

Preservation of Vat Phou monuments: results and perspectives

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The ‘Ruins of Wat Phu’ were presented to readers of the *Tour du Monde* by Francis Garnier in 1871. Garnier was a member of the Mekong Exploration Commission which went up river, stopping for three months in Champasak between September and December 1866. His brief description gives few details of the monuments, however, since they were heavily overgrown with vegetation as can be seen in the drawings of Louis Delaporte, another member of the Expedition.

Thirty years later, in 1902, two articles appeared in the *Bulletin de l’École française d’Extrême-Orient*: one concerning the K. 367 inscription translated by August Barth and the other on the site and temple by Louis Finot. Vat Phou also appears, with a simple map, in the inventory of Khmer monuments published by Etienne Aymonier in 1901, and then again in 1911 by Etienne Lunet de Lajonquière under inventory number IK 339.

The very first architectural description, with plans, photographs and monument details was published only in 1914 by Henri Parmentier, who revised it in 1939 with some additions.

Also in the *BEFEO*, George Cœdès published an important article in 1956 concerning the K. 365 inscription, which was found on the banks of the Mekong and can today be seen in the Vat Phou Museum. In this article he confirmed that the inscription dated to the 5th Century and its importance in the history of the genesis of the Khmer Empire. In the appendix to the article he printed an aerial photograph sent to him by Charles Archambault, who was then a member of the EFEO residing in Champasak, in which the double enclosure of an Ancient City on the banks of the Mekong, where the inscription was found, can be seen.

It should be noted that in the middle of the 20th century, the Vat Phou monuments, although the object of several scientific studies, had been neither maintained nor preserved. This despite the recommendations of Louis Finot who wrote in 1902 (p. 245): “Even though Vat Phou has been subject to the ravages of time, the constructions are solid and have resisted well. It is not impossible and to be desired that intelligent care restore the imposing stature of this noble ruin.” George Cœdès wrote (1956: 220) concerning the Ancient City: “Whatever the case may be, there is in this place and without a doubt, an archaeological site deserving of prospection and excavation.”

In 1969, Jacques Dumarçay gave the EFEO a *Preliminary Study for the Reconstruction of Vat Phou*, written following a mission to the site, although this internal memo was ignored. Twenty years later several technical missions, financed by UNESCO at the request of the Lao authorities, made a detailed inventory of the state of the structures and proposed preservation measures: Bruno Dagens in 1986 and 1988, Dumarçay in 1992, although these proposals were not implemented due to a lack of funds. Jacques Dumarçay recommended the complete anastylosis of the buildings, terraces and access stairways, along with a general draining of the site to take place over six years for a budget then estimated at 4.5 million dollars.

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Prior to any preservation work, an important series of prospections and excavations began in 1991, funded by the French government in the framework of the PRAL (Projet de recherche en archéologie lao) under the direction of Marielle Santoni of the CNRS and Viengkeo Souksavatdy of the Archaeology and Museum Department. From 1991 to 1995, the first digs uncovered structures around the upper temple and the device which captured the sacred water from the perennial source at the foot of the cliff and brought it to permanently asperse the *liṅga* in the centre of the cella. In the Ancient City, several pre-Angkorian structures were also excavated from 1993 to 1998 (Santoni and Souksavatdy 1996; Santoni and Hawixbrock 1998). With Italian financial support, the Lericci Foundation also joined the project to establish an archaeological cartography of the site from the Ancient City on the banks of the Mekong to the temple on the mountain, and carried out a systematic geophysical prospection campaign under the direction of Mauro Cucarzi and Patrizia Zolese. The French and Italian specialists worked closely with Lao staff, thus training the young local archaeologists, architects and engineers who today lead the archaeological and heritage services of the Lao Ministry of Information, Culture and Tourism.

In February 1997, teams were on site. The UNESCO regional offices in Bangkok organised a coordination and training workshop in Champasak, where I was requested to produce a new report on monument preservation (Pichard 1997): I then proposed a step by step approach to implement partial interventions on one structure or sector, with financial and technical support from donating nations in coordination with the empowerment of the local site surveillance and maintenance staff. The newly created Inter-Ministerial National Coordination Committee for the Protection of Vat Phou – Champasak (NIMCC) defined priorities and took control of the operations. As it was obvious that this new report was not enough to stimulate the local staff who had seen experts and studies come and go for years



fig. 1: North quadrangle, 1997. Shoring up of a dangerously cracked angle in the main gallery

with no result, it was decided to proceed immediately with the shoring up of some especially unstable structures [fig. 1]: it was above all necessary to show by example that it was high time to proceed from theory to practice.

At the same time UNESCO, the Leric Foundation and the Lao authorities wrote the Heritage and Development Management Plan needed to present Vat Phou – Champasak to the World Heritage Committee, which ratified its official nomination in 2001. The now better motivated local staff improved the maintenance of the site especially controlling vegetation which has a tendency to invade the structures after every monsoon.

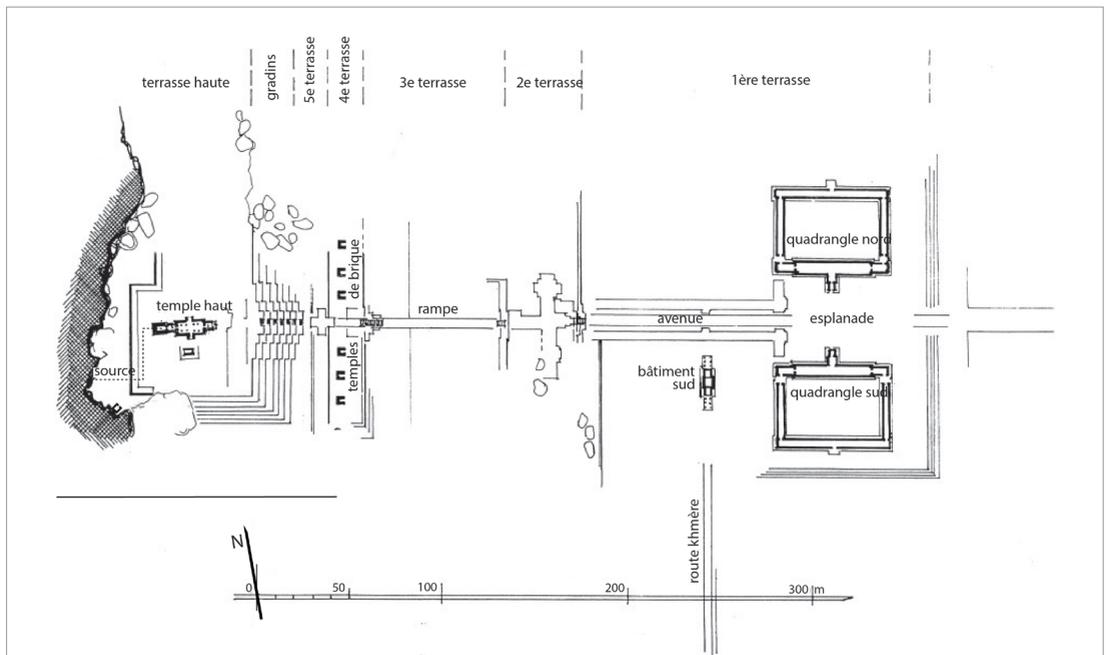


fig. 2: Vat Phou – Plan of monuments

The condition of the structures is mainly due to impregnation and erosion of the soil by rain water. The mountain overlooking the site creates an important watershed, the runoff of which floods the upper terrace where the upper temple was built, before pouring down the slope upon which are built stairs and terraces. Over a height difference of 60 metres, this slope was built with earthworks supported by retaining walls [fig. 2]. Also, at an ancient although unknown date, an important rock fall above the northern part of the site modified the water path and led to the earthworks' deterioration [fig. 3]. At the request of the Leric Foundation, a hydrological study confirmed these observations and proposed technical solutions to deviate the flow of rainwater away from the most fragile sectors (Franzetti 1998). On the basis of these studies, Japan produced a three-point programme in 2002:

- The establishment of a drainage network, with an initial canal on the mountainside upstream of the site in order to deviate part of the torrent runoff at the southern limit of the site, completed by a dry drain between the foot of the cliff and the upper temple in order to collect water surplus before it can flood and soak the upper terrace;
- The construction of a site entrance building to welcome visitors with an exhibition hall, a sculpture showroom and offices;
- The supply of worksite equipment, such as cranes, metal scaffolding, small tools, topographic station and computer material, as well as training staff to use these tools.



fig. 3: Access ramp to the fourth terrace and supporting bleachers of the upper terrace, 1997. The well preserved bleachers of the southern side, to the left, contrast with those of the northern side which have been damaged by running water following an ancient rock slide. Under the frangipanes, the present and practically inaccessible stairway covers the original steps with recuperated stone

Work on the monumental complex

Preservation operations began in earnest in 2005. Under the direction of Patrizia Zolese, the flagstones of the access avenue were levelled and milestones were straightened on a length of 400 metres [fig. 4]. Since most of these had been broken, an Italian restorer, Paolo Pagnin set up a workshop to train a Lao team to assemble their fragments. During this campaign, scattered stones from an old eastern pediment landslide in the southern quadrangle were classified, identified and then reassembled on the ground. Although still small, these worksites trained the local staff to manipulate sandstone blocks, record documentation and use the available equipment: the following stages would be more ambitious.



fig. 4: The ceremonial road, as seen from the southwest in 2006, with reassembled and straightened milestones

In 2006 the Leric Foundation undertook the restoration of Nandin Hall, a small isolated building in the south of the site. This sandstone and laterite structure had come apart when its foundations weakened and the surrounding ground eroded [fig. 5]. Dismantling the walls and the foundation allowed them to reach the original level and stabilise the internal northern landfill [fig. 6]. Led by Mara Landoni and Phakhanxay Sikhaxay, the work is expected to continue on the other end of the building.



fig. 5: The southern building, known as Nandin Hall from the northeast, before work, 2006



fig. 6: The southern building in 2010: in the foreground, the northern portion is rebuilt and stabilised. In anticipation of the rainy season, a temporary roof protects the central area where drains have not yet been installed

A French project in the framework of the Priority Solidarity Fund (FSP) has been ongoing since 2007 under the direction of Laurent Delfour, a heritage architect, with the following objectives:

- Creating and developing a public institution, the Vat Phou – Champasak Management and Development Service (SAGV) of the Lao Ministry of Information and Culture;
- Training administrative, technical and scientific personnel; and
- Site development and economic valorisation.

These three measures have improved service and personnel skills, although they have lost some of their importance since September 2011 when site maintenance and tourist reception was handed over to a private firm.

The fourth part of the FSP project was to organise a field school to rebuild the south quadrangle entrance porch which was, like the one of the north quadrangle, blocked by stones which fell from above and made dangerous by unstable blocks of stone [fig. 7].

Its restoration began in 2008 and took four years. This allowed visitors to finally gain access to the main quadrangle gallery. Rigorous methodology was adopted for these two French and Italian reconstruction projects. The stone-by-stone inventory of monuments, level recordings and deformation analysis preceded the work in order to establish a damage diagnosis and lay out the operations in detail. The Lao personnel, be they architects, archaeologists, engineers, topographers or draftsmen, were involved from the very start which allowed them to gain solid training and a competent team is now in place. After shoring up unstable areas [fig. 8], data selection and recording of scattered stones and blocks taken from dismantled walls [fig. 9], led to assembly on the ground [fig. 10].

Some blocks were too fragmented and others could not be found and had to be replaced by new ones, which meant that stone cutters had to be trained. The dismantling of walls course by course uncovered the disrupted base, the strengthening of which allowed us to rebuild the walls. Two broken lintels were found, reassembled and replaced in their original spot under restored pediments [fig. 11]. The Archaeological Survey of India opened a worksite on the north quadrangle in 2010, funded by the Indian government. The rapid dismantling of the eastern and northern galleries was a cause of concern and confirmed the need for a controlling authority to coordinate projects and their implementation.



fig.7 : Entrance gate of the southern quadrangle, 2008. Fallen blocks obstruct the gate and the instability of superstructures makes this gallery off limits to the public



fig. 8 : North quadrangle, 2009. Supporting the entrance gate



fig. 9 : Sorting, cleaning and restoring of blocks in the southern quadrangle, 2010



fig. 10 : Southern quadrangle gate, 2010. Sorting and recording recuperated blocks from the ruins for an initial reassembly before rebuilding the pediment. Missing stones will be replaced by new ones



fig. 11 : Southern quadrangle, entrance gate rebuilt with its two pediments (2012)

These sectorial operations are only the first steps of the monument's global preservation. They should be followed by re-establishing aplomb lines and levels on terraces and stairs. The stairs which access the 4th terrace, for example, were covered with recuperated stones at an unknown date (fig. 3). Clearing these will uncover the original steps and moulded sides surmounted by a beautiful terrace and *nāga*-balustrade. The operation will restore its former nobility to this ascension to the upper temple, while making the climb easier for visitors.



fig. 12 : Eastern side of upper temple, 2008

The upper temple and terrace will be the subject of the last and most delicate worksite. The present state of the building, its original layout and the exceptional quality of its sculpture [fig. 12] require prudent and attentive care. The temple has been disrupted long ago by differential settlements [fig. 13], since it was built on a heterogeneous terrace made by landfill among solid points from the bedrock. The interior of the temple has, for example, subsided 30 cm in relation to the outside walls which has brought about the rupture of numerous blocks. Clearing off the terrace, dismantling the structure and consolidating the foundation will be made all the more complicated since access for materials and machines is difficult.

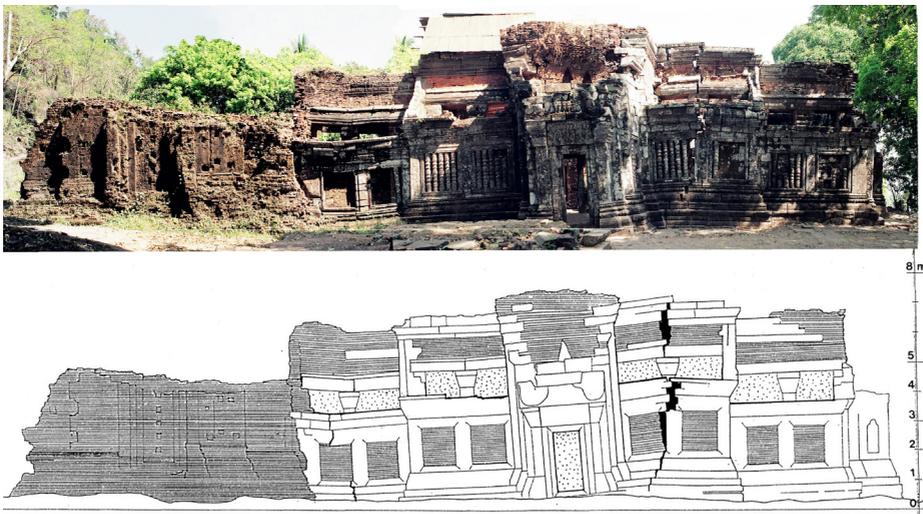


fig. 13 : Southern side of upper temple, present disorganised state due to foundation collapse.
Photographic editing and inventory of deformations

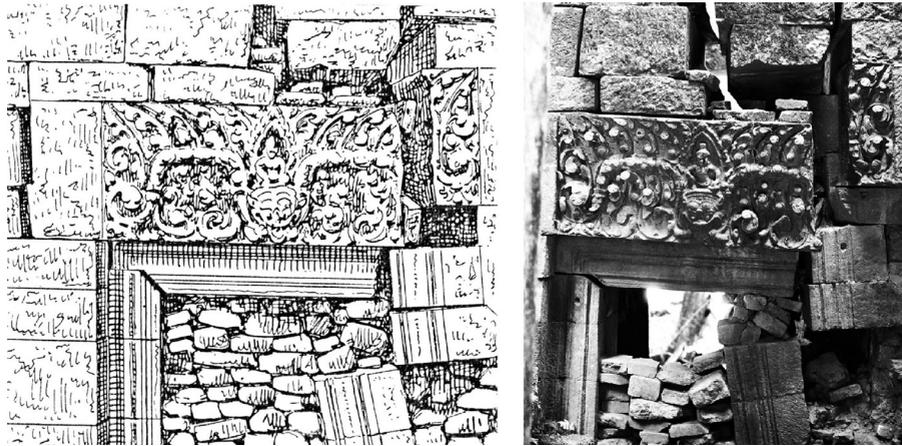


fig. 14 : Upper temple, interior, north-west angle: crumbling of the central portion in relation to the outer walls has led to a crack in the sculpted lintel. To the left, Parmentier's 1912 drawing. On the right, extend of differential settlement in 1997

The old photographs taken by Henri Parmentier in 1912 show that the monument has changed little in one century, with a few exceptions: disturbances in the upper temple have worsened [fig. 14] and the collapse of part of the lateral wall and its window have further destabilised the northern quadrangle porch. Trees which grew at that time on the walls and through the flagstones have since disappeared. On the other hand, frangipanis on either side of the stairs and ramps had not yet been planted [fig. 15]. Today they are part of the charm of the site (fig. 3) and losing them would be a shame, but they must be cut down for the stairs to be restored. They are also beginning to endanger the structure: one of them was blown down by typhoon Ketsana in September 2009, causing several stones from the 4th terrace to fall.



fig. 15 : Fourth terrace access in 1912 as seen from the south. The original stairs were covered with recuperated stone on which we can see that the present-day frangipanes had not yet been planted (Photo EFEO-Parmentier PARH00401)

Parmentier (1914, 197) wrote after his first visit to Vat Phou: “Most of the minor work would be neither costly nor difficult. Besides, Mr. Mahe promised, if the Government General gave its consent to make an effort to maintain this beautiful monument, to supply all necessary manpower to this end. I am sure his successor will be of the same spirit. Thanks to this cooperation, this remarkable ruin will be preserved: it will also make visiting it more pleasant for those in Indochina who are drawn to Angkor and Halong Bay and can complete their tour by going up the Mekong and seeing the unforgettable Khone Falls and the melancholic sight of the last vestiges of the splendour of Vieng-chan.”

Almost one century passed before those ‘minor works’ could be undertaken, although it is true that they are more ambitious today than those envisaged by Parmentier who could not imagine an anastylosis which had not yet even been experimented at Angkor. At least the development of tourism which he mentioned comes close to the programmes presently coordinated by authorities in Cambodia, Laos and Thailand.

Other monuments around the site

With a size of 380 km², the territory protected as a World Heritage Site is divided into more or less sensitive zones over which specific rules apply. The area includes several sites and monuments [fig. 16]: the Ancient City on the banks of the Mekong dating from the 5th to the 10th Centuries, the Khmer establishment from the 11th to the 13th Centuries, vestiges along the Vat Phou-Angkor Imperial Road, the Hong Nang Sida, Thao Tao and Tomo Temples, the presence of which was noted at the beginning of the 20th Century by Lajonquière and Parmentier, the sculpted boulders at Khan Mak Houk in the Mekong which are only visible when the water is low, the natural landscape comprising mountain and rural rice paddies, and finally 55 villages with nearly 30,000 habitations where wooden houses and Buddhist monasteries bear witness to a wonderful, yet endangered architectural tradition.



fig. 16 : Map of protected areas for the nomination of Vat Phou – Champasak as a World Heritage Site

In the Ancient City, excavations undertaken since 1991 by Marielle Santoni have uncovered the foundations of pre-Angkorian religious brick buildings and brought new inscriptions and sculpted stones to light. We hope to be able to pinpoint living quarters better in order to gain a greater understanding of the urban organisation of this space, closed in as it is by a double rampart.

The contemporary Khmer sector of the Vat Phou temple has been the subject of surface prospections which have allowed Patrizia Zolese to localise pottery making and housing sectors.

Hong Nang Sida is a classic Khmer temple, comprised of a central tower flanked by an *avant-corps* and preceded by a *mandapa* and an *antarāla*. These three *avant-corps* are accessible from a *cella* although they are enclosed on the outside by false doors, a layout reminiscent of such waystation temples as Krol Ko which dot the ancient Preah Khan road from Kompong Svay – from which the Vat Phou Road diverges. The temple was unfinished: only the central tower seems to have been entirely built, although it has fallen and is today no more than a pile of sandstone blocks [fig. 17], even though its walls have remained standing thanks to healthy foundations. Its state of ruin is probably due to invading vegetation, trees which have sprouted between the stones over the centuries and whose roots have grown and progressively weakened the edifice. On the *mandapa* and the tower's *avant-corps*, construction stopped at the walls before the pediments and vaults could be installed. The only partially executed sculpture is limited to the *mandapa* pillar tops, the cornice and the *avant-corps*' false doors, although some pediment fragments can be seen in the tower ruins.

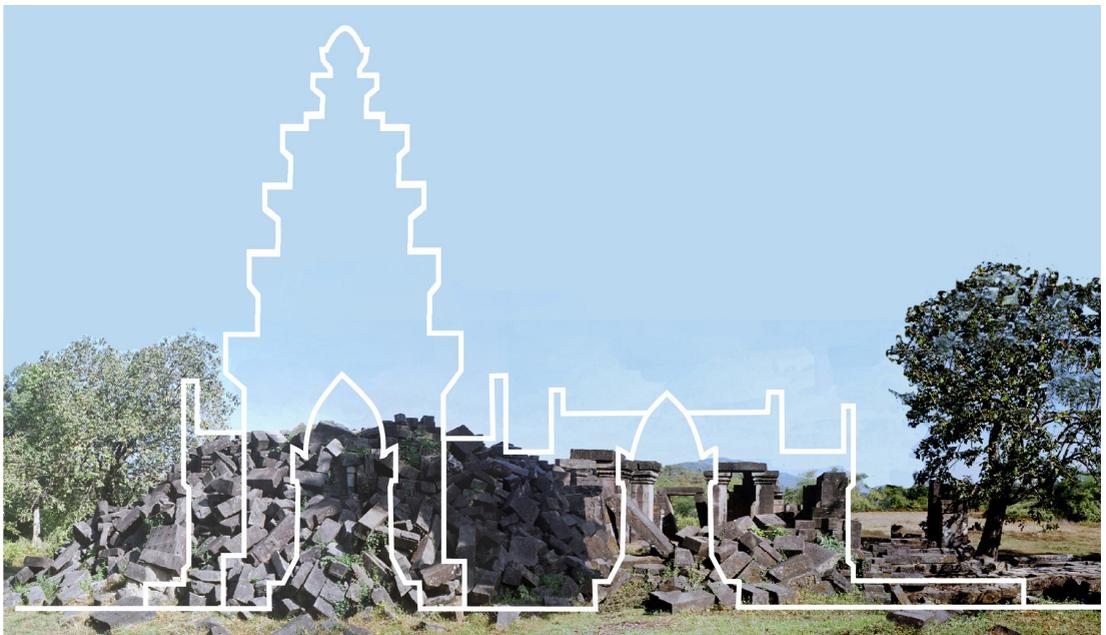


fig. 17 : Hong Nang Sida temple, south side and supposed contour of projected, although never finished, monument

Currently being studied by a Korean team, the anastylosis of this tower will prove to be very difficult since its stones, most of which are not sculpted, are cuboid and practically impossible to identify and reassemble. Even if we were able to rebuild it, the result would be of little interest since it would only be a brut mass of rough-hewn stones, flanked by an uncovered *avant-corps* and *mandapa*. In its present state, on the other hand, the tower is impressive by the size of its ruin, by the sight of its heavy sandstone blocks thrown pell-mell yet now stable; they can fall no further. While so many temples, be they vast or modest, have been progressively restored all throughout the ancient Angkorian Empire, we feel that some can remain as they stand to bear witness to the process of destruction. Hong Nang Sida would be a superb example of this after a bit of work to improve its presentation: straightening the *mandapa* walls and gate, and above all taking out the stones which fell inside the tower, the *avant-corps* and the *antarāla*, which would grant access to the interior of the monument [fig. 18].

Some minor changes could also improve the appearance and interest of the small Thao Tao Temple, an ancient hospital chapel from the 13th Century.

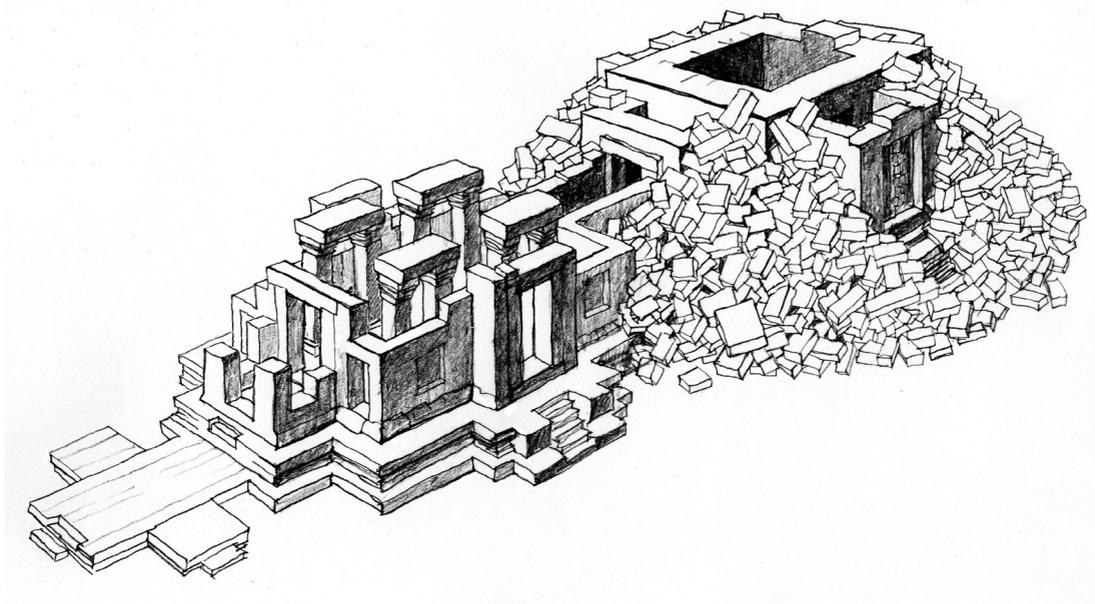


fig. 18 : Proposition for the presentation of Hong Nang Sida temple

Of the Tomo Temple, on the other bank of the Mekong, there only remain two entrance pavilions, part of an outer wall and a sandstone support which reinforced the shore. Some sculpted pieces, such as lintels and *mukhalinga*, were collected and are now in the Vat Phou Museum. An archaeological excavation would be welcome to understand better the layout of the tower(s) in the centre of the site since this is a question which has long troubled researchers.

Between Vat Phou and the Cambodian border, M. Santoni (1999) was able to identify several stage temples. We can only hope that one day they will be accessible and valorised by the creation of an archaeological itinerary on the ancient Khmer road from Angkor to Vat Phou, many portions of which are identifiable.

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