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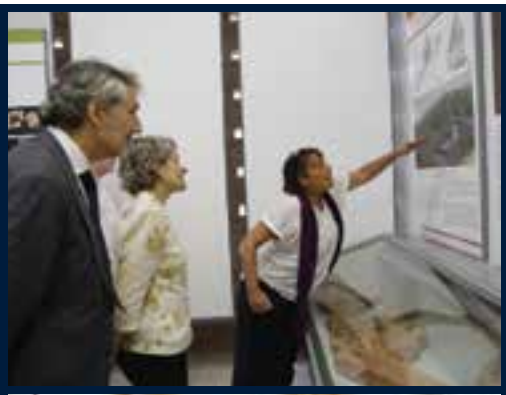



Safeguarding of My Son World Heritage Site

2003 - 2013

Project Completion Report

Published by UNESCO Office in Viet Nam
23, Cao Ba Quat, Ba Dinh District,
Hanoi, Viet Nam
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Photo credits:
UNESCO: Pages 17, 38, 40, 41, 42, 43, 44, 45, 53, 56, 57.
Lerici Foundation: Pages 15, 22, 23, 24, 25, 26, 28, 31, 35, 54.
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Dang Khanh Ngoc/ICM: Page 48.

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Project Completion Report

November 2013

PROJECT PROFILE

Beneficiary Country	Viet Nam
Donor	Government of Italy
Project Code and Title	Safeguarding of My Son World Heritage Site: Demonstration and Training in the Application of International World Heritage Standards of Conservation 534VIE4000 Phase I (2003-2005) 534VIE4001 Phase II (2008-2010) Sustainable Tourism Development in My Son World Heritage Site 534VIE4003 Phase III (2012-2013)
Project Budget	USD 812,470 Phase I USD 538,788 Phase II USD 282,735 Phase III
Implementing Offices	UNESCO Bangkok (Phase I) UNESCO Ha Noi (Phase II - III)
Implementation Partners	Ministry of Culture, Sports and Tourism Quang Nam Provincial People's Committee Lerici Foundation
Reporting Period	2003 - 2013

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Address by Ms. Irina Bokova
Director-General of UNESCO

On the occasion of the launching ceremony of the exhibit of "Group G Archaeological Excavation" and opening of Group G to public

My Son, Viet Nam, 22 June 2013

Excellencies,

Ladies and Gentlemen,

I am honoured to be here this morning, among friends of the My Son Sanctuary, to mark a milestone in our commitment to cultural heritage. The My Son Sanctuary is inscribed on the UNESCO World Heritage List, because it carries "outstanding universal value" – for the people of Viet Nam, for Southeast Asia, for societies across the world. Once the religious and political capital of the Champa Kingdom, My Son expresses 10 centuries of human spirituality and political development, building on Hinduism and influences from across the region.

The result is a unique valley, and architecture and sculptural monuments of exceptional beauty, reflecting rich exchanges between many cultures. I know the main tower is known as *kalan*, which symbolises the sacred mountain – Meru – at the centre of the universe, and I believe we all can feel this millennial power today.

After years of restoration, we open today the Group G monuments with this exhibition on the Archaeological Excavation of Group G, My Son World Heritage Site. This opening bears testimony to the efforts of many women and men – policymakers, heritage managers, archaeologists, architects, conservationists, and local workers. I salute each of them with great respect.

This project embodies Viet Nam's commitment to safeguarding and promoting the diversity and beauty of its unique cultural heritage – this commitment is reflected by the Government and, more importantly, it is taken forward by women and men from across Vietnamese society.

Over the last 16 years, we have tireless efforts to excavate the site, to clean, inventory and document artefacts and objects.

Together, we have conserved and restored the almost collapsed monuments of Group G according to the highest standards of heritage conservation – we will see the stunning results today. For all this, I wish to thank the experts of the Lerici Foundation, for sharing their experience, knowledge and, above all, their passion for My Son.

I thank especially the experts from the Viet Nam Institute for Conservation of Monuments of the Ministry of Culture, Sports and Tourism, the Quang Nam Centre for Scenic Landscapes, and the My Son Management Board. I am deeply grateful for your dedication. I hope the skills you have gained will be useful for conserving other My Son monument groups and Cham structures.

We are also honoured to welcome today 50 local workers, whose lives have changed thanks the conservation project, which has opened new opportunities and new sources of income.

Ladies and Gentlemen, without you, this work could have never been achieved... without you, it would have had little meaning…

This project proves the power of partnership – between the Governments of Italy and Viet Nam, and with UNESCO coordination. Thanks to this, we understand better today the architecture and art of the ancient Kingdom of Champa. We have sharper insight into the social and political conditions at the time when the kingdom flourished.

We have identified the construction materials of Cham bricks and *dau rai* that can be applied to conserving other Cham and Hindu-influenced monuments. The results are here now for all of us to experience…

This opening is a wonderful moment when the past is brought to light, when we stand together as a single community. This is the spirit of the World Heritage Convention, whose 40th anniversary we celebrated last year. It is the spirit of shared values and shared destiny, which have deep roots in Viet Nam.

For their leadership, I wish to thank the People's Committee of Quang Nam Province, the Provincial Department of Culture, Sports and Tourism, the Quang Nam Centre for Scenic Landscapes, and the My Son Management Board.

I thank also the Government of Italy, represented by the Ambassador of Italy to Viet Nam, Excellency Lorenzo Angeloni, for its commitment over the past decade.

In this spirit, Ladies and Gentlemen, I am pleased to open officially the Group G and the exhibit of archaeological excavation.

Address by Mr. Lorenzo Angeloni
Ambassador of Italy to Viet Nam

On the occasion of the launching ceremony of the exhibit of "Group G Archaeological Excavation" and opening of Group G to public

My Son, Viet Nam, 22 June 2013

H.E. Tran Minh Ca, Vice Chairman of Quang Nam People's Committee,

Dear Mrs Irina Bokova, Director-General of UNESCO,

Dear Mrs Katherine Muller Marin, UNESCO Representative to Viet Nam,

Ladies and Gentlemen,

It's my pleasure to be here to take part to this ceremony, which holds a special value to all of us. This important event marks the long awaited opening of the exhibit and of the G group to the public, and it is part of a wide range of activities organized to celebrate the 40th anniversary of the establishment of diplomatic relations between Vietnam and Italy. Today's ceremony is also one of the focal activities within the framework of 2013 UNESCO Culture and Development Week and is part of the most enjoyable 5th Quang Nam Heritage Festival. Above all these reasons we have today also the great pleasure an honour of the presence of UNESCO Director-General Irina Bokova, who I warmly greet again and thank for her presence.

This Exhibit represents an excellent result of the tripartite cooperation between Italy, UNESCO and Viet Nam. I would take this opportunity to express my sincere thanks to UNESCO and Quang Nam Province, for their great effort and all the support they have devoted for the success of this project, during their excellent cooperation over the last 16 years. Without such a good action of coordination and management, of UNESCO Viet Nam and of the My Son Management Board, we could not have achieved the results we celebrate today.

Italy, in collaboration with UNESCO, has been working since 1997 in My Son. During this long period, my Country has provided an essential contribution to the restoration of numerous monuments belonging to the Group G of the monumental complex. My special thanks go to the Italian team of Lerici Foundation from the

Italian University, Milan Politecnico: the Director, Prof. Cucarzi, Prof. Zolese, Dr. Landoni and the rest of the staff. Thank you, for your fine work, your great effort and your invaluable contribution to today's achievement. Lerici Foundation and its Vietnamese counterpart during these years have shared their knowledge, expertise in the field of conservation and enhancement of cultural heritage. Restoration techniques have been refined and local workers have been trained to participate in the restoration work. And it is a great achievement that all the archaeological excavation and restoration process has been documented and presented to public in this exhibit, so everybody can learn about archaeological works and admire their results.

I would like to add a final comment: the Province of Quang Nam has always been considered as a first priority for the Italian Cooperation activities in Viet Nam. Italy has been promoting several projects in the Province, in the fields of health, water and sanitation, agriculture and vocational training. These projects, under implementation or in the pipeline, have a total budget amount of approximately 16 million Euros. Among them, I would like to mention the project named "Vocational Training Centre for Restoration and Conservation of Cultural Heritage". This initiative will provide specific training courses for restorers of monuments, skilled workers in the industry and archaeological sites managers. I underline here today the importance of this project because it has been conceived to add sustainability to the results accomplished until now, improving the quality of restoration and conservation capacities of relevant Vietnamese institutions as well as upgrading the archaeological sites in Quang Nam.

All these projects tell you more than any word the level of our commitment to help this beautiful Province and our wish to see it as one of the key players of sustainable tourism development in the Country. And of course it proves our wish and expectation to see My Son recognized as one of the most beautiful pearls of Vietnam and a not to be missed spot for tourists in Southeast Asia.

Address by Mr. Tran Minh Ca
Vice Chairman of
Quang Nam Provincial People's Committee

On the occasion of the launching ceremony of the exhibit of "Group G Archaeological Excavation" and opening of Group G to public.

My Son, Viet Nam, 22 June 2013

Distinguished guests,

Ladies and gentlemen,

Today, within the framework of the 5th Quang Nam Heritage Festival 2013, in the majestic and ancient My Son sanctuary, the People's Committee of Quang Nam is solemnly organizing the Cham Cultural Festival to honour a culture which once flourished and made important contributions to the common cultural treasures of the great family of Viet Nam's ethnic groups.

After centuries of existence and development, the Cham have created a unique culture reaching peaks in architecture, sculpture and dances. Those cultural values have overcome the harsh wearing and elimination by time, to be the companion of history, and they have arrived to be with us today.

Quang Nam is the land with numerous Cham architectural relics typical of various periods and with unique styles. In addition to the My Son sanctuary, the Dong Dương Buddhist Institute, towers and groups of towers of Chien Dan, Khuong My, Bang An, 30 Cham architectural ruins have been found scattered in the province so far. The diversity of the above mentioned relics and ruins demonstrate their level and diverse cultural characteristics, thus embodying a unique treasury of intangible culture, along with enduringly and fervidly loving folk songs and dances that profoundly allure human hearts.

Implementing the Resolution of the 5th Plenum of the Central Committee of the Party's 8th Congress on the development and promotion of advanced Vietnamese culture imbued with national identity, Quang Nam province has conducted many activities over the past years, aiming at preserving and promoting Cham cultural heritage, that includes the organization of the "Mysterious My Son" festival that annually helps reinstall traditional cultural values, and which is inherited and developed at a greater level by our Cham Cultural Festival today.

In addition to the activities, Quang Nam has made major efforts in the restoration of Cham architectural relics. Thanks to UNESCO and the Italian Government's assistance, for more than 10 years, international experts and Vietnamese technicians and workers have worked tirelessly to rescue and restore the relics, turning the crumbling Group G monuments into spacious and durable ones that meet the requirements to serve visitors, as we can see now.

In line with the monument restoration, the project to preserve the My Son cultural world heritage has trained skillful technical experts and workers, equipped with adequate methodology and procedures to preserve Cham architectural heritage.

After more than ten years of implementation, we are glad to affirm that this is a successful model and can be further brought into full play. On behalf of the People's Committee of Quang Nam, I would like to express our sincere thanks to the effective assistance from UNESCO and the Italian Government in the preservation and promotion of cultural heritage.

In that spirit, I would like to declare the opening of the Cham Cultural Festival, the exhibit "Archaeological Excavation and Conservation of Group G Monuments" and the opening of Group G to the public.

I wish you all good health, happiness and success.

I wish the festival a great success.

Thank you for your attention.

Introduction and Project Overview

Panorama view of groups B, C, D in the valley with the holy mountain in the background

1. Introduction to My Son World Heritage site

Between the 4th and 13th centuries a kingdom with a unique culture owing its spiritual origins to Indian Hinduism developed on the coast of contemporary Viet Nam. Today, the physical remains of this culture, the Champa Kingdom, are illustrated at the World Heritage site of My Son Sanctuary. The sanctuary is located in a visually dramatic landscape and was the spiritual centre of the Champa Kingdom for most of its existence. From the 13th century the Champa Kingdom slowly declined and was absorbed by the growing power of Dai Viet. It ceased to exist as an entity in the later 15th century, when worship ceased at My Son.

As the main intellectual and religious centre of Cham civilization, My Son was the place where kings were cremated and towers built to commemorate their great deeds of conquests. The majority of the temples were dedicated to the Cham Kings who, after their death, were associated with divinities of the Hindu pantheon, especially Shiva, who was considered the founder of the Champa Dynasty.

Eight groups of 71 standing monuments, built throughout the 7th to 13th centuries, exist as well as extensive buried archaeology representing the complete historic sequence of construction of tower temples at the site, covering the entire period of the existence of the Champa Kingdom. The monuments have a variety of architectural designs symbolizing the greatness and purity of Mount Meru, the mythical sacred mountain home to Hindu gods at the center of the universe. The groups of monuments are constructed in fired brick with stone pillars and decorated with bas-reliefs depicting scenes from Hindu mythology.

The use of brick notably differs from other Southeast Asian monuments, which favoured more labour- and time-intensive constructions made with stone, as evidenced in Angkor Wat and Angkor Bayon (Cambodia) and Borobodur and Prambanam (Indonesia). The variance is said to be a result of differing economic forms adopted by the respective ancient Southeast Asian civilizations. Both Khmer and Javanese

societies were predominately agricultural, where an abundant workforce could be easily mobilized. In contrast, Champa society engaged in international commerce and, therefore, access to construction labour was more limited.

The location of the My Son sanctuary in a small valley with a natural spring and surrounded by mountains was integral to the spiritual significance of the site. The mountain to the south of the monuments signified Mahaparvata, the Hindu God Shiva, while the natural spring signified Mahanadi, the Hindu God Ganga, wife of God Shiva. The location also gave the site strategic significance as an easily defensible stronghold. In Vietnamese My Son literally means 'Beautiful Mountain'.

My Son was inscribed in the World Heritage List in December 1999, under Criterion ii and Criterion iii. Under Criterion ii, the My Son Sanctuary is an exceptional example of cultural interchange, with the introduction of the Hindu architecture of the Indian sub-continent into Southeast Asia. Under Criterion iii, the Champa Kingdom was an important phenomenon in the political and cultural history of Southeast Asia, vividly illustrated by the ruins in My Son.

2. Conservation history

My Son Sanctuary has been repaired and altered continuously over the centuries.

The rulers of Champa, after ascending the throne, often added to an old temple built by their predecessors but generally only to the exterior walls. At several groups of towers, these alterations were carried out over a period of several decades. During this process the original decorative features were reproduced and thus many decorative motifs were reused from century to century, undergoing little modification. In addition, materials from earlier structures were reused, especially those made of sandstone. Despite this conceptual continuity, construction techniques changed greatly from one century to the next.

First intervention efforts to the monuments made by non-Cham were of the French in the early 20th century, between 11 March 1903 and 3 February 1904. Local villagers, and a number of missionaries and archaeologists, most notably Henri Parmentier, cleared, cleaned, supported and inventoried the My Son site. Parmentier, who discovered the site in 1898, classified the temple towers into 14 groups, including 10 principal groups each consisting of multiple temples. He assigned a letter to each of these principal groups: A, A', B, C, D, E, F, G, H and K. Within each group, he assigned numbers to the edifices comprising it.

Following the research and conservation study by a group of French researchers from the École Francaise d'Extrème-Orient, Ha Noi, in collaboration with Nguyen

Xuan Dong (1907 - 1986), the only Vietnamese national who participated in the first restoration project in the early 20th century the site received almost no attention for forty years. Moreover, the site suffered dramatic and irreversible damage during the period of hostilities in the 1960s and 1970s.

In September 1980, a joint Vietnamese and Polish team, headed by Dr. Kazimierz Kwiatkowski, conducted its first investigation at My Son. Several hundred local labourers cleared vegetation, which tightly enveloped the site. During this time, emergency repairs were made on Groups A, B, C and D including the clearance and stabilization of the ground plan by removing thousands of cubic meters of soil, filling in bomb craters and treating vegetation that covered the surface of the structures. Tens of thousands of ancient bricks found in collapsed heaps were sorted by type for future re-use and decorative elements were identified and recorded for future re-assembly and restored to their original position, when this could be identified.

In the 1990s, conservation work was restricted to further removal of vegetation and soil from structures. There was a regular monitoring system for the My Son monuments, for which the Management Board and the Quang Nam Provincial Museum were responsible. Reports on conservation have been submitted to the Provincial Department of Culture and Information and the Department of Preservation and Museology of the Ministry of Culture and Information.

From 1997 to 2013 Group G was included in a major restoration project, which brought together archaeologists and architects from the Lerici Foundation of the Politecnico di Milano and the Institute for Monuments Conservation (Viet Nam's Ministry of Culture, Sports and Tourism). The restoration work was supported by the Governments of Italy and Viet Nam and UNESCO. The restoration adhered to strict international standards and has been seen as of exemplary quality.

The intervention by French mission in early 1900s

The Polish - Vietnamese team led by Architect Kazimierz Kwiatkowski in 1980s

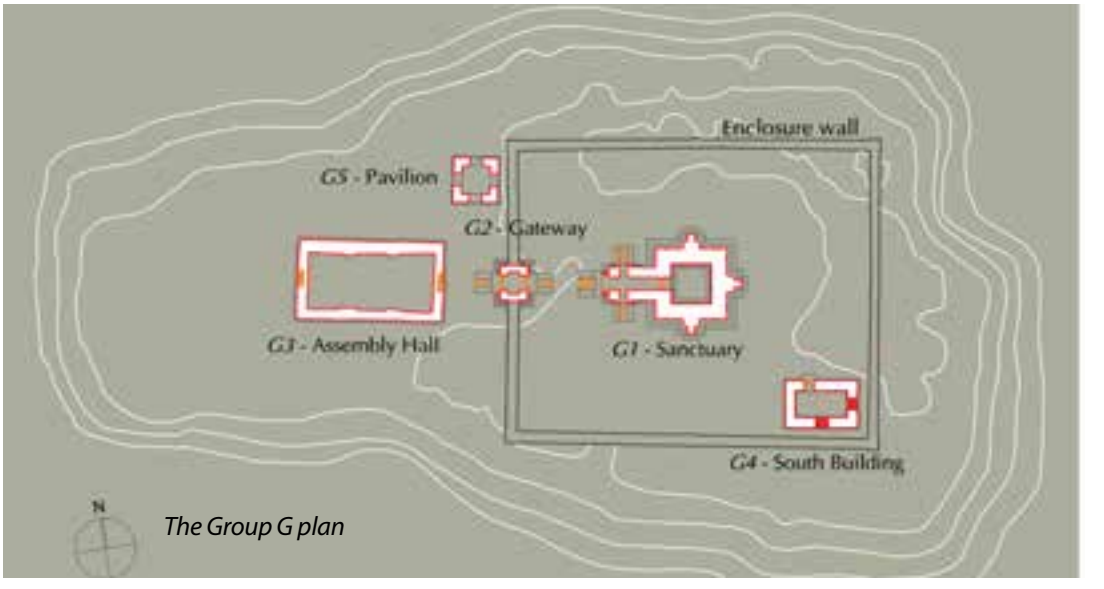
3. Overview of the support of the Government of Italy to My Son

3.1. Choice of group G

The support of the Government of Italy to My Son over the last decade, divided into three phases, focused on the archaeological studies and restoration of the Group G.

Group G, built during the first half of the 12th century, was selected from the various monuments due to its unique characteristics: the group situates on an elevated area unaffected by seasonal flooding and had never been restored except for some minor archaeological research by Parmentier in the early 1900s. More importantly, Group G, which had likely been originally constructed in one phase, presents an excellent model of how a Cham sacred area is organized with typical sacred Cham decorations.

Similar to the structure of other temples in My Son, Group G is made up of five monuments, whose type and function represent an example of Hindu and Cham religious architecture. The main temple (G1, or *Kalan*), the gateway pavilion to access the sacred area (G2, or *Gopura*) and the vestibule where believers purified themselves and prayed before entering the sacred area (G3, or *Mandapa*) are oriented along an East-West axis. Monuments G3 and G5 (the square shaped pavilion to shelter the foundation inscription) are set outside of the enclosure (*Antamandala*) which surrounds the *Kalan* and the southern building G4 (or *Kosargha*). The enclosure delineates the sacred perimeter, within which the worshipers could enter in contact with the divinity, either through the pradaksina rite or by walking around the temple in an counter clockwise direction.



The Group G plan

3.2. Project "Safeguarding My Son World Heritage – Phase I: Demonstration and Training in the Application of World Heritage International Standards of Conservation" (2003 – 2005)

Over the three years of implementation, the project resulted in a number of archaeological findings and in-depth understanding on building materials which later effectively served restoration activities.

As part of the archaeological study, researchers, employing the technique of geophysical prospecting on the entire Group G area, excavated an area of around 1,800m^2 and discovered 1,200 artefacts. The study also resulted in the dating of several bricks using a thermo luminescent method and by collecting tiles and pottery samples. The artefacts excavated were also inventoried.

Another significant achievement was the chemical-physical analysis and findings of an organic resin used to bind bricks together in the construction of Cham monuments. G3 and G5 buildings and the enclosing wall were restored and strengthened during this Phase. Furthermore, Vietnamese archaeologists, architects, surveyors, geologists, geophysicists, technicians, workers and management staff strengthened their capacities in conservation practices as a result of on-site training.

3.3. Project "Safeguarding My Son World Heritage – Phase II: Demonstration and Training in the Application of World Heritage International Standards of Conservation" (2008 – 2010)

Phase II of the project focused on the restoration of G1, the most important building of Group G. This was achieved thanks to the identification of a successful technique in producing bricks for restoration. Together with the organic resin identified from Phase I, the brick production technique is instrumental for the restoration work. This technique, together with other lessons learned during the restoration process, was published in the *Guidelines for archaeological studies and restoration of Cham monuments*, which has become a reliable resource for the restoration of Cham and other Hindu-influenced monuments in the region.

Throughout the three years of implementation (2008 - 2010), Vietnamese archaeologists, architects, conservators, and site managers were continuously trained on heritage safeguarding measures, including archaeological research and excavation, restoration and conservation activities. The capacity building efforts also extended to 50 local workers around the My Son Sanctuary, who directly participated in the restoration of the site. These workers, local farmers with no previous experience in archaeological or conservation work, dramatically improved their knowledge and skills in the until then unfamiliar field of restoration, which offers opportunities for them to make additional income and improve their livelihoods.

3.4. Project "Safeguarding My Son World Heritage" – Phase III: Sustainable Tourism Development in My Son World Heritage Site (2012 – 2013)

While Phases I and II of the project largely focused on the conservation of the Group G monuments, the ultimate goal of Phase III goes beyond the restoration works, aiming to promote sustainable tourism development in My Son in order to strengthen the balance between heritage preservation and socio-economic development.

In addition to the further consolidation of G2, a full interpretation framework was implemented at the site, including the development of new tourism products and services. Synergy has been created with the support from other donors active in Quang Nam through the coordination of UNESCO in order to avoid overlaps and allow for the projects to build on each other 's results. Group G and all associated products and services are now open to public.

These interventions are expected to lead to achievement of the long-term aim to provide a better experience for visitors, a longer stay for tourists, increased income for local communities and higher revenue for My Son Management Board. This revenue in turn will be invested in the conservation and management of the site.

The inauguration ceremony of the phase III project in Ha Noi, March 2012

4. Other supports to My Son

With UNESCO's coordination support, the Italian-funded project was designed and implemented in conjunction with a number of related interventions in the area in order to reinforce the project' successes.

4.1. Development of site visitor management plan

Between 2009 and 2012, with funding from the UN in Viet Nam's One Plan Fund, a visitor management plan was developed, using valuable research findings from the Italian-funded project. The plan proposed concrete actions for the period 2010 - 2015 to promote sustainable tourism at the site by balancing the investment in heritage preservation and in tourism development. The implementation of this plan began in 2011 with a number of activities including two training courses for heritage guides, installation of 22 rest stops and information panels within the relics and opens new shuttle electric carts between the entrance and the relics. The tourism development in My Son is placed in the context of the Quang Nam provincial integrated culture and tourism strategy, which ensures the provincial-wide comprehensive and sustainable approach.

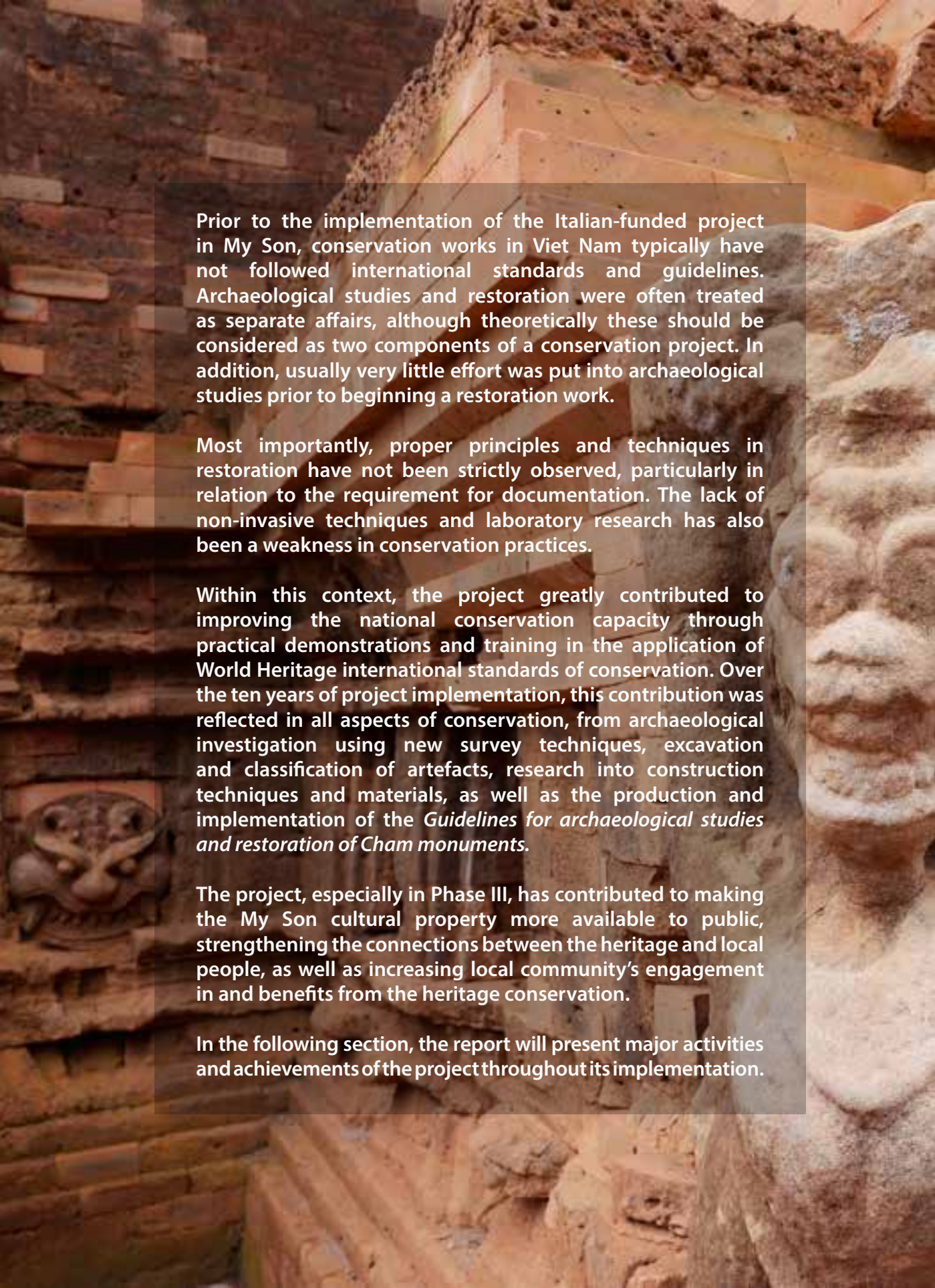
4.2. Development of innovative publications and information panels

As part of the project "Promoting sustainable tourism development in World Heritage sites in Central Viet Nam" (2013) funded by Asiana Airlines, an innovative brochure was designed to mimic in appearance the unique bricks used in construction of My Son sanctuary. With its pages cut to resemble the topographic layout of the sacred valley, this inventive publication helps to reduce the use of numerous low quality and one-time pamphlets, hence contributing to environmental protection. Using the reliable information from the historical and archaeological research by Italian and Vietnamese experts, it at the same time effectively transmits the values of the site to readers and encourages public participation in heritage preservation.

4.3. Provision of additional products and services to strengthen site's interpretation

Complementing the exhibit on excavated works and the restoration of Group G, a thematic exhibit entitled "Our Common Heritage" was held in My Son with financial support from Japanese Funds-in-Trust in 2013. At the same time, the site entrance was remodelled with the support from Korean Funds-in-Trust, providing a space for presenting local craft products and quality souvenirs. The strengthening of the site's interpretation aims to contribute to increasing visitors' understanding about and experiences at My Son World Heritage site.

Major Activities and Achievements 2003 - 2013



Prior to the implementation of the Italian-funded project in My Son, conservation works in Viet Nam typically have not followed international standards and guidelines. Archaeological studies and restoration were often treated as separate affairs, although theoretically these should be considered as two components of a conservation project. In addition, usually very little effort was put into archaeological studies prior to beginning a restoration work.

Most importantly, proper principles and techniques in restoration have not been strictly observed, particularly in relation to the requirement for documentation. The lack of non-invasive techniques and laboratory research has also been a weakness in conservation practices.

Within this context, the project greatly contributed to improving the national conservation capacity through practical demonstrations and training in the application of World Heritage international standards of conservation. Over the ten years of project implementation, this contribution was reflected in all aspects of conservation, from archaeological investigation using new survey techniques, excavation and classification of artefacts, research into construction techniques and materials, as well as the production and implementation of the *Guidelines for archaeological studies and restoration of Cham monuments.*

The project, especially in Phase III, has contributed to making the My Son cultural property more available to public, strengthening the connections between the heritage and local people, as well as increasing local community's engagement in and benefits from the heritage conservation.

In the following section, the report will present major activities and achievements of the project throughout its implementation.

1. Archaeological investigation

A significant strength of the archaeological investigation within this project was the collection of very rich information while minimizing the impacts on the monuments and surrounding areas by employing all five modern techniques of non-invasive methodology.

These techniques, including geo-archaeological survey, topographic survey, geophysical prospection, geomorphologic investigation and geological and hydrological surveys generated valuable data, particularly on buried structures, and helped to analyze the structures of standing monuments within Group G.

These techniques were extremely useful, especially as Group G was covered with thick vegetation at the beginning of the research. Results from the geo-archaeological survey showed that in most of the area (70%), the cultural layer was at least 2.5 meters deep underground.

A significant result from the research using the topographic survey technique was the production of a new topographical map at a scale of 1:1,000. This map accurately reflects the changes in topography observed by Parmentier in the early 1900s and the hydrography, including failures in water management by the French mission. The map also provides information on a larger area surrounding the monument groups, providing better information of the ancient landscape of My Son Sanctuary.

Using geophysical prospecting with magnetic methods, buried structures were detected by viewing the high contrast of magnetic susceptibility between bricks and natural soil. This helped to determine the original shape of the hill before the construction of G monuments by Cham people. The collected data supported the assumption that the Cham people flattened the top of the hill before building the monuments.

The technique also helped to detect buried elements, collect information on brick characteristics and conduct comparative analysis of soils, bricks and other construction materials. At the end of the geophysical prospecting campaign, a geophysical survey map of the Group G area was produced.

With geomorphologic investigation techniques, the project team was able to localize the fault pattern, identify whether the area was affected by tectonic movement and understand the old river/stream courses.

Finally, the geological and hydrological surveys provided data on the natural environment and human interaction over the centuries. The data from this survey also contributed to identification of measures in the control and management of a river system which caused negative impacts on the monument area. It found that the top soil is extremely reduced, probably due to the strong erosion processes that are still active inside the valley. The bedrock is constituted by triassic polymictic conglomerates, sandstones and red-coloured siltstones of the Nong Son Formation.

2. My Son Risk Map and GIS Catalogue of Monuments

The main hazard My Son is exposed to is flooding, as the entire site is located in a valley circled by a river and surrounded by a mountain chain. Once flooded, the monuments are highly vulnerable due to a series of factors, including, in addition to the existing condition of monuments after a very long period of neglect and warfare: i) weakness of site structures due to inconsistent use of materials between the original construction and restoration (for example, organic resin was used to bind bricks in the original structures of the D1 and D2 monuments, but cement was used in the restoration process); ii) the deterioration of bricks due to inappropriate preservation methods as in the case of F1 under the new roof; and iii) lack of regular maintenance.

Data analysis on vulnerability and risks was conducted for 17 monuments and incorporated into the GIS data system. The results were used to produce the integrated thematic maps of the site and a Catalogue of My Son and its monuments. All these data were then managed in the 3D Odysseus software system. The entire package of GIS data was also transferred to the Institute for Conservation of Monuments, which uses the data as part of the continuing management and restoration work at site.

Group G area before exvacation: visible scattered ruins of G2 and G3

3. Archaeological excavation

A series of archaeological excavation activities were conducted in dry seasons annually (February – September) between 2003 and 2010. A team of archaeologists, restorers, draftsmen, architects and conservationists was set up with the guidance and management of leading experts from Lerici Foundation and the Institute for Conservation of Monuments, under UNESCO's coordination.

3.1. Intensive and exhaustive excavation of G area

Before the project intervention, Group G was covered almost entirely by a thick layer of vegetation. Using non-invasive techniques, the project team was able to collect initial data to produce a Geomorphologic Map of Group G, as described above, which was helpful for excavation works.

The project team then decided to conduct extensive archaeological excavation to understand the bigger picture of the Group, considering that it is spread over a large area of approximately 3,500m^2. In the past, this area was excavated only once during 1903 - 1904, by Parmentier and his team, who mainly retrieved and collected art masterpieces. During this period, most of the debris covering the monuments was removed without documentation. This debris and architectural elements were once again removed as a result of bomb explosions during the American War and much was destroyed.

The excavation area, covering 2,500m^2, was divided into 20m^2 grids with trenches of different sizes. Prior to the excavation, which started in 2003, bushes and other vegetation were cleared. Three types of chemicals were used to eliminate the vegetation after a careful test to ensure the lowest impact on the masonry. The excavation process was then divided into two phases. First, debris left from the

G2 and G3 during exvacation

Parmentier period and the war was removed, mostly taken in the north edge of the hill. Second, the base of the dumped debris was excavated to reveal the original surface.

During this process, many artefacts were found in the rubble, most of which were terracotta architectural decoration such as antefixes, tympanums which depicted floral patterns, divinities and other sacred symbols related to Hinduism. A few artefacts with Chinese and Cham inscription were also discovered. Thousands of original bricks were found during the clearing. All bricks were sorted, cleaned and stored for later restoration and each layer of excavation was carefully recorded.

The Group was severely affected over the centuries by abandonment since late 13th century, post-abandonment spoliation from vegetative overgrowth, French intervention in the early 20th century, American bombing and a Polish mission's intervention in the 80s. Taking this, and the vulnerability of the Group, into consideration, excavation activities were carefully conducted with documentation and deep respect for the religious and political property of the ancient Champa. International principles in the archaeology have been strictly followed.

As a result, eight layers of stratigraphy were identified between the original bedrock and the recent post-war rubble and over 1,500 artefacts were found throughout project Phases I and II. The rich data found from the excavation were used as inputs for a 3D movie describing the ancient monuments in their original condition and revealing valuable information on the ancient Cham societies.

3.2. Excavation of the monuments

Following the excavation of the surrounding areas, all five monuments in Group G and the enclosing wall were excavated.

The excavation work at G1 included the cella and the outer basement which was extended to the east side of G area and around the G5 monument. This extended area of excavation led to the rediscovery of the enclosing wall and the natural bedrock of the hill. All bricks were cleaned and recorded for later use in restoration.

At G2, the excavation of the collapsed areas and the surroundings was conducted until the bedrock was reached. The building's interior was cleaned from the rubble and the thresholds were found. The digs showed that G2 was built on natural bedrock with two rows of laterite blocks at the foundation.

The works at G3 found that the original building was divided into three portions and probably had four pillars sustaining a tile roof.

At G4, a large amount of broken bricks, sandstones, small pebbles, tiles and pottery shreds were uncovered while an irregular laterite was found in the corner of G5 building.

Collapse of G3's tile roof, after site abandonment

General view from the East side, showing the tower-shrine and G4 collapsing, which occurred after the Cham abandonment

The excavation also helped to unveil the enclosing wall structure, which was buried at the beginning of the project except a short stretch around G4. Many pottery pieces belonging to gritty ceramic and some significant green glazed fragments were found during the digs at the enclosing wall. The wall in the west was consistent in height with an average of three courses of brick. The wall in the north side was very different with the courses varied from two to six. The southeast corner collapsed and was deformed due to a landslide.

The enclosing wall was studied carefully and treated as a monument itself for its importance in Hinduism. It was a symbol marking a sacred area, protecting the divinity against evils and preventing worshippers who had not purified their mind from entering the holy space.

This work provided quality information to understand the relation between the monuments and the construction of this Group. All bricks, including broken ones excavated during archaeological works, were carefully cleaned, brushed and classified based on origin, size, surface condition, features and possible use. The complete ones were marked and stored in a storeroom next to the Group G. The broken ones were also classified for later use in making brick powder and mortar. All these materials were later used in restoration of monuments.

In addition, the studies also rediscovered the ancient drainage system in Group G, which was later highly useful in restoration.

Gazelle head found under debris in the Group G area

4. Handling of archaeological artefacts

4.1. Treatment of artefacts

During the excavation at Group G and surrounding areas, approximately 1,500 artefacts have been discovered, found in over 5,000 fragments, many of which were ceramic imported from China or local pottery used for ritual purposes.

A Vietnamese team of technicians was trained on the proper handling of archaeological materials, a task which can easily be neglected if time is limited. As part of the on-the-job training, the technicians performed an inventory and documentation of archaeological materials during the excavations before they could be transferred to the storage room. Complete measurements and drawings of the excavated holes and architecture were produced at each step of the stratigraphic excavations.

In the store room, a complete cleaning was conducted and photographs and drawings of the fragments were produced. The analysis and documentation of the fragments was then conducted prior to their classification. Two draftsmen and a conservationist of My Son Management Board who were trained in electronic graphics and documentation participated in the process, under the guidance of two Italian archaeologists. The studies of the fragments and objects led to valuable understanding about the history of the site.

Considering the large number of artefacts and archaeological relics recovered from the site, additional extensive research will be required in the future to fully understand the significance of the recovered items.

4.2. Restoration of terracotta objects

There were about 200 architectural decorations found among over 1,500 excavated artefacts. About 60 typical samples were restored and selected for the exhibit "Archaeological Excavation and Conservation of Group G Monuments" at the site museum. Most of the architectural and sculptural decorations were terracotta. Only a few samples were sandstone, such as the pedestal and Yoni.

4.3. Cataloguing of Cham objects

The long process of excavation, classification and documentation has resulted in a set of Catalogues of Cham objects in the form of an album. An Inventory Documentation using the software Filemaker Pro was also created to allow easy access and management. The documentation was provided to My Son Management Board for future use, with a recommendation that the Management Board continuously update it in case new objects are identified, following the same format.

Above: Drawing of the fragment terracota tympanum showing a female deity, most likely Laksmi, found in Group G

Architectural elements and terracota decorations discovered during excavation work

5. Research into material characteristics and building techniques of the ancient Cham builders

5.1. Research on compatibility between ancient and new bricks

Construction materials are essential for the restoration of built heritage. This matter is often more challenging in the case of monuments made of bricks such as Cham monuments in My Son than the stone or wood heritage whose materials are more readily available.

The research on materials used in My Son was conducted both in on-site experiments on mortars and at Polytechnic of Milan in laboratory analysis on bricks, binder, lime and clay. The research findings showed the characteristics of original bricks and set the standard for brick production to ensure the best compatibility between old and new materials.

5.2. Research and test on the natural resin

Parmentier made an assumption that ancient Cham architects used an organic resin to bind bricks that can prevent the growth of vegetation inside the joints. However, there had not been research conducted to test his hypothesis.

Within this project, many chemical-physical analyses were conducted to test three possible sources of biological glue from indigenous trees, including *Dau Rai, Boi Loi and O Duoc*. The analyses have been done jointly by the Lerici experts and staff of the Institute for Conservation of Monuments, under an agreement of staff exchange between the Institute and the Department of Structural Engineering, Polytechnic of Milan.

This research resulted in the finding of an organic resin from the Dipterocarpacea Alata, an indigenous tree, often known as *Dau Rai*, found in Central Viet Nam, Central Laos and Northern Thailand. This organic resin is still being used by Vietnamese in the region today in caulking wooden boats and in the production of colour pigments.

The tests confirmed this resin an appropriate organic binder between bricks, particularly in monsoon areas with high humidity such as My Son. The resin needs to be used in a mixture of shell lime powder and brick powder as mortar for the internal part of masonry. This breakthrough research paved the way for the restoration works with Cham brick monuments both in My Son and in many other parts in the region.

5.3. Research on lime and laterite

Shell lime is also an essential material for the restoration of brick monuments. The project team spent great efforts in collecting the shell lime from different regions nearby My Son, including from a small village in Lang Co lagoon in Hue, Non Nuoc village in Da Nang and a village in Hoi An ancient town.

After many lab tests, the sample from Hoi An, the closest location to My Son Sanctuary, was identified as the most compatible. It was used to produce the mortar following the proportion of one part shell lime and three parts brick powder.

Laterite is uniquely used in construction of monuments in Group G. After the test, the project team identified a site 90km from My Son Sanctuary where laterite can be collected. This material is still being used by locals in building houses. Collected laterite blocks were then brushed with water to remove clay and soil and cut by the sizes similar to those of the originals for restoration.

5.4. Experimentation and production of new bricks

The number of original bricks collected from collapsed buildings and excavation was not sufficient for restoration. Therefore, there was a need to produce new bricks which are compatible with the original bricks in the chemical-physical standards. This type of brick requires quality clay and the same technique of production as in the past. Many tests were conducted and first batches of new bricks were produced and used in Phase I (2005) as an experiment. However, these bricks developed salt efflorescence and biological growth on the surface after several months of being exposed to the natural environment.

Tests continued over three years until another brick composition and production technique were identified that met the technical requirement.

An important lesson learned from this project is that research to identify appropriate materials for restoration should be planned as one of the project expected results for any restoration project. Sufficient time and resources are needed for proper research and experimentation in preparation for restoration. Although the brick issue has caused some delays to the project, the identification of an adequate composition and production technique for new Cham bricks will eventually contribute remarkably to future restoration activities of Cham and other Hindu-influenced ancient monuments.

The long process of experimentation for production of restored bricks was documented in the *Manual on Cham brick production process* by the experts of

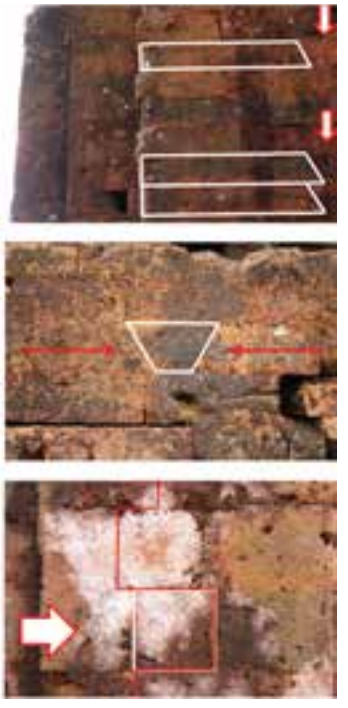
the Institute for Conservation of Monuments. The experts identified a qualified producer, Mr. Nguyen Duy Qua, based in the vicinity of My Son, who can potentially supply bricks for future restoration projects.

5.5. Analysis of construction techniques

Architectural and geometrical surveying was conducted to understand the building techniques before the restoration. In this process, the project team removed rubble and soil, cleaned wall surfaces and joints of bricks and conducted measurement sketches. With these preliminary data, the experts were able to evaluate the damage of building structures. Damage was classified in the following categories: surface alteration; disintegration of building material; cracked patterns; deformation; mechanical damage; biological growth; and structural damage.

In parallel with the geometric surveys, the experts conducted an analysis of construction techniques, focusing on the brick connections considering different brick shapes. Research showed that the ancient Cham built massive structures with soft red bricks assembled by hand rubbing to produce the thin joint typical in Cham brick monuments.

The experts also identified a unique construction technique in the enclosing wall structure which was built of three parts, the foundation made of two rows of bricks, the basement made of laterite and the body made of bricks.



Left: Special brick shapes, made for masonry connections
Above: Organic resin used as a binder

6. Restoration and conservation

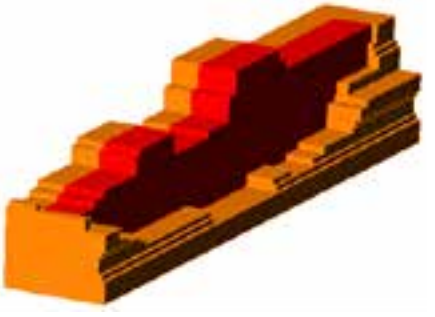
6.1. Conservation principles of My Son site

A set of principles for restoration of Group G was adopted in 2004 by the Project Steering Committee with a technical advisory board led by Prof. Luigia Binda, Prof. Hoang Dao Kinh, Arch. Pierre Pichard and Dr. Mauro Cucarzi, after several meetings in Ha Noi and My Son.

These principles were applied to Group G, but they can be applied not only for all the My Son monuments, but also for all the Cham structures in Viet Nam built with brick masonry and without the use of mortar in the external joints.

The main principles adopted were the following:

- To respect the authenticity of the original masonry and perform reconstructions only where strictly necessary;
- To forbid, in principle, the introduction of new materials different from the original ones (as steel, concrete, cement mortars, fibre-reinforced plastic, etc.) to avoid incompatibilities and also taking into account the difficulty of applying durable materials in the peculiar tropical environment;
- To preserve the remaining parts of the collapsed buildings as much as possible by repair and local consolidation;
- To reconstruct by "anastylosis" the sections where stability or durability problems are present, leaving intact the present profile of the ruins as much as possible;
- To use new bricks, well distinguished from the old ones, only in case of dangerous stability deficiency; and
- To use natural resins to create new joints at outer walls and use brick fragment with hydraulic mortar for inner reconstruction.



The wall of G3 was reconstructed using the anastylosis

View of Group G in 2008: the completion of restoration of G3 and G5

6.2. Conservation and restoration of G3 and G5

The restoration works began with G3 and G5 early on in Phase I, considering the structure of these buildings is relatively simple compared to others.

G3 was almost completely collapsed with only the basement remaining. Most of the restoration works of the monument were to strengthen what remained of the structure and prevent it from collapse. The project team performed the consolidation work in every corner of the monument and the internal floor. The experts decided to keep the internal floor level slightly lower than the original due to the lack of uniformity in the height of the walls. The restoration of this monument also required the use of newly collected laterite blocks to replace damaged ones.

At G5, the work mainly consisted of filling the inside of monuments and repairing the remaining portions. A decorated brick which was found at the second layer under the foundation was similar to the one found in the G3 monument. The foundation of G5 was composed of three layers of bricks of different sizes and characteristics which were placed in an irregular way and jointed by soil and brick fragments. The restoration of G5 mainly involved using original bricks which had been collected due to the monument's small size.

This first restoration work set a great foundation for the project team to continue restorations with a larger monument, G1 temple, in Phases II and III of the project.

6.3. Conservation and restoration of G1 temple

The restoration work of G1 was conducted between 2008 and 2013. A scaffolding and large temporary roof were created to shade the monuments during restoration works.

A great deal of work was conducted to strengthen the building structure, particularly to save the northern wall which was at risk of collapse at the beginning of the project. Key activities and achievements of restoration included fixing the basement, consolidating corners, reconstructing stairs, strengthening the northern, leaning wall and the vaults, monitoring the drainage system and restoring the cellar.

The corridor of G1 was also restored Phase III of the project to allow the visitors to penetrate the inner core of the temple and access the cellar. A sloping floor has been executed with a layer of bricks to facilitate the water discharge towards the North and South staircases. By mid-2013, the temple was fully restored, remarkably improved when compared with its situation in 2007.

After restoration of the masonry, a pit has been dug and filled with gravel so the rainwater will disperse into the conglomerate bedrock during the rainy season.

Different options for future protection the cellar (such as a permanent roof) were proposed to Quang Nam Provincial People's Committee and related management agencies by the Lerici Foundation and the Institute for Conservation of Monuments in March 2013. It was decided that the temporary roof was to be removed, and the My Son Management Board will continue to monitor and maintain the situation, particularly during the rainy season.

Although it was not originally planned for this issue to be resolved within the scope of this project, there was a need to flag this issue to provincial authorities, who will take responsibility for addressing it after the restoration is completed in order to ensure that the restored Group G monuments can remain in good condition in the future.

In relation to this temple, the sandstone Yoni and pedestal found within Group G were relocated next to the entrance of the building to reflect the original structure of the site and functions of the Group G monuments. Before the relocation, the broken Yoni was restored by a professional stone restorer from the Cambodian Royal Museum.

6.4. Conservation and restoration of G2

The G2 monument was restored in 2012 - 2013 in parallel with the completion of G1. The restoration began with strengthening the foundation and repairing a large portion of cracked and dislocated walls. The work then continued with dismantling

and reassembling the stairs. The entrances were reconstructed with two relocated thresholds and stone frames.

6.5. Conservation of the enclosing wall

The use of mixed materials of bricks and laterite at Group G was unique among complexes of monuments in My Son. The enclosing wall, which symbolically marked the holy area, was built with a large number of laterite blocks.

During Phase I, new laterite blocks were inserted into missing positions with mortar to stabilize the structure. In some parts which were seriously damaged, such as the eastern side, three or four entire courses were reconstructed to support the structure.

In 2013, the last part of the enclosing wall was restored after the completion of works at G1 and G2.

6.6. Rehabilitation of the drainage of the monuments

A drainage system was installed for the discharge of rain water for G3, G5, then G2 and G4 according to technical proposals by Architect Pierre Pichard from École Francaise d'Extrème-Orient. The system was implemented with the following steps and techniques:

- Preparation of the bed surface with rammed soil;
- Construction of iron pipes through the wall's foundation during reconstruction (iron pipe with diameter of 160mm);
- Creation of clay basins to collect water;
- Protection of the basins and the absorbent mount of pipe by plastic nets;
- Installation of water discharge pipes (PVC pipes with diameter of 140mm);
- Installation of inspection box and pipe;
- Connection of the pipes with the outside drain system;
- Refilling with mixture of soil, lime and broken brick;
- Spreading of absorbent layers made of pebbles up to designed floor level (10cm thick);
- Protection by plastic textiles;
- Spreading of final layers by mixture of sand and pebbles for the flooring.

In addition, the ancient drainage system of the Group G enclosing wall was discovered during the archaeological research, making it possible to be integrated into the site interpretation for visitors. This system, composed of two original drainages located in the north wall, was to discharge rainwater from the sacred space around the main temple. Both drainages were broken when discovered. The broken trough bricks have been removed and stored as Cham artefacts. They were then substituted by a reproduced one made with the same characteristics. The damaged laterite bricks around them were also replaced with new ones.






7. Promoting sustainable tourism development

While having all the potential to become a popular tourist destination, My Son receives only 20% of tourists who come to the province and the income generated from tourism is small compared to other destinations in Central Viet Nam such as Hue or Hoi An. Most of the visitors to My Son come on a tourist bus, spend only a couple of hours at the site then leave to have lunch in Hoi An.

Great efforts have been made over the past three years to promote sustainable tourism in My Son, while ensuring that the heritage is adequately preserved. In this regards, funds had been pooled together from different sources, including from the United Nations in Viet Nam's One Plan Fund, Korean Funds-in-Trust, Japanese Fund-in-Trust and Asiana Airlines/Korean National Commission for UNESCO, in addition to the major support of Italian Funds-in-Trust, in order to maximize the synergy among different projects coordinated by UNESCO, and to give the site a full boost toward the sustainable development of tourism.

Ms. Irina Bokova, UNESCO Director-General launched the opening of Group G in June 2013

7.1. Development of site interpretation plan

Before UNESCO interventions took place in My Son, the site offered limited interpretation of the heritage values and the services and products made available to tourists were limited. This is one of the reasons for the short stays of visitors at the site. During Phase II (2008 - 2010), an interpretation plan was developed for the site, which identified four themes for a My Son visit itinerary: i) natural environment; ii) agricultural landscape; iii) archaeological and architectural evidence; and iv) recent historical events.

The content of the Site Interpretation Plan has been integrated in UNESCO's Cultural Heritage Specialist Guides training course which aimed to provide tour guides with essential information that can be delivered to tourists during visits to My Son. In addition, it has also been used in the development of the Quang Nam provincial Integrated Culture-Tourism Strategy under another UNESCO project in the province, and a Visitor Management Plan, which provides concrete actions that need to take place during the short-, medium- and long-term to ensure sustainable tourism.

My Son site managers have continuously used the Site Interpretation Plan as major reference document to develop a set of tourism messages and a directory of attractions. The themes identified were also used for the development of tourist products, supported both under this Italian-funded project and others.

G2 (back right) after restoration was launched in the Cham festival, June 2013

7.2. Upgrading of the landscape around Group G

While restoration work of Group G was reaching completion, preparation to open the monuments to the public was undertaken, especially in relations to the surrounding landscape. This included the design and construction of the entrance to the compound, both through a pathway and a stairway, ensuring the harmony with the environment.

The landscape upgrading work also involved the setting up of walking paths around the monuments of Group G. The paths are especially useful when the site is crowded with visitors as they clearly mark the visiting routes. As part of the path establishment, an 80-centimeter boundary was built around all monuments to protect their basements.

Two view points were also established near G4 and G5, from which visitors can have an overview of the Group G monuments and a close look at G1. The original floor and the original Cham drainage system have been restored and reused. The southern side of the hill in which Group G is located was reinforced to prevent soil erosion. Grass and bushes were also planted around the compound so their roots can help to retain soil

The South door of G1 before intervention

The South door of G1 after intervention

The new publications were launched during the 5th Quang Nam Heritage festival in June 2013

and improve the site's landscape. The final touch to make the completion of the Group G landscape was the removal of the temporary roof that had been erected over G1 for the past decade.

The opening of Group G to the public after over ten years of being closed for restoration took place on 22 June 2013, under the framework of the 5th Quang Nam Cultural Festival and to celebrate the 40th anniversary of Italy - Viet Nam diplomatic relations. The ceremony was attended by the UNESCO Director-General, the Ambassador of Italy to Viet Nam, high ranking authorities of the Ministry of Culture, Sports and Tourism and Quang Nam Province and almost 200 other guests.

The Group G monuments are presented to the public as an exemplary case of heritage restoration, transforming the entire group to a better status of conservation. Opening of the Group G monuments to the public added a valuable tourism product to the site by showcasing a model of restored Cham heritage with the unique construction techniques and materials.

7.3. Development of new publications

Funding was mobilized from other sources to turn the in-depth knowledge and data from archaeological research and conservation activities into innovative publications, which effectively transmit the values of the site to readers and encourage public participation in heritage preservation. These products also help to reduce numerous low-quality and one time used pamphlets, hence contributing to environmental protection.

The *My Son Sanctuary* publication was designed to mimic in appearance the unique bricks used in the construction of My Son Sanctuary, and its pages are cut to resemble the topographic layout of the sacred valley. *A Journey Within* situates My Son within the context of World Heritage sites in Viet Nam's Central Region.

8. Development of the museum space

The "site museum", located at the main entrance of the site of My Son, was built in 2004 with Japanese support. Although the ticket counter is located in the lobby of this building, few visitors come in and only wait at the building steps while their guides purchase tickets.

During Phase III of the project, a number of international and national professionals were engaged in the reorganization of the museum space and development of thematic exhibits in order to attract visitors to spend a longer time at the site and also to provide them with a more enriching experience. The reorganization and development of the museum space has contributed to strengthen the character and quality of all the rooms in the building and maximize the use of its space without disturbing the building's architectural style.

Dr. Patrizia Zolese (left) explained the displays to Ms. Irina Bokova (second from left), UNESCO Director-General and Mr. Lorenzo Angeloni (fourth from left), Ambassador of Italy to Viet Nam during the opening of G Group Exhibit, June 2013

8.1. New thematic exhibits

The thematic exhibit "Archaeological Excavation and Conservation of Group G in My Son World Heritage", displaying over 60 objects excavated from Group G, 25 information panels and a multimedia component, was set up in order to provide visitors with in-depth knowledge about the archaeological findings and conservation history of the site, with strong emphasis on the decorative elements and ritual symbols. The exhibit also provides detailed information on the overall history and description of the site and the Cham construction techniques, and highlights the support of the Government of Italy and UNESCO over the years.

In addition to being informative and educational, the innovative design of the exhibit also helps to enhance visitors' visual pleasure. The design, while consistent throughout the exhibit, with its various artefacts, labels, shelves and information panels, at the same time distinguishes this exhibit with other components of the building.

An exhibit entitled "Our Common Heritage" was established at an adjacent room in the building. This is a result of a Japanese Funds-in-Trust project to Viet Nam, Laos and Cambodia, which presents the interconnectedness between My Son and other archaeological World Heritage sites in Indochina.

The entrance of My Son site museum after refurbishment

8.2. Refurbishment of the museum building's lobby and entrance

The large and previously underused lobby of the museum building was the subject of another upgrading to capitalize on the lush landscape behind the building that the lobby overlooks.

Complete refurbishment of the building's lobby was implemented to attract visitors to the building and to enhance the visual aspect and convenience that they will first encounter.

The remodelling work at the lobby involved a ticket booth, a souvenir shop and a cafe with spacious sitting area overlooking natural landscape. The design was made to fit with the building architecture and in harmony of the surrounding environment.

A new system of outdoor signs and lighting was installed at the entrance of the building under the framework of the Asiana Airlines-funded project, which provides a comprehensive facelift to the whole area, and serves as a pointer to the building for visitors.

The lobby of My Son site museum before intervention

The lobby of My Son site museum after intervention

The new gift shop installed in the lobby of My Son site museum

A technical meeting between Lerici experts, local staff and workers in Group G

A technical meeting between UNESCO, Lerici Foundation, ICM and the My Son Management Board

9. Capacity building

9.1. Management skills

Both management and technical staff of the My Son Management Board and the Quang Nam Centre for Management and Preservation of Monuments and Scenic Landscapes were encouraged to participate in all project activities to build their technical and practical capacities.

The Director of the Quang Nam Centre for Management and Preservation of Monuments and Scenic Landscapes was selected to work as a National Project Coordinator and a Vice Director of My Son Management Board was selected to take the position of Local Project Coordinator.

With a team of resource persons from each agency, they were able to perform complex tasks, including working closely with international and national experts, coordination among all related management agencies and stakeholders on technical issues which occurred over ten years of project implementation.

In addition to the hands-on coaching of UNESCO programme officers during the project implementation, the management personnel also had opportunities to participate in a number of training and capacity building workshops on heritage management, tourism planning as well as scientific conference and technical workshop on Cham culture, archaeology and monuments.

The improved management capacity was reflected in the active participation of the site personnel during the last phase of the project. The percentage of Vietnamese personnel engaged in project activities from the My Son Management Board's staff has increased from below 30% in Phase I (2002 - 2005) to over 50% in Phase II (2007 - 2010) and to 80% in Phase III.

Ms. Irina Bokova, UNESCO Director-General and Mr. Tran Minh Ca, Vice Chairman of Quang Nam Provincial People's Committee handed the certificates to local technical staff who participated in the project, June 2013

The coordination capacity of My Son Management Board has also significantly increased, and this is evidenced beyond the coordination of the Italian-funded project. Four additional UNESCO projects were implemented in My Son during the last four years, and the My Son Management Board has been able to ensure that the results of these projects reinforced one another and contribute to the overall objective of strengthening the conservation and sustainable tourism development at the site.

9.2. Technical skills

A technical team of 25 archaeologists, architects, geologists, geophysicists, surveyors and draftsmen coming from site, provincial and national levels have acquired knowledge and expertise on international World Heritage standards of conservation from both formal workshops and by working side by side with leading Vietnamese and Italian experts.

National geophysicists and geomorphologists were trained on the applied geophysical prospecting in archaeology and non-invasive diagnostic technology for evaluating risks on buried structures. They were also trained to use these technologies in the assessment of archaeological problems.

Archaeologists were trained on stratigraphic excavation techniques while trainings for architects focused on different techniques of geometrical survey. Draftsmen were trained mainly in drawing archaeological stratigraphy, archaeological excavation plans and archaeological objects according to international standards.

During project implementation, the Vietnamese team of experts and technicians were also extensively trained on the handling of archaeological artefacts in

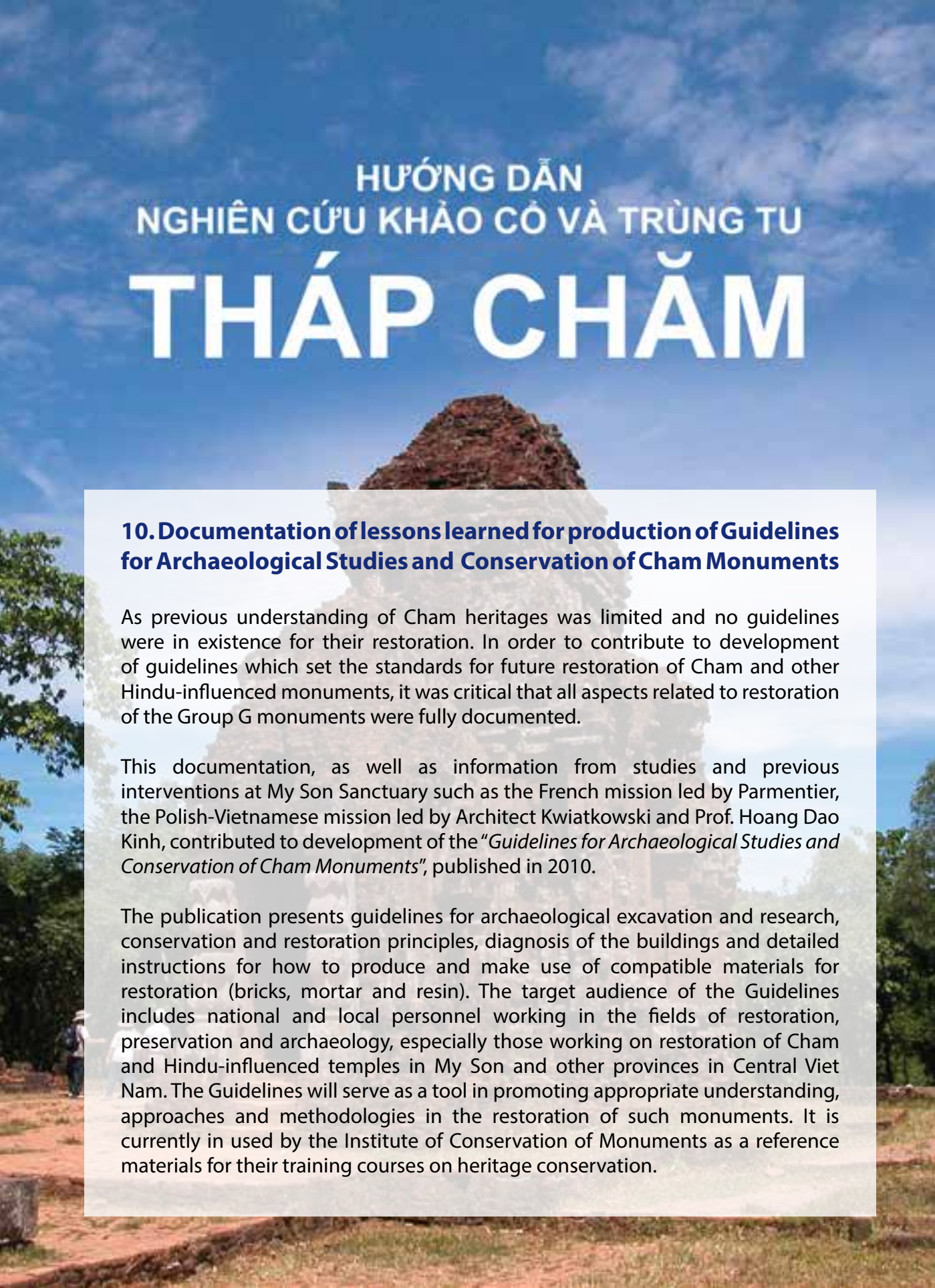
Delegation representing UNESCO in Viet Nam, Italian Development Cooperation Office, Lerici Foundation, Department of Cultural Heritage and Institute for Conservation of monuments, My Son Management Board in a field monitoring mission in December 2010

compliance with international standards. This involves proper cleaning, documentation and inventorying of the excavated artefacts before putting them in storage.

The training opportunities were also extended to a large number of technical personnel in the country with several courses and workshops. One of the most important courses was on investigation techniques, restoration, consolidation and conservation of Cham Monuments in My Son, which was attended by over 100 technical staff from 14 provinces with Cham heritage in the Central and South Regions of Viet Nam.

Capacity building efforts led to remarkable achievements in archaeological excavation, consolidation and restoration. This not only applies to technical personnel from My Son site and departments in Quang Nam province, but also 50 workers, who were originally farmers from My Son's surrounding villages. Throughout the course of the project, the workers have become adept in a wide range of conservation tasks, including sorting bricks, mortar masonry assembling, wall assembling, moulding reproduction, laterite stone dressing and stone repairing. The newly acquired skills have provided them with additional livelihood.

This capacity building plays an essential role for the sustainability of the restoration work of Cham monuments, not only in My Son but also in other provinces of Viet Nam's Central Region. There is great potential for future conservation projects in Central Viet Nam to capitalize on the new skills and knowledge of this workforce, including managers, technicians and workers, to ensure continuity and further success.



10. Documentation of lessons learned for production of Guidelines for Archaeological Studies and Conservation of Cham Monuments

As previous understanding of Cham heritages was limited and no guidelines were in existence for their restoration. In order to contribute to development of guidelines which set the standards for future restoration of Cham and other Hindu-influenced monuments, it was critical that all aspects related to restoration of the Group G monuments were fully documented.

This documentation, as well as information from studies and previous interventions at My Son Sanctuary such as the French mission led by Parmentier, the Polish-Vietnamese mission led by Architect Kwiatkowski and Prof. Hoang Dao Kinh, contributed to development of the "*Guidelines for Archaeological Studies and Conservation of Cham Monuments*", published in 2010.

The publication presents guidelines for archaeological excavation and research, conservation and restoration principles, diagnosis of the buildings and detailed instructions for how to produce and make use of compatible materials for restoration (bricks, mortar and resin). The target audience of the Guidelines includes national and local personnel working in the fields of restoration, preservation and archaeology, especially those working on restoration of Cham and Hindu-influenced temples in My Son and other provinces in Central Viet Nam. The Guidelines will serve as a tool in promoting appropriate understanding, approaches and methodologies in the restoration of such monuments. It is currently in used by the Institute of Conservation of Monuments as a reference materials for their training courses on heritage conservation.

Highlights of Achievements

5,000	fragments excavated in Group G
450+	drawings produced for the catalogue of GIS data of all monuments in My Son
36	trenches opened for the complete excavation of Group G area
1	discovery of organic resin mix used by the Cham for binding bricks
1,500	artefacts rediscovered and classified
26	international experts consulted
24	national experts involved
20	national staff trained in heritage site management
12	national and international institutions involved
18,000+	new Cham bricks produced for restoration
1,200	laterite blocs produced restoration
50+	local workers trained in restoration skills
1	thematic exhibit opened on Archaeological Excavation and Conservation
25	museum information panels installed
22	information panels and signposts set up
60+	artefacts put on permanent display
5	monuments restored in Group G according to International World Heritage Standards
1	set of Guidelines for Cham architecture restoration published
1	souvenir shop refurbished

Conclusion and Recommendations for Future Development

The entrance to My Son site museum after renovation

1. Conclusion

Over the ten years of implementation, the Viet Nam - Italy - UNESCO tripartite partnership has yield significant results: restoration of Group G monuments, a standard documentation of archaeological research, archaeological excavation of 1,500 artefacts, an exhibition on archaeological excavation and conservation of Group G monuments, upgrading of the Group G entrance and landscape, refurbishment of the site museum lobby and entrance, the establishment of a signage system and development of new tourism products and publications.

The most important result, however, is the capacity building for the personnel at all levels – national, provincial and local – in both management and technical expertise. Most significantly, 50 local workers have been trained and obtained jobs in restoration, making additional income and improving their livelihoods.

To this end, the project also contributed to create an availability of local staff and workers for future restoration activities in the province and the region.

As the project has come to the end, the sustainability of its results depends largely onAs the project has come to an end, the sustainability of its results depends largely on the will and capacity of My Son Management Board in the coming years.

Although the foundation which has been laid during the UNESCO - Italy support during the past decade is quite strong, further efforts from both the Management

The fourth Project Steering Committee meeting in December 2010

Board and the provincial authorities will need to be made in order to retain momentum and to maintain the level of successes achieved by the project.

Over the past ten years, the project generated a significant synergy among all involved partners, namely UNESCO, the Embassy of Italy in Ha Noi, Lerici Foundation of the Milan Polytechnic University, the Department of Cultural Heritage (Ministry of Culture, Sports and Tourism), the Institute for Conservation of Monuments, the Quang Nam People's Committee and the My Son Management Board.

Support of the Government of Italy has been acknowledged whenever possible during the project implementation. This includes the logo of Italian Development Cooperation and UNESCO displayed at backdrops of all workshops and in the publication of all project outputs.

On occasions of Steering Committee meetings and other important events, the press was invited to communicate proceedings of the meeting and project progress to the public. UNESCO maintains and regularly updates press clippings of the project.

The results of this project, particularly an exhibit on excavated and restoration works, were coincidently presented to the public in June 2013, marking the 40th anniversary of the Viet Nam – Italy diplomatic relations. The presence of the UNESCO Director-General and Italian Ambassador to Viet Nam at the ceremony received wide press attention.

Prime Minister Nguyen Tan Dung in his visit to My Son

The internal route recommended for entering the complex of monuments in My Son site

2. Recommendations for future actions of Quang Nam province

While the project has come to an end with these tangible results, more efforts need to be made in the follow-up periods and in the future to sustain these achievements. The following are the key recommendations that UNESCO would like to put forward to the authorities of the Quang Nam Province, Duy Xuyen District and My Son Management Board.

2.1. Management of My Son World Heritage site

2.1.1. Institutional management

My Son is currently directly managed under the People's Committee of Duy Xuyen District. Considering its World Heritage status and the important role of the My Son Management Board to protect the site's Outstanding Universal Values, it is recommended that the current position of the Management Board under Duy Xuyen District will be transferred to Quang Nam Province, either directly under the People's Committee or at least under the Department of Culture, Sports and Tourism. The empowerment of the Management Board will facilitate decision-making regarding the investment in preservation and promotion of the site.

The need for strengthening and empowering the site management board has become apparent by a number of factors, which will become more critical in the coming period. This includes the high vulnerability of the monuments, mostly ruined and endangered, and the rapid increase in number of visitors and the economic development in the surrounding area.

A more empowered management board will also have better opportunities and conditions in drawing greater attention to the preservation of the site, as well as to conduct exchange programmes and events with other World Heritage sites to build up their capacity in heritage management.

Khe The spring in My Son site

2.1.2. Human Resources Management

Service staff

Drivers, cleaners, gardeners and watchmen are essential for the effective operation and management of My Son World Heritage site and should be available in sufficient number. Each group of monuments requires 1-4 watchmen and cleaners to ensure a regular (daily) maintenance. The cleaning work to prevent the vegetation growth affecting the building structures is of high importance.

The personnel number should also be reinforced during special festivities, weekends or holidays when a sharp increase of visitors is foreseen. The working schedule for service personnel should also be revised to ensure a more balanced presence to focus on the peak visiting hours and to avoid leaving the site without proper surveillance during lunch breaks. The cleaners and gardeners should be equipped with appropriate safety tools (e.g. gloves, security shoes and eye protection).

Technical staff

It is recommended that the Provincial authorities allocate budget for three official positions within the technical team at My Son Management Board: 1 archaeologist, 1 architect and 1 museum curator. This is to ensure that basic maintenance and emergency work can be done at the site without having to wait for technical support from outside. These personnel will also have an important role in implementing the recommendations listed in the section below.

2.2. Restoration and maintenance of the site

2.2.1. Maintenance of My Son Heritage site

It is recommended that the Management Board develop a concrete schedule for maintenance activities including regular checking of the state of conservation

Over 1,500 artefacts were recorded and classified in the store room

of monuments, cleaning of vegetation on monuments, surveillance of walking paths, rest stops, benches, food and beverage services, signage system, site circuits, souvenirs and publications available for sale. A list of designated personnel with clear responsibilities needs to be clearly communicated.

The site's existing amenities and the new set up components need constant surveillance: walking paths, rest stops, benches and seats, food and beverage services, signage system, site circuits, souvenirs and publications.

2.2.2. Future interventions

Any intervention in the site should be conducted with extreme prudence, considering the vulnerability of the site, the complexity of materials and the construction techniques used in Cham brick monuments. Every step of the intervention needs to be documented and must strictly follow the Operational Guidelines of the 1972 Convention on Protection and Preservation of World Heritages and Viet Nam's Law on Cultural Heritage.

According to the Paragraph 172 in the Operational Guidelines, "The World Heritage Committee invites the States Parties to the Convention to inform the Committee, through the Secretariat, of their intention to undertake or to authorize in an area protected under the Convention major restorations or new constructions which may affect the Outstanding Universal Value of the property. Notice should be given as soon as possible (for instance, before drafting basic documents for specific projects) and before making any decisions that would be difficult to reverse, so that the Committee may assist in seeking appropriate solutions to ensure that the Outstanding Universal Value of the property is fully preserved."

The new electric car system in My Son site

2.2.3. Traffic control

The current practice at the site allows buses, minivans and private cars to enter the core zone. The situation is especially chaotic in the morning, when a large number of visits are concentrated at once. Most of the minivans and buses keep their engine running to keep the air conditioner functional while parking very close to the temples. The traffic congestions will only get worse as the number of visitors continues to rise. This will also create risks for pollution and deterioration of the site.

It is recommended that the Management Board reinforces the parking regulations, under which vehicles are requested to use the parking area constructed outside the site entrance. Awareness of tour operators needs to be raised in order for them to encourage visitors to follow the rules for site protection and to benefit from the new exhibits and shop developed recently under UNESCO support. Finally, more funds should be allocated for purchasing more electric cars, which prove very efficient in transporting guests from the museum building to the monuments area.

2.2.4. Group G monuments

Group G is currently exposed to natural weather after the removal of the temporary roof. It has been decided in the Steering Committee Meeting in March 2013 that a close observation on the situation of the G1 will be made during the 18 months following the removal of the roof in June 2013. During this period, the following activities will need to be implemented:

- Monthly observation of the site of each temple's condition;
- Close observation of the inside of the cella of G1, especially during the rainy season;
- Keeping rainfall records, after heavy rains, of the inside of the cella;
- Monitoring of organic growth inside the cella and around G1;
- Checking the possible masonry degradation of the main shrine, and in particular of the cella; and
- Monthly complete cleaning of the buildings.

A final report with documented evidence that shows the level of vegetation growth and masonry degradation and proposed interventions should be made available at the end of 2014 to the Provincial authorities, UNESCO Office in Ha Noi, Department of Culture, Sports and Tourism and Institute of Conservation of Monuments. Based on this report, a decision will be made on whether a roof would need to be installed to protect G1 in the future.

2.3. Management of the site museum

2.3.1. Public reception at the entrance and gift-shop

The staff working at the entrance (ticket sellers, book and souvenir shop vendors, refreshment vendors) need to encourage visitors to visit the exhibits. They should also be trained to be able to provide basic information about the site and the surrounding areas to visitors.

A tour guide with good knowledge about the site excavation and conservation issues should be available during opening hours to provide guiding service to visitors around the exhibits.

A watchman should be available in every room to protect the displayed artefacts and to handle emergency situations as they arise.

2.3.2. Cleaning and maintenance

The My Son Management Board should ensure the daily cleaning of the exhibition rooms and the maintenance of the entire building. The cleaners need divided into groups for specific tasks: cleaners in charge of delicate and fragile items (showcases, sculptures, panels, displays, etc) and cleaners for the mains structures (floor, windows, doors). The cleaners need provided sufficient cleaning supplies and perform the cleaning services on a daily basis. The requirement is also applied to the entrance lobby area and all public spaces such as front steps, chairs, tables and rest rooms.

2.3.3. Storage room management

The storage room is the place where all the excavated items found at the site and its surrounding are preserved. It is the place where the objects are studied, numbered, documented and restored. To ensure effective management of the store room, it is recommended that My Son Management Board implement the following activities:

- Update the classification: The inventory of the preserved material must always be available and must not be manipulated. The inventory is the ID card of the material, and it is the only official document to provide correct data in case of theft. The inventory is a means of controlling of the site property, and it has to be updated periodically.

- Every new entry of material must be registered in the inventory, according to the same methodology: It should include place of origin, date, dimension, description of the object, etc.

- Clean and maintain the storage room: The storage room must be kept in order and clean. It must be provided with a basic number of equipment to study and to inventory the material as tables, lamps, chair and measuring equipments. Basic equipment for restoration is also necessary to avoid the loss of fragments of damaged objects.

- Inspect the state of conservation: A regular check of the material and their location must be performed. A good supply of boxes of different dimensions, of plastic bags, sponges and cotton must be always available to store the material.

- Secure and control the access: The access to the storage room is only authorized for the technical staff and professionals in the field of archaeology, art history and conservators. Authorized personnel must register their entry and their exit in the store room, and they must always be accompanied by a staff member.

- Pictures are not allowed of any material, for study or publication, without special permission.

Annexes

Annex 1: List of publication and manuals

UNESCO 2010, *Hướng dẫn khảo cổ và trùng tu Tháp Chăm – Tài liệu đúc kết từ dự án trùng tu nhóm tháp G ở Mỹ Sơn (Guidelines on archaeological works and conservation of Cham monuments – Documented lessons learnt from conservation project of G Group, My Son)*, VHTT Publishing House, Ha Noi.

UNESCO 2012, *My Son Sanctuary,* VHTT Publishing House, Ha Noi.

UNESCO 2013, *A Journey Within*, VHTT Publishing House, Ha Noi.

UNESCO - ICM *2010, Manual for production of Cham bricks*, Ha Noi.

Annex 2: Technical reports

Boriani, Bortolotto and Palo 2004, *My Son's Master Plan Goals.*

Dang Khanh Ngoc 2005, *Report on Technical and on site activities.*

Cucarzi 2005, *Technical and progress report.*

Cucarzi, Zolese and Condoleo 2005, *Preliminary report on Demonstration and Training in the Application of International Standards in the conservation at My Son E7 monuments.*

Cucarzi, Dang Khanh Ngoc 2005, *Preliminary report on Demonstration and Training in the Application of International Standards in the conservation at My Son Group G monuments.*

Zolese 2005, *Technical report on the conservation of selected archaeological artefacts found in My Son G Group.*

Cucarzi, Zolese and Binda 2005, *Technical progress report.*

Cucarzi, Condoleo and Dang Khanh Ngoc 2005, *Technical report on the Architectural Working Group.*

Cucarzi, Zolese and Condoleo 2005, *Technical report on the Archaeological Working Group.*

Cucarzi 2005, *Report on Technical Scientific meeting.*

UNESCO 2008, *Report of the 1st Project Steering Committee meeting.*

Binda, Taranto and Tonna 2008, *Report on Proposed technical interventions in Group G.*

Lerici Foundation 2008, *Technical report on indication of materials.*

Landoni, Dang Khanh Ngoc 2009, *Report on Conservation activities in My Son Group G.*

Lerici Foundation 2009, *Report on Technical training activities.*

Cucarzi, Dang Khanh Ngoc 2009, *Notes and Observations on Brick's Efflorescence.*

Cucarzi 2009, *My Son Risk Map.*

Cucarzi 2009, *Summary report of training courses.*

Bernasconi 2009, *Report on Proposed improvements of information provision facilities.*

Lerici Foundation 2009, *Suggestions for the Master Plan of My Son.*

Lerici Foundation 2009, *My Son master plan – Goals for valorization.*

Zolese 2010, *Archaeological works in the field and in the store room.*

Zolese 2010, *Inventory G Group.*

Lerici Foundation 2010, *Lessons learnt during the conservation of G1 monument.*

Premoli 2009, *Technical solution for the plan of entrance in Group G, My Son.*

Pichard 2009, *Report on field visit and recommendations for technical solutions.*

UNESCO 2010, *Report of the 4th Project Steering Committee meeting.*

Tran Ky Phuong 2010, *Technical advisory report on the conservation of Cham monuments in My Son and central region.*

UNESCO 2004, 2005, 2006, 2008, 2009, 2010, 2012, 2013, *Monitoring mission reports.*

Institute for Conservation of Monuments 2010, *Report on testing of brick samples.*

Institute for Conservation of Monuments 2010, *Report on Production process of new Cham bricks for restoration.*

Institute for Conservation of Monuments 2010, *Technical solutions for general*

decays and degradation problems of monuments.

Lerici Foundation 2013, *My Son Complete Inventory.*
Lerici Foundation 2013, *Technical Report on restoration activities in field season 2012 - 2013.*

Zolese and Romano 2013, *Advisory report on museum arrangement and site management.*

Zolese, Landoni and Romano 2013 *Documentation of stone elements in G Group area.*
Zolese 2013, *G1 pedestal: Study, restoration and relocation.*

Institute for Conservation of Monuments 2013, *Technical advisory report on the temporary roof of G1 monument.*

Institute for Conservation of Monuments 2013, *Progress report on the removal of the temporary roof and improvement of G Group landscape.*

UNESCO 2013, *Report of the Steering Committee and Technical meeting.*

Annex 3: List of international experts

University of Polytechnic of Milan
Lerici Foundation

Dr. Mauro Cucarzi, Project Chief Technical Advisor
Architect Luigia Binda, Head of Architecture team
Architect Paola Condoleo, Chief Architect (Phase I)
Dr. Mara Landoni, Chief Architect (Phase II - III)
Architect Roberta Mastropirro
Architect Fulvia Premoli
Architect Ruth Bernasconi
Architect Federico Landoni
Architect Manuela Core
Architect Lorenzo Cantini
Architect Susanna Bortolotto
Architect Maurizio Boriani
Dr. Patrizia Zolese, Chief Archaeologist
Dr. Federico Barocco
Dr. Silvia Pozzi
Dr. Caterina Brunelli
Dr. Michele Romano
Dr. Emanuela Sibilia, Head of Dating Team

Dr. Paola Conti, Geophysicist
Dr. Carlo Rosa, Geologist
Prof. Gabriele Guidi, IT Engineer
Dr. Michele Russo, IT Engineer

Arch. Pierre Pichard, Architect, Ecole Francaise d'Extreme Orient (EFEO), consultant
Prof. Dr. Architect Hoang Dao Kinh, Vietnam Architects Association

Thonglith Luongkhot, Archaeologist, consultant
Amphol Sengphachanh, Surveyor, consultant
Sinthewa Xayasane, Surveyor, consultant
Tran Ky Phuong, Cham researcher, consultant
Christopher Young, consultant
Phkanxay Sikhanxay, Architect

Annex 4: List of management personnel and national experts

Ministry of Culture, Sports and Tourism
Institute for Conservation of Monuments

Dr. Le Thanh Vinh, Director
Architect Dang Khanh Ngoc
Architect Nguyen Anh Tuan
Ta Quoc Khanh (2004-2005)
Nguyen Hong Kien (2004-2005)
Nguyen Kim Duc (2005)

Ministry of Culture, Sports and Tourism
Department of Cultural Heritage

Dr. Nguyen The Hung, Director
Dr. Dang Van Bai, former Director (1997 – 2009)
Architect Nguyen Anh Dung
Architect Tran Dinh Thanh
Nguyen Viet Cuong, Archaeologist

Viet Nam Academy of Social Sciences
Institute of Archaeology

Dr. Le Dinh Phung, Senior expert in archaeology

Quang Nam Provincial People's Committee

Dr. Tran Minh Ca, Vice Chairman

Quang Nam Provincial Department of Culture, Sports and Tourism

Dinh Hai, Director
Ho Xuan Tinh, Vice Director

Quang Nam Centre for Management of Monuments and Scenic Landscape

Phan Van Cam, Director
Tran Anh, former Director (2005-2008)
Phan Thanh Bao, former Director (2002-2004)
Nguyen Thuong Hy, Draftsman,
Pham Viet Tam
Dinh Van Toan, Geophysicist
Doan Van Tuyen, Geophysicist
Pham Van Hung, Geologist
Ho Xuan Ring, Conservationist
Phan Van Dung, Architect
Tran Toan Sy, Architect

My Son Management Board

Nguyen Cong Huong, Director
Huynh Tan Lap, Vice Director
Le Van Minh, conservation Team Leader
Nguyen Van Tho, conservationist

Annex 5: UNESCO personnel

Ha Noi office

Katherine Muller-Marin, Head and Representative
Vibeke Jensen, former Head and Representative (2007 - 2009)
Chu Shiu-Kee, former Head and Representative (2002 - 2007)

Duong Bich Hanh, Culture Programme Coordinator
Pham Thi Thanh Huong, Culture Programme Officer
Architect Nicolas Viste, Culture Programme Officer
Thuy Tran Thi Thu, Culture Assistant Programme Officer
Nguyen Thi Thanh Huong, Culture Programme Officer (2004 - 2009)

Bangkok office (2003 - 2005)

Dr. Richard Engelhardt, Regional Advisor for Culture in Asia and the Pacific
Beatrice Kandun, Culture Programme Officer
Ricardo Favis, Culture Programme Officer

For more information on UNESCO Culture Programme and possibilities to join hands to promote the role of culture for sustainable development in Viet Nam, please contact:

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