REPORT IV
FIELD CAMPAIGN I - PROJECT MOBILIZATION

APPENDICES
IV/A West Processional Way Inventory & Condition Report
IV/B Vishnu Temple Complex (West) - Survey & Drawings
IV/C Dharmasala (Pilgrim's Resthouse) - Survey & Drawings

WORLD MONUMENTS FUND
PREAH KHAN CONSERVATION PROJECT
HISTORIC CITY OF ANGKOR
Siem Reap, Cambodia

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October 1992 - March 1993

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New York
September 1993
Preah Khan, Angkor
THE WEST LANTERN APPROACH
An Archaeological Appraisal & Condition Report

Prepared for the World Monuments Fund
The West Lantern Approach

An Archaeological Appraisal & Condition Report

Prepared for the World Monuments Fund

by Fred Aldsworth BA FSA MIFA
The Conservation Practice International

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The author is grateful to Nicola Smith for assistance in the preparation of this report.

1 The author is grateful to Nicola Smith for assistance in the preparation of this report.
Foreword

This report was conducted as part of WMF Field Campaign I (November 1992 to April 1993) at Angkor.

It represents one of three surveyed areas of Preah Khan which were documented and analyzed as a basis for conservation action in future phases of work. This report is referred to in Report III: Preah Khan Conservation Plan, and is more specifically to read in conjunction with Report IV: Preah Khan Project Mobilization, in which the enclosed information and conclusions are summarized.

The conservation recommendations portion of this survey will be treated in a separate document at the time when the Western Lantern Approach is restored.
PREAH KHAN
The West Lantern Approach

Introduction

The vegetation and a certain amount of soil was cleared from the west lantern approach in November 1992 (WMF Mission IV). Following this the feature was surveyed and a description was prepared of each lantern giving recommendations for repair and re-assembly on the basis of pre-determined criteria.

Description

The main feature of the approach is an avenue of forty-one pairs of lanterns supported on a continuous moulded plinth which measures internally 95.95 meters in length and between 8.40 & 8.47 meters in width (Fig.1). The avenue is entered at either end over the plinth and a carved step. At the east end the avenue widens in a series of steps in the line of the plinth which is surmounted by a further six pairs of lanterns before giving way to the bridge abutments over the moat which include by a pair of naga and the figures of gods and devils.

Each lantern is of similar design varying only in form of construction and detail (Fig.2) and each is carved from a single stone or two stones set one above the other. The horizontal joint between adjoining stones varies in position.

The three main components of each lantern are the pedestal, the lantern and a finial at the top (Fig.3), all supported on the continuous plinth. The pedestal carries the figure of a garuda on each face and this supports the lantern, carved with a flame-surrounded niche on each face which formerly carried the effigy of buddha, defaced in the thirteenth century. A single example of an undefaced buddha was found during soil clearance and this appears to have belonged to Lantern No. 29 (Fig.4). For purposes of description other component names used in the text are also shown in Figure 3.

The lanterns have been numbered from 1 - 47 west to east on both the north (N1-N47) and the south (S1-S47) sides of the approach and those which represent potential candidates for conservation have been photographed.

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1 These carved standing stones have been variously described as lanterns, milestones, or, by the French, bornes in the past. I understand that the French term means a stand to signal from and is perhaps therefore an inappropriate use here where the flamed buddha niches appear to have been intended to light the way to the west gate. The use of the term milestone also seems inappropriate, so for the purposes of this report they are described as lanterns.
Figure 1
In an attempt to ensure authentic reconstruction certain characteristics of each lantern were examined to determine criteria which might help to indicate the former position of those components which are broken or collapsed.

1. The lanterns, which are made from either one or two pieces of stone, appear to have been finished in situ or at least the plinths on which they stand were cut to accommodate them. Hence most of the pedestals sit on a raised section cut into the plinth - which I have called the plinth base - and so it should be possible to relocate fallen pedestals by their size and the level of the conjoining surfaces between the pedestal and the plinth base.

2. The pedestals & lanterns are not square in plan but the greater dimension (longer side) is usually on the east-west axis - the two exceptions being S44 and S47 which may have been re-erected incorrectly.

3. The bedding plain of the sandstone is always on the greater dimension of the stone where this is known and thus normally, with the two exceptions noted above, on the east-west axis. Broken fragments can be examined to determine their original position on this basis.

4. Pedestals are/were located on the plinth using a round peg which fits into a peg hole in the plinth. Where the peg and hole are not central to the pedestal this, together with 1 above, can help to determine the original orientation of the pedestal.

5. The feet of the garuda on every surviving in situ pedestal are turned to the east on their internal face and then continue round the pedestal on the north side of the approach in an anti-clockwise direction and on the south side of the approach in a clockwise direction.

6. The position of the horizontal joint between two stones making up a pedestal and lantern varies and this can be used to some extent to indicate which upper part fits which lower part.

7. Not all the pedestals and lanterns sit comfortably on their respective plinth bases or pedestals and there is evidence of incorrect re-positioning in the past. For example S44 & S47 are both on a north-south axis whilst S2 sits on a bed of mortar or cement. Conservation interventions are known to have taken place at Preah Khan between 1954 & 1959 by Jean Laur & Rene Dumont and dates in 1956 appear carved on at least two of the lanterns in the west approach (N1 & S2). It is to this period of work that we can ascribe the repairs noted below, some of which appear to have been successful others not so.

For a full description of each lantern and some photographs see Appendices 1 & 2.
PREAH KHAN, ANGKOR
West Lantern Approach

Typical decoration on long side based on finial of N6 and remainder on N42

Scale 1:10
PREAH KHAN, ANGKOR
West Lantern Approach
Component names used in text
Scale 1:10

Figure 3
PREAH KHAN, ANGKOR
West Lantern Approach

Lantern fragment, probably from S29

Scale 1:10

Priorities

| N1  | Low/Medium |
| N2  | High       |
| N3  | Low        |
| N4  | No action  |
| N5  | Low        |
| N6  | High       |
| N7  | Medium/High|
| N8  | Low        |
| N9  | Medium/High|
| N10 | Medium/High|
| N11 | Low        |
| N12 | High       |
| N13 | Medium     |
| N14 | Medium     |
| N15 | High       |
| N16 | No action  |
| N17 | Low        |
| N18 | No action  |
| N19 | No action  |
| N20 | No action  |
| N21 | Medium/High|
| N22 | Low        |
| N23 | High       |
| N24 | Low        |
| N25 | High       |
| N26 | High       |
| N27 | High       |
| N28 | No action  |
| N29 | No action  |
| N30 | High       |
| N31 | High       |
| N32 | High       |

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 4
Recommendations

I have suggested what action might be taken to repair and re-assemble each lantern and have indicated, using the above criteria, which piece belongs where. Recommendations vary from those where no action is required to those where immediate remedial work is required to avoid imminent collapse.

Priorities

I have attempted to indicate by using the simple terms - no action, low, medium and high - the priority which I attach to the repair work and these are summarised in the following lists.

NORTH SIDE

<table>
<thead>
<tr>
<th>No.</th>
<th>Priority</th>
<th>Action Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>Low/Medium</td>
<td>Re-organise pedestal, place lantern beside</td>
</tr>
<tr>
<td>N2</td>
<td>High</td>
<td>Remove lantern for safety</td>
</tr>
<tr>
<td>N3</td>
<td>Low</td>
<td>Re-align lantern</td>
</tr>
<tr>
<td>N4</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N5</td>
<td>Low</td>
<td>Re-align pedestal and lantern</td>
</tr>
<tr>
<td>N6</td>
<td>High</td>
<td>Dismantle, repair &amp; re-assemble or leave on ground</td>
</tr>
<tr>
<td>N7</td>
<td>Medium/High</td>
<td>Dismantle, repair, re-set. Check crack.</td>
</tr>
<tr>
<td>N8</td>
<td>Low</td>
<td>Check hairline crack in lantern</td>
</tr>
<tr>
<td>N9</td>
<td>Medium/High</td>
<td>Perhaps replace old repair. Check crack in pedestal.</td>
</tr>
<tr>
<td>N10</td>
<td>Medium/High</td>
<td>Perhaps replace old repair. Compare lantern on N12.</td>
</tr>
<tr>
<td>N11</td>
<td>Low</td>
<td>Check crack in lantern</td>
</tr>
<tr>
<td>N12</td>
<td>High</td>
<td>Remove incorrect lantern</td>
</tr>
<tr>
<td>N13</td>
<td>Medium</td>
<td>Perhaps replace old repair in pedestal. Repair lantern.</td>
</tr>
<tr>
<td>N14</td>
<td>Medium</td>
<td>Re-set part of finial.</td>
</tr>
<tr>
<td>N15</td>
<td>High</td>
<td>Dismantle, repair, &amp; re-build.</td>
</tr>
<tr>
<td>N16</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N17</td>
<td>Low</td>
<td>Check cracks.</td>
</tr>
<tr>
<td>N18</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N19</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N20</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N21</td>
<td>Medium/High</td>
<td>Dismantle, repair cracks, rebuild.</td>
</tr>
<tr>
<td>N22</td>
<td>Low</td>
<td>Check hairline cracks in pedestal.</td>
</tr>
<tr>
<td>N23</td>
<td>High</td>
<td>Offer pieces, repair &amp; re-assemble.</td>
</tr>
<tr>
<td>N24</td>
<td>Low</td>
<td>Check crack in pedestal</td>
</tr>
<tr>
<td>N25</td>
<td>High</td>
<td>Re-assemble.</td>
</tr>
<tr>
<td>N26</td>
<td>High</td>
<td>Repair, &amp; re-assemble.</td>
</tr>
<tr>
<td>N27</td>
<td>High</td>
<td>Re-locate &amp; re-assemble if possible.</td>
</tr>
<tr>
<td>N28</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N29</td>
<td>No action</td>
<td></td>
</tr>
<tr>
<td>N30</td>
<td>High</td>
<td>Remove, re-align, repair &amp; replace.</td>
</tr>
<tr>
<td>N31</td>
<td>High</td>
<td>Remove, repair &amp; replace.</td>
</tr>
<tr>
<td>N32</td>
<td>High</td>
<td>Remove, repair, replace &amp; reposition finial.</td>
</tr>
</tbody>
</table>
N33 High
N34 No action
N35 High
N36 Low/medium
N37 High
N38 No action
N39 High
N40 High
N41 High
N42 Medium/High
N43 No action - missing
N44 Low
N45 Low
N46 No action
N47 Low

SOUTH SIDE

S1 Medium/High
S2 No action
S3 Medium/High
S4 Low
S5 Medium/High
S6 High
S7 No action
S8 Medium/High
S9 Medium/High
S10 Medium/High
S11 Low
S12 Medium/High
S13 High
S14 No action
S15 High
S16 Medium/High
S17 No action
S18 High
S19 No action
S20 High
S21 No action
S22 No action
S23 Low
S24 Low
S25 High
S26 No action
S27 No action
S28 High
S29 High

Remove, repair and replace.
Dismantle, repair & erect.
Check cracks in foot and lantern.
Remove, repair & replace.
Compare, replace & stabilise.
Compare, replace & stabilise.
Compare, reconstruct & replace.
Re-align & repair.
Check stability, check crack in lantern.
Re-align lantern
Check hairline crack.

Check crack in lantern, reset on pedestal if possible.
Repair cracks in pedestal & re-set lantern.
Re-align
Repair cracks in lantern, dismantle & re-erect.
Dismantle, repair pedestal & re-erect.
Repair crack in lantern.
Dismantle, repair cracks in pedestal, & re-erect.
Check cracks in pedestal - repair & re-erect.
Check cracks in pedestal.
Repair lantern & re-set if possible.
Dismantle, repair lantern, re-erect & re-align.
Dismantle, repair pedestal & re-erect.
Re-align pedestal & re-set lantern.
Check cracks in pedestal, repair lantern & re-erect
Dismantle, repair pedestal, re-set finial & re-erect.
Check crack in lantern.
Check crack in lantern.
Re-assemble & repair & re-erect if possible.
Repair pedestal, repair lantern & place on plinth.
Repair & reposition.
S30 Medium/High  Dismantle, repair cracks & re-erect.
S31 High  Re-erect pedestal, repair & rebuild lantern if possible.
S32 Medium/High  Re-erect.
S33 Medium/High  Repair pedestal & re-erect.
S34 Medium/High  Repair pedestal & re-erect.
S35 Medium/High  Dismantle, repair cracks in pedestal & re-erect.
S36 No action
S37 No action
S38 High  Repair pedestal & lantern, then re-erect.
S39 Low  Re-position lantern, and offer extra pieces for repair.
S40 No action
S41 No action
S42 Medium/High  Re-erect pedestal.
S43 Medium/High  Re-erect and check for cracks.
S44 Medium/High  Check cracks in pedestal, re-erect lantern. ?Alignment.
S45 Medium/High  Remove lantern, repair & replace.
S46 High  Dismantle, repair pedestal, & re-erect.
S47 High  Dismantle, repair pedestal, & re-erect. ?Alignment.

PRIORITY GROUPINGS

High  North 2, 6, 12, 15, 23, 25, 26, 27, 30, 31, 32, 33, 35, 37, 39, 40, 41
       South 6,13, 15, 18, 20, 25, 28, 29, 31, 38, 46, 47

Medium/High
       North 7, 9, 10, 21, 42
       South 1, 3, 5, 8, 9, 10, 12, 16, 30, 32, 33, 34, 42, 43, 44, 45

Medium
       North 13, 14
       South 35

Low/Medium
       North 1, 36
       South

Low  North 3, 5, 8, 11, 17, 22, 24, 44, 45, 47
       South 4, 11, 23, 24, 39

No Action
       North 4, 16, 18, 19, 20, 28, 29, 34, 38, 43, 46
       South 2, 7, 14, 17, 19, 21, 22, 26, 27, 36, 37, 40, 41
Appendix 1

LANTERNS ON THE NORTH SIDE OF THE APPROACH

Description

This comprises two pieces of stone which was found in front of N2. The lettering is carved on its face "26.8.15", which is unclear.

The Buddha is defined on the three symbols at the bottom of the lantern measures 254.7cm long parallel to the ground.

Part of the pedestal (b) seems to be a stone 50cm wide, on the axis of the building and 44cm wide. The other piece (a) looks as if it will fit the broken top and includes the peg at the bottom, but too long. Piece (a) sits immediately adjacent to a stepping stone and almost certain that all three pieces came from a larger pedestal.

The lantern looks as if it will fit the pedestal with a horizontal cut above the cornice and below the flat band.

A few small pieces of stone were found during excavation and are to the pedestal.

Recommendation

The two main pedestal pieces could possibly be re-set though their adjoining parts are clearly very worn. The lantern could be placed at the side of the remaining pedestal.

Priority: Low/Medium

Action Taken: 
PREAH KHAN
West Lantern Approach

Lantern No. N1

Description

This comprises two pieces of pedestal (a & b) and a complete lantern (c) which was found in front of N2. The lantern seems to be complete. It has a number carved on its face "26.8.56", which is presumably a date and also some lettering. The buddha is defaced on the three exposed sides. The finial is broken off. The bottom of the lantern measures 55x46cms., lying with its longest dimension parallel to the ground.

Part of the pedestal (b) seems to be a more or less complete half measuring up to 58cms. wide, on the axis of the bedding and 99cms high to the top of the cornice. The other piece (a) looks as if it will fit (b). It is 59cms. from the bottom to the broken top and includes the peg at the bottom, up to 14 cms. diameter and 6cms. long. Piece (a) sits immediately adjacent to a standing place on the plinth and it is almost certain that all three pieces came from a lantern in this position. The lantern looks as if it will fit the pedestal with a horizontal joint immediately above the cornice and below the flat band. A few small pieces of stone were found during excavation and these may belong to the pedestal.

Recommendation

The two main pedestal pieces could possibly be re-set though their adjoining faces are clearly very worn. The lantern could be placed at the side of the repaired pedestal.

Priority Low\Medium

Action Taken
Between N1 & S1, seven pieces of sandstone were found adjoining the main step into the lantern approach.

Four pieces (a-d) appear to have formed part of a lantern although the decoration on the two or three which conjoin (a-c) is all but worn away. The fourth (d) includes part of the buddha recess and flames to the top left of a lantern. All four pieces are up to about 10cms. thick.

A fifth piece (e) is a small part of a base with the garuda legs and tail. It may be from N1.

The other two pieces (f & g) are small, seemingly undecorated fragments.
PREAH KHAN
West Lantern Approach

Lantern Nos. N1 & N2
PREAH KHAN
West Lantern Approach

Lantern No. N2

Description

An almost complete example with part of the pedestal missing on the upper part of the north side.

It is in two pieces with the horizontal joint immediately above the cornice but there is no clearly defined flat band.

The pedestal (58x48cms) sites comfortably on the plinth base and there is no reason to doubt that it is in its original position. On the broken face the letter LUVTHA have been carved.

The lantern, which is almost complete, looks insecure on the pedestal. The apparent absence of a flat band may suggest that the lantern is not the original, though it is possible that the horizontal joint cuts the flat band in half.

There is some graffitti on the lantern -

Recommendation

No remedial action but perhaps the lantern should be moved to the ground for safety reasons.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N3

Description

Complete in two pieces with the horizontal joint above the flat band.

The pedestal (60x46cms) fits comfortably on the plinth base and there is no reason to doubt its position.

The lantern has no finial but sits a little askew.

Recommendation

Turn lantern.

Priority Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N4

Description

Complete in two parts with the horizontal joint through the flat band.

The pedestal (58x46cms) fits comfortably on the plinth base.

Complete lantern.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N5

Description

Complete in two parts with the horizontal joint immediately below the flat band.

Pedestal (56x48cms) is slightly askew to the plinth base. Faces partly damaged but still sufficient to support the lantern.

Complete lantern appears to be on the correct pedestal but sits slightly askew.

Recommendation

Re-align both pedestal and lantern.

Priority Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N6

Description

Complete in two parts with the horizontal joint above the flat band.

Pedestal (57x49cms) probably in original position but there is a vertical crack, an old cement mortar repair, and part of the north face is lost. Looks as if in imminent danger of collapse.

Lantern is complete and look as if it is on the correct pedestal.

Recommendation

Dismantle and either repair and re-assemble or repair pedestal and leave the lantern on the ground.

Priority     High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N7

Description

Complete in two parts with the horizontal joint part way up the lantern.

Pedestal (58x47cms) looks as if it is on the correct plinth base and it is complete. Some signs of cracking on east and west faces.

Lantern is complete with finial but it has cracked into two pieces on the bedding plain and is in need of repair.

Recommendation

Dismantle, repair lantern and re-set.

Check crack on pedestal.

Priority Medium/High

Action Taken
PREAH KHAN
West lantern Approach

Lantern No. N8

Description

Complete in two parts with the horizontal joint below the flat band.
Pedestal (55x51cms) sits comfortably on the plinth base and is complete.
Lantern is complete with finial and looks as though it is on the correct pedestal.
Vertical hairline crack on the east & west sides.

Recommendation

Perhaps deal with hairline crack.

Priority    Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N9

Description

Complete in two parts with the horizontal joint below the flat band.

Pedestal (60x48cms) looks to be in its original position but it has severe cracking.

Lantern probably on correct pedestal but lacks a finial. A severe crack up to 35mm. wide has previously been filled with cement or mortar - perhaps there is a steel rod in here.

Recommendation

Check and repair cracks in pedestal.

Check previous repair to lantern and replace if necessary.

Priority  Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N10

Description

Only the pedestal (53x43cms) survives here with its flat top part way up the lantern. It has been re-set and repaired with cement and using what appears to be a replacement flat slab of stone at the base. No evidence to indicate whether it is in its original position. There is a vertical crack and then a horizontal break on the south face, together with an old repair at the top as an attempt to hold it together.

There must be some doubt as to whether this is in its original position.

No trace of a lantern here but there is a spare lantern on N12 which looks from its size and decoration as if it might fit here.

Also a piece of finial sits alongside the N12 pedestal.

Recommendation

Either no action or dismantle and repair using more appropriate methods & materials.

Re-locate lantern from N12 if it fits here.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N10

Description

Incomplete stela with inscriptions (ferocious god) terminating in a horizontal flat surface. octagonal profile of the pedestal terminates in a silt dyke at N10.

An incised piece of inscription in a square section at N10.

The pedestal (90 cm) in poor condition with no silt dyke, similar to N10.

A small piece of stone with the inscription N10.

Recommendation

Priority: High

Action Taken

No action taken.

Note: The image shows a stone monument with the inscription N10.
PREAH KHAN
West Lantern Approach

Lantern No. N11

Description

Complete in two pieces with the horizontal joint above the flat band.

Pedestal (59x46cms) is probably in its original position though slightly askew. There is a vertical crack at the base on the west side.

Lantern is complete with finial but it has a vertical crack which passes through the finial.

Recommendation

The hairline crack in the lantern may need attention where it passes through the finial.

Priority Low

Action Taken
PREAH KHAN  
West Lantern Approach  

Lantern No. N12  

Description  
Incomplete with pedestal and part of the lantern, as one piece of stone, terminating in a horizontal flat surface part way up the lantern.  
An incorrect piece of lantern has been placed on the top which probably belongs to N10.  
The pedestal (59x57cms) appears to be in its original position and is in good condition with no obvious cracks.  
A small piece of finial is sitting on the east side of the base.  

Recommendation  

No action, other than to remove the incorrect lantern fragment.  

Priority High  

Action Taken
PREAH KHAN  
West Lantern Approach  

Lantern No. N13  

Description  

Incomplete and broken. 

The north half of the pedestal survives up to a horizontal face just below the flat band. It is on a plinth base (60x43cms) and its east-west dimension is the same so it may be in its original position. It has a break that has been repaired with cement. 

There are fragments of a lantern adjoining, and this comprises two faces (presumably north and south) which probably do not conjoin. There are also several stone flakes which may have made up the original thickness. 

Recommendation  

In the absence of the discovery of further pieces there is little that can be done at present. The old repair on the pedestal could be replaced. 

Priority Medium  

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N13

Description

Originally this lantern was in a more northerly position as indicated by cracks at the base. The extant arms suggest another lantern may have stood here.

Recommendation

Dismantle, repair, cast new pieces with a record of measurements and of the original fragments. This may be a restoration of a lantern from the south.
PREAH KHAN
West Lantern Approach

Lantern No. N14

Description

Complete in two pieces with the horizontal joint part way up the lantern.

Pedestal (58x56cms) appears to be in its original position. It is complete with no evidence of cracking or old repairs, but towards the top there are pieces missing from the lantern.

The lantern top seems to go with this pedestal. It is also complete and without cracks or repairs but the finial is broken off but present.

Recommendation

Finial to be re-set

Priority Medium

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N15

Description

Originally two pieces with the horizontal joint part way up the finial, but the latter top piece is now missing.

There is no reason to believe that the lantern has been moved, but horizontal cracks at the height of the garuda’s legs and feet and on the line of the garduda’s arms suggest some former reconstruction. There are also some vertical hairline cracks.

Recommendation

Dismantle, repair and reconstruct.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N16

Description

Complete and all in one piece. No reason to believe that the pedestal (58x46cms) has been moved. There is a hairline crack at the base, otherwise it is undamaged and unrepaired.

Recommendation

No Action

Priority     No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N17

Description

Complete and all in one piece. No reason to believe that the pedestal (58x50cms) has been moved.

There are cracks in the east and west faces which widen at lantern level and one passes through the finial.

Two small pieces of the finial are missing.

Recommendation

Probably no action but cracks need checking.

Priority Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N18

Description

Complete and all in one piece.

Pedestal (56x48cms) probably in original position.

Finial intact and no cracks, no damage and no old repairs.

Recommendation

No action

Priority    No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N19

Description

Complete in two pieces with the horizontal joint near the bottom of the lantern.

Pedestal (60x51cms) seems to be in its original position. One crack part way up the base on the east and west sides but no other damage.

Lantern, with finial, seems to fit this pedestal and there are no cracks or other damage.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N20

Description

Complete and in one piece.
No cracks, damage or old repairs.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N21

Description

Complete in two pieces with the horizontal joint just above the flat band.

No reason to believe that the pedestal (55x46cms) has been moved but like N22 the lowest element in the carved base is almost missing as if the bottom has been removed. Vertical cracks towards the top.

The lantern is complete, with finial, but there are vertical cracks.

Recommendation

Remove and repair lantern. Repair crack in pedestal and replace lantern.

Priority   Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. N22 & N23
PREAH KHAN
West Lantern Approach

Lantern No. N22

Description

Pedestal and part of lantern only with the horizontal joint part way down the cornice.

Pedestal (60x46cms) sits slightly askew on the plinth and, like N21, the lowest order at the base is missing. Some damage at the bottom on the south side and some, minor, cracks.

Lantern seems to be on its original pedestal but the south face and the finial are missing.

Recommendation

Possibly no action, but minor cracks in the pedestal may require attention.

Priority Low

Action Taken
PREAH KHAN  
West Lantern Approach  

Lantern No. N23  

Description  

This comprises three pieces of pedestal and a complete lantern, the horizontal joint between the original two pieces being above the flat band.  

Two pieces of pedestal (about 58x50cms) sit askew on a plinth base and probably originate here. The larger piece (a) is the north half and survives to full height. A small piece (b), with only the lower mouldings, sits next to it. To the south-west is the third piece of pedestal (c), which has a small broken piece at the top, and if re-assembled this should complete the pedestal, although the conjoining pieces show signs of wear.  

The lantern lying nearby (d), probably came from this pedestal. It is complete, with its finial, but shows signs of cracking.  

Recommendation  

Offer all four pieces of the pedestal together and, if they fit, repair and re-assemble.  

Priority High  

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N24

Description

Complete, though lacking a finial, and originally of two pieces with the horizontal joint in the cornice.

The pedestal (58x52cms) is probably in its original position but there is no plinth base. It shows signs of cracking on the west side only so this may not be serious.

The lantern is complete, without finial, and has no obvious cracks.

Recommendation

Probably no action unless the pedestal crack is sufficient to warrant repair. In which case dismantle, repair and re-assemble.

Priority  Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. 24-27
PREAH KHAN
West Lantern Approach

Lantern Nos. 25-27

General Note

All three lanterns are missing from their bases and some fitting may be required for accurate reconstruction. However, there seems to be little doubt about N25 & N27 so the remaining pieces can probably be allocated to N26.
PREAH KHAN
West Lantern Approach

Lantern No. N25

Description

This is near complete, with its finial, and originally in two parts with the horizontal joint cutting through the flat band. Both pieces are lying on the plinth with the base of the pedestal close to the peg hole and the lantern next to it. It seems to have toppled or been pushed over.

The pedestal (about 58x45cms) is near complete, as far as can be seen, with no sign of cracking. A fragment of pedestal base was found during excavation and may be from this example.

The lantern is complete, with finial, and with no signs of cracking.

Recommendation

Re-assemble the two pieces of the pedestal, if they conjoin, the re-erect the whole as N25 with the longest axis east-west. The position of the peg should assist here. The upper face of the lantern is probably the south face.

Priority       High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N26

Description

The fragment of lantern lying adjacent to plinth base N26 looks as if it will go with N27.

What appears to be the pedestal for N26 (a) lies about three metres to the west of its plinth base. The horizontal joint at the top is below the flat band. One vertical slice, about one third of the full thickness is missing and there is a crack on the east and west faces.

The lantern to the south-east of this (b) may be complete, but missing its finial, though there may be some loss of stone on the buried underside. There are no obvious signs of cracking.

Recommendation

Repair the pedestal crack and re-assemble the two pieces as N26. If the position of the locating peg cannot assist with orientation place the best preserved face to the south.

Priority     High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N27

Description

There is a complete pedestal (a) and two pieces of lantern (b & c) which probably conjoin, with the horizontal joint through the cornice.

The pedestal (a-56x49cms) lies behind N28 and seems to be complete with no signs of cracking.

The smaller piece of lantern (b) lies close to (a) & N28 whilst the larger piece (c) is five metres to the west. The pieces may conjoin but the broken face of the smaller piece is worn and the broken face of the larger piece is not exposed. There is no obvious sign of cracking on either piece.

A fragment of finial found during excavation may be from this lantern.

Recommendation

Relocate pedestal as N27 and if the locating peg does not assist with orientation, place the best preserved face to the south. If possible, re-assemble the two lantern pieces and place on pedestal.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S. N27 & N28

Description

...The action is suggested... (description text cut off)

Recommendation

No action

Priority: No action

Action Taken: No action
PREAH KHAN
West Lantern Approach

Lantern No. N28

Description

Complete, except for the finial, in two pieces with the horizontal joint near the top of the lantern and a piece of the lantern top is missing.

The pedestal (58x50cms) seems to be on its original plinth base and neither this or the lantern shows any sign of cracking.

Recommendation

No action

Priority  No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N29

Description

Complete, except for finial, in two pieces with the horizontal joint immediately below the cornice.

The pedestal (56x44cms) appears to be on its original plinth base and there is no cracking.

The lantern is complete, except for the finial, and there is a small crack on the north face.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N30

Description

Complete, with only part of a finial, and in two parts with the horizontal joint part way up the lantern.

The pedestal (56x46cms) sits slightly askew on its plinth base but is probably in its original position. It is complete with no signs of cracking.

The lantern is in two parts of which one, the north, is damaged. There is an old repair which attempts to hold the two pieces together.

Recommendation

Remove and repair lantern, Re-align pedestal and re-assemble two pieces.

Priority High

Action Taken
PREAH KHAN  
West Lantern Approach  

Lantern No. N31  

Description  
Complete, with finial, in two parts with the horizontal joint through the flat band.  
The pedestal (53x48cms) appears to be on its original plinth base. It is almost complete but with a vertical crack on both sides and one fragment missing on the west side.  
The lantern is in two pieces with a serious crack which passes through the finial and an old repair. The north half of the finial does not belong here.  

Recommendation  
Remove incorrect finial fragment.  
Dismantle, repair and re-assemble.  

Priority  High  
Action Taken
PREAM KHAN
West Lantern Approach

Lantern No. N32

Description

Complete, with finial. In two parts with the horizontal joint above the flat band.

The pedestal (57x46cms) is probably in its original position but there is no plinth base. There is minor cracking and part of the north face is missing, though a piece of this was found during excavation.

The lantern is complete but there is a serious crack which passes up through the finial and an old repair.

NB There is a near complete finial at the base which can be re-used, but where?

Recommendation

Dismantle, repair and re-erect lantern.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N33

Description

Complete, with finial. In two pieces with the horizontal joint below the flat band.

Pedestal (56x50cms) sits slightly askew with no clear evidence for a plinth base.
Complete with no signs of cracking.

The lantern is complete with a serious crack and an old repair.

Recommendation

Dismantle lantern, repair and re-assemble.

Priority    High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N34

Description

Near complete, with finial. In two parts with horizontal joint through the flat band.

Pedestal (58x46cms) sits comfortably on a plinth base and is probably in its original position. It is complete with no signs of cracking but there is a fragment missing from the top south-east corner.

The lantern is missing its south face and has minor cracking.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N35

Description

Complete, with finial. In two parts with the horizontal joint above the flat band. The whole has fallen northwards and there is damage at the bottom. There is no reason to believe that it is not at its original location.

The pedestal is near complete and there is no sign of serious cracking. The lantern seems to be complete but there is a serious crack and an old repair with metal ties in cement.

Recommendation

Dismantle, repair and re-assemble.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N35
PREAH KHAN
West Lantern Approach

Lantern No. N36

Description

Complete, but without finial. In two pieces with the horizontal joint through the cornice.

Pedestal (56x47cms) is slightly askew its plinth base. Complete with no signs of cracking but part of the foot has split off.

Lantern has minor cracks.

Recommendation

The broken piece could be re-set but otherwise no action.

Priority Low/Medium

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N37

Description

Complete, with finial. In two pieces with the horizontal joint above the flat band.

Pedestal (53x52cms) sits on a plinth base. Near complete but with serious cracks, one vertical and one horizontal. Part of the foot is missing in the south-west corner.

Lantern complete, but with a serious vertical crack.

Recommendation

Dismantle, repair, and re-erect.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N37
PREAH KHAN
West Lantern Approach

Lantern No. N38

Description

Near complete, with part of a finial. In two pieces with the horizontal joint above the flat band.

The pedestal (56x47cms) sits on a plinth base. It is complete with no signs of cracking but there is a piece missing from the top north-east corner.

Only the south half of the lantern survives in situ with a fragment of finial. There are fragments of stone nearby but these do not conjoin.

Recommendation

No action

Priority  No action

Action Taken
PREAH KHAN
West Lantern Approach

Lanterns 39 & 40

Description

There is an in situ pedestal on N40 which looks as if it has been re-erected and another to the south-west lying on the ground (N39). Adjacent is a lantern. Since the horizontal joint on each pedestal is about 8cms above the flat band it is difficult to judge, without re-erection, to which pedestal the lantern belongs.

Pedestal N39 (58x54cms) is near complete but with pieces broken off at the top and bottom. At position N39 there is a good plinth base which is probably for this pedestal. The pedestal shows no signs of serious cracking.

Pedestal N40 (60x50cms) is now supported on several small pieces of stone and there is little sign of a plinth base. It is in good condition with no serious cracking.

The lantern is complete with finial with some cracking but this is not serious. A further lantern, complete with finial, was found behind (north of) N40 during excavation but its horizontal joint is similarly placed to the other one - so the two lanterns need to be offered up to the pedestals N39 & N40 to see which fits the best.

Recommendation

No obvious need for repairs but the two pedestals should each be offered to the plinth base at N39 & N40 to see which fits the best. The peg positions may help with orientation. If all else fails retain existing pedestal on N40 but need to examine why it is supported on small stones.

The lanterns should be placed where they best fit.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No3. N39 & N40
PREAH KHAN
West Lantern Approach

Lantern No. N41

Description

This has collapsed but comprises a pedestal, three or four pieces of lantern, and a finial on which the larger piece of lantern is now propped.

The pedestal has one part of one side missing, the south face. It is 60cms wide. Signs of cracking on the north side which could remove the face including the garuda. The horizontal joint between the two original pieces is at the top of the flat band.

There is a large piece of lantern to the east of the pedestal which is of full height and the finial should fit on here. Lying next to it is a piece of the lower side of a lantern which will probably fit and complete the lower part of this one. Under the pedestal is part of the face of a lantern and there is another piece near N40. Both contain the remains of a circular hole and there is the remains of a hole of similar dimensions in the back of the large lantern fragment. The two smaller fragments look as if they conjoin the larger piece and together with the base fragment they may provide a complete lantern.

Recommendation

Re-erect the pedestal having regard for minor damage to the plinth. Offer up all the pieces of lantern and reconstruct as far as is possible. Though partly damaged, the pedestal may retain sufficient width to support a full lantern.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N41

Description

Thirteen plates found near S41 which occur on si rakthi main doors.

Priority: No action

Action Taken: No action
PREAH KHAN
West Lantern Approach

Lantern No. N42

Description

Complete, except for the missing finial. In two pieces with the horizontal joint near the top of the lantern.

The pedestal (58x50cms) is slightly askew on its plinth base but there is no reason to believe that it is not in its original position. No cracking.

The lantern is complete, except for the finial. There are no signs of cracking in the larger piece but there is a break in the small piece at the top.

Recommendation

Re-align and repair the uppermost piece.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N43

Description

There are no remains of this lantern but there is a small fragment of pedestal near S41 which needs to be located somewhere.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N44

Description

Complete, with broken finial. In two pieces with the horizontal joint below the cornice.

Pedestal (59x49cms) is complete but there is no plinth base and the plinth itself is damaged under the pedestal. There may be sufficient plinth left to support the pedestal. No cracking on the pedestal but there is some damage to the top.

Lantern complete but only part of the finial survives. There is some cracking which has passed through the finial.

Recommendation

Check stability of the pedestal on the plinth.

Repair lantern if necessary.

Priority Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N45

Description

Complete, with finial. In two pieces with horizontal joint at the bottom of the flat band.

Pedestal (55x46cms) has no plinth base. No cracking or damage.

Lantern complete, with finial, sits askew on pedestal. No cracking.

Recommendation

Re-align lantern.

Priority      Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. N46

Description

Incomplete, bottom part only, with horizontal joint part way up the lantern.

Pedestal (56x43cms) has no plinth base. No cracking and no damage.

Recommendation

No action, assuming we cannot find the top of the lantern.

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach
Lantern Nos. N 46 & N 47
PREAH KHAN
West Lantern Approach

Lantern No. N47

Description

Incomplete, bottom part only, with the horizontal joint half way up the lantern.

Pedestal (57x47cms) sits on plinth base. Good condition with only hairline cracks but these seem to pass through full width of stone.

Recommendation

Hairline cracks may need attention.

Priority Low

Action Taken
Appendix 2

LANTERNS ON THE SOUTH SIDE OF THE APPROACH

Description

Complete, with base lost. All horizontal joints lose balance. No column.

Pedestal (55cm) are in a poor state which will make re-painting difficult.

Lantern complete with feed in good attention. An old concrete without horizontal band indicate that it has been repairs in the past.

Recommendation

Repair lantern to set on pedestal if possible.

Priority: Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S1

Description

Complete, with finial, but the lantern has fallen to the south. In two pieces with horizontal joint just below flat band.

Pedestal (55x46cms) sits on a plinth base. Complete but much wear on the top which will make re-positioning of lantern difficult. No damage and no cracking.

Lantern complete, with finial, but partially buried. Some cracking which may need attention. An old concrete underpinning and the date of "26.8.56" cut into the flat band indicate that it has been re-set in the past.

Recommendation

Repair lantern, re-set on pedestal if possible.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. 51
PREAH KHAN
West Lantern Approach

Lantern No. S2

Description

Complete, with finial, in two parts with horizontal joint below the flat band.

Pedestal (62x48cms) sits slightly askew on slight plinth base. Complete with no signs of cracking.

Lantern, complete with finial, but has been re-set on pedestal using cement. Seems to fit this pedestal. No signs of cracking but north face has already been partially removed by surface flaking. Bears several cut graffitti including the date "26.8.56".

Recommendation

No Action except re-alignment.

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S3

Description

Complete but lantern has fallen to the south and the finial, if it exists, is now buried. In two parts with the horizontal joint through the cornice.

Pedestal (61x50cms) sits on slight plinth base. Complete but with a vertical crack and the top shows signs of wear.

Lantern has lost its south face by the removal of a large flake. Otherwise intact with no obvious sign of cracking.

Recommendation

Repair pedestal and re-set lantern.

Check presence and condition of finial.

Priority  Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. 53 & 54
PREAH KHAN
West Lantern Approach

Lantern No. S4

Description

Only the pedestal (58x48cms) survives with the horizontal joint above the flat band. Sits slightly askew on a slight plinth base. No signs of cracking.

Recommendation

Re-align

Priority     Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S5

Description
Complete, with finial, in two pieces with horizontal joint through the cornice.

Pedestal (61x46cms) with no signs of a plinth base. In good condition with no signs of cracking.

Lantern in good condition but some cracking which may require attention.

Recommendation
Dismantle and repair lantern.
Re-erect.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S6

Description

Complete, with finial, in two parts with the horizontal joint above the flat band.

Pedestal (56x50cms) is located on a plinth base. Complete with a fragment missing from the top north-east corner. There is a serious crack right through which has opened up and there is some loss of stone.

Lantern, complete with finial, shows no sign of cracks.

Recommendation

Dismantle, repair cracks in pedestal and re-assemble.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. S6 & S7
PREAH KHAN
West Lantern Approach

Lantern No. S7

Description

Incomplete, only a lantern exists here, sitting where a pedestal should be. The horizontal joint is through the cornice. No evidence to suggest whether it derives from this position or not.

Lantern complete, with finial, but with minor crack on west side.

Recommendation

No action

Priority       No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S8

Description

Complete, with finial, in two pieces with horizontal joint near the bottom of the cornice.

Pedestal (56x50cms), sits on slight plinth base. Complete and with no signs of cracking.

Lantern in good condition, with finial, but part of the south face is missing due to flaking. Some cracking could cause further flaking if not arrested.

Recommendation

Repair crack in lantern.

Priority    Medium/High

Action Taken
PREAH KHAN  
West Lantern Approach  

Lantern No. S9

Description

Complete, with finial, in two parts with horizontal joint through the cornice.

Pedestal (58x50cms) has no sign of a plinth base. Some damage at the bottom and some cracking.

Lantern complete, with finial, and no cracks.

Recommendation

Dismantle, repair pedestal and re-erect.

Priority  Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S10

Description

Complete, with finial, in two pieces with the horizontal joint part way up the lantern.

Pedestal (60x50cms) with no sign of plinth base. Some cracks which may be serious.

Lantern complete, with finial, but no signs of cracking.

Recommendation

Dismantle, repair pedestal and re-erect.

Priority  Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S11

Description

Complete, with finial, in two pieces with horizontal joint above the flat band.

Pedestal (60x54cms) sits on a shallow plinth base. In good condition with minor cracking.

Lantern complete, with finial. Minor cracks.

Recommendation

No action, unless cracks near the base are considered to be serious.

Priority Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S12

Description

Complete, with finial, in two pieces with the horizontal joint through the flat band. The lantern has fallen to the south.

Pedestal (53x42cms) is dislodged from its plinth base. Part of its south face has flaked off and there are further cracks. There must be some doubt as to whether the pedestal has sufficient depth to support the lantern. There is evidence of an old repair, presumably securing the lantern to the pedestal. Minor cracks.

Lantern complete, with finial, but lying on the ground. Serious crack which threatens to split the stone into two halves.

Recommendation

Repair lantern and re-set on pedestal if sufficient support is available. Otherwise place on plinth next to pedestal.

Priority Medium//High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S12
PREAH KHAN
West Lantern Approach

Lantern No. S13

Description

Complete, but finial missing, in two pieces with horizontal joint part way up the lantern.

Pedestal (56x49cms) slightly askew, on a slight plinth base. In good condition with minor cracks.

Lantern now in two parts with a very serious vertical open crack and some stone missing.

Recommendation

Dismantle, repair and re-erect lantern.

Re-align pedestal.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S14

Description

Complete, with finial and all in one piece.

Pedestal (54x46cms) sits on a plinth base.

All in good condition with no signs of cracking.

Recommendation

No action

Priority    No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S15

Description

Complete, with finial, in two pieces with horizontal joint above the flat band.

Pedestal (56x46cms) sits askew on a plinth base. Broken at bottom and with serious cracks. One piece broken from the base lies adjacent.

Lantern complete, with finial, and only minor crack.

Recommendation

Dismantle, repair pedestal and re-erect whole.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. Sl6
PREAH KHAN
West Lantern Approach

Lantern No. S16

Description

Complete, though missing finial, in two parts with the horizontal joint below the cornice. Lantern is upside down next to the pedestal.

Pedestal (58x50cms) sits slightly askew on plinth base. In good condition with no signs of cracking.

Lantern complete, without finial, and no signs of cracking.

Recommendation

Re-align pedestal and re-set lantern.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S17

Description

Complete, with finial, in two pieces with the horizontal joint through the cornice.

Pedestal (54x40cms) sits on plinth base. Complete with only minor cracking which will probably not require repair.

Lantern is complete, with finial. No obvious cracking.

Recommendation

No action

Priority   No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S18

Description

Near complete, with finial, but part of the lantern has fallen off. Was in two pieces with the horizontal joint just above the flat band.

Pedestal (56x46cms) stands on a plinth base. Some cracks which may require attention.

Lantern in two halves. South face is in situ on the pedestal with most of the finial in place. What seems to be the other half has fallen face down. Presumably they conjoin.

Recommendation

Dismantle, repair both pedestal and lantern and re-erect.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. S18 & S19
PREAH KHAN
West Lantern Approach

Lantern No. S19

Description

Pedestal only survives in situ with no trace of the lantern. The horizontal joint between the original two pieces was below the cornice.

The pedestal (56x44cms) sits on a slight plinth base. In good condition with minor cracking.

Recommendation

No Action

Priority No action

Action Taken
PREAH KHAN
West lantern Approach

Lantern No. S20

Description

Complete, with finial, in two pieces with the horizontal joint at the top of the flat band.

Pedestal (56x48cms) sits on a slight plinth base. The lower north face is both cracked and broken, and one piece has all but separated.

The lantern is complete, with finial, though the latter is broken off.

Recommendation

Dismantle, repair pedestal and replace finial on lantern. Re-erect.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S21

Description

Complete, with finial, in two parts with the horizontal joint at the top of the flat band.

Pedestal (58x44cms) sits on a plinth base. In good condition with no signs of cracking.

Lantern in good condition, with finial, and no signs of cracking.

Recommendation

No Action

Priority    No Action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S22

Description
Complete, except for finial, in two parts with horizontal joint at the top of the flat band.

Pedestal (61x48cms) with no trace of plinth base. In good condition and no signs of cracking.

Lantern complete, except for finial, and no signs of cracking.

Recommendation
No Action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S23

Description

Complete, except for finial, in two parts with horizontal joint cutting through the cornice.

Pedestal (59x50cms) sits on a slight plinth base. In good condition with no signs of cracking.

Lantern is complete, except for finial, but there is a crack, beginning to look serious, on the west side.

Recommendation

No action, unless crack in lantern considered necessary for repair.

Priority  Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S24

Description

Complete, with finial, in two pieces with the horizontal joint at the top of the flat band.

Pedestal (60x47cms) complete and in good condition with no signs of cracking.

Lantern complete, with finial, but a crack is beginning to appear and this may need attention.

Recommendation

Examine lantern and, if necessary, repair.

Priority    Low

Action Taken
PREAH KHAN  
West Lantern Approach  

Lantern No. S25  

Description  

Now in three pieces lying on the ground but if repaired and re-assembled there may be sufficient to complete both the pedestal and lantern. Originally in two pieces with the horizontal joint at the bottom of the flat band. 

Pedestal (about 57x46cms) with little trace of plinth base. Now in two halves, one of which is part buried. They may conjoin. 

Lantern in one piece, with finial, in good condition with no signs of cracking.  

Recommendation  

Offer the two pieces of the pedestal together and, if possible, repair and re-erect all three pieces.  

Priority  High  

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. **S25**
PREAH KHAN
West Lantern Approach

Lantern No. S26

Description

Near complete in two pieces with the horizontal joint part way up the lantern.

Pedestal (54x54cms) on traces of a plinth base. In good condition with no signs of cracking.

Lantern top, part loss of north face and north side of finial but otherwise in good condition and no signs of cracking.

Recommendation

No action

Priority No Action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S27

Description

Complete, in two parts with horizontal joint above the flat band.

Pedestal (56x49cms) in good condition with fragment missing from bottom north-west corner. Crack on east side is not serious.

Lantern complete, with finial, though latter has small piece missing. No cracks.

Recommendation

No action

Priority     No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S28

Description

Incomplete and comprising part of the pedestal and lantern, with finial. In two parts with the horizontal joint at the bottom of the flat band.

Pedestal (58x50cms) comprises north half and bottom of south half as two pieces, sitting on a slight plinth base. North part is part damaged and cracked. Small part is worn on the top.

Lantern is complete, with finial, but lying on the ground. A fragment is breaking off and, as a result, part of the finial is missing.

Recommendation

Repair pedestal, but unless more pieces can be found there is insufficient to support the lantern. Repair lantern and place at side of pedestal on plinth.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. 528 & 529
PREAH KHAN
West Lantern Approach

Lantern No. S29

Description

Only the damaged remains of the pedestal survive alongside the locating peg hole. There is a plinth base here.

The pedestal (about 56x?) is both cracked and damaged at the top and bottom but using the remains of the peg it may be possible to relocate this in an authentic orientation.

A fragment of lantern with an intact buddha was found near here during excavation and may be belong here or on S31.

Recommendation

Repair and re-position on peg hole.

Priority       High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. 529
PREAH KHAN
West Lantern Approach

Lantern No. S30

Description

Complete, with finial, in two pieces with the horizontal joint below the flat band.

Pedestal (57x42) sits on plinth base. Crack on west side which may need attention.

Lantern complete, with finial, part-damaged on north face and some serious cracking.

Recommendation

Dismantle, repair, and re-erect.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S31

Description

A complete pedestal and two fragments of lantern all lying on the ground. Originally in two pieces with the horizontal joint above the flat band.

Pedestal (58x46) is complete with no signs of cracking.

Lantern - only two fragments survive and these may not conjoin.

A further fragment of lantern with an intact buddha was found near S29 during excavation and may belong here.

Recommendation

Re-erect pedestal and orientate to give the best fit in the peg hole and on the slight plinth base. Offer all three pieces of lantern together and, if they conjoin, repair and re-erect on pedestal.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. S31 & S32
PREAH KAHN
West Lantern Approach

Lantern No. S32

Description

Complete in two pieces, without finial, but both lying on the ground. The horizontal joint is below the flat band.

The pedestal (59x?cms) is part damaged at both the top and bottom but there is no sign of cracking.

Lantern complete, except for finial, and there are no signs of cracking.

Recommendation

Re-erect

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S33

Description

Complete, with finial, in two pieces with the horizontal joint through the flat band.

Pedestal (59x49cms) without plinth base. There is some cracking which may require attention.

Lantern complete, with finial, but with minor cracks.

Recommendation

Dismantle, repair pedestal and re-erect

Priority     Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S34

Description

Complete, with finial, in two pieces with horizontal joint through the flat band.

Pedestal (60x49cms) but no sign of plinth base. Cracking on south side could worsen and remove wedge-shaped fragment.

Lantern complete, with finial, in good condition and no sign of cracking.

Recommendation

Dismantle, repair pedestal, and re-erect.

Priority    Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S35

Description

Complete, with finial, in two pieces with lantern on the ground. Horizontal joint through the flat band.

Pedestal (57x?cms). Cracked and with one piece broken off but lying next to the base. Sits askew on slight plinth base.

Lantern complete, with finial, and no signs of cracking.

Recommendation

Repair pedestal and re-set lantern.

Priority Medium

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S35
PREAH KHAN
West Lantern Approach

Lantern No. S36

Description

Complete, without finial, in two pieces with horizontal joint at the top of the flat band.

Pedestal (54x43cms) sits on slight plinth base. In good condition with no signs of cracking.

Lantern complete, without finial, but no signs of cracking.

Recommendation

No action

Priority    No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S37

Description

Complete, without finial, in two parts with horizontal joint part way up the lantern.

Pedestal (57x46cms) sits on a plinth base. In good condition with only minor cracks on west side.

Lantern, without finial, otherwise complete and no cracks.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S38

Description

Near complete, with finial, but lantern has fallen off and is broken. Originally in two parts with horizontal joint above the flat band.

Pedestal (60x?cms) sits on a plinth base. Fragments missing from top and bottom of north face and from south-east side. No signs of cracking.

Two pieces of lantern lie on the ground, including finial, and may conjoin. Old repair using iron rods has failed.

Also several pieces of stone partially buried may belong here.

Recommendation

Repair pedestal and lantern using all recovered stones, and re-erect.

Priority High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. 338 & 339
PREAH KHAN
West Lantern Approach

Lantern No. S39

Description

Comprises only part of the pedestal and half the lantern. Originally in two pieces with the horizontal joint below the flat band.

Pedestal (58x50cms) sits on a plinth base. Substantial part of north side missing.

Lantern comprises only one half, without finial.

Recommendation

No action but a fragment from the top of a pedestal with a horizontal joint similar to S39 was recovered from near the east step of the lantern approach. This may conjoin S39 and has provisionally been placed next to it.

If this conjoins it could be re-fixed.

Priority Low

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S40

Description

Complete, with finial, in two parts with the horizontal joint at the top of the flat band.

Pedestal (60x50cms) on slight plinth base. In good condition with no signs of cracking.

Lantern, with finial, in good condition with no signs of cracking.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S41

Description

Complete, with finial, in two pieces with the horizontal joint immediately below the cornice.

Pedestal (58x52cms) sits at the corner of the plinth with no sign of a plinth base. In good condition with no cracks.

Lantern complete, with finial, and no cracks.

Recommendation

No action

Priority No action

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. 541
PREAH KHAN
West Lantern Approach

Lantern No. S42

Description

Pedestal *in situ* and part of a lantern on the ground. Originally in two pieces with the horizontal joint near the top of the cornice.

Pedestal (57x41cms) complete. In good condition with no cracks.

Lantern, without finial, and part broken off and missing. No obvious cracks.

Recommendation

Re-erect lantern on pedestal with damaged face to the south ie as it has fallen.

Priority  Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. 542
PREAH KHAN  
West Lantern Approach

Lantern No. S43

Description

Complete, without finial, but fallen over to south-west. In two parts with horizontal joint at the top of the flat band.

Pedestal (50x40cms) complete with no signs of cracking.

Lantern, without finial, but no obvious signs of cracking.

Recommendation

Re-erect, having first dealt with any hidden cracks.

Priority    Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. 543
PREAH KHAN
West Lantern Approach

Lantern No. S44

Description

Complete, except for finial, in two pieces with horizontal joint at the top of the flat band.

Pedestal (53x46 - aligned north-south). In good condition but with a single crack. There is no obvious plinth base here so it is not possible to determine whether the pedestal has been previously re-erected incorrectly, but this seems likely.

Lantern, without finial, but no cracks.

Recommendation

Repair crack in pedestal and re-erect lantern.

Check for plinth base and re-align pedestal if necessary.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S45

Description

Complete, without finial, in two parts with horizontal joint part way up the lantern.

Pedestal (51x37cms) in good condition with no cracks.

Lantern, without finial, has a large crack, probably with some loss of stone, and an old repair in which an iron rod is exposed.

Recommendation

Remove lantern, repair and re-erect.

Priority Medium/High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern Nos. 544 & 545
PREAH KHAN
West Lantern Approach

Lantern No. S46

Description

Complete, with part of a finial, in two pieces with horizontal joint part way up the lantern. Top of finial, now missing, may have been cut from a third stone.

Pedestal (57x50cms) has a large crack at the bottom with one piece broken away. Another piece has broken off the north-west corner at the top.

Lantern retains bottom of finial. No cracks.

Recommendation

Dismantle, repair pedestal and re-erect lantern.

Priority    High

Action Taken
PREAH KHAN
West Lantern Approach

Lantern No. S47

Description

Complete and all in one piece.

Pedestal (55x40cms) is aligned north-south but slightly askew. There is no trace of a plinth base so it is not possible to determine whether the pedestal has been incorrectly set up in the past, as seems likely. Broken and repaired in several places.

Lantern cracked and repaired with iron and concrete.

Recommendation

Dismantle, repair and re-erect.

Check for evidence of plinth base and re-align if necessary.

Priority High

Action Taken
Preah Khan, Angkor
THE VISHNU TEMPLE COMPLEX (WEST)

An Archaeological Appraisal & Condition Report

Prepared for the World Monuments Fund

JULY 1993
Preah Khan, Angkor
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by Fred Aldsworth BA FSA MIFA
The Conservation Practice International

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FOREWORD

This report was prepared as part of the World Monuments Fund Field Campaign I for the Buddhist Monastic Complex of Preah Khan (November 1992 to April 1993) at Angkor, Cambodia.

It represents one of three surveyed areas of Preah Khan which was documented and analyzed as a basis for conservation action in future phases of work. This report is to read in conjunction with Report IV: Preah Khan Project Mobilization in which the enclosed information and conclusions are summarized.

The conservation recommendations portion of this report will be treated in a separate document at the time when the west end of the Vishnu Temple Complex is repaired and conserved.
INTRODUCTION

The structures described in this report are located at the west end of the Vishnu Temple Complex (West) immediately inside the Enclosure Wall III along the western access (Figs 1 & 2).

The remains of the central tower of this wing and the adjacent passages, to the north, east and south (shown stippled on Fig 2), were recognized as being in a precarious state and a hazard to visitors in September 1992 (Report III: Preah Khan Conservation Plan Project 5 pages 77 & 78).

It was noted in the report of September 1992 that the central passage was an addition to the complex and therefore represents an interesting architectural development at Preah Khan (Report III: pages 20 & 115). It was, therefore, recommended that, despite severe structural movement, dismantling and reconstruction of this component should be avoided in favour of consolidation in its present form. As an exception to the principle established by WMF of conservation rather than reconstruction, it was recommended that reconstruction should be considered for the tower and the passages to the north and south, following a programme of survey and identification.

During WMF Field Campaign I (November 1992 to April 1993) work on disengaging and sorting dressed stones from the piles of rubble and debris found in the two yards (A & B) to the west of the complex was completed. Following this the structure was surveyed and an attempt was made to determine where individual stones had belonged prior to collapse.

This report, prepared in June 1993, represents a statement on progress during WMF Field Campaign I and it is proposed that the work to disengage and sort through the remaining piles of collapsed masonry, and the survey and appraisal techniques following the methods evolved during Field Campaign I will continue prior to the commencement of the programme for repair, consolidation and partial reconstruction.
METHODOLOGY

The two open paved yards where the disengagement of worked stones was commenced in November 1992 are bounded on the east side by the west end of the Vishnu Temple complex, on the west side by the West Gopura (Enclosure Wall II), and on the north and south sides by boundary walls linking these two structures (Fig 2 Yards A & B).

The two boundary walls, of which only the footings survive of the one on the south side, are clearly later additions to an original arrangement possibly for two stone-lined tanks, at approximately original ground level, about 110 cms below the level of the present yard floors. The walls were later added, the tanks filled, and the present yard surfaces laid.

The two stone heaps were laid up, as they fell, against the west end of the Vishnu Temple Complex and, since the West Gopura and the north boundary wall are both essentially intact, it is assumed that the heaps derive from the temple complex and the boundary wall to the south. An initial examination suggested that there was no specific pattern to the collapsed masonry, which would help indicate from where individual stones or groups of stones had fallen. It was decided therefore that no particular advantage would be gained from introducing a recording or numbering system during the initial phase of disengagement. However, it was considered that confusion would occur if stones were moved outside the yard in which they were found. With very limited space available in which to manoeuvre, an area on the west side of each yard was cleared of rubble, vegetation, and soil, and stones were gradually disengaged from the heaps and moved to storage locations and stacked in the order that they were taken out, using wooden levers and rollers, manufactured from the surrounding trees (Plates 1 & 2). Within a period of three weeks the two yards had been cleared of collapsed masonry and each stone had been disengaged and stored (Plates 3 & 4).

Once the stone and debris had been removed from against the structures, it was possible to survey and carefully study the surviving in situ fabric and then analyze the disengaged worked stones in an attempt to determine the feasibility and logic of reconstructing components of the building for both its stability as well as its presentation.
METHOD OF SURVEY

The survey of the *in situ* remains was restricted to the west elevation of the west passage and the three porches which give access to it (Fig 3).

A horizontal datum was first established on all the external walls, initially using a waterfilled plastic pipe and later using a surveyor's level, and this was marked as a continuous line on the walls using white chalk. The elevations were then photographed (Plates 5-13) and the prints were used as the basis for the production of a series of scaled photographs, drawn elevations, and measured sections, all recording the condition of the remains as found (Figs 4-12, 13a & b, 17a and 19a & b).

The roof survived, complete, over the central porch and in part in four areas over the west passage. In two places the roof was in a partially collapsed state, giving concern about its stability and the safety of visitors, and in three places it had completely collapsed over the junction of the central and west passages, and over the north and south porches. Generally speaking, however, the walls have stood to their full height with little sign of movement.

The survey of the Vishnu Temple Complex served as a training program for the architectural and archaeological students from the University of Fine Arts, Phnom Penh. During the process of disengagement between November and April the work was monitored by two groups of students.
ANALYSIS & INTERPRETATION

Since consideration was to be given to the reconstruction of the central tower and the adjoining passages to the north and south, attempts were made to analyze both the standing remains and the collapsed masonry in order to determine the original form of these structures and to what extent it might be possible to relocate stones in their original positions.

Three specific areas of the building were considered:-

a)  The doors and frontons
b)  The roof
c)  The central tower

The Doors and Frontons

Careful study produced evidence to show that there were five doorways leading into the building from the west side of the complex - a north porch (Door 1), a central porch, and a south porch (Door 4), and two intermediate doorways (Doors 2 & 3). The central porch, with door and decorated triangular fronton survives intact (Plates 7, 8 & 13 and Figs 6, 7 & 10).

DOOR 1

The north porch had collapsed but the surviving in situ evidence (Plates 9 & 10 and Fig 13a & b) show that it had originally contained a door. A study of the carved stones found in the adjoining yard (Fig 14) provided evidence that the door had been surmounted by a large fronton, the majority of which could be re-assembled to produce a beautifully sculpted scene depicting Vishnu and his attendants (Plate 14 & Fig 13 c & d).

The decorated lintel (Plate 15 & Fig 13c 101 - 105) is supported on a pair of octagonal columns (107 - 110 & 111 - 114), which are each secured at their base by a small tenon set into a mortice hole in the stone blocks on either side of the threshold. Neither the lintel nor the columns appear to have been attached to the porch in any way. The lintel and side pillars support the fronton over the doorway, at the west end of the north passage. The stones making up the lower part of the panel are end-on to the west elevation. They appear on the internal elevation as part of the cornice arrangement, and as bonders, they form an integral part of the main structure. It is not until this level is reached that there is any bonding between the door surround and fronton and the north porch. A few missing pieces belonging to the fronton have yet to be found amongst the stored stones, but doubtless they can be located.

The interior of the porch has yet to be cleared of collapsed masonry. During the process of clearance, it is essential that each individual stone is examined, identified and recorded during the progress of work in order to identify individual members belonging to the lintel and those backing on to it.
DOOR 2
To the south of the north porch are two windows and the opening for a second door leading into the west passage (Door 2 Plate 5, Figs 4, 9, & 15a). A study of the stones found in the adjoining yard (Fig 16) enabled the reconstruction of the door surround and the fronton which it supported (Plates 17 - 19 & Fig 15b). Octagonal columns on either side of the opening, one of which survived in situ and the other recovered in pieces from the collapsed debris (Plate 16 and Fig 15b 1 - 3), supported a decorated lintel (Plate 17 and Fig 15b 30 & 31), which at its south end may also have engaged the body of the wall in a shallow rebate.

The fronton was directly supported off the lintel and side pillars. However unlike the fronton over Door 1 which is bonded into the masonry of the north porch, the decorated stones in this example were carved lengthways and they merely abut the face of the passage wall with little or no sign of bonding between the two. A number of holes cut into the masonry wall, however, indicate the probable use of metal ties to restrain movement of these stones.

All but one of the decorated stones needed to reconstruct the door surround and fronton have been identified, and the completed scene includes the rows of nine kneeling figures beneath an individual figure, perhaps Vishnu, with two attendants (Plate 18 & 19 and Fig 15c).

DOOR 3
To the south of the central passage is a single window and the opening for a doorway (Door 3, Plate 6, Figs 5, 11 & 17a). South of the doorway are a further two windows, the first of which was never completed as it was blocked partially by the south pillar of the door.

An examination of the stones found in the adjoining yard (Fig 18) enabled a reconstruction of the door surround and the fronton which it supported (Plates 20 & 21 and Fig 17b). Octagonal columns on either side of the opening supported a decorated lintel (219 & 220) which may also have engaged in a shallow rebate cut in the stone at the head of the door.

The fronton was supported on the lintel and side pillars. Similar to the construction of Door 2, stones were placed lengthways abutting the face of the passage wall with little or no signs of bonding between the two. However, as with Door 2, a number of holes survive in the masonry which indicate the probable use of restraining ties.

Most of the decorated stones needed to reconstruct the door surround have been identified, and the completed scene includes a row of nine kneeling figures beneath a coiled serpent mounted by a seated figure with five attendants (Plates 20 & 21). The scene is thought to depict the story of Krishna protecting the cow-herders by capturing the King of the Nagas and pulling off all his heads.²

²I am grateful to Nicola Smith for providing this provisional interpretation of the scene.
**DOOR 4**

The *south porch* had collapsed but the surviving *in situ* evidence (Plates 11 & 12 and Fig 19a & b) showed that it had contained a doorway (Door 4). A study of the stones found in the adjoining yard (Fig 20) provided evidence that the door had been surmounted by a large fronton, part of which has been re-assembled (Plate 22 & 23 and Fig 19c). The method of construction was similar to that for Door 1 with a lintel (301 - 303) supported on octagonal columns and a shallow rebate. The fronton, supported on the lintel and side pillars, includes a large number of bonding stones, forming an integral part of the main structure of the porch.

Several pieces of the door surround and fronton have yet to be located amongst the stored stones and those yet to be removed from the porch. The scene on the fronton appears to depict two rows of nine kneeling figures surmounted by a figure, perhaps Vishnu, riding a creature, perhaps a garuda.

**The Roof**

The roof survived, partially intact, in four places over the west passage. The intact sections are on either side of the collapsed central tower and at either end of the passage immediately before it adjoins the north and south porches at either end (Plates 5, 6, & 24).

Most of the surviving *in situ* structure was built of the local Kulen sandstone but there are two areas where laterite had been used, possibly as a later repair. It may be of significance that these two areas of roof would have been obscured from the west by the frontons over Doors 2 & 3. Perhaps not surprisingly, both areas had either completely or partially collapsed.

The method of roof construction is typical of the Preah Khan temple complex, with corbelled roof slabs rising from a stone cornice to a capstone surmounted by a ridgepiece (Plate 25 & Fig 6). Rebated joints between roof slabs slope downwards from the centre to provide a rainwater run off between slabs. Where the roof extended over an interior dividing wall bonding stones are included over the wall to carry the roof and a reduced form of fronton between roof sections (Plate 26). The stone corbels forming the vaults have extremely smooth horizontal faces and were probably rubbed using an abrasive to produce a remarkably tight dry bed.

A very careful examination of the roof showed that, whilst it had the appearance of being constructed in fairly regular courses of stone, each stone had been individually prepared and laid in such a way that it would be very difficult to replace a stone in any position other than its original.

Generally speaking in Preah Khan floor levels, threshold levels, window levels, and roof levels all fall away from the central shrine on the north-south, east-west axis accentuating the shrine as the highest point in the temple complex. This pattern appears to apply also to the Vishnu complex. The threshold and window levels certainly fall away north of the central passage although as far as can be determined from the surviving structure, the roof level remains consistent. South of the central passage there is also an attempt to achieve the same desired effect but the levels of the last window cill and the roof above it are higher rather than lower.
The form of the roof at the crossing points immediately behind the north and south porches was also studied in detail and compared with evidence elsewhere in the temple complex. It is now clear that the crossing points did not carry towers, as had previously been suggested, but were simply completed by a large capstone surmounted by a cruciform ridge piece. Two parts of a capstone were salvaged from the south end of the west passage as well as some interlocking ridge or crest pieces. The capstone measures 190cms square and is 34 cms deep and carries a shallow groove 32 cms wide, in two directions to locate the decorated ridge piece. The capstone from the south-east corner of the Vishnu complex survives complete (Plate 27). A number of fragments of ridge pieces can be seen in situ and in store. One piece is of particular significance as it was clearly used to form the junction of two ridge pieces at right angles to one another on the capstone at the south end of the west passage (Plate 28).

The Central Tower

No attempt has yet been made to identify and reconstruct parts of the central tower, although it is clear from an initial inspection of the sculptural stones in store that one formerly existed. It appears that the towers of Preah Khan followed a typical format and it would be possible, in theory, to reconstruct the tower following existing extant examples such as the surviving example on the Dharmasala.

By a process of elimination of those stones which belong elsewhere on the west end of the Vishnu Temple Complex, it might be possible to isolate those which belong to the tower, and attempt a reconstruction drawing.
ARCHAEOLOGICAL INVESTIGATIONS

During the thorough study of the structures and the building elements of the Vishnu Temple Complex, several interesting details emerged concerning the chronology of construction and methodology.

It has already been noted that the central passage and the boundary walls were additions to the complex, and that the level of the two yards to the west had been raised. The use of laterite stone in the roof might indicate a repair. Apart from these exceptions, no further evidence was found during the survey process to indicate that the complex is the result of a phased program of construction. However, two anomalies were noted, both to the south of the central passage.

As far as can be determined from the in situ remains, the roof level is neither horizontal to the south of the central passage, as is the case to the north, nor does the it decrease in height, as might be expected. The completed surround of Door 3 partly covers the window to the south which is incomplete as is the carved decoration on the wall. On balance this evidence is considered not to indicate phases of construction but inconsistencies, errors and changes of plan, during a single building program.
CONCLUSION

The method employed for disengaging and recording the two stone heaps in Yards A & B was adequate for the process of analysing this material and in particular in dealing with decorative features, such as the frontons. However, for components where the original location of individual stones is much less obvious it is essential to study their existing location and to analyse whether there is a relative position between the stone’s original position and its present fallen state. Should this be the case, as is likely to be the case with roof slabs, then a more rigorous approach to recording is desirable until such time as the workforce is more familiar with the material.

The straight sections of roof will be difficult to reconstruct from stone heaps, simply because they lack the detailed decoration present on the frontons. However, there is evidence for coursing in the stone slabs and this together with rebating and minimal decoration will assist, particularly where approximate locations are known from collapsed positions.

The reconstruction of towers from collapsed masonry is an activity yet to be considered and will require careful study. The reconstruction of the Vishnu Temple complex towers are not a priority and it is unlikely that they will ever be reconstructed other than as an academic exercise by surveys and drawings.

Following the studies made in Field Campaign 1 it has been demonstrated that authentic reconstruction is possible with certain elements of the structure, such as door surrounds and frontons, but in these cases an exhaustive search is still necessary to find all the pieces before re-assembly can begin. Decisions will be required on how missing or severely damaged pieces should be replaced. In the case of the Vishnu Temple Complex roof it might be quite legitimate to use precast concrete slab replacements for the blocks that cannot be identified or are too badly broken for re-use.
RECOMMENDATIONS

Consideration is being given to the proposals made in *Report III* to repair, conserve and partially reconstruct the western wing of the Vishnu Temple Complex.

If a decision is made to proceed with this work then I suggest that it will be necessary, first, to complete the disengagement of the collapsed masonry within the passages and the areas to the north, east and south of it. Components of the door surrounds and frontons on the west elevation (Doors 1-4), which have yet to be identified, are most likely to be found amongst the stoned material in Yards A and B. Roof slabs, and pieces of the lesser frontons between roof sections are most likely to be found within the passages and porches, whilst stones from the tower are likely to be widely scattered.

As regards the extent of reconstruction perhaps serious consideration should initially be given to dealing with the surviving sections of the roof to provide complete cover between the central tower and the north and south porches. A major task here will be dealing with a repair which is not a natural end to the roof. This will be a re-occurring problem not only at Preah Khan but in the whole Angkor complex and needs to be addressed. One possibility would be to terminate reconstruction at the lesser frontons between roof sections which usually occur over interior dividing walls.

In the areas where laterite stone had previously been used it is recommended that consideration be given to the use of modern replacements or precast slabs to replace those that are broken or beyond recognition and repair.
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Preah Khan, Angkor
VISHNU TEMPLE COMPLEX (WEST)
Plan of West End

Fig. 3 Plan of the west end of the complex, showing the location of elevation drawings, sections and scaled photographs.
(Based on a survey by Var Morin & Lek Sareth).

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Preah Khan, Angkor
VISHNU TEMPLE COMPLEX (WEST)
West Elevation - AA

Fig. 4 Record elevation drawing and sections AA (Based on surveys by Cheam Phally & Lek Sereth). (For a scaled photograph see Fig.9).

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Preah Khan, Angkor

VISHNU TEMPLE COMPLEX (WEST)

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(For a scaled photograph see Fig. 11).

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Preah Khan, Angkor
VISHNU TEMPLE COMPLEX (WEST)
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VISHNU TEMPLE COMPLEX (WEST)

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VISHNU TEMPLE COMPLEX
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Preah Khan, Angkor
VISHNU TEMPLE COMPLEX (WEST)
Photograph - FF

Fig. 9 Scaled photograph of elevation FF.

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Fig. 10 Scaled photograph of elevation GG.

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VISHNU TEMPLE COMPLEX (WEST)
Photograph - HH

Fig. 11 Scaled photograph of elevation HH.

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VISHNU TEMPLE COMPLEX
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Preah Khan, Angkor
VISHNU TEMPLE COMPLEX (WEST)
Yard A - Door & Fronton 1
Fig. 14 Yard A — showing the stored locations of stones belonging to Door and Fronton 1.

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Preah Khan, Angkor
VISHNU TEMPLE COMPLEX (WEST)
Door & Fronton 2

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VISHNU TEMPLE COMPLEX (WEST)
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Based on drawings by Chhun Soma, Cheam Phally, and Var Morin.

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VISHNU TEMPLE COMPLEX (WEST)

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VISHNU TEMPLE COMPLEX (WEST)
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THE CONSERVATION PRACTICE
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Preah Khan, Angkor
THE DHARMASALA
A Survey Report

Prepared for the World Monuments Fund

JULY 1993
Preah Khan, Angkor
THE DHARMASALA

A Survey Report

Prepared for the World Monuments Fund
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by Fred Aldsworth BA FSA MIFA
The Conservation Practice International

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FOREWORD

This report was prepared as part of the World Monuments Fund Field Campaign I for the Buddhist Monastic Complex of Preah Khan (November 1992 to April 1993) at Angkor, Cambodia.

It represents one of three surveyed areas of Preah Khan which was documented and analyzed as a basis for conservation action in future phases of work. This report is to read in conjunction with Report IV: Preah Khan Project Mobilization, in which the enclosed information and conclusions are summarized.

The conservation recommendations portion of this report will be treated in a separate document at the time when the structure is repaired and conserved.
INTRODUCTION

The structure depicted in this report is located on the eastern side of Preah Khan along the principal entrance route between the outer enclosure wall and the eastern gopura about midway between the two gopura. (Fig 1).

It was identified by J. Boisselier (1966) as the dharmasala, or rest house for pilgrims visiting the temple complex, but more recently Professor Claude Jacques has suggested that it might be a shrine referred to in documentary sources, wherein the sacred flame of the temple was kept. Since there is some doubt as to its original function, Boisselier's published identification is used throughout this report.

The trees and undergrowth around the structure were removed at the beginning of World Monuments Fund’s Field Campaign I (November 1992 to April 1993) and the structure was surveyed and photographed in March 1993 (Plates 1 - 5, Record photographs S1 - S6, N1 - N5, E1 - E3 & W1 - W3, and Figs. 2 & 3).

In view of the unstable structural condition of the building, it was decided that a set of accurate measurements would be essential to establish the deformation of the structure over the centuries. Therefore, using a theodolite, a survey framework was laid out around and within the structure. A plan and three sections have been prepared at 1:50 (Figs 2 & 3) and controlled 35mm photography has been used to provide record photographs from which scaled enlargements at 1:20 have been produced to provide the basis for specifying repairs and, if necessary, to number stones for dismantling and re-erection.
DESCRIPTION

In the 1950's the Dharmasala was located and identified by members of the Ecole Francaise d'Extreme Orient. However, subsequently the structure was lost to the inpenetrable jungle. It was only in December 1992 that the WMF workforce rediscovered the structure and the dense vegetation was cleared from around it.

The pavilion-like Dharmasala, built in a similar fashion to all other stone structures in Preah Khan, is located on the northern side of the formal access between the outer enclosure wall and the grandiose principal east gopura leading into the temple complex. It is surmised that it formed part of the royal complex consisting of the king’s palace in the north eastern part of the Preah Khan compound (Fig 1). Like the other temple structures, the Dharmasala is built of large blocks of stone that are laid dry. It has a simple corbelled and vaulted roof with a tower projecting above the roof level at the western end.

The structure, although in a seriously unstable condition, is almost complete, and undamaged apart from a small number of fallen or broken stones (Plates 1 - 5 & record photographs). It is rectangular in plan, measures a little over 14 meters in length and 6 meters in width on an east-west orientation, and comprises three definable sections - a central rectangular space measuring 7.0 meters by 4.5 meters internally, a smaller space at the east end measuring 2.3 meters by 3.5 meters internally, and a space at the west end under the tower measuring 2.7 meters by 5.3 meters internally. The roof rises to a height of 6.2 meters externally at the east end, and 6.6 meters in the center, whilst the tower is about 11.0 meters high.

There are doorways in the east and west walls, five windows at ground level in the south wall, and a series of stone settings for effigies in the west end under the tower. Mirroring the southfacing windows are a similar set of false windows in the north wall at ground level which are only visible on the external elevation. At a higher, clerestory, level in the south wall are two further sets of three openings, thought to be the vents to allow the smoke from the sacred flame to escape. There appears to be an original opening for ventilation in the capstone of the tower.

The walls are constructed on a low plinth or platform of laterite with minimal foundations. It is probable that the laterite was quarried from the pit to the north of the structure. The walls are constructed in stone and laid dry, judging by the construction, and there is no evidence to suggest that the building was constructed in phases.

There are several decorated stones lying on the ground around the building which clearly derive from it. Just outside the south jamb of the east door there is a socket cut in the plinth, possibly to carry a standing stone.
STRUCTURAL ASSESSMENT

A lack of proper foundations and inadequacies in the original structural bonding of the stonework have led to lateral movement in the side walls and roof and dislocation of substantial sections of wall at the east and west ends.

As with most of the Preah Khan roofs the corbelling method of construction provides little or no lateral constraint, but here the problem is exacerbated by the addition of a clerestory in an uninterrupted section of roof which measures 7 meters in length. In the middle of the central space in the building, the ridge piece and upper two courses have remained in their original position but the corbel stones beneath them on the south slope of the roof have slid northwards and dropped. The roof sections have moved a total of 50 cms (Fig 3 Section BB). As a result of the defective foundations along the north wall, it is tilting about 20 cms inwards.

The same effects can be seen in the roof at the eastern end where the movement is again seen to be greater on the north side than on the south (Fig 3 Section CC). The substantial weight of the walls and roof on what appear to be an inadequate foundations are undoubtably contributory causes to the problems.

In general, the absence of adequate bonding in the coursed stonework, has resulted in considerable displacement of the stonework along the walls. In particular, the whole of the east wall has separated from the main structure, perhaps by as much as 25 cms at ridge level (Record photograph S1 & N1). At the west end the same problem is evident to the south of the west door (Record photograph W2).
CONCLUSIONS

It is remarkable that this structure is still standing and it appears that over the centuries it has been subjected to only minimal repairs. Although there has been major structural movement in the building it appears that the lateral movement in the side walls has halted. However, this is almost certainly not the case with the end walls where the structural stability of the masonry should be regarded as critical. Whereas scientific structural analysis is being undertaken to establish the present condition of the structure, it is likely that inadequate foundations and a lack of bonding between stones are major contributory factors to the failures in this structure.
RECOMMENDATIONS

The condition and nature of the foundations of the building should, perhaps, be ascertained by means of a trial excavation through the line of the north wall, and action taken accordingly to counteract any further lateral movement in the building.

The east wall needs to be tied back into the main body of the building. One possible course of action might be dismantling and re-erection if an alternative cannot be found.

Action needs to be undertaken at the west end to arrest further movement.

Decorated stones lying around the building need to be collected together, identified and stored for potential replacement.
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THE DHARMASALA

Plate 1 The Dharmsala from the South-West.
Plate 2 The Dharmasala, west end and tower.
Plate 3 The technique for producing scaled photographs.
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Photograph Number W3
Fig. 1 Plan of Preah Khan (after J Boisselier 1966).
Preah Khan, Angkor

THE DHARMASĀLĀ

Plan