

Chapter 1: Research and Restoration Project of the Western Prasat Top Site

Section 1. Process of the Reconstruction

In 2001, the Nara National Research Institute for Cultural Properties (NABUNKEN) held discussions with the APSARA regarding the selection of a site for a new project. In order to select a site, we had a series of discussions with Prof. Ang Choulean, then Director of APSARA's Heritage Department, and decided on Western Prasat Top (Fig. 1). It was chosen as the target site because it had been in existence for a relatively long time and has a strong Buddhist element among the sites of Angkor Thom.

The Western Prasat Top site is located about 500m west of the Bayon (at the centre of Angkor Thom), and about 50m south of the east-west road that continues to the West Gate of Angkor Thom. Its existence was known but detailed investigation and research had not been done. We started the survey based on a wide range of time covering the Bayon period to the post-Angkor period. In August 2003, the first phase of excavation began and, in 2010, we compiled the results of our research and published reports in Japanese and English (NABUNKEN 2011,2012).

On 26 May 2008, about 40 pieces of stone fell from the east gable of the central sanctuary. It is thought that these stones were destabilised by the felling of trees, which had been growing on the top of the central sanctuary, the year before. The collapse of the stones caused



Fig. 1 Western Prasat Top before the restoration (view from the southeast)

further instability to the entire upper part of the central sanctuary.

We decided to start with the north and south sanctuaries, which are smaller than the central sanctuary. Therefore, it was decided to dismantle and restore the southern sanctuary in order to gain familiarity with the various methods and procedures, and then proceed to dismantle and restore the north and central sanctuaries in that order. A new memorandum of understanding was signed between APSARA, the Tokyo National Research Institute for Cultural Properties and the Nara National Research Institute for Cultural Properties on 14 December 2011. On 8 March 2012 a ceremony was held at the Western Prasat Top site to mark the start of restoration, with dismantling work commencing on 9 March 2012.

The southern sanctuary consists of the building frame, the upper platform and the lower platform (Fig.2). Most of the roof was lost and the body was tilted 19 degrees to the south. The dismantling of the structure was carried out by a process of drawing plans, numbering the stones, and dismantling one layer at a time, starting from the top. The top surface of the platform was made of sandstone paving stones, but it had sunk more than 20cm, from the centre to the south, due to unequal settlement of the associated fill. When the paving stone layer was dismantled, it was found that the foundation soil was coarse sand. When this soil was excavated, the southern staircase of an earlier platform of the central sanctuary was found in the lower platform of the southern sanctuary. After the dismantling of the lowest level of the platform, the trace of the underground foundation was confirmed from the south side of the lower platform and also the rows of stone blocks were found in the center of the foundation. From October 2014, we started to reconstruct the foundation under the platform and on 23 September 2015, we successfully completed the research and restoration of the southern sanctuary.



Fig. 2 South sanctuary before the reconstruction (left side), after the reconstruction(right side) (view from the east)

In February 2016 we started the dismantling of the northern sanctuary (Fig.3). By March we finished the dismantling of the structure and the survey of the scattered stones north of the northern sanctuary. The whole structure of the northern sanctuary had inclined to the north and the collapse of the building frame was more severe than that of the southern sanctuary. After the dismantling of the building frame was completed, we started to investigate the platform of the sanctuary.

In order to know the condition of the foundation soil, we opened a trench aligned north-to-south and the result suggested the presence of some brickwork below the lower platform. After the excavation of the brick work, it is revealed that the brickwork was an underground brick chamber that measured 2m x 2m and 1.5m deep. In this underground brick chamber, metal objects such as gold, crystal, glass beads, and burnt bone fragments were excavated. Traces of heat exposure were also found on the surface of the brick chamber and artifacts, and a number of carbon samples were also recovered.

After conducting a detailed survey of the underground brick chamber, it was backfilled with the original reddishbrown soil to preserve the remain. By the reassembly of the building frame of the northern sanctuary, it was revealed that the standing Buddha image was curved on the all three false doors except the east front. The entire body of the standing Buddha on the north face, which had not been recorded in the old archives was heavily damaged and collapsed—its existence could not even be presumed. However, the image was reconstructed by examining the scattered stones in detail.

(1) NABUNKEN, 2011, *Western Prasat Top Site Survey Report, Scientific Report of the Nara National Research Institute for Cultural Properties 88: Report on the Joint Research for the Protection of the Angkor Historic Site*, in Japanese.

(2) NABUNKEN, 2012, *Western Prasat Top Site Survey Report: Report on the Joint Research for the Protection of the Angkor Historic Site*.



Fig. 3 North sanctuary before the reconstruction (left side), after the reconstruction(right side) (view from the east)

Section 2. Reconstruction of the Central Sanctuary

The dismantling survey of the central sanctuary began in January 2018. As with the previous southern and northern sanctuaries, the dismantling was carried out in order from the top. After dismantled the building frame, a survey was carried out on the upper surface of the upper platform. As a result of excavation, it was found that there is a vertical pit which was looted in the modern period. The pits were backfilled with sandstone, laterite, and consolidated soil to withstand the upper load.

The restoration of the platform of the central sanctuary had a number of challenges. The most important of these was the theory put forward by Henri Marchal in the first half of the 20th century that there was another laterite platform inside the outer sandstone exterior platform (Marchal 1918, 1925). In fact, an architectural survey confirmed the existence of a lat-



Fig. 4 Central sanctuary before reconstruction (view from the east)



Fig. 5 Central sanctuary before reconstruction (view from the northeast)

erite platform inside the sandstone exterior of the central sanctuary platform. For this reason, we decided to dismantle the sandstone exterior one quarter at a time and investigate the exposed laterite platform.

As a result, it was found that the laterite platform, like the sandstone platform of the exterior, was composed of three tiers: upper platform, middle platform and lower platform. In order to preserve the originality of the laterite platform without dismantling it, a 3D measuring survey and photography of the laterite platform were carried out. Some repairs were performed before the reassembly of the sandstone exterior. After the excavation of the Buddhist terrace, we reconstructed the Buddhist pedestal. Then, the reassembly of the lower platform of the central sanctuary was also carried out.

Reassembly of the central sanctuary

The reassembly of the platform of the central sanctuary was carried out in order from the sandstone exterior of the lower platform to the middle and upper platform (Figs. 7 and 8). As the structure differs between the opening and the lintel above it, the work was divided into two parts: the upper part of the building frame and the lower part. In the reconstruction of the lower part of the building frame from the 25th to the 16th layer, the door frames for the openings on the east, west, south, north and south sides were assembled first, and then the walls were built up. Those parts that could not be reused due to damage or deterioration were joined or replaced with new sandstone blocks.

The door frame, colonnette and lintel of the opening are made of red sandstone, unlike the grey sandstone used in other parts of the building. Some of the lintels and colonnettes, together with other pediments and other materials, were stored at the Angkor Conservation Office in Siem Reap. After consultation with the Ministry of Culture and Arts, it was decided to return these decorative stones to the site, and in October 2020, they were transferred from the Angkor Conservation Office to the site, where they were repaired and joined for reconstruction. In April 2021, the installation of lintels over the openings began, and work began on the reconstruction of the upper part of the building frame.



Fig. 6 Central sanctuary before reconstruction (view from the southeast)



Fig. 7 Central sanctuary before reconstruction (view from the west)

Reassembly of the upper part of the building frame

The upper part of the frame is from layer 15 to layer 8, which is also where the first pediment is located (Fig. 11). It is placed above the openings on the east, west, north and south faces. The second pediment appears in layer 7 to layer 1 of the roof. At the start of the survey, many of the stones had already collapsed and there were many missing elements. These collapsed stones were removed during clearance works by the French at the beginning of the 20th century, and were placed in a pile on the site. In order to reconstruct the sanctuary, it was necessary to find the stone blocks corresponding to the upper part of the central sanctuary from among more than a thousand fallen stones. For this reason, when temporarily reassembling the stones on a concrete base, we had to fit them one by one and identify the missing parts (Fig. 12). The parts of the pediment of the central sanctuary which were stored in the Angkor Conservation Office included many of the core parts of the pediment, such as the Buddha image. As some of the pediments were recorded in old photographs by EFEO, we reconstructed the pediments by referring to the drawings and old photographs of the upper part of the structure before dismantling.



Fig. 8 Reconstruction situation of Central sanctuary (view from the northwest)



Fig. 9 Reconstruction situation of Central sanctuary (view from the east)

Details of the first pediments

East pediment (Fig.13)

The first pediment, like other pediments found at Angkor, is composed of a carved image of the subject within a niche divided by a band of decoration. At each end of the pediment, there is a relief of five heads of Naga wearing crown-like ornaments, which is the same on all four sides of the first pediment. The east pediment is the only one that can be seen in its original position in old photographs taken by EFEO (Fig. 10). In the niche of the pediment, a seated Buddha image in the *māravijaya* is shown. Above the head of the seated Buddha is a representation of a leaf of the Bodhi tree, with the leaf pattern continuing to the shoulder of the seated Buddha. The stone materials for the head, body and base of the seated Buddha image have not been confirmed at present.



Fig. 10 Old archive of the central sanctuary (view from the north east) (EFEO_CAM01489)



Fig. 11 Central sanctuary before dismantlement (view from the northeast)

West pediment (Fig.14)

The pediment on the west face could not be seen in old photographs, but we were able to reconstruct it almost completely by finding the relevant parts among the scattered stones. Inside the niche is a seated Buddha image in *māravijaya*, but without the Bodhi tree seen on this pediment. The face is obscured in places by wear and tear, but the eyes are long and slanted, and the eyebrows are slightly arched. The pedestal on which the seated Buddha sits is composed of three layers of patterned bands. The upper layer is decorated with a flower design, the middle layer with a double-petalled lotus design, the lower layer with a lotus bud-shaped design, and in the centre of the pedestal is a square decoration with a floral motif.

South pediment (Fig.15)

The south pediment was also not recorded in the old photographs. For the legs of the seated Buddha image, we have been able to find the appropriate stone material, but unfortunately we have not been able to find any stone material above the body of the seated Buddha. From the expressions on the legs, it can be assumed that the seated Buddha was represented in *māravijaya*, as on the other sides. The upper part of the seated Buddha image is carved with leaves of the Bodhi tree. The pedestal is decorated with upwards lotus petals in the upper part and downwards lotus petals in the lower part, and the central part of the pedestal is adorned with floral designs in the form of an inverted triangle.

North pediment (Fig.16)

Although the north face could not be confirmed by old photographs, it could be almost completely reconstructed except for the head of the seated Buddha image. The seated Buddha image sits on a pedestal in *māravijaya*. As in the west face, there is no representation of a bodhi tree on the upper part of the seated Buddha image. The pedestal has a similar structure to that of the west face, with three layers of patterned bands: a flower patterned band on the upper layer, a double-petalled lotus band on the middle layer, and a lotus bud band on the lower layer. There is no representation of fabric or ornamentation as seen on the western pediment.



Fig. 12 Trial reassembly of the upper part of the building frame

As there are a number of missing elements in the first pediment, we will continue to search for the appropriate stone material and continue with the temporary assembly of the upper part of the body.



Fig. 13 Trial reassembly of the first east pediment



Fig. 14 Trial reassembly of the first west pediment



Fig. 15 Trial reassembly of the first south pediment



Fig. 16 Trial reassembly of the first north pediment