movement and prevent vehicles from entering the area. In the proposed plan the battery-operated vehicles will pick up tourists from parking and drop them off in this area.
 - Seating has been proposed along the periphery of the landscaped greens.
 - A feasibility study for visitor amenities.
- f. Ongoing conservation efforts
- Removal of encroachments in the temple zone is recommended.
- g. Toilets
- Toilet facilities should be upgraded and relocated to the Visitor Facilitation Center
 - All toilet facilities should be fitted with a basic first aid kit.
- h. Food and water
- Water facilities should be upgraded and located at the
 - Visitor Facilitation Center
 - Additional water facilities should be located around the site.
- i. Visitor comfort
- Create recreation areas for families
 - Benches should be sited in such a manner that they do not detract from the significance of the site or pose a safety or security risk. Some seating should be provided in a covered area for visitors to escape the sun.

- Where possible, recreational areas should make use of existing vegetation and landscape features to provide seating and shade.
- j. Universal and VIP access
 - Guidelines about universal access should be followed for the site, including for handicapped accessible toilets, and water facilities, paths and entryways, and universal signage installed to indicate the location of these facilities.
 - A vehicular movement route has been given in the proposed plan for both universal access as well as maintenance vehicle.
- k. Maintenance and security
 - An adequate number of dustbins should be provided around the site.
 - Fire and safety policies should be implemented.
 - The Archaeological area should be enclosed by a fence, making it easier for security personnel to clear out and monitor the area after and during visitor hours.

5.1.3. Site Interpretation and Educational Outreach

It is recommended that the Site Interpretation and Educational Outreach program include a range of potential activities to heighten public awareness and enhance understanding of the cultural heritage site. This program is based on historic research and reflects the overall conservation and revitalization plan. Specific activities and techniques are recommended below:

- A. Interpretive signage will communicate the significance of the site to the visitor and will be compatible with the character and architecture of the site. For more detailed information about signage, refer to section 10.1.2.2.
 - **Historical Description Interpretive Signage:**
A sign permanently attached to the ground on its own supportive structure independent of any building or backing support. This should describe the historical narrative of the significant building or structure supported by plans, pictures, text on history, events and personalities, narrative and notional linkages, artwork conveying significance, project logo and title, tourist circuit information, etc. This signage should be located near the important building or site. The signage should be tri-lingual script.
 - **Banner Signage:**
A sign suspended from an exterior fixture. This signage should indicate facilities, conveniences and attractions housed within the adjacent building or site. The signage should contain the name of the facility with direction sign. The signage should be bi-lingual script (English and Cambodian).
 - **Historic Building Identity Signage:**

A sign painted on or attached parallel to the wall or window of a historical building or structure or horizontally projected from the wall of the building supported by a bracket indicating the name of the building. The signage should be bi-lingual script).

- Integrated Site Facility Interpretive Signage:
A sign permanently attached to the ground on its own supportive structure independent of any building or backing support. This should describe the location of the visitor in the plan of the entire site, highlight important places, locate visitor services and amenities, features and facilities and businesses, and indicate the project title and logo. This signage should be located near the important nodal, entrance and vantage points within the site. The signage should be tri-lingual script.

B. Tours

- General and theme guided tours
- Audio tours
- Podcasts

C. Printed maps and materials

- Maps
- Guidebooks
- Children/ and family packets
- Educational materials for teachers
- Visitor survey

D. Sound and light show

E. Website

F. Films

- Short, site specific films that could be screened at the proposed Visitor Facilitation Center
- Historical films about the site

G. Public programs and outreach

- Lectures, symposiums
- Partner programs with museums and conservation centers.
- Developing 'academic tourism', i.e. for lectures, seminars and exhibitions from national and international scholars and institutions
- Family activities that are child friendly, involving use of gardens for recreation areas, basic information through museum displays, interactive craft events and displays, cafes and shopping opportunities
- Build a deeper and broader community base through heritage awareness and conservation camps and workshops for school and college students; youth volunteers for guiding and site management; conservation and maintenance activities; inter-university exchanges for research and publication at national and international levels; cultural and art events like residency workshops

- Educational handouts/training sessions for stakeholders, including staff and security, and the village council
- Interactive craft displays and sale
- Ceremonial display

H. Museums and information center

Recommended museum uses:

- Focusing on the history of the site and including artifacts from the collection. It is recommended that this museum house temporary exhibitions that target repeat visitors. This museum could be the site of an oral history project aimed at capturing stakeholders' stories and its significance to them.
- Photo and Document Archives
- Antiquities Museum, housing antiquities from various periods, including works from the collection at the Phnom Penh Museum.

I. Facilitation Center

Recommended program for the Visitor Facilitation Center

- Provide information about exhibitions, performances, seminars and other events at the site
- Screen a short informational film to orient visitors to the site
- Create a curio shop
- Provide water, toilet facilities and a first aid center

5.1.4. Engineering Services

5.1.4.1. Public Health and Sanitation

The issues of conservation of the historic fabric and visitor needs have determined the approach for planning for public health and sanitation. The planning approach includes:

- An adequate and supply of non-stop potable water
- Efficient disposal from toilets/ wet areas
- Quick disposal of rainwater without flooding
- Minimization of energy needs
- An efficient and cost-effective system
- An appropriate operation and maintenance system, which could be controlled centrally and efficiently
- An aesthetic system which would not disturb the environment
- Utilization of the existing system to the maximum extent
- Providing for a reliable firefighting system
- Providing for a system which is not detrimental to the historic built fabric, and open spaces and archaeological remains
- A responsive design to the needs of the multidisciplinary team preparing the plan and to advise them on the feasibility and impact of the proposals.

5.1.4.2. Planning approach

The planning and implementation approach is addressed. The fundamental principle for the design of the service system for the complex has been to follow the line of minimum intervention without damaging the historic fabric.

5.1.5. Outer historic environments development plan

The moat and the landscape constitute the buffer of the complex. It is an interface between the surroundings and the complex and therefore includes development of tourist facilities, edges, and movement pattern. The recommendations for development and environment upgrade of the historic outer environs are as follows:

A. Buffer zone

a. Proposals for tourist facilities in the buffer zone

Development and environment up grade projects are proposed in the buffer zone responsive to the present conditions and need assessments. The basis of these proposals is to achieve high quality of environment for the complex by promoting highest possible standards and giving due regard to the historical setting of the complex. A visitor facilitation center to provide a welcoming ambience to visitors has been proposed. This center is recommended to include an efficient ticketing facility, security systems and visitor amenities. Though the primary mode of movement within this space (buffer) is pedestrian, movement by mini-buses /battery-operated vehicles from the parking to this center is also proposed. Cultural, commercial and security interests and requirements of the site managers are given appropriate regard in the new proposals. The plan provides adequately for the needs and activities held in the buffer of the complex on special days of celebrations.

b. Reintegrate the complex and its setting

The immediate context of the complex is the three districts. However it is strongly proposed that the districts also maintain other visual, historic and functional relationships with its larger setting. The following relationships are recommended:

- Historical/Architectural contiguity structures and landscapes that have a historical as well as an architectural relationship with the complex
- Green space contiguity
- Landscapes and open spaces which surround the complexes and its buffer.
- Open viewpoint contiguity
- The immediate surroundings of the complexes that provide open viewpoints to the complexes as well as define its presence.

c. Protection and conservation of historic buildings and features

It is proposed that important historic buildings and features within the historic environs of the complexes are conserved. Conservation of the above elements can be undertaken by restoring and maintaining the existing ruins, reinventing the original elements and connections and reducing the impact of air pollution and vandalism by providing buffer space.

- d. Consideration to existing elements and government proposals in the precinct parking, are the new projects proposed for the development of the complex and its historic environs.

- e. Strategic planning framework for the Group and its historic environs

There are numerous projects that are proposed and implemented in the precinct. They are undertaken by different planning authorities. However, these agencies do not work in conjunction with each other and need to be sensitized to the significance of the Group. Therefore, it is recommended that:

- A positive and coherent strategic planning framework for the precinct be made to ensure consistent guidelines for the local planning authorities, developers and influence over the dynamic processes of change in the urban environment.
- A coordinated planning strategy be implemented that respects the cultural heritage values of the Group and gives relevance to the life of the wider community.
- The plan seeks to promote greater coherence in the definition, adoption, application and monitoring of the national, regional and local planning policies and mechanisms. It is important that any future development appropriately takes into account the above mentioned relationships of the Sambor Prei Kuk Group with its setting.

A framework to achieve the above has been proposed in Chapter 11.

5.2. Integrated Risk Management Plan

Detailed surveys and investigations carried out at the site have revealed several levels of information/data on the existing status of the heritage components and their attributes and various natural and human induced hazards to which they are exposed, depending on their current condition. For those risks which occur as discrete events, probability is the numerical expression of the chance that the event will happen. It requires a specified time period, and a set of conditions. For example, the probability that a small museum will burn down in the next 100 years, given its current state of fire prevention and control may be one in 1000, which can be expressed as 0.001 or 0.1% or 1/1000.

Consequence is the direct effect of an event. It is expressed as health effect (e.g. death, injury, and exposure), property loss, environmental effect, evacuation, etc.

Risk assessment is an informed judgment based on the systematic use of this information/data to determine how often specified risk(s) may occur and the magnitude of their likely consequences. It is important to emphasize here that risk assessment is indeed a judgment based on available facts but is not a fact in itself. However, it is very useful in formulating proactive measures for the prevention and mitigation of potential risk factors. Moreover, it helps in determining effective emergency preparedness and response procedures to handle potential disaster risks. 'Emergency is an event, actual or imminent, which endangers or threatens to endanger

life, property or the environment, and which requires a significant and coordinated response’

An integrated approach is needed in identifying all kinds of risk factors and their combined ‘direct’ and ‘indirect’ impact on various heritage components. This approach would ensure the effectiveness and sustainability of risk management actions by addressing the underlying causes.

Selective risk assessment of the complex has been undertaken on a pilot basis (for representative open space and historic buildings) based on the existing condition, primarily to demonstrate the methodology for conducting the same for the entire site in the course of project development and implementation.

5.2.1. Natural and human-induced hazards

On the basis of historical research and extensive condition assessment undertaken at the site, carried out through detailed inventories of historic structures and open spaces, several potential natural and human-induced hazards have been identified.

Each of these can be further classified as ‘momentary’ and ‘slow and progressive’ and their potential impact on the site and its components is varied. The ‘momentary’ natural hazards to which the site is exposed are primarily heavy rainfall, wind, lightning, and fire. Heavy rainfall may create high risk due to improper drainage and change of the original slope over time. Leakage from roofs may eventually lead to dampness, exfoliation and efflorescence. The ‘slow and progressive’ risks are the exposure to winds and high temperature causing weathering of stone surfaces and exfoliation; air pollution causing discoloration; and growth of plants and microorganisms causing cracks.

However, many sources of risk are human induced, including terrorism, vandalism, theft, insensitive planning, and development projects in and around the site.

There is no seismic activity in the area.

5.2.2. Impact on Heritage Components

On the basis of detailed surveys and investigation carried out at the site, various categories of heritage components have been identified, namely:

- Surviving physical evidence of the ‘structural relationship’ of historic built and open spaces and connecting routes based on the original design and planning. These are manifested in the form of visual linkages, historic morphology (the heights of structures in relation to open spaces), boundaries /edges.
- The relationship of the site with the historic precinct of the entire area. Several parameters like historic morphology, architectural character, and visual and physical linkages define this relationship.
- Individual historic structures of different periods.
- Dikes and the surrounding moat.
- ‘Hard’ and ‘Soft’ features of surviving landscape/gardens, ponds, and baray.

- The hard features include historic paving, etc. while species of plants and trees form the soft component.
- Disturbed and undisturbed 'Archaeological Areas' of high potential
- Total Station Survey (TSS) has enabled identification and spatial locating of the components within the Group. The map has been linked with a database using GIS. Each of these components carry one or more heritage attributes defined by their historical, associational, architectural, artistic, educational and locational values and authenticity and integrity¹ of the resource and its components as defined in the Historic Building Information System (HBIS) and Open Space Inventory (OSI).

The potential hazards mentioned earlier, may have a negative impact on specific heritage components under each of the above-noted categories and the corresponding attributes, thereby causing risks to the cultural resource at two levels:

- Risks to the overall structural integrity of the Group and its historic setting
- Risks to individual heritage components within the complex

The underlying reasons for the same may be linked to such factors such as lack of maintenance, incompatible usage of space/building or improper interventions in the past. The process of comprehensive risk assessment is illustrated in the form of a matrix explained:

Heritage component (as per the database) Category (as per the list above i - vi)

5.2.2.1. Potential hazard agents and their location

Potential impact on heritage attributes (risk to heritage component)

Underlying reasons for vulnerability

Increased visitors' movement and activity

- Risk to potential archaeological area

Loss of original design and layout of the space due to past interventions

Incompatible layout of the light poles and utilities

- Risk to visual integrity of the space
- Risk to potential archaeological area

Fire

- Risk to historic fabric from fire

Surface water runoff

- Risk to potential archaeological area
- Original water rains, which may overflow during heavy rainfall and damage archaeological subsurface

5.2.2.2. Weathering/ Erosion

Risk of loss/ deterioration of historic built fabric sandstone and brick surface is highly vulnerable to slow erosion and is exposed to extreme temperatures

5.2.2.3. Air pollution

- Risk of deterioration of built fabric through blackening and soot deposit

- Risk of corrosion through airborne pollutants
- High level of air pollution

5.2.2.4. Fire

Risk of loss of historic fabric

5.2.2.5. Water ingress

Further loss/deterioration of the historic fabric especially decorative details, finishes in plaster and stone surface through staining, growth of vegetation, microorganisms, efflorescence and exfoliation in the plaster surface Leakage from the roof or rising dampness from the ground due to cracks, lack of maintenance, inadequate slope, improper water and sewage infrastructure

5.2.2.6. Wind and lightning

Risk of high winds causing collapse of historic fabric, either directly or through an indirect agent such as a falling tree

5.2.3. Ascertaining Risk Levels

Since there are a variety of risks to heritage components, it is important to ascertain their levels so that priorities for mitigation can be defined. Risk is a product of two variables, namely, probability and consequence. The former can be classified as constant, sporadic or rare, and the latter as catastrophic, severe, mild or gradual. Level of Risk can be ascertained as 'severe', 'very high', 'high', 'medium', 'low' and 'negligible' by giving threshold values for each level. The evaluation of risks can be done qualitatively or quantitatively, although the latter is easier for comprehension and application.

- A. Site No.
- B. Potential Hazard
- C. Agents
- D. Probability of occurrence (constant, sporadic, rare)
- E. Consequence on heritage attribute (catastrophic, severe, mild or gradual)
- F. Level of Risk (probability X consequence) Low (category 4), Medium (category 3), High (category 2), Very High(category 1))

5.2.3.1.

- a. Increased visitor movement and activity: Constant; Gradual; Medium
- b. Incompatible layout of the light poles and telephone cables Rare
Constant Severe High
- c. Fire Rare Mild Low
- d. Surface water run-off along the drains

5.2.3.2. Sporadic Gradual Mediums

- e. Earthquake: Rare Catastrophic Very High

- f. Weathering/Erosion: Constant Gradual Medium
- g. Air Pollution: Constant Severe/Mild High
- h. Fire: Sporadic Catastrophic Very High
- i. Water ingress: Constant/ Sporadic Mild/Severe/ High
- j. Explosive remnants of war (ERW): Rare/Medium/High
- k. Wind and lightning: Rare to Medium

5.2.4. Multi-hazard perspective

It is important to mention here that each heritage component at some point of time might be exposed to one or more hazard agents in various permutations and combinations, each of which might affect a particular heritage attribute in more than one way. Therefore, a multi-hazard perspective is very important for a comprehensive risk assessment.

The following table exemplifies the assessment of risks from multiple hazards, acting together or as a follow-up:

- A. Site No.
- B. Potential hazard agents
- C. Probability of occurrence (constant, sporadic, rare)
- D. Consequence on heritage attribute (catastrophic, severe, mild or gradual)
- E. Level of risk (probability X consequence): low, medium, high, very high

5.2.5. Periodic Risk Assessment for Monitoring

Risk assessment of a heritage site is not a one-time exercise. Rather, it is a periodic activity that informs the managers on the changing spectrum of risks and needs to be carried out during all phases of project implementation and later too as part of the regular monitoring process. This would also help ascertain the 'existing' vis-à-vis 'projected' risks at any given time and thus help in evaluating the effectiveness of mitigation measures put in place as a result of 'projected' risk assessment undertaken at the outset.

- A. Potential hazard
- B. Mitigation measures: Implementation phase; Implications for management
- C. Strategy/ Intervention
- D. Location
- E. Purpose
- F. Phases I, II, II
- G. Maintenance and monitoring

- H. Creating defined movement pattern for visitors
- I. Limiting the number of visitors in the open space alone paved area to reduce the pressure on archaeological areas
- J. Visitor management
- K. Handling the changed levels and accordingly redesigning appropriate drainage system
- L. Paved area

5.2.6. Emergency Preparedness and Response Plan

The complex is vulnerable to catastrophic natural and human-induced disasters including earthquakes, fire, terrorism, and theft. Although the first priority has to be effective prevention and mitigation measures so that these disasters either do not occur or at least their impact is minimized, the site also needs to be prepared for any untoward incident that may significantly threaten life and property. For such situations, special plans and procedures should be put in place. The comprehensive conservation management plan recognizes the need for an emergency preparedness and response plan, as a written, working document which lays down the procedures to be followed in any given emergency, and provides the additional information required for carrying out these procedures. This plan must be prepared with the involvement of all key stakeholders, including the site managers, security agencies currently deployed at the site, the police and the fire services.

Preparedness in general is the state of readiness of the site managers and the relevant agencies for an emergency situation. Its effectiveness depends on their policies, procedures and plans regarding how to manage the situation, stockpiles of supplies and equipment, and even lists of emergency contacts.

Effective response procedures would ensure prevention of injury and limit losses to life and property. An example of this is training staff and volunteers to evacuate visitors, colleagues, collections, other heritage objects and records safely. Although saving lives is undoubtedly the first priority, the emergency preparedness and response plan for the Sambor Prei Kuk Archaeological Group needs to incorporate plans and procedures for securing heritage property during emergency situations. For this purpose, it has to have special provisions for the open spaces and for the individual buildings including historic structures, as well as existing and proposed museums.

Therefore, a site plan showing the tentative locations of evacuation routes for emergency services and pedestrians, visitors' collection points, emergency signage and location has been given in the management plan. The following guidelines and procedures are proposed as part of the emergency preparedness and response plan for the site:

A. Movement for emergency services

Emergency services like fire brigade, ambulance and police vans need quick and easy access during emergency situation. The proposed service road has been designed keeping in mind emergency needs.

B. Evacuation procedures

Considering the large area of the Group, evacuation of pedestrian visitors and staff is proposed. These routes and the primary and secondary collection spaces have been identified on the site plan.

C. Equipment

Emergency equipment for fighting fire or handling potential theft or terrorist activity are recommended to be installed at critical locations within the site.

- Over-ground as well as underground water storage tanks should be utilized during an emergency. Independent storage tanks are recommended to be provided for this purpose where practical.
- Adequate fire extinguishers are recommended to be provided in the buildings at the visitor's center.
- Fire and theft alarms and smoke detectors are recommended to be provided in vulnerable areas.

Equipment like ladders, helmets, gloves and other accessories for rescue personnel would have to be provided within the site itself. A special storage space for this equipment is recommended to be provided in one of the modern structures which have convenient access.

D. Signage

Signage is recommended to be installed along the designated evacuation route and emergency exits from the buildings. The former should contain a sketch plan of the evacuation route that visitors can follow during an emergency situation. Emergency services and equipment like first aid should also be located on this route. Emergency information is recommended to be provided at the visitor facilitation center as well as in select areas in the site.

E. Information for visitors

Important emergency information should be incorporated in the information brochures for the tourists/visitors.

F. First aid

A small dispensary is proposed to be set up within the Group to provide timely first aid during an emergency. Moreover, first aid boxes should be provided at adequate locations within the site. Their location should be marked on the site map and made available for the local staff as well as visitors.

G. Locations for temporary storage of salvaged heritage objects

During emergency situations, some historic artifacts and building fragments may need to be salvaged from the heritage structures/museums damaged by fire, or vandalism. Therefore it is vital to identify some locations for temporarily storing these

salvaged objects within the site before they are moved for safekeeping until recovery. An adequate security plan and procedure is recommended to be developed by the site managers.

H. Security system and equipment

It is suggested that an equipped control room be set up for 24-hour monitoring of activity through close circuit television cameras (CCTVs) at strategic locations within the site, especially historic structures and museum. At least two personnel should always be stationed at the control room.

Special security systems against theft and vandalism should be installed in the galleries and storage areas of the museums.

I. Security management

The site managers must ensure coordination. Guidelines should be prepared for security staff for operating and maintaining emergency equipment like fire extinguishers and multi-tasking jointly with staff during exceptional situations. Capacity building of staff is recommended to operate and maintain security equipment and follow proper evacuation procedures.

While the police continue to play their role in managing the outer security of the site, their expertise and services should also be available for internal security during emergency situations. For example, during a fire or a terrorist attack, the police should be able to effectively seek services from the military to cordon the area and provide armed security to the visitors and staff. This would require a regular communication system and joint emergency drills and patrolling exercises.

Security procedures for safekeeping salvaged artifacts/fragments should also be formulated and rehearsed through drills.

J. Emergency management team

In order to ensure effective coordination during an emergency, an 'Emergency Management Team (EMT)' will to be set up. It should be headed by the SPK Site Manager and two other individuals. The team should hold periodic meetings and formulate contingency action plans. Experts/officers from outside agencies like the local fire, police, hospital and other civic services should also be invited regularly to some of these meetings to seek their specialized input and ensure coordinated efforts. Joint emergency drills should be conducted with key external agencies, namely, fire, police and hospital.

K. Emergency contact list

A comprehensive contact list of key people in all the local organizations and services such as the local staff, fire, police, hospital, municipality, etc. should be prepared and made available to

all staff members. This should also be put up at critical locations in the site for easy reference.

5.2.7. Recovery Procedures

Recovery procedures from the point of damage assessment till the site returns to normalcy need to be developed and staff trained to carry them out. This process may last for months or even years depending on extent of damage. The following key recovery procedures should be developed.

(See Annex for Site Emergency Management Plan- EMP)

Assessment of damage to historic structures and collections

Inventories are crucial for judging the extent of damage by enabling comparison with the status of the heritage before a disaster. The HBIS (Historic Building Inventory System) forms the first database for this.

- Clearing the site of debris and deciding what to salvage
- Phased opening of the site.
- Security considerations during recovery phase.
- Conservation of damaged historic structures.
- Conservation treatment of heritage objects damaged due to fire etc.
- Monitoring recovery operations.

While some of the above-mentioned procedures would need to be developed according to the nature of the disaster and the extent of damage, some basic guidelines for damage assessment, security, treatment, restoration and monitoring should be developed immediately.

Inventories and databases of immovable as well as movable heritage components within the complex should be placed at multiple venues to prevent loss in case of disasters.

5.3. Program and Priorities for Action

The objectives of the management plan can be achieved through the implementation of a wide range of projects. Based on the resource and logistics these projects can be broadly classified into two areas;

- conservation and revitalization of the complex, and
- environmental upgrade and improvement of visitor facilities in the buffer zone.

Numerous factors are at play in determining the implementation strategy. These factors include the range of cultural heritage (buildings, archaeological remains, and open spaces significance of the resource type's extent of decay, stakeholder concerns, visitor needs and expectations, available resources etc. The plan is therefore recommended to be implemented in three phases; short, medium, long term. One of the fundamental principles of conservation is to ensure that buildings or parts of buildings which are in a serious state of disrepair (recorded in the HBIS) are conserved urgently so that they are not lost. In the case of the complex, conservation interventions have been classified in the DCPs as required 'urgent', 'necessary' or 'desirable'. There are buildings that require investigation or monitoring before conservation interventions can be made. It would be prudent to have a conservation plan which works laterally as well as vertically: by addressing issues which are urgent in nature, regardless of the phases they fall under.

It is proposed that the management plan be implemented in three phases:

- A. Short term (0-2 years)
- B. Medium term (3-7 years)
- C. Long term (8-10 years)

The program and priorities for action for the three phases is based on an assessment of significance, condition of the heritage fabric, visitor needs etc. The projects at the complex and the buffer zone have been categorized as follows:

- A. Historic building conservation
- B. Conservation of decorative features
- C. Historic landscape conservation
- D. Site revitalization and interpretation

It is important to note here that this categorization is largely for ease of reference. The program for action is an integrated one and therefore needs to be undertaken in an inter-disciplinary manner.

6. Implementation of the Sambor Prei Kuk Comprehensive Cultural Heritage Conservation Management Plan

The Sambor Prei Kuk Comprehensive Cultural Heritage Conservation Management Plan (SPK-CCHCMP) is not an end in itself. Its effective and meaningful implementation is contingent on the ongoing support and participation of many organizations and individuals, and commitment of resources. The Ministry of Culture and Fine Arts (MCFA) is the nodal agency responsible for taking the plan to its fruition. The successful implementation of the SPK-CCHCMP requires MCFA to play the key role in the process.

6.1. Implementation strategy

The scope of the implementation structure addresses a wide range of concerns of implementation including monitoring and reviewing and as and when needed updating the SPK-CCHCMP.

To ensure the participation and coordinated action of all relevant organizations and specialists, it is proposed that MCFA constitutes a SPK-CCHCMP Consultative Committee, chaired by the Director General of MCFA, and comprising members of the relevant organizations.

The SPK-CCHCMP Consultative Committee should be an advisory body for the implementation of the SPK-CCHCMP, monitor its progress, and establish systems for coordinated management and action.

A Technical Unit is recommended to be constituted that shall comprise of a multidisciplinary team of experts from various fields responsible for conservation of cultural resources in Cambodia including conservation specialists, historians, educators, designers, community representatives and others. This unit shall play the role of an advisory body to the SPK-CCHCMP Consultative Committee. Any proposal in the protected or buffer zone of the Sambor Prei Kuk Group must be first examined by the Technical Unit and based on their feedback/ comments, the required directions shall be given by the SPK-CCHCMP Consultative Committee.

Additionally the Technical Unit shall advise the implementation unit, of the MCFA, for the SPK-CCHCMP, on various matters related to the conservation, revitalization and aspects related to site interpretation and educational outreach.

The SPK-CCHCMP Consultative Committee will play a major role in generating among stakeholders a sense of ownership, and support for the objectives of the SPK-CCHCMP. These stakeholders include, amongst others

The Council of Ministers, elected leaders from the area at the national, state and local levels, visitors and the local community living and working in the environs of the SPK Group.

6.2. Implementation structure

6.2.1. Appointment of Project Coordinator (Site Manager)

In the interest of effective coordination between the site and headquarters, continuity and accountability of implementation of the SPK- CCHCMP in a time bound manner, it is recommended that MCFA should appoint a project coordinator/site manager. The role of the project coordinator will be that of the Site Manager and will facilitate the interdisciplinary project development

and implementation and further be the link between MCFA central office and MCFA Kampong Thom. The project coordinator must ensure that work schedules are followed and that milestones are met. The project coordinator should be highly skilled, with experience in conservation / management of heritage sites, and a member of MCFA.

The project coordinator will be responsible for the management of the site of Sambor Prei Kuk and for the implementation of the SPK-CCHCMP in specific areas related to conservation, revitalization, interpretation and educational outreach. He/ she will be assisted by the Council of Ministers in coordination with the Ministry of Culture and Fine Arts. Each Ministry will assign one person to be the liaison between the Site Manager and that Ministry. Any problems involving that Ministry will first be handled at the liaison level.

For a number of years with generous support from UNESCO and the international community, the Royal University of Fine Arts (RUFA) has taken precise actions aimed at producing qualified young Khmer nationals in heritage conservation especially in the fields of Architecture and Archaeology. Many graduate students have been involved in various cultural projects concerning, among others, research, monumental conservation, engineering, tourism and heritage management.

Conservation expertise has been developed by the APSARA Authority (Authority for the Protection and Management of Angkor and the Region of Siem Reap) and Preah Vihear National Authority for many years with various interrelated issues concerning monuments and cultural heritage. In addition individuals with these organizations have a wide knowledge of management through training, work experience with international professionals, and as such are an important resource of expertise in conservation and site management to assist and support the Sambor Prei Kuk Group Administrative and Conservation Office.

Staff and expertise may also be drawn from a pool within the MCFA itself, in particular from the National Museum and from the Department of Cultural Heritage.

Pro-active participation in the programs with the Ministry of Forests & Fisheries, and the Ministry of Environment, regarding the public awareness of preservation of cultural landscapes, biology, ecology and the natural environment are essential.

The proposed Sambor Prei Kuk Administrative and Conservation Office will be temporarily based at the Sambor Prei Kuk Group site and will be responsible for technical aspects and management of the site. The office staff will be composed of:

- Director/Site Manager (1)
- Assistants to the Director (2)
- Administrator (1)
- Administrative assistants (2)

- Archaeologists (2)
- Architects (restoration) (2)
- Conservators (2)
- Documentation expert (1)
- Communication person (1)
- Logistics/technician (1)
- Workers (20 (estimated) skilled laborers, plus unskilled as required)
- Tourist police/guards on site (estimated 40 in two shifts)

This Administrative and Conservation Office will be an integral part of the administrative network of the MCFA, Phnom Penh. The Office will undertake daily maintenance, field research and extensively survey the site to produce conservation plans in collaboration with various national and international partners ensuring efficient and cooperative work teams. In the future, it is intended the proposed number of office staff be increased as budget and circumstances permit.

It is recommended that the Technical Unit advise the SPK site manager on the specific areas of: conservation and revitalization and site interpretation and educational outreach.

6.2.2. Preparation of annual work programs

The project coordinator shall be responsible for preparation of the annual work program. It is recommended that the SPK-CCHCMP be implemented in three phases: short (years 0-2), medium (years 3-7), and long (years 8-10). A detailed plan or Annual Work Program must be prepared every year to guide each of these phases. The Annual Work Program/plans will be prepared by the Project coordinator in cooperation with the stakeholders. This program will outline the scope of work to be completed annually. It will be based on the recommendations in the SPK-CCHCMP and will include detailed information about conservation, revitalization, and site interpretation and educational outreach projects. The program will include a timeline and will set milestones about when work should be completed.

6.2.3. Coordination of the annual work programs

The Annual Work Programs will be coordinated by the Project Coordinator. He will be responsible for the bidding process and for ensuring that qualified consultants and contractors are appointed. Final approval for undertaking various works according to the annual works program shall be given by Director General MCFA in consultation with the Council of Ministers.

6.2.4. Establishment of monitoring procedures and guidelines

The MCFA in consultation with other Ministries will be responsible for setting the guidelines for the conservation and revitalization of the site. Guidelines are recommended to be developed for documentation of conservation works, investigation, management of databases, sourcing of contractors and other specialists, environmentally sound horticulture practices, management of archaeological resources, formulation of an agreed

interpretation strategy, risk management, management for museums, signage design, etc. The goal of the guidelines and monitoring procedures is to ensure that high quality of work is being done in pursuance of the objectives of the plan.

6.2.5. Review of the annual work program

It is recommended that the Annual Work Program as prepared by the Project Coordinator six months prior to implementation, and shall be reviewed quarterly by the Technical Unit of the Consultative Committee. The committee should ensure that the monitoring procedures and guidelines are followed and that work schedules are being met.

6.2.6. Annual/periodic administrative review and reports

An independent review of administrative activities will be undertaken annually at a date decided by the SPK-CCHCMP Consultation Committee in cooperating with the other Ministries as required. Periodic review to enhance efficiency and productivity are recommended. Reviews should include personnel, procurement, revenue and expenses.

Financial records should be kept on a monthly basis, with formal financial statements produced quarterly. An annual financial report should be formally published and comply with all accounting and reporting standards recognized in Cambodia and internationally. An independent audit by a recognized accounting firm should be conducted and an audit report published.

6.2.7. Monitoring of the state of conservation of the historic fabric

It is recommended that a monitoring committee constituting Minister of Culture and Fine Arts or delegate, Project Coordinator (Site Manager), and at least three other members who are experienced in conservation should be set up. An independent advisor may be added as required.

This committee shall monitor the state of conservation of the historic fabric (buildings, decorative features, open spaces and archaeological remains) to ensure that all completed and in process works meet the highest conservation standards and practices. The buildings not taken up for conservation work should also be monitored, to make sure that their physical condition does not deteriorate and necessary conservation interventions are taken. This committee is envisioned to take the form of the International Coordinating Committee, under Cambodian sponsorship, as currently is employed at the Angkor Archaeological Park.

6.2.8. Developing mechanisms for reviewing and updating the SPK-CCHCMP and its implementation

It is recommended that the SPK-CCCMP be reviewed and updated annually by the Sambor Prei Kuk Site Office in consultation with the Technical Unit. The scope of completed works should be recorded and data analyzed so as to ensure that the objectives of the plan are met.

6.2.9. Explore funding options

The Consultative Committee should consider strategies and opportunities for sourcing funds for the project (e.g. national and provincial authorities,

donations, revenue from ticketing, profits from selected tourist services, the corporate sector, National Culture Funds, private sector, and foreign governments).

6.2.10. Promotion and advocacy

Advocacy is a valuable tool in advancing the cause of preservation. It is recommended that MCFA, promote and advocate the significance of the SPK complex at the local, province and national levels. Programs for educating the public about the value of the SPK complex can help to generate long-term support for its sustained maintenance. Promotion and advocacy are also useful for securing additional funds for the SPK-Comprehensive Cultural Heritage Conservation Management Plan project.

6.2.11. Risk management and monitoring limits of acceptable change

A key element of the plan's implementation is to determine the limits of acceptable change (LAC). This is done by defining the parameters on which site manager will then assess the vulnerability of the various components of significance within the site. This is recommended to be undertaken as part of The MCFA General Department of Cultural Heritage responsibility.

6.2.12. Transparency and improvement of activities

All documentation and activities undertaken by the SPK-CCHMP will be subject to review. Specific information such as work schedules, visitations, special events, emergency contact lists, and other documents as deemed necessary shall be posted on a board adjacent to the site manager office. A suggestion box with forms will be located outside the site manager office in efforts to improve operational performance. From time to time but at least once a year visitor surveys will be performed.

6.2.13. Channelizing and mobilizing resources

Objectives and action plans contained in the SPK-CCHCMP can be initiated with the resources available with MCFA. The site manager can develop practices and undertake projects for conservation, maintenance and site development with these resources until additional resources are mobilized.

GLOSSARY

avant-corps	part of a building such as a porch or pavilion
baray	an artificial reservoir not excavated but contained by dikes
Caturmukla	four faces
Chenla	Chinese name for the Khmer state that emerged after Funan
colonette	small column; usually decorative in Khmer architecture
flying palace	term used to describe a small detailed depiction of a building a horizontal band which runs above a doorway, window or below cornice
frieze	mythical creature, part elephant, part lion, part reptile; hybrid
gajasimba	makara
Gambhiresvara	"the God of the Depths" or 'hidden knowledge'
Ganga	Sanskrit and Hindi for the River Ganges in India
Kalkin	future and last avatar of Vishnu with the head of a horse
kinnara	female mythical being with human face and bird's body
linga	stylized image of a phallus representing the essence of Siva
lintel	block spanning an entrance across two door pillars
makara	sea monster with scales; form of crocodile
mandapa	antechamber; a pavilion or porch in front of the main sanctuary
medallion	circular shaped artistic element
Nandin	Hindu sacred bull; mount of Siva; guardian of temples
Nilakantha	Siva
Pankajanabha	Vishnu
pediment	decorative architectural element composed of polylobate rampart frame
pilasters	square or rectangular sectioned pillar engaged in the wall
pond	body of standing water either natural or manmade
prasat	temple
schist	medium grained metamorphic rock
Siva or Shiva	Hindu god of cosmic destruction, and rebirth
snanadroni	a symbolic vulva associated with a linga, water channel
somasutra	stone pipe or channel through which water is drained slaked lime, sand and water mixed and used to cover or create decoration
stucco	
vajra	diamond; thunderbolt; a pronged implement used in rituals

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Takeshi Nakagawa

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Preparer

Name: **Phoeun Sackona**, President of the NASPK
Title: Minister of Culture and Fine Arts, Phnom Penh, Cambodia
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone : (855) 12-618499
E-mail : sackonap@gmail.com

Name: **Prak Sonnara**
Title: Director-General of Cultural Heritage
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone: (855) 12-870705 or 15-551173 or 97-8833907
E-mail: psonnara@gmail.com

Name: **Hab Touch**
Title: Director-General of Cultural Techniques
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone: (855) 12-621522
E-mail: habtouch@yahoo.com

Name: **Heng Sophady**
Title: Deputy Director-General of Cultural Heritage
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone: (855) 92-997166
E-mail: hsophady@yahoo.com

Name: **PhannNady**
Title: Director, Department of Antiquities
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone: (855) 12-882368
E-mail: nady.phann@gmail.com

Name: **Heng Kamsan**
Title: Deputy Director of Archaeology and Prehistory Department
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone: (855) 89-810089
E-mail: kamsan_heng@yahoo.com

Name: **Heng Than**
Title: Deputy Director of Archaeology and Prehistory Department
Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia
Mobile phone: (855) 89-949 824
E-mail:

Name: **Chan Vitharong**

Title: Deputy Director, Department for Safeguarding and Preservation of
Monuments

Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia

Mobile phone: (855) 16282773

E-mail: chanvitharong@yahoo.com

Name: **Chhay Visoth**

Title: Director of Tuol Sleng Genocide Museum

Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia

Mobile phone: (855) 12233304

E-mail: chvisoth@yahoo.com

Name: **Charlotte Emma Crow**

Title: Expert of Cultural Heritage Management

Advisor to the Ministry of Culture and Fine Arts

E-mail: CharlotteEmmaCrow@gmail.com

Name: **Robert F. McCarthy**

Title: Archaeologist, Project and Heritage Manager

Advisor to the Ministry of Culture and Fine Arts

Address: Japan-APSARA Project Office Complex, Siem Reap

Mobile phone: (855) 92-252206

E-mail: rmccarthy2004@yahoo.com

Name: **So Sokuntheary**

Title: Executive Director of Sambor Prei Kuk Conservation Project

Honorary Head of Department of Architecture and Urbanism of Norton
University

Mobile phone: (855)12-968302

E-mail: thearyso11@gmail.com

8.b International Experts

Name: **Azedine Beschaouch**

Title: Permanent Scientific Secretary of the ICC's for Angkor and Preah Vihear

Email: azedinebeschaouch@hotmail.com

Name: **Sachchidanand Sahai**

Title: National Professor Epigraphy and History, India

Email: ssahai4@hotmail.com

Name: **Divay Gupta**

Title: Architect, Conservation specialist ICOMOS

Email: divaygupta@gmail.com

Name: **Philippe Delanghe**

Title: Archaeologist, Advisor

Email: p.delanghe@unesco.org

8.c Official Local Institution/Agency

Name: **Phoeurng Sackona**

Title: Minister of Culture and Fine Arts, Phnom Penh, Cambodia

Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia

Mobile phone : (855) 12-618499

E-mail : sackonap@gmail.com

Name: **Chuch Phoeurn**

Title: Secretary of State

Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia

Mobile phone: (855) 97-9556017

E-mail: phoeurnchuch@yahoo.com

Name: **Tan Theany**

Title: Secretary General

Address: Cambodian National Commission for UNESCO, Phnom Penh, Cambodia

Mobile phone: (855) 23-210369 or 16-925933

E-mail: cambonac@gmail.com

Name: **Ros Borath**

Title: President of the National Committee for World Heritage

Address: Cambodian National Commission for UNESCO, Phnom Penh, Cambodia

Mobile phone: (855) 12-843084

E-mail: borathros@yahoo.fr

Name: **Prak Sonnara**

Title: Director-General of Cultural Heritage

Address: Ministry of Culture and Fine Arts, Phnom Penh, Cambodia

Mobile phone: (855) 12-870705 or 16-698045 or 97-8833907

E-mail: praksonnara@yahoo.com or psonnara@gmail.com

Name: **Chhang Kang**

Title: Director of Department of Culture and Fine Arts of the Kampong Thom

Address: Department of Culture and Fine Arts of the Kampong Thom Province

Kampong Thom Province, Cambodia

Mobile phone: (855) 17-914737

8.d Other Local Institutions

General Department of Cultural Heritage

#227 (KbalThnal), Preah Norodom Blvd., Sangkat TonleBassac, Khan Chamkar
Mon, Phnom Penh, Cambodia

Tel/Fax: (855) 23 218 146/147/148

Mobile phone: (855) 12-870705 or 16-698045 or 97-8833907

E-mail: praksonnara@yahoo.com or psonnara@gmail.com

National Museum of Cambodia

Street 13, CheyChumneas, Daun Penh

Phnom Penh, Cambodia

Tel: (855) 23 211 753

Email: museum_cam@camnet.com.kh

Governor of Kampong Thom province

H.E. Mr. Ouch Sam An

Mobile phone: (855) 12 488 377

8.e Official Web address

[http: www.mcfa.gov.kh](http://www.mcfa.gov.kh)

Contact name: H.E.Mr. ChuchPhoeurn

E-mail: phoeurnchuch@yahoo.com