The Conservation of Monumental Archaeological Sites in Southeast Asia: Management, Planning and Educational Needs

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Introduction:

Typically and historically the conservation of monuments is and has been seen as a technical enterprise, focused primarily on treatments of materials, structural issues and decisions based on scientific and sometimes aesthetic knowledge. However, increasingly those involved in the field of monuments and archaeological conservation recognize that problems relating to management, site interpretation, visitor use and especially zoning and land-use have profound impacts on the preservation and conservation of sites. Conservation must, indeed, be understood in this more complete context and resources and consideration in future years are apt to center more and more on areas outside of traditional conservation practice.

Probably most important is the very problem of the viewing audience. At one time isolated from population centers and little threatened by human activity, the ancient monuments of Southeast Asia are now important tourist attractions. Some sites, such as Angkor Wat or Borobudur, have many visitors; Borobudur in the mid 1990s had as many as 2 million tourists a year, Angkor now has about 300,000 visitors annually, but the number is climbing quickly. Other sites are rarely visited, and still can be found “lost in the jungle” (notably many of the Khmer sites

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in northeast Thailand). Despite these differences, no site now can do without some sort of management plan, linked to other kinds of plans by local and national governmental agencies that may impact a site – however remote it may be. Similarly, every individual monument and site would benefit from some sort of prior document as a means of charting a course for its future, soliciting funds for repair and much else.

Management and Planning Concerns:

This section considers different areas that need to be considered for the preservation of historic sites. All may be classified as critical needs throughout the region. These are not the only concerns pressing experts in the field but may be considered the primary problems.

Zoning and Environmental Planning:

With increasing development pressures, long-term planning for use and environmental impacts needs to be a bigger part of the conservation process in the management of monuments and archaeological sites. This has been an area much emphasized by UNESCO as a prerequisite for inscription on the World Heritage List. The development of a Zoning and Environmental Management Plan (ZEMP) has been an effective tool at Angkor, Vat Phu, My Son and many other significant sites in Southeast Asia. Failure to produce such a plan has been set back to the listing of Pagan.

A ZEMP can aid in identifying future development pressures, in establishing realistic boundaries and buffer areas for sites, and generally for mitigating the impacts of new hotels, restaurants and other commercial development attendant upon potential tourism sites. A ZEMP needs to take into account present and future infrastructure needs, such as power and water. It also needs to assess impacts of increased visitation on the existing infrastructure, determine effects upon the local residential community, provide for means of access to the site, designate parking and concession areas – or limit those to off-site locations, as is being considered more in some parks, such as that at Angkor. Road design,

pathways, transportation systems, provincial and regional impacts all need to be considered, as do population trends, educational and training needs and much else. In Cambodia the ZEMP was also utilized to identify areas for reforestation. The failure to have such a comprehensive plan at sites such as Borobudur – listing of Borobudur predates UNESCO's emphasis on planning – has detracted from the overall character of the site, leading to visual intrusions, inadequate provision for tourists and lack of proper planning for facilities, such as restrooms and food stalls.

The vast majority of sites in Southeast Asia still lack long-term environmental management plans. Site planning in Thailand, Vietnam and Indonesia tends still to be specific to the monuments alone. Kamphaeng Phet, one of the Sukhothai parks, still does not have a comprehensive plan. The plans for Sukhothai, Si Satchanalai and Ayutthaya rely heavily on traditional urban and regional planning models and lack sensitivity to many conservation issues.

Documentation:

Creating a complete record of a site is essential for the development of future conservation plans and for site development generally. Documentation takes many forms: photography, photogrammetry, analysis of aerial photographs, traditional measured drawing, surveys of significant features and individual elements, mapping and creating a permanent data base or inventory. Documentation also includes historical research – many of the temples at Angkor are well-noted in records of the Ecole Francaise d'Extreme-Orient (EFEO), soon to be stored in copy form in Angkor – interviews with knowledgeable people, such as villagers or past conservators. As with the World Monuments Fund project at Preah Khan in Angkor, a thorough documentation project should include extensive mapping of different features, including roof forms, towers and other structures, trees and vegetation. Historic photographs and drawings should also become part of the historic record of the site.

Documentation should also involve careful surveys of structural components, including analysis of structural problems, soil testing, elevation drawings and catalogs

of carvings and other decorative features. Increasingly, a documentation project should also involve archeological testing for hidden historic features and other evidence of use and occupation of the site (see Southworth 2000, on the Cambodian example). Non-destructive archaeological techniques for recording historic features should also be employed. The art and science of documentation has made great strides in the last ten years; however, many traditional methods, such as drawing, photography and cataloging still apply.

Both archaeology and other more thorough kinds of documentation have not been a part of documentation for most sites in Southeast Asia.

Site Management:

As with the ZEMP plan for large-scale sites, a more intensive plan for on-going site management is also important to site development. This aspect of pre-planning will necessarily overlap with other kinds of project planning, especially landscape planning and conservation planning, but should consider a significant component on visitor access and use. Many sites have areas that are unsafe for visitor access, and these need to be noted. As again with the ZEMP, the site management plan needs to consider provisions such as restroom facilities, gift shops or simply places for vendors, pathways and other considerations for visitor use. Site management needs to be carefully coordinated with the conservation plan, timing of areas that may be closed to visitors during work periods and different phases of the project.

Management plans have not been developed for the majority of sites in the region.

Conservation Planning:

Conservation planning – laying out a schedule of work and measures to be accomplished – is an inherent part of caring for ancient structures. Conservation planning has developed to a high art on many of the projects at the Angkor Park; similar long-term conservation plans are being developed at My Son and other Cham sites in Vietnam, and at Vat Phu in Laos. All of the Thai and Indonesian

projects involve the preparation of extensive and detailed conservation plans. The shortfall of most conservation plans in Thailand and Indonesia is their reliance on models more applicable to conventional construction projects. Basically, both national offices compile working drawings and construction specifications. In Thailand this process is further handicapped by the fact that much of the work is now being contracted out to private building and construction firms. Conservation requires a much longer view of the project's aims – not a one-shot restoration or repair job, but long-term, ideally incremental steps toward the repair of threatened features, testing of methodologies for cleaning and other treatments and a projected schedule of interventions. In some Southeast Asian countries, especially Burma, there is no prior planning, and work is carried out on an ad hoc basis by local builders, under the direction of the Archaeological Department's regional office.

It is essential in the Southeast Asian context that conservation planning become a priority. Efforts need to be made to reeducate professionals in national offices and to encourage a rethinking of the approach taken to projects overall. Maintenance especially needs to become a part of the planning process throughout the region.

Landscape Treatments:

The optimum treatments for the settings of archaeological sites have not been considered widely in Southeast Asia. Probably the most sophisticated considerations of the existing landscape have been the studies carried out by the World Monuments Fund at its project at Preah Khan. Utilizing the consulting services of a professional forester, the WMF identified older trees – including ancient corner and boundary markers – trees still in production for the gathering of resins, invasive trees and a diagnosis of the relative age and health of trees. The WMF project is committed to keeping the site in a "natural" setting – meaning, allowing for a natural succession of new growth and systematic harvesting or removal of potential threats to the site. Most other sites at Angkor leave the issue of trees and surroundings unconsidered. The park itself has been promoting reforestation, working with the United National Food and Agriculture Organization to reestablish stands of commercially valuable trees for later harvesting.

At the majority of sites throughout the region, little thought at all has been given to landscape treatments. Sites in Indonesia, Vietnam and Burma are simply cleared of shrubs and other larger kinds of vegetation, and then allow for turf coverings to establish themselves. Thailand, unfortunately, has tended toward the promotion of ornamental gardens, generally turf lawns, with groomed hedges. The Thai park managers – particularly at Ayutthaya – tend also to introduce ornamental lighting, both directed lights and period-style (Victorian-looking) lighting for pathways and park roads. Again, this kind of treatment is most noticeable in Ayutthaya and not in other parks. More remote historical parks, such as Si Satchenalai and Kamphaeng Phet, tend to have a more neglected appearance. The Sukhothai area parks have also devoted land to commercial reforestation, as in Angkor.

The Thai historical parks have not adopted comprehensive landscape plans. Many of the choices at Ayutthaya and Sukhothai have been left to the park superintendents, who tend toward traditional, urban park-like solutions. Ayutthaya includes roses and topiary typical of more formal parks in Bangkok and deriving from the twin traditions of English pastoral gardens and French formal planting schemes. Chinese decorative elements and predilections, stemming from 19th-century formal gardens of the Thai royalty and aristocracy, also enter into landscape choices at Ayutthaya. A recent project instigated by the Bangkok UNESCO office is attempting to look at Thai historic gardens and how they might be introduced at Sukhothai in particular. Discussions with members of the project committee do not indicate a goal beyond introducing traditional ornamental and especially medicinal plants. Regrettably, resurrecting a traditional vernacular landscape does not seem to be part of present considerations.

All of the sites in Southeast Asia could benefit from more sophisticated landscape planning. This is an exciting possibility in the context of the region's parks, touching upon historic uses, literary and pictorial ideals of the wilderness and jungle and, especially, simply better understanding the characteristics of forests, tree growth and plant succession. The incorporation of increasingly threatened vernacular landscapes, such as rice fields and orchards, into park planning would

also be desirable. (In Pagan the dry, dusty landscape suffers from erosion and agricultural overuse. Conservation of the basic environment is a striking priority in the Pagan area.)

Tourism:

Tourism is the driving force behind the development of most of the major sites in Southeast Asia. This is certainly true for the monuments of Indonesia, which, until the recent political troubles, received millions of visitors annually. As stressed often in this report, Cambodians see the monuments at Angkor as part of their ethnic and national patrimony, but international tourism is the engine driving development within the archaeological park – as well as a significant part of the national economy. Cambodia, represented in Angkor by the oversight organization the Authority for the Protection and Management of the Region of Siem Reap (APSARA), has been strikingly sophisticated in its approaches to tourism management. Relying on successive teams of park planners, most recently from the French park system, APSARA has established a truly efficient park management and tourism management system. A toll gate now dispenses tickets for one day, three days or one week, with the tickets subsequently checked at each site by well-trained uniformed park attendants. Tourists may take one of two circuits, a 17-kilometer route that takes them to the principal monuments, or a 26-kilometer route, which leads to some of the more distant temples. Vendors, who used to follow tourists into the sites, now are expected to remain at the entrances. Taxis and remotes – motorcycles, towing fringe-covered wagons – are assigned to parking areas away from the monuments, as are tour buses and vans. Training courses are offered to guides, who need to be licensed by the organization. There is consideration given to restrooms, restaurant facilities near Angkor Wat's west entrance and many other aspects of visitor needs. Negotiations are still underway for a sound-and-light show at Angkor Wat for paying tourists – a development still of great controversy. A museum is also still in the planning stages.

Other sites in the region cannot match Angkor's standards. Borobudur is badly planned and managed, with vendors scattered throughout the usually

crowded site. Trash is not collected efficiently, and there are few facilities for the many tourists. Whereas APSARA is giving consideration to banishing all traffic from the site – substituting motorized multi-car trams as found at sites such as Disney World – Borobudur allows buses and cars to park within site of the monument. Management officials at Pagan strive towards the efficiency of Angkor, but lack the same levels of sophistication and planning. The Thai parks are more informal overall, but include uniformed park rangers and interpreters – similar to U.S. parks – and also feature small on-site museums at Sukhothai and Si Satchenalai and two larger museums at Ayutthaya. Phimae also resembles an American national park, as do other, more popular historic sites.

Tourism within the historical and archaeological parks is obviously what the parks were intended to encourage. Thai parks tend in fact to include many Thai visitors. Angkor also attracts Cambodians, who come to the site for picnics, weddings and simply to view the monuments (although Cambodians, other than children selling drinks or souvenirs, are encountered mostly at Angkor Wat). Officials at Angkor are considering issues such as the distribution of tourists over the site. Crowd management becomes increasingly a concern as Angkkor Wat itself becomes target for one-day visitors from Bangkok or from cruise ships stopping at the port of Sihanoukville and taking a one-day return flight to Siem Reap as part of a package tour. Other parks, with the exception of Borobudur, do not face this problem yet, but may in future years.

APSARA and Cambodian governmental officials are beginning to consider ways to encourage tourists to visit other sites outside of the park area. APSARA's recent effort to begin to develop what are known as the "remote sites," such as Banteay Chmar, about two hours' drive northwest of Siem Reap, or Preah Khan, Kampong Thom to the south, appears as part of a strategy to better distribute tourists nationally as well as to conserve the sites themselves. With Angkor Wat being such a tourist mecca, this will be a difficult undertaking; but the organization's effort does suggest an understanding of tourism planning at a larger scale. Tourism planning at a national level and developing ways to enhance and promote other,

lesser-known sites are certainly important new developments in the region and a trend that needs to be encouraged.

Site Interpretation:

Site interpretation is still in its infancy in Southeast Asia. The Thai Department of Fine Arts has produced published guidebooks and brochures for Ayutthaya and Sukhothai, but still has little good published materials on smaller parks, such as Si Satchanalai, Kamphaeng Phet, Phimae or Phnom Rung. Commercial publishers have helped fill the need for the Khmer sites in Thailand, largely through Michael Freeman's individual site guides and overall guide to Khmer sites in northeast Thailand (Freeman 1998a, 1998b, 1998c). Similarly, commercial presses have made Dawn Rooney's guide to Angkor (latest edition 1994) and the more recent and complete guide to the monuments by Freeman and Jacques available to visitors (Freeman and Jacques 1999). There is little in Khmer language on Angkor and only basic guidebooks and single-page descriptions in Thai for the national historical parks. Borobudur publishes a short guidebook, but tourists are mostly dependent on commercial publications for more in-depth descriptions of the temples at Prambanan and Borobudur. Pagan has guidebooks in English (Strachen 1996), but nothing in Burmese is available. Many of the guidebooks mentioned also have French, German and Japanese editions as well.

There are no countywide guidebooks covering monumental archaeological sites for Thailand, Cambodia, Laos or Burma. There is one short published guide to Cham sites (Tran Ky Phuong 2000) and a badly out-of-date guide to Indonesian sites (Suleiman 1981). Tourists must depend on more general travel guides; local residents have little available at all. Although it may be sensible for national conservation and antiquities programs to depend upon commercial presses and the initiatives of international scholars – Tran Ky Phuong's guide to Cham sites is the exception – programs devoted to providing better guidebooks and other written materials might help promote lesser-known sites for international visitors and also serve to enhance the prestige of national programs and oversight agencies, such as APSARA.

Guide training has figured prominently into Cambodian park planning overall. Many of the archaeology students at the Royal University of Fine Arts anticipate employment as guides to the Angkor park. APSARA has also overseen guide training and licensing. In Burma and Indonesia, the sites have depended upon private initiative; and there are commercial guides, with links to shops and individual vendors, operating at both Pagan and Borobudur. Most visitors to Borobudur – and many to Pagan – also travel in group tours, where guides are provided by private companies. In Thailand, almost all guides work for tour companies. The quality of both licensed site guides and commercial guides varies greatly. Guides to Borobudur, Pagan and Angkor often have poor foreign language skills and generally do not supply the kinds of information that might be useful for understanding the sites.

Borobudur has an onsite museum, as does Pagan, Ayutthaya, Si Satchanalai and Kamphaeng Phet and many other sites. These vary in quality, but do provide overviews of the history and culture of each place. The Pagan museum is a branch of the National Museum and contains a great number of artifacts and interpretive displays. These include inscriptions, Buddha images, historic artifacts, maps, paintings and other interpretive materials. With the exception of the Ayutthaya Historical Study Center, none of these are modern, informative museums with entertainment value. APSARA is planning a large museum near the entrance to the park. The national museums of Indonesia, Malaysia, Singapore, the Philippines and Thailand all have information relating to ancient sites, but these are all remote from the sites themselves. The National Museum in Phnom Penh also has many sculptures originally in Angkor. Unfortunately, few international tourists now visit the capital as part of their tours. The Cham museum in Danang is an interesting period-piece with many examples of Cham art, although it too is remote from My Son and other Cham sites. (Kelly 2001; Guillon 2001).

Overall, locally-produced publications, guide training and museum development are areas of need in Southeast Asian countries.

Accommodating Existing Residents:

Many of the monumental sites of Southeast Asia have residents living near or among them. This was true at Sukhothai, before a wholesale relocation of some 200 families took place in the 1980s as part of the development scheme for the park (Watanabe and Nishimura 1994). Similarly, in Pagan, the historic village– which had grown up in the wake of increasing tourism in the 1960s and 1970s-- was moved to a new site, south of the archaeological reserve. Angkor has two small villages within the bounds of the park. The residents practice traditional agriculture, including rice farming, grazing of cattle, also gathering insects, crabs, wild potatoes and herbal remedies. Most famously families in the villages harvested resin from trees, burning a hole near the tree's base and collecting the liquid for hardening timber posts and other kinds of waterproofing uses. Over the years the families had established claims to designated resin trees. This practice, together with other gathering rights, had become part of the cultural ecology of the park. Dr. Keiko Miura, with Sophia University, devoted a Ph.D. dissertation to the study of local inhabitants, who also play a part in the tourism economy, by selling souvenirs and working at food and beverage stands (Miura 2000). Unfortunately, recent decisions by park managers point to the removal of these traditional residents, despite earlier expressions of a concern to accommodate local people and practices.

Obviously, the needs of local people need to be taken into account in planning large-scale conservation projects. Some parks, such as Sukothai and Pagan, have a rather bad record in this regard. However, long-term needs also require that a realistic appraisal be made of the local community as well. UNESCO-sponsored ZEMP plans emphasize the importance of taking into account local populations and traditional activities. But it would be naive to think that such communities will not be changing in the future as access to other kinds of employment – often engendered by the park itself – begins to have an effect on the local economy (Chapman 1998). The Thai Fine Arts Department is attempting to better understand future development in Ayutthaya, where the community was traditionally dispersed among the ancient ruins. Now a far more modern, commercial presence is being felt in the ancient city; and it is difficult to determine

ways to accommodate this trend. At every level, the relationship of the community to the site needs consideration and periodic adjustments in approach. This remains an important area of inquiry and research in the context of ancient sites.

Security and Policing:

Park security, especially the protection of ancient monuments against theft and vandalism, is a priority at many sites. Security is particularly an issue at many more remote sites, such as the many Khmer monuments along the border of Cambodia and Thailand, many sites in Java and Sumatra, the Cham sanctuaries and at the less known sites in Cambodia. Park police in Thailand and at Angkor have been well-trained in recent years. However, much more could be done in the way of police training.

The security of ancient sites is tied in with the bigger problem of art theft. Cambodian sculpture especially has been subject to international trafficking; pieces from Cambodian temples can be found in antique shops in Thailand on a daily basis. Assistance in the area of monitoring stolen antiquities is a critical regional need.

Philosophical Issues:

It has been popular over the past ten years for the conservation community itself to question some of the assumptions that lie behind their efforts. Sharon Sullivan, in a paper given in Honolulu in 1991, as part of an international conference (sponsored in part by the Getty Conservation Institute), argued that it is inappropriate for Western people to impose their ideals of conservation on peoples in other parts of the world (World Monuments Fund and US/ICOMOS 1993; Sullivan 1995). It has been suggested by Sullivan and others that in the Asian context historic properties are imbued with a “spiritual” character and that Asian people generally hold such significance as more important than “a material view of what of their past is valuable” (Ibid.:16). This issue was much discussed at the Getty-sponsored conference held in Chiang Mai in 1995, where many participants spoke of the unique Asian approach to conservation issues – the Asian emphasis on “living” traditions, over frozen historic sites and the greater spiritual concerns of Asian

people over those in the West (Corso 1995). In an effort to give attention to such perceived differences of outlook, the Nara Document on Authenticity was promulgated in 1994 and has become part of the set of conventions guiding the World Heritage Convention of 1972. The Nara Document also gives emphasis to social and cultural values and recognizes that there may be varying points of view toward conservation, based on cultural context.

These are indeed interesting issues. However, it is probably too simple to say that people from Asia – and Southeast Asia, in this case – have a wholly different point of view from people in the West. There are certainly varying viewpoints, based on education, economic level as well as culturally-based differences. The idea that Asian people as a whole value the “spirit” of a place, over its material qualities, probably does not do justice to Western ideas of spirituality, cultural memory and attachment to place. The implicit notion that Asians treat their sacred places with reverence and that Europeans and Americans do not, also seems to dismiss Western practices too simply. Differences do exist across classes and cultures; but it appears that in the Southeast Asian context, most of those participating in the conservation process at all levels share many of the same assumptions – including the importance of repair over replacement and the value of the old over the new.

Rarely do monumental archaeological sites lend themselves to renewal; and where this occurs, such as in Burma today, it is widely recognized that something of universal value has been lost. Conversations with Burmese guides and others indicate that they too draw a difference between monuments and sites of great antiquity, and those of more recent origin. They also consider re-gilding of stupa and repainting older art as damaging to the original ancient structure and its intent. In both Thailand and Cambodia, there is a high value placed on the antique and original over copies; many Thai people of all classes collect ancient Buddha images, both for what is thought of as their inherent spiritual power and also their historical associations. Educated, middle-class Thai people see the ruins of Sukhothai and Ayutthaya as part of the history of their country. Cambodians feel strongly that the ancient ruins of Angkor provide the historical bedrock for the present. They also perceive the monuments at Angkor as a powerful expression of

their cultural and ethnic heritage. Changes to these sites are generally viewed as demonstrating a lack of respect to the original object.

Nonetheless, there are sites throughout the region where a balance between the veneration of the old and accommodation to continuing use must be taken into account. Shrines in highly populated areas of Burma, such as the Shwedagon Paya in Rangoon (Yangon) or even in Pagan with the Shwezigon temple, located in the town of Nyaung U, are still very much living, sacred sites. Renewal and redecoration are a continuing part of their meaning. The same story applies to most of the older La Na temples in northern Thailand and the vat of Laos, still used as places of worship and filled on a daily basis with pilgrims and monks. In Bali too, the ancient temples have never fallen out of use. They are re-roofed, repaired and added to in keeping with changing needs. These are not monumental archaeological sites, yet they share many of the same characteristics. Change is inevitable at these places, but conservation still has a part as well.

The debate on the place of religious and culture practices – and differences of cultural perspective – within the context of monuments conservation remains an important topic and will doubtless engender many more conferences and discussions.

Critical Sites:

Southeast Asia possesses many monuments and archaeological sites in critical need. Many of the Cham sites in Vietnam have been much neglected. The work done on them since the 1960s by a combination of local public works departments and sometimes misguided conservators has not contributed positively to their conservation, and much work needs to be done to reverse these earlier efforts. Many of the more remote sites of East Java and especially Sumatra have important conservation needs. Several sites are eroded and require attention. The same is true of some of the less well-known Cambodian sites, especially those in the south of the country and along the northwest border with Thailand. Burmese sites at Pago (Bago) and Pyay (Promme) also require conservation work. The Khmer sites and many of the more remote, abandoned temples of the

Sukhothai area, including those in parks at Kampaeng Phet and Si Satchanalai, also need to be looked after better than they are today.

The following is a short list of some of the most important sites requiring attention. A number of these suggest opportunities for intensive field training, much as with the Te Nei project. Others represent genuine conservation opportunities in the region – sites as yet untouched that need attention.

Indonesia:

The Indonesian government has a regular program of conservation of monumental sites. However, the national organization is severely underfunded. Work on brick monuments is particularly needed. There are also scattered sites with both brick and stone monuments that have yet to be consolidated or restored.

The Hindu temples of the **Dieng Plateau**, about 120 km north of Yogyakarta, in Central Java are a high priority. Including about 400 different monuments, many of these are as yet untouched. The Indonesian Archaeological Department has reconstructed and repaired about eight of the structures; others remain in ruins.

Near **Parakan**, also in Central Java, are a scattered group of Hindu temples, dating to the 9th century and earlier. Most are in poor, un-stabilized condition.

Mt Penanggungan, in East Java, also has a large collection of Hindu shrines, dating again to around the 9th century. Many are in a ruined condition; some have been partially restored or stabilized.

The Majapahit shrines and city remains in the area around modern Mojokerto, also in East Java, are in need of overall repair and conservation. Under excavation and some stabilization since the early 1990s, the site of **Trowulan**, and associated shrines of the 13th to 15th centuries, offer opportunities for conservation. Most ofthe structures are brick.

The *biaro* of **Padang Lawas** in north-central Sumatra are a group of at least 16 brick temples along the banks of the Barumun River. Under restoration since the 1980s, this collection of Hindu shrines suffers problems of brick and stucco deterioration.

Cambodia:

Within the Angkor park itself, a great deal of work is underway, undertaken by as many as 10 international organizations, with participation by as many as 20 countries overall. This is a site of enormous significance for conservation work in the region today.

Despite the difficulties of becoming part of the work in Angkor, there are a number of temples in the Angkor Park that still require attention. In the Roluos group, away from the central shrines, the brick towers of **Lolei** are in need of emergency repair. The perimeter towers of the **Bakong**, a 9th-century stepped pyramid and one of the earliest large temples in Angkor, are also brick and are in poor condition. The stone monument of the Bakong itself was restored by the French architect Maurice Glaize in the 1930s, but still has many problems.

Well outside of the park, Preah Vihear, near the Thai border, greatly needs attention. Present political problems between the Thai and Cambodians probably prevent anything being done at this time. (The site is only accessible from the Thai side of the border.) A previous project to be funded by American Express had been planned by the Thai Fine Arts Department but has been postponed indefinitely.

Koh Ker, located east of the Angkor Park, is one of the most impressive and least disturbed of all Khmer sites. Still mined in some areas, the site was the capital of Jayavarman IV and is a miniature version of the city of Angkor. At least 130 shrines have been identified. The site has been under study by the Royal Academy of Cambodia, an organization that falls under the Ministry of Culture, independent of APSARA. This is an extraordinary site with great potential both for conservation and interpretation.

In the vicinity of Kampong Thom in central Cambodia are the sites of Prasat Sambour and **Phnom Phum Prasat.** These are extremely early sites, associated with Chenla culture. **Preah Khan, Kampong Thom,** is also in this area. The Cambodian government includes this site among the list of "remote sites" for which it is interested in finding a sponsor. The WMF has examined the site as a possible project.

Banteay Chmar (Chhmar) is a enormous abandoned temple in Banteay Mean Chey Province, near the border with Thailand – but well inside the Cambodian side. This temple too is one of the identified "remote temples," and a preliminary study is being carried out by the WMF for its conservation. There is a huge amount of work to be done on this Bayon-period temple. **Phnom Bak, Phnom Chun** and **Phnom Touch** are in the general area of Bateay Chmar and also are in need of work.

Phnom Chissor (Chisor, Chi Sou), in the southern part of the country, is a mountain-top site, dating to the 12th century. Composed of brick, laterite and stone, the temple has many conservation needs. It is well outside the Angkor area.

Vietnam:

The Lerici Foundation, with support from the Italian government, has been carrying out an outstanding project at My Son, the most important Cham site. Little has occurred, however, in terms of actual conservation work.

There are about 20 Cham complexes in Vietnam. The ruins of **Cha Ban,** about 26 km north of Quy Nhon are one of the more extensive. Unlike My Son, there is no existing long-term plan for the conservation of the complex. Cha ban covers an area of about 1400 by 1100 m and includes the remnants of numerous towers and other structures.

Po Nagar, near the city of Nha Trang, has been partially restored and stabilized, but still requires much work. The site retains four large towers and the bases of many other temples. The complex was in use from as early as the 2nd century through the 13th.

Burma (Myanmar):

The best known Burmese site is Pagan, in the west-central part of the country. Unfortunately, the vast majority of the structures there have been subjected to an extensive program of restoration, which has severely compromised the integrity of the site. There appears to be little opportunity of altering the situation in Pagan.

Some of the more remote Pagan sites have yet to be affected by the current reconstruction and restoration program. But it is uncertain whether it would be possible for any outside organization to begin work there.

The greatest opportunity for conservation work in Burma is probably Arakan (Rakhaing), in the southwestern part of the country. Consisting of predominantly stone buildings, with a strong relationship to building traditions of India, Arakan has undergone little conservation work by the Burmese government. The best-preserved of the Rakhaing sites is Mrauk U. A large city complex, **Mrauk U** includes about 70 significant sites overall.

Thailand:

The Fine Arts Department of Thailand has active conservation and restoration programs underway throughout the country. The principal work has taken place at Sukhothai and its related parks and at Ayutthaya.

Kamphaeng Phet is the smallest of the Sukhothai parks and has experienced less conservation and restoration work. A 15th-century satellite of Sukhothai, Kamphaeng Phet includes a surrounding brick wall and many, as yet un-restored temple bases and other sites.

Si Satchanalai has also received far less attention than the larger, parent park of Sukhothai. There are many untouched ruins within the site. The adjacent site of **Chalieng** also includes several significant ruins, including many temple bases and enclosures *(mondop)*. The Fine Arts Department has expressed strong interests in assistance with the predominantly brick structures in the park.

Although work has been underway on many of the Khmer temples in the northeast part of Thailand, there are still several smaller Khmer temples requiring attention. These include the site of **Ku Suan Taeng, Ta Muaen Toch** and **Kuti Reussi,** Numbers 1 and 2. The larger site of **Muang Tam** recently has been worked on by the Fine Arts Department, but requires much more before it is stabilized fully.

Laos:

The principal ancient site in Laos is the extensive series of ruined Chenla and Khmer temples and other features in Champasak Province. Principal among these is **Vat Phu**. The subject of numerous UNESCO-sponsored studies, Vat Phu and surrounding sites are currently being surveyed by the Italian Lerici Foundation.

Education and Training:

Training in conservation remains a high priority throughout Southeast Asia. Discussions with the staffs of national programs and others suggest that training is wanted at all levels: for professional staffs, for managers and for on-site technicians. Although the professional staffs of most countries have had training in architecture, archaeology and allied disciplines, there has been little formal – especially onsite– training in conservation techniques and practice. Few staff members of national programs have extensive training or experience in conservation science.

Training in the region has traditionally been offered though formal university-based courses, also in field-oriented programs, such as those offered by the Southeast Asian Ministers of Education Organization's Center for Archaeology and Fine Arts (SPAFA) in the late 1970s and early 1980s, and through seminars and colloquia. Few students or young professionals now have an opportunity to study abroad, and programs such as (International Center for the Study of the Preservation and Restoration of Cultural Property (ICCROM)'s longer architectural conservation course are no longer available. Most young staff members have relied upon conferences and seminars to keep abreast of current developments in the field. These are typically of short duration and provide little practical experience. Professionals in Indonesia have some exposure to actual onsite work through refresher courses offered by the Borobudur training center. Cambodian students

and young professionals have had numerous opportunities for training through the many international projects underway in Angkor. Approximately 50 students and recent graduates are currently employed at Angkor projects, providing Cambodians with an unusual opportunity for conservation training and experience.

Many of the recent symposia in the region have shifted focus away from materials conservation toward more general issues of site development and management and national policy concerns. There are exceptions. The Thai-Japanese Cooperation Seminars, sponsored by the Royal Thai Government's Fine Arts Department and the Tokyo National Research Institute of Cultural Properties, and held in Bangkok over the past two years, have focused on conservation treatments, new methods of documentation and other more technical problems. The same is true of the Bayon Symposia in Cambodia, which have brought a great number of technical conservation issues forward. However, much of this information is difficult for younger professionals to understand. Also, both seminar series have been highly localized and have not allowed wide regional participation. Most young professional staff members in Southeast Asian countries are dependent upon on-the-job training and still have little access to higher levels of conservation research. Because of their lack of formal training in actual conservation theory and methods, Southeast Asian younger professionals are handicapped in the context of more complex conservation treatments and approaches. There is a strong indication from senior-level staff in all the countries assessed that a return to "conservation basics" is much needed for their junior staffs.

A critical issue for Thai professionals in general is the lack of opportunity for sustained field experience. Most young Thai architects have never worked directly with materials. They are aware of conservation issues, such as preferred mortar mixes to be used for the restoration and repair of historic brick structures, but have never actually seen lime mortars being made and applied. Consistently, the staff members in the Thai official office for conservation, the Office of Archaeology and Museums in the Ministry of Culture complains of the separation of planning from onsite practice and a lack of communication between the professional staff and technicians. Many important conservation decisions are

made by the laborers and technicians, who generally ignore specifications provided for projects. Thai conservation appears to have settled into a dangerous routine that over time will cause great harm to the country's historic sites.

The same pattern seems to hold for other Southeast Asian countries as well. Vietnamese conservators have little opportunity for formal training in conservation. The same is true of Laotian professional staffs – of which there are few representatives. Burmese professional architects and archaeologists receive very little conservation training. Since the 1990s they have been cut off from educational opportunities, either regionally or internationally. The University of Yangon was closed for most of the last decade, and has just reopened for graduate training. Short courses available through SPAFA, in particular, have not supplied the level of technical training that would be needed for the Burmese to improve their knowledge of current conservation methods.

Thai and other Southeast Asian professionals complain consistently of an absence of technical training in more advanced systems of measuring, monitoring and otherwise documenting and tracking conservation projects. The work of Japanese experts from the Tokyo National Research Institute for Cultural Properties, which was demonstrated in recent seminars in Thailand – especially methods of scanning and computer imaging – has impressed many Thai professionals. But they also were frustrated by the lack of access to subsequent training in these very specific technologies.

Cambodian students and young professionals are confronted with other kinds of difficulties. The work in Angkor is highly technical and often beyond the educational backgrounds of Cambodian participants. Similarly, the Bayon Symposia have offered Cambodian students an extraordinary opportunity to be exposed to current conservation practice, but most Cambodian students are insufficiently prepared to understand much of what is being presented and discussed. Cambodians are faced with a handicap of an insufficient primary and secondary school education, inconsistent university-level training and poor understanding of other languages.

English has definitely become the *lingua franca* of Southeast Asian professional life, and lack of English speaking and reading ability hampers both advanced students and professionals in several Southeast Asian countries, notably Laos, Vietnam and Burma. Thai professionals generally are competent English-speakers, as are the majority of Indonesian conservation staff members. Malaysian, Singaporean and Filipino staffs are typically fluent in English and have strong educational backgrounds generally. English use is important to training in the region and is an important consideration in the selection of participants in any courses or symposia.

Universities in several Southeast Asian countries have begun to respond to the need for higher levels of training in conservation and allied disciplines. Silpakorn University has just begun an international graduate program in Architectural Heritage Management and Tourism. Started in 2002, the program offers both M.A. and Ph.D. degrees. Chulalongkorn University created a concentration in Architectural Conservation within its M.Arch. program. The Institute of Technology in Bandung, West Java, Indonesia's premier university, has course offerings in conservation, but no concentration on the special problems attendant upon the conservation of archaeological sites. Regionally, the National University of Singapore provides opportunities for graduate research in a range of preservation and conservation-related areas through its Centre for Advanced Studies in Architecture. The University of Hong Kong has also begun a master's program in Architectural Conservation, offering both an M.S. in Architectural Conservation and a Graduate Diploma. However, none of these programs offers truly in-depth instruction in technical aspects of conservation. Relying on visiting lecturers, such as John Sanday, the University of Hong Kong Program offers perhaps the most opportunity for student exposure to issues in the conservation and management of archaeological sites. Silpakorn University's program has perhaps the greatest regional potential, but it is hampered by the fact that students have little opportunity to study technical issues in conservation and have no immediate access to field experience. None of these regional university programs has yet to develop strong, conservation science oriented courses. They also do not have laboratory facilities for testing and research (with the exception of the Institute of Technology in Bandung).

Another critical issue in conservation training in the region is the desire for certifications or other kinds of formal credentials among both graduating students and younger professionals. This need is particularly felt in Cambodia, and no doubt lies behind the proposed master's program of Dean Hor Lat for the Royal University of Fine Arts in Phnom Penh. Increasingly lacking opportunities to attend European and North American universities, many Southeast Asian students and younger professionals are hoping that national and regional institutions will respond to the need for degree programs. The Silpakorn international course in Architectural Heritage Management and Tourism was created because of this assessed need. Student enrollments were high in the first year of the program– 22 students entered in the initial class, with approximately the same number in subsequent classes. Many of those enrolled in the new Silpakorn program are mature professionals, entering in the Ph.D. program. Their primary aim is to improve their standing and increase their professional options and opportunities. Unfortunately, the program as yet has not had a chance to fully develop its technical content to assist in the development of competence in conservation work. Some greater practical connection between university-based education and field experience is much needed.

For advanced architecture and archaeology students and professional staff members in conservation departments throughout the region, a means of both securing recognized credentials and genuine training in conservation science and methodology remains a high priority. Credentials and training would not only help to ensure quality work, but would also allow for Southeast Asian nationals to enter into a field dominated still by international experts. This need is especially felt in Cambodia – as well as in Laos and Vietnam – where foreigners still dominate the conservation efforts at the country's most significant sites. Opportunities for study outside of Southeast Asia, new programs in national and regional institutions, and especially training that includes both practical onsite experience and instruction through lectures, research and laboratory work, would seem to hold the key to improved conservation practice in the region.

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