Banteay Chhmar, Cambodia

2011 Project Progress Report

March 2012
Executive Summary

One of the major developments during the 2011 Stage has been the greatly improved relationship with the Ministry of Culture and Fine Arts (MCFA), Department of Cultural Heritage. Under the direction of His Excellency Hab Touch, a concerted effort has been made by the MCFA to establish a greater collaboration both at the administrative level as well as in the field. The main focus for this collaboration will be defined in a revised and updated MOU that is being drafted and will be formally approved in January 2012.

Since its inception, the focus of the Banteay Chhmar Conservation Training Project has been on training at all levels from the professional staff through to the craftsmen. Most of the training has been executed on site - the most notable being the training of the stone conservators group which has been carried out by a local atelier, Southeast Asian Conservation and Restoration (SACRA). The team, trained by SACRA and funded by Friends of Khmer Culture is well established and there is communication still between the GHF Team and their trainers. The specific task of the stone conservation group has been the consolidation repair and conservation of the bas reliefs in the Southeast Sector of the East Enclosure Wall III.

Another productive collaboration has been with the Interdisciplinary Center for Scientific Computing (IWR), University of Heidelberg, whose program Scientific Computing for Cultural Heritage - under the direction of Dr Pheakdey Nguonphan, a staff member of GHF’s Banteay Chhmar Project - has been working on the development of a scientific research program to scan fallen structures using 3D digital scanning technology with the goal of being able to virtually reconstruct them. The focus of this program is the Face Tower 18N, which was threatening collapse and had to undergo a controlled dismantling. The Face Tower became an ideal subject for this scanning program, and two of GHF’s IT staff are undergoing training with Dr Pheakdey along with other members of the GHF team.

On the broader scale, the continued involvement of GHF consultants enables on site training of a general nature - administration, site management, risk assessment - as well as the development of the various plans and strategies with the MCFA, the local community and the Governors office. GHF supported, along with Friends of Khmer Culture and Heritage Watch, a Workshop to discuss the MCFA’s development of a Masterplan for Banteay Chhmar. The Banteay Chhmar GHF team has offered to develop a “vision” for Banteay Chhmar, taking into consideration the studies prepared on the hydrology of Banteay Chhmar and also the recent visit by John Hurd who is preparing a conservation plan for Banteay Chhmar. The GHF team will prepare the Masterplan in association with Belt Collins International, specialists in landscape architecture.
Above: Location map of Banteay Chhmar in Cambodia.
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Planning

Under the direction of John Hurd, GHF’s Senior Technical Advisor, the team is developing a Master Plan which will include:

- A Conservation Plan in two parts covering (1) the site, and (2) its cultural landscape and buffer zones.

- A Development Plan for which GHF will supply alternative "visions" in collaboration with Allen Kerton, a consultant Landscape Architect.

- A Tourism plan addressing on-site interpretation and didactics, visitor center, facilities, parking and other visitor needs, development for which GHF can assist in cooperation with the responsible ministries.

- A Site Management Plan, on which GHF can assist the MCFA’s Department of Heritage and other appropriate ministries. To that end, GHF has contributed to the funding of a two-day seminar in which representatives from various key stakeholders were called to discuss the development of this plan.

As the issue of water onsite and in the surrounding communities is critical to the plans outlined above, GHF has sponsored a Hydrological Research Program for a planned publication for UNESCO and a layperson’s guide to the hydrology of Banteay Chhmar.

Above: A schematic overlay of water flow in and around the Banteay Chhmar complex.
As part of the ongoing gathering of data, the following documentation is carried out on a regular basis:

- Every stage of operation is carefully recorded by measured surveys details which are digitized and printed as required. Detailed working drawings are also prepared for each stage of intervention all of which are kept in a database on site.

- Photographic records are kept of each and every stage of operations by all members of the GHF team. All photographs are catalogued and available on two hard disks which are regularly backed up. In addition, all events are recorded on video and this material is forwarded to GHF Palo Alto when possible.

- The 3D digital scanning project produces an extensive record of the stone blocks relating to the Face Tower 18N. These are kept in a separate database.

- Regular checking and measurement of the water table throughout the site. Data is recorded at least every two weeks when there is water in the ponds, tanks and other hydraulic features of the landscape.
The GHF Banteay Chhmar Project, which has an exceptionally well-established administration, has been praised by several GHF HQ staff and Board Members for its efficiency and sound management.

The plan has been to set up distinct levels of management and control as follows:

- **General Administration** under the direction of Kussum Sarun. This unit manages and administers the staff, the workforce and all of the equipment. It is also responsible for the accounts and disbursements.

- **Technical Management Group** monitored by Architect Han Ritha. Each member of the professional staff is designated specific responsibilities which are then coordinated by Ritha in discussion with Sarun.

- **The Workforce** is under the overall control of the Chef de Chantier who works closely with the professional staff and the Administration. The workforce, consisting of 45 workmen, is divided into groups of six or seven workers with an appointed leader, or “sous-chef.” These groups have defined special skills.
Conservation

A long term conservation plan is under development in collaboration with the MCFA (see above). The existing Memorandum of Understanding is to be revised to focus on more specific and tangible activities. In consultation with the MCFA and based on the excellent progress made to date, the revision will be finalized between the MCFA and GHF and come into force for a planned further four years from 1st January 2012 until 31st December 2015. Most of GHF’s activities are ongoing and can be summarized as follows:

- The conservation and structural repair of the Southeast sector of the East Gallery Enclosure Wall III, which also includes the platform on which the bas relief is set.

Above: Shifting stones on the Southeast Sector platform.
Above: Workers relaying the paving to the Southeast Sector platform.

Above: The crane being used on the bas relief wall, Southeast Sector.
The dismantling, recording and reconstruction of Face Tower 18N. This activity became urgent following the heavy storm (Ketsana) that caused extensive damage in Cambodia and Southeast Asia in the latter part of 2010.
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Above: Dismantling of Face Tower 18N under way.

Above: Discussing the reassembly of Face Tower 18N.
A significant discovery made during the course of the work on Face Tower 18N was of a gilded bronze pinnacle piece which would have topped the tower; it is the first example of such an artifact found by the Banteay Chhmar team.

Above: The pinnacle from Face Tower 18N, found in a crevice of the southwest wall.
• The research and development of a system using a 3D digital scanning program to record and simplify the reconstruction of Face Tower 18N. The end result will be to virtually reconstruct such structures as the Face Tower using specially designed and developed software.

• The undertaking of annual risk assessments of all the structures within the boundary of the moat and to carry out the temporary structural consolidation of any threatening structures.

Above: Scanning a stone block for virtual reconstruction.
Community Development

GHF continues to support the Community Based Tourism (CBT) Project and the following activities:

- **Guide Training Program.** Following a year of English language training, a group from the CBT has been identified for the guide training program. The group is made up of both male and female students, all of whom are from the District. Under the direction of the CBT coordinator who is hired by GHF, the guide trainees have been identified, and training will commence at the beginning of 2012.

- **Solid Waste Management.** The project initiated last year with the supply of a collection vehicle, trash bins etc., is on-going with an expansion plan under development. The areas where there is waste collection have certainly benefitted from this service and there is far less rubbish scattered by the community.

_Above: Traditional dance performance on the East Platform; the local community continues to use the site of Banteay Chhmar for cultural events._
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- **Upgrading of Homestays.** A request initiated by the CBT Committee for loans to the homestays has provided each with a $300 loan to upgrade the accommodation and especially the bathroom facilities. The funds have been distributed and the upgrading is under way.

*Above:* A map of the CBT Homestay locations around the Banteay Chhmar temple complex.
Partnerships

Linkage with the MCFA is through the Department of Cultural Heritage and is maintained by two of their staff that have been seconded to the GHF team.

Monthly meetings are planned with the MCFA either in Banteay Chhmar or in the MCFA offices in Phnom Penh. The MCFA receives regular monthly reports consisting of a summary of activities from each of the professional staff.

At the request of the MCFA, the GHF team has been asked to prepare a report for submission to the Prime Minister’s office, summarizing works completed to date as well as an outline of proposed activities. This report will be accompanied by a Powerpoint presentation, which the GHF team will make at the time when the report is presented.

GHF and the MCFA have discussed the revision of the current Memorandum of Understanding (MOU) to define more clearly the responsibilities and work plan of both parties and also to incorporate potential new activities that have arisen and that are not presently covered in the existing MOU.
Human Impact

One of the great success stories that can be told is the stunning achievements of Mr. Lo from a mere laborer to a master craftsman over a period of ten years working with me on World Monuments Projects in Angkor where he had the chance to earn a daily wage and begin to learn about the stones of Angkor. Under the guidance of WMF’s Architect Var Morin, Mr. Lo developed excellent skills in recognizing the location of stones by shape size and decoration and as a result can very quickly identify from a pile of fallen stones the location of pieces in the enormous jig-saw.

When Mr. Lo heard about GHF’s plan to start the new project in Banteay Chhmar, he asked if he could join the team. Knowing his quiet demeanor and exceptional skills, the newly formed GHF team was quick to respond and within weeks, Mr. Lo, who had hardly travelled beyond Angkor, was on his way to the remote site of Banteay Chhmar. A temple complex of over half a square kilometer in size best described a partial ruin buried in a jungle soon became Mr. Lo’s greatest challenge.

Having had only rudimentary schooling he set to work to figure out the structures; he spent weeks on end surveying and drawing; he quickly mastered the use of a digital camera and computer and has become the brains behind the piecing together the intricate fallen structures of Banteay Chhmar - the collapsed bas reliefs, the unique face towers and the complex layout of the overall complex.

Mr. Lo is in strong competition with another ‘hi-tech’ project - the 3D digital scanning of the fallen stones with the target of one day being able to digitally recreate the structure at the touch of a button. There is the hare and tortoise conundrum where the Team from Heidelberg is challenging Mr. Lo to see who is the fastest at recognizing and recording the stones. Mr. Lo, who still is streaks ahead in the race, is now being engaged by the technocrats to inform them how he does it. We hope the outcome of this interesting collaboration will speed up the scanning process and eventually produce a fast and accurate system for reassembly.

From a simple laborer, Mr. Lo has become GHF’s chef de chantier in the Banteay Chhmar Training Project, where he is equally at ease managing the local work force as with advising a bunch of academics from Heidelberg University. As a key member of the GHF team, he earns a decent salary and can afford now to give his children a good education and provide for his family.
About Global Heritage Fund

GHF’s mission is to save the Earth’s most significant and endangered cultural heritage sites in developing countries and regions through scientific excellence and community involvement. Founded in 2002 by Dr. Ian Hodder of Stanford University Archaeology Center and Jeff Morgan, GHF is the only non-profit international conservancy working exclusively in developing countries, where there are many threatened heritage sites but few financial and technical resources and little expertise to scientifically conserve them.

GHF goals include:

- Preserving structures and physical evidence of cultural heritage
- Advancing education about, and protection of, endangered heritage sites
- Advancing community involvement and benefits from preservation

Our work takes each selected heritage project through a process called Preservation by Design®, encompassing master planning, scientific conservation, community involvement and partnerships to provide enduring protection, management and financial support. GHF currently has 12 projects in 10 countries, including China, India, Guatemala, Colombia, Peru and Turkey.

While the nature and depth of each of our projects differ, one theme runs throughout: that the monuments, art and architecture of our ancestors can, if respected, bring lasting cultural, social and economic benefits to civil society. GHF’s mission is to help people realize the value of these assets in places where the sites are all too often neglected - or worse.

Holistic and effective preservation of cultural resources requires extreme care and planning to make preservation economically viable to local stakeholders. GHF goes beyond heritage conservation: We provide catalytic funding, site planning and technical training for local people to become capable stewards, giving them the opportunity to contribute more easily to their families and communities. GHF’s projects also have significance and benefits that surpass their primary conservation and development objectives as the monuments that we select are rich symbols of national identity and patrimony.

For more information on GHF’s mission and projects, see:

www.globalheritagefund.org

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