UNESCO
PROJECT TERMINAL REPORT

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1. **Background**

My Son is located in Quang Nam Province about 60 kilometers south of Danang. The group of monument complexes is scattered over an area of about 10 hectares some 40 meters above sea level and surrounded by hills rising to a height of 100-300 meters, dominated by the 675 meter high massif of Hon Quap (Cat’s Tooth).

My Son became a religious centre during the reign of King Bhadravarman, towards the end of the 4th century AD. Construction of structures continued until the 13th century, giving rise to the longest religious occupation in Southeast Asia, when compared with Angkor in Cambodia and Pagan in Myanmar. My Son, the main intellectual and religious centre of the Cham culture, was the place where the kings were cremated and towers built to commemorate their great achievements and conquests. These monuments are the ruins of My Son.

My Son was discovered by Henri Parmantier of the Archaeological Service of the Ecole Francaise d’Extreme Orient in 1898, who undertook numerous research and restoration campaigns in the area. In 1982, the Vietnamese Ministry of Culture and Information, in collaboration with Polish experts from the State Laboratory for the Conservation of Historic Monuments (Pracownie Konservacji Zabytkow), led by the architect Kazimierz Kwiatkowski, undertook restoration and conservation works of several damaged monuments, located in the B, C, D, and to a lesser extent, E group of monuments.

My Son was declared a World Heritage Site in December 1999. In spite of its outstanding cultural, historical and environmental values, this site suffered serious deterioration from man-made and natural causes, such as bombardments during the war in 1969, vandalism, floods and weathering.

In 1999 a Tripartite Italian, Vienamese and UNESCO protect, financially supported by the Italian Ministry of Foreign Affairs, entitled “Investigation, Zoning and Management of My Son Monument and Archaeological Site” was started. This 3-year project (1999-2001) is geared to provide necessary comprehensive background information such as data, maps as well as a Management Plan for the long-term safeguarding of the site.

Pursuant to this tripartite project, the Government of Viet Nam expressed the wish to realize a new project devoted to the safeguarding of selected monuments of My Son by restoring a high-priority group of Cham monuments. To this end, UNESCO, the Italian Government through the Lerici Foundation and the Vietnamese Ministry of Culture and Information formulated the project “Safeguarding My Son World Heritage – Demonstration and Training in the Application of International Standard of Conservation at My Son Group G Monuments” (Project 534VIE4000).
Within the framework of the preservation and enhancement of the cultural heritage, the Global Heritage Fund (GHF) provided additional grant assistance for the safeguarding of the World Heritage Site of My Son, in conjunction with activities carried out by the International Implementing Agency the Lerici Foundation under the UNESCO- Italian Funds-in-Trust Project 534VIE4000. As in the implementation of Project 534VIE4000, the UNESCO Hanoi Office provided backstopping and coordinating support for the GHF funded project.

After a careful analysis of the structural, scientific and technical conditions of the different groups of monuments in My Son, the Lerici Foundation selected E7 for archaeological investigation and excavation, in preparation for its future consolidation and restoration for the following reasons:

1. E7 lies on an elevated area never affected by the seasonal flooding
2. E7 has never been restored (though minor interventions were made by K. Kwiatowski in 1991)
3. E7 has considerable importance from the archaeological point of view.

The E7 monument is considered to be an important library that was used to store the holy texts during the height of the Champa kingdom. The temple suffered bombardment during the 1967 war, and urgently needs stabilization and conservation. The E7 monument is placed on the southeast corner of the E group of monuments. The building is rectangular in plan and has been generally defined as the ‘south building’, which was probably used as the service annex to the main structure.

The E7 monument has two rooms, connected by an interior door with threshold, stone jams and plain lintel. The main entrance is oriented to the north. The eastern and western sides have two small windows, characterized by balusters of small stone columns. The roof is multi-storied and probably decorated by corner stone antefixes. The building is composed of a platform decorated with moulded niches, the body with door and windows, and a multi-layered roof with inverted vault. Relative to the main temple E1 monument, the E7 building was constructed during a later period, probably around the 10th century. Excavation carried out in 2004 between the E7 monument and the enclosing wall of E area, has shown that the area was enlarged to accommodate the E7 monument. Archaeological and stratigraphic evidence has shown two different and superimposed layers of enclosing wall: the lower one related to the main temple E1 and the other correlating to the E7 monument.

2. Development problem and immediate problems attacked

Discovered by H. Parmentier in 1898, the state of preservation of the E7 building was quite fair. Only the higher part of the roof was lost, but the rest of the body was still standing. During the 1969 war, the main entrance was impacted by a bomb shell that destabilized the whole structure. An emergency intervention by the Polish
architect Kazimier Kwiatkowski in 1991, aimed at reinforcing the platform of the E7 monument, was never completed.

The project is aimed at providing an integration of what remains of the E7 monument and emergency consolidation to prevent collapse of the structure. An archaeological research was undertaken to document the present day state of conservation of the structure.

The immediate problem that had to be resolved was the removal of the thick plant overgrowth. As in the case of all monuments in My Son, the E7 was covered by a thick layer of vegetation, including trees, that overtime, have caused cracks on its walls. E7 had to be cleaned of the vegetation and filling soil, to enable the archaeological team to survey and assess the state of conservation of the building. The interior of the E7 monument was also covered by a high layer of recent filling and dirt, accumulated during the last 50 years, which had to be cleared before excavations can take place. Parmentier never carried out any archaeological investigation inside this area.

### 3.0 Outputs produced and problems encountered

#### 3.1 Archaeological investigation: preventive non-invasive survey, archaeological excavations, dating and GIS cataloguing

At the time the project was formulated and proposed, several investigations were carried out on mapping the My Son area, but there were no information concerning the buildings in the E group. For this reason, geophysical prospecting and geomorphologic investigations were carried out.

Geophysical prospecting required the use of non-invasive method of survey to evaluate the physical differences between the archaeological remains and the surrounding soil obtained by measuring certain physical characteristics relating the archaeological remains to their geophysical response, commonly referred to as “geophysical anomaly”. The Italo-Vietnamese team conducted geophysical surveying of E7 with georesistivity measurements, geomagnetic and susceptibility measurements. In magnetic prospecting, buried archaeological objects produces an anomaly in the magnetic field of a magnitude and intensity that depends on its shape, its degree of magnetization and its depth. Another type of geophysical prospecting utilized by the team was the georadar methodology, which is a soil investigation for shallow soils based on the reflection of electromagnetic waves. When used correctly under suitable environmental conditions, this methodology is capable of revealing the stratigraphy of the portion of ground investigated.

Topographic surveying meter by meter with a total station to reconstruct the shape of the hill and install the topographic grid were also undertaken.

TSL (Thermally Stimulated Luminescent) dating was done on pottery and bricks. The principle of TSL dating is that an insulator or semiconductor, as in
archaeological context pottery and bricks, when headed produces a light emission if it has been previously irradiated by ionising raditions. Three parameters are mainly involved:
dosimeter (the natural clay minerals); ceramics (natural irradiation); and environment
(external source of natural irradiation).

Important features of the structure were discovered after the archaeological excavation on the foundation of the enclosing wall in the northern sector of the investigated area.

The team sorted the scattered bricks from E7 monument for future re-use during the consolidation and restoration works. The team also conducted photographic and drawing documentation of the numerous archaeological and architectural objects scattered in the area.

The archaeological working group was headed by Dr. Patrizia Zolese, archaeologist and Chief Technical Advisor, with Dr. Caterina Brunelli.

3.2 Architectural Survey and Research

All the geometrical surveys of the E7 monument, including drawings of prospects, plans and sections were conducted by the Vietnamese team of architects, under the guidance of the Italian experts. All drawings were translated into Autocad.

The architectural survey included a detailed survey of the state of conservation of the E7 monument, which classified damage to the structure according to the following:

- surface alteration
- disintegration of building material
- crack patterns
- deformation
- mechanical damage
- biological growth
- structural damage.

Chemical-physical tests on the structure were also conducted together with visual inspections, photographic surveys and material sampling.

The architectural working group headed by Prof. Luigia Binda conducted the geometrical survey and crack patterns on E7. The team was composed of:

- Arch. Lorenzo Contini
- Arch. Federico Landoni
- Arch. Mara Landoni
- Arch. Dang Khanh Ngoc
- Dr. Ta Quo Khanh
- Arch. Nguyen Anh Tuan
• Arch. Nguyen Anh Dung
• Arch. Tran Dinh Thanh
• Arch. Tuan Sy
• Arch. Amphol

3.3 Conservation of the enclosing laterite wall and drainage system

Considering that the project was formulated in conjunction with the Italian FIT-funded activities in G Group of monuments (Project 534VIE4000), archaeological works included the investigation of the area between monuments G2 and G3, testing of the foundation of G5, clearing of the debris on the eastern side of the G monuments, conservation of the enclosing laterite wall and rehabilitation of the drainage system of the G Group of monuments.

The conservation of the the laterite enclosing wall started with the cleaning of the wall surfaces and survey of the internal filling, followed by the removal of tree roots, reconstruction of the foundation and the consolidation of the walls, using old bricks and lime and brick mortar.

3.4 Training activities

During the three year project, careful attention was given to the training of the Vietnamese personnel. In fact, Vietnamese workers were mainly farmers without any experience in archaeological or conservation work. After this period, the workers, as well as the national officers, technicians and local staff dramatically improved their skills. The Vietnamese archaeologists, architects, geologists, geophysicists, surveyors, draftsmen and other workers acquired new knowledge regarding international standards of conservation.

International and national personnel involved in the project were as follows:

7 International architects
5 International archaeologists
3 International Geoscientists (2 geophysicists and 1 geomorphologist)
2 TLC Dating International researchers
2 International surveyors
4 National geophysicists
1 National geomorphologist
3 National archaeologists
4 National architects
4 National draftsmen
2 National surveyors
10 Officers from local staff

Concerning the national experts (geophysicists, geomorphologists, archaeologists and architects) the contribution of international experts were at different levels. For example, the Vietnamese geophysicists were very good scientifically but
they were not familiar with geophysical prospecting for archaeology and with non-invasive diagnostic technology for evaluating the individual risk (of the monuments) and impact risk for buried structures. The same was the case of the Vietnamese geomorphologists. The geophysicists and the geomorphologists have been trained to use these new technologies in solving archaeological problems.

In the case of the Vietnamese archaeologists, the training was mainly focused in stratigraphic excavation techniques, while the Vietnamese architects were taught about the different techniques for the geometrical surveying using total stations and the reconnaissance of different crack patterns.

In the case of the common workers and laborers, eleven out of the 35 workers became specialized in stratigraphic excavation, three became assistant surveyors, five as assistant restorers of archaeological objects, and six became experts in classifying different types of bricks.

3.5. **Preparation of the My Son’s Master Plan Goals**

In line with the objective of GHF’s contribution for providing assistance in the development of a Master Conservation Plan for My Son Sanctuary, Mr. Mauricio Boriani and Ms. Susanna Bortolotto of the University Polytechnic of Milan visited the site in June 2008 to conduct research and prepare a report on entitled “My Son’s Master Plan Goals” which sought to identify the potential of the site by identifying themes which can be developed for educational and tourism purposes, in support of the development of a Conservation Master Plan for My Son. (Refer to attached report).

The Italian team identified four possible themes for an interdisciplinary visit to the site, which are as follows:

- **Natural environment**
  This theme would enable the visitor to gain knowledge on the local flora and fauna, pharmacology and traditional alimentation, climactic factors, and the impact of the environmental conditions on the monuments

- **Rural landscape**
  This theme would showcase the local agricultural practices through the creation of a botanical garden for demonstration purposes.

- **Archaeological and architectural resources**
  This theme would provide understanding on the Hindu/Shiva cults of the Champa civilization, archaeology and architecture, epigraphy and iconography, and the conservation/restoration of My Son

- **Recent historical events**
  This theme would recount the conflict which as left a profound scar on the country, and its impact on the site.
3.5 Problems encountered

Though the GHF initial contribution of US$ 15,000 was received by UNESCO Bangkok in June 2003, the Italian-Vietnamese archaeological team was able to start the implementation of project activities only in May 2004, considering the following factors:

- The delay in the completion of the on-site office and residence for the international team, which was partially funded under the Italian FIT-funded project 534VIE4000.
- The delay in the appointment of a National Project Manager, whose presence in the site was required for proper coordination with the local work force and for provision of logistic support for project implementation activities.
- No field work is possible during the raining season, thus limiting the period of time for project implementation. Usually, no work can be done on site from October – January, due to heavy rains.

However, the archaeological works on E7 proceeded smoothly, considering that the E7 is not in a very bad state of conservation.

4.0 Objectives achieved

At the completion of Projects 570VIE4000 and 507VIE4001, the Italian-Vietnamese archaeological team were able to accomplish the following:

- Geophysical survey map of E7 area
- Geomorphological map of E7 area
- Archaeological excavation of the surrounding area and the enclosing wall
- Excavation of the interior room
- Installation of wooden supports for the northern door
- Installation of metal scaffolding for the whole E7
- Geometrical and crack pattern survey of E7 monument
- Rehabilitation of ancient Cham drainage system inside the enclosing wall
- Training for conservation of Vietnamese archaeologists, architects, surveyors, geologists, geophysicists, technicians, workers and management staff

These preparatory activities are necessary before the consolidation and restoration works can be carried out in the future.

5.0 Recommendations
The Vietnamese experts who have been trained in the archaeological works in My Son since 2002 by the international team of experts already have the capacity to undertake the consolidation and restoration of E7 by themselves, in accordance with international conservation standards, considering that the E7 monument is technically not too complicated to restore. The concerned Vietnamese authorities should be encouraged to raise adequate funds for the consolidation and restoration of E7.

In the meantime, the Vietnamese staff responsible for the site should continue to maintain and clean the surrounding areas of E7, and monitor the physical state of the monument until such time that consolidation and restoration works can start.