

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR
IMPROVEMENT OF THE SURROUNDING AREA
OF
MY SON SANCTUARY
IN THE SOCIALIST REPUBLIC OF VIETNAM

NOVEMBER 2003

JAPAN INTERNATIONAL COOPERATION AGENCY
MATSUDA CONSULTANTS INTERNATIONAL CO., LTD.

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PREFACE

In response to a request from the Government of the Socialist Republic of Vietnam, the Government of Japan decided to conduct a basic design study on the Project for Improvement of the Surrounding Area of My Son Sanctuary and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Vietnam a study team from May 22 to June 14, 2003.

The team held discussions with the officials concerned of the Government of Vietnam, and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Vietnam in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Socialist Republic of Vietnam for their close cooperation extended to the teams.

November, 2003

Kunimitsu YOSHINAGA
Vice-President
Japan International Cooperation Agency

November, 2003

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Improvement of the Surrounding Area of My Son Sanctuary in the Socialist Republic of Vietnam.

This study report was conducted by Matsda Consultants International Co., Ltd., under a contract to JICA, during the period from May, 2003 to November, 2003. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Vietnam and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Akihiko TAKEUCHI

Project Manager,

Basic Design Study Team on The Project
for Improvement of the Surrounding Area of My Son
Sanctuary in the Socialist Republic of Vietnam

Matsda Consultants International Co., Ltd.

LOCATION MAP



PERSPECTIVE



ABBREVIATIONS

ACI	American Concrete Institute
AJC	Architectural Institute of Japan
A/P	Autorization to Pay
B/A	Banking Arrangement
CMHC	Quang Nam Center for Monuments and Heritage Conservation
E/N	Exchange of Notes
GIS	Geographic Information System
GNI	Gross National Income
GNP	Gross National Product
GDP	Gross Domestic Product
NGO	Non-Governmental Organizations
PC	Personal Computer
RC	Reinforced Concrete
PKZ	Pracownie Konserwacji Zabytkow (Atelier for Conservation of Cultural Propert
UNESCO	United Nations Educational, Scientific and Cultural Organization

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SUMMARY

SUMMARY

The My Son Sanctuary, which is the subject site of the Project, is a historic religious site which was built as a holy place from the 8th to the 13th Century by a succession of kings in the Champa Kingdom which dominated central and southern Vietnam. The Champa Kingdom developed its own unique culture which prospered in an area of exchange between the Chinese cultural zone to the north and the Hindu and Buddhist cultural zone to the south. A number of monuments have been remained and these include the tower group of the My Son, Quang Nam, Vinh Dinh, Po Nagar and Po Hai. Among these, the My Son site is the largest due to continuous contribution by successive kings as the holy place of the Kingdom and represents the cultural as well as architectural styles of each period of the Kingdom. The buildings are not only excellent works of art but also provide precious information on the Kingdom's history of cultural exchange with various parts of Southeast Asia at the time. However, the tower group of the My Son Sanctuary which is mainly made of bricks and sandstone has suffered extensive damage by war and the progression of natural erosion which has now resulted in the Sanctuary facing a danger of collapse and disappearance.

More than 70,000 tourists from all over the world currently visit the My Son Sanctuary every year but the absence of facilities around the Sanctuary to properly introduce it and to provide information for visitors means that it has been practically impossible to effectively publicise this precious cultural heritage at home and abroad. While some of the artefacts excavated and collected during the French colonial period are stored at the Da Nang Museum of Cham Sculpture, the lack of suitable on-site facilities for the storage and management of artefacts means that many artefacts are exposed to a danger of deterioration, scattering and/or theft.

Cultural heritage in Vietnam is stipulated as being important for the development of the nation and the protection of its people which include many minority ethnic groups under the Cultural Heritage Law and the National Socioeconomic Development Plan 2001-2010 calls for the protection, development, restoration and management of cultural properties and historic remains and also for the qualitative improvement of museums. The My Son Sanctuary was officially certified as a national heritage site in Vietnam in 1985 and was registered as a world heritage site by the UNESCO in 1999. The Ministry of Information and Culture has formulated the Master Plan for Conservation and Value Promotion of the My Son Sanctuary for its implementation by the Quang Nam Province's People's Committee and is planning to implement a work plan designed to conserve, restore and improve the surrounding environment of the ruins in accordance with global standards. Because of the difficult budgetary allocation for such work, however, the Government of Vietnam made a request to the Government of Japan in 2002 for financial assistance for the

construction of an exhibition building and an administration building, procurement of the necessary equipment, rehabilitation of a flood control dam and the construction/improvement of the road and bridge leading to the heritage site. As the original request involved an amount in excess of the upper limit for Japan's grant aid for cultural heritage, the construction/improvement of the dam, road and bridge was dropped from the said request.

In response to this request, the Government of Japan dispatched the Basic Design Study Team to Vietnam from 22nd May to 14th June, 2003 to discuss various issues with officials of the Government of Vietnam and to conduct a site survey in the Project Area. On its return to Japan, the Study Team analysed the findings of the field survey, prepared the Project and then returned to Vietnam from 1st to 12th September, 2003 to explain the contents of the Basic Design to the Vietnamese side.

The present Project aims at introducing the My Son Sanctuary to visiting tourists through the provision of useful information by means of constructing exhibition and administration facilities at the entrance area of the Sanctuary. It also aims at storing the collected artefacts. Some 80% of the tourists visiting the Sanctuary are foreigners from Japan, the US and European countries. As the Project is required to ensure the construction of a building which will function as a site museum with high quality exhibits to satisfy tourists from all over the world, the contents have been planned based on the following principles.

While using materials which match those of the Sanctuary, the architectural design adopts a modern style to avoid a wrong impression of the traditional styles observed at the Sanctuary. The construction materials will be strong, long-lasting materials, such as natural stone, and simplicity will be the main feature of the new buildings. To minimise the maintenance cost, the new buildings will make the maximum use of natural lighting and ventilation and the building service systems and equipment will be simple to allow their maintenance using skills which are available locally.

The new facilities will be located in the gateway area some 2.4 km before the actual sanctuary site as tourists leaving their coaches in the car park must pass through this area. In order to ensure the scale of buildings which match the site and its surrounding environment, the new facilities will be divided into three buildings, i.e. Exhibition Building, Administration Building and Lavatory Building. The Exhibition Building will be of a suitable grade to function as a site museum which cost reduction will be attempted as much as possible for the other buildings.

An exhibition plan will be formulated by the Exhibition Work Committee (tentative name) on the Vietnamese side. Technical assistance by the Japanese consultant is planned regarding the

exhibition contents, method and management under the soft component of the Project for the purpose of improvement the quality of the exhibition.

The planned contents of the new facilities, equipment and soft component are shown in the table below.

	Building	Structure	Total Floor Area	Rooms, etc.
Facility	Exhibition Building	RC single storey	916.7 m ²	Exhibition hall; storage rooms; work room; entrance hall; reception/information; equipment room
	Administration Building	RC single storey	261.5 m ²	Curator's office; administration office; meeting room; researchers' office; reading/viewing room
	Lavatory Building	RC single storey	101.9 m ²	Men's and women's toilets; toilet for the disabled; connecting corridor
	Total Floor Area		1,280.1 m ²	
Equipment	Recording and information processing equipment; photographic and imaging equipment; artefact transportation equipment; artefact repair and restoration equipment; equipment for facility management			
Soft Component	Technical assistance for the formulation of an exhibition plan, exhibition method and display work			

If the Project is implemented under the grant aid scheme of the Government of Japan, 15 and a half months will be required for its completion, comprising three months for the detailed design, two and a half months for the tender and 10 months for the construction of the facilities and procurement of equipment. The total cost to implement the Project is estimated to be ¥296 million (¥293 million and ¥2.55 million to be borne by the Japanese side and the Vietnamese side respectively).

The implementation of the Project will enable (i) more than 7,000 visitors a year to have intimate knowledge of the historical significance and characteristics of the My Son Sanctuary, (ii) the safe storage for artefacts with a high risk of deterioration or high historical value and (iii) the efficient provision of important information for researchers through the collection and storage of survey/research records of the Sanctuary.

The operation and maintenance of the planned facilities will be conducted by six specialists, including the curator, to be assigned from the CMHC as well as newly recruited staff members. No special skills will be required for the maintenance of the facilities and equipment. Although the new employment of security guards and cleaners will be necessary, it should be sufficient for staff members to conduct the maintenance work with the assistance of the CMHC Head Office. While

the annual operation and maintenance cost will be funded by the Quang Nam Province's People's Committee, in reality, the income from the admission charge to the Exhibition Building should be sufficient to cover this cost.

The Project is expected to have a positive effect on the wide publicity of and education on the My Son Sanctuary and the conservation of artefacts and the operation of the new facilities can be sustained without external assistance. Accordingly, the implementation of the Project as a grant aid project of the Government of Japan is deemed appropriate.

Active publicity of the My Son Sanctuary and the Exhibition Building will be essential for the effective use of the Exhibition Building to attract many visitors. Moreover, the Master Plan should be properly implemented so that the entry of ordinary vehicles to the Sanctuary beyond the Exhibition Building is regulated. No car park should be constructed between the Exhibition Building and the actual sanctuary site. Furthermore, appropriate management should be in place, including the introduction of a combined ticket for the Sanctuary and the Exhibition Building, to prompt tourists to visit the latter.

CHAPTER 1 BACKGROUND OF THE PROJECT

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The My Son Sanctuary was officially certified a cultural heritage site of Vietnam in 1985 and was registered as a world heritage site by the UNESCO in 1999. The old remains at this Sanctuary are mainly made of bricks and are facing a danger of collapse and disappearance due to weathering and plant invasion. Since registration as a world heritage site by the UNESCO, tourists from all over the world have visited the Sanctuary but the absence of facilities around the Sanctuary to properly introduce it and to provide information for visitors means that it has been practically impossible to effectively publicise this precious cultural heritage at home and abroad. While some of the artefacts excavated and collected during the French colonial period are stored at the Da Nang Museum of Cham Sculpture and also at museums in Hanoi and Ho Chi Minh City, the lack of suitable on-site facilities for the storage and management of artefacts means that many artefacts are scattered around the site.

The Ministry of Information and Culture has formulated the Master Plan for the Conservation and Value Promotion of the My Son Sanctuary for its implementation by the Quang Nam Province's People's Committee and is planning to implement a work plan designed to conserve, restore and improve the surrounding environment of the ruins in accordance with global standards. Because of the difficult budgetary allocation for such work, however, the Government of Vietnam made a request to the Government of Japan in 2002 for financial assistance for the construction of an exhibition building and an administration building, procurement of the necessary equipment, rehabilitation of a flood control dam and the construction/improvement of the road and bridge leading to the heritage site. As the originally requested amount by the Vietnamese side exceeded the upper limit for Japan's grant aid for cultural heritage, the construction/improvement of the dam, road and bridge was withdrawn from the said request through consultations between the two sides, leaving the construction of the exhibition building and administration building and the procurement of the necessary equipment for these buildings under the scope of the Project. Road and bridge construction work is already in progress by the Vietnamese side.

CHAPTER 2 CONTENTS OF THE PROJECT

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2.1 BASIC CONCEPT OF THE PROJECT

The My Son Sanctuary represents an important cultural heritage site in multi-racial Vietnam and also has the status of being a cultural heritage site of mankind. The Sanctuary was officially certified as a cultural heritage site of Vietnam in September, 1985 and was registered as a world heritage site by UNESCO in 1999. Following such global recognition, the Government of Vietnam is planning to preserve and protect the Sanctuary in accordance with the relevant global standards. The Ministry of Information and Culture has formulated the Master Plan for Conservation and Value Promotion of My Son Sanctuary for its implementation by the Quang Nam Province's People's Committee and is planning to implement this Master Plan. The implementation of the Master Plan will preserve the cultural and artistic value of the My Son Sanctuary and will also develop it as a national as well as world cultural heritage site.

In addition to being a site of excellent works of art, the My Son Sanctuary offers precious artefacts showing the history of cultural exchanges throughout Southeast Asia as the site was created by the Champa Kingdom, which prospered in central and southern Vietnam from the 2nd to the 16th Century, at the contact point between the Chinese cultural zone to the north and the Hindu and Buddhist cultural zone to the south. Evidence of cultural exchanges between the Champa Kingdom and Japan are found in Japanese culture in the form of ceramic-ware, various items, including fragrant wood, and imperial court music. In return, old Imari-ware is said to have been exported to the Champa Kingdom along with other items. With the passing of many years since their original construction, the remaining towers, etc. made of mainly bricks and sandstone at the My Son Sanctuary are currently facing a danger of collapse and disappearance. Some of the artefacts excavated and collected during the French colonial period are stored at the Da Nang Museum of Cham Sculpture but many artefacts are still scattered on the site. The storage facilities are insufficient due to funding difficulties and the construction of suitable storage facilities is urgently required.

The present Project aims at protecting and handing down the cultural heritage of mankind to future generations and such cooperation constitutes part of Japan's important cultural and intellectual contribution to the rest of the world. The intended assistance for the My Son Sanctuary will greatly contribute to the mutual understanding and friendship between Japan and Vietnam.

The Master Plan mentioned earlier demarcates the conservation area of the Sanctuary, sets forth land use and development regulations within this area and puts forward a work implementation

plan regarding the conservation, restoration and improvement of the environment. The implementation plan consists of two phases, i.e. Phase I (2004 – 2010) and Phase II (2011 – 2015). While a road leading to the Sanctuary and a bridge have so far been constructed, the development of facilities for the conservation of the Sanctuary is still a pending task.

It is currently impossible to effectively appeal the important value of the Sanctuary at home and abroad because of the lack of facilities to provide information on and to introduce the Sanctuary to tourists. The lack of storage facilities for artefacts except for temporary storage which has been created in part of the ruins means inadequate security arrangements to conserve and protect the artefacts, making the construction of facilities to prevent the degradation, loss and theft of the artefacts urgently necessary.

The purposes of the Project are (i) the provision of information on and the introduction of the Sanctuary for more than 70,000 tourists a year and (ii) classification and arrangement of the collected artefacts for safe storage by means of the construction of facilities to exhibit the artefacts and to introduce the My Son Sanctuary to visitors and administration facilities together with the provision of the necessary equipment.

2.2 BASIC DESIGN OF THE REQUESTED JAPANESE ASSISTANCE

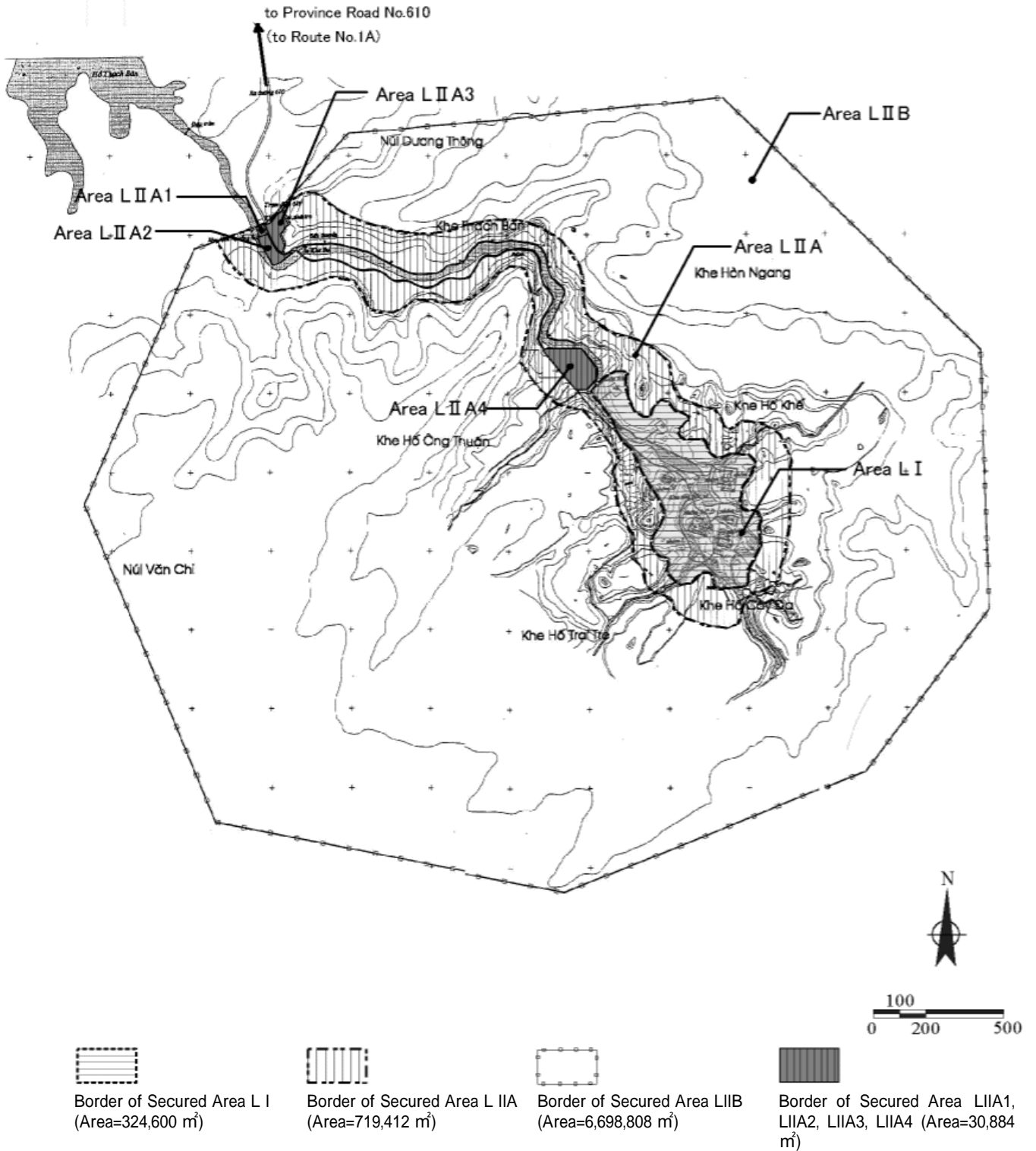
2.2.1 Design Policy

(1) Background of the Selection of Construction Site for Exhibition Building

The construction site for the requested Exhibition Building and Administration Building is assumed to be on the right-hand side of the bridge at the entrance to the Sanctuary site and is in the area classified as the Management Office Area (LIIA1, LIIA2) in the Master Plan. From the viewpoint of conserving the environment of the actual Sanctuary site, visiting tourists leaving their vehicles (cars and buses, etc.) are expected to travel the 2.4 km from the other side of the bridge to the Sanctuary by jeep, horse-drawn carriage or boat operated by the My Son Management Office and ordinary vehicles are not permitted to enter the Sanctuary. Even though an area (LIIA4) for resting facilities for tourists is planned at the halfway point between the bridge and the Sanctuary, this area is considered to be undesirable for the construction of the Exhibition Building because of the strong likelihood of the discovery of further ruins.

When the Basic Design Study Team initially checked with the Quang Nam provincial government regarding the likely construction sites for the Exhibition Building and

Fig. 2-1 Master plan of the My Son Sanctuary



SOURCE : MASTER PLAN FOR CONSERVATION AND RESTORATION OF MY SON SANCTUARY

Administration Building, the Quang Nam Center for Monuments and Heritage Conservation (CMHC) and the Duy Xuyen District People's Committee indicated that they would prefer the construction of these buildings in the Thach Ban Tourism Development Area, which the Duy Xuyen District Authority is planning to establish and which is located before reaching the Sanctuary proper, instead of in the Master Plan Area LIIA1, LIIA2. The Duy Xuyen District Authority plans to develop the surrounding area of the My Son Sanctuary as a resort area to attract many tourists and anticipates the introduction of souvenir shops, restaurants, a mini-hotel, a camping site, a Cham culture and folk village and a tourists' car park, etc. in an area of some 100 ha situated in front of the sanctuary conservation area. The site initially suggested for the construction of the Exhibition Building is the site earmarked for the Cham culture and folk village in this tourism development plan and is located more than 200 m away from the bridge and some distance from the road.

The suggested construction site for the Exhibition Building in the request is located on the line of flow for tourists visiting the Sanctuary walking from the car park to the bridge and this location which allows convenient visits is the most important condition. This location is almost adjacent to the bridge and is quite favourable because (i) a car park cannot be planned beyond the Exhibition Building site and (ii) the location is suitable for tourists to visit on their way to the Sanctuary and also after leaving the Sanctuary.

Through consultations, it has been agreed by both sides that the Exhibition Building will be constructed in the Management Office Area (LIIA1, LIIA2) in line with the facility development plan of the Master Plan.

The agreed construction site is an area identified by the Master Plan for the construction of administration facilities for the Sanctuary. In the Master Plan, a car park (parking area) is to be introduced to the left of LIIA2 (LIIA3) further away from the bridge and there is no plan to construct a car park between the bridge and the Sanctuary proper. This means that tourists will not pass the Exhibition Building by car provided that the facility layout plan of the Master Plan is properly implemented.

(2) Examination of Contents of Request

The contents of the request are the construction of the Exhibition Building and the Administration Building and the provision of associated equipment for the purposes of (i) introducing and providing information on the My Son Sanctuary, (ii) storage and repair of artefacts, (iii) surveys and research on the Sanctuary and (iv) education and extension of knowledge on the Sanctuary. The new facilities will be placed under the jurisdiction of the

CMHC and the Management Board of My Son World Heritage of the Duy Xuyen District People's Committee will be responsible for the conservation and security of the Sanctuary area. At present, the absence of facilities to properly introduce the My Son Sanctuary to visiting tourists means that it is practically impossible to publicise this valuable World Heritage site in an effective and accurate manner. The lack of appropriate facilities for the storage of artefacts makes the construction of exhibition and storage facilities an extremely urgent and necessary task. The lack of such facilities makes the main purposes of the requested Project worthwhile. The survey and research facilities aim at the implementation of surveys and research regarding the operation of the Exhibition (and Storage) Building and the main activities planned are studies on the collected artefacts, recording and repair of artefacts, gathering of reference materials for surveys and research, education and extension. These activities are essential for the operation of the Exhibition Building and are justified in view of the operation system supported by specialists of the CMHC. The gathered research materials will be made accessible to researchers at home and abroad and will facilitate wide-ranging research work. The conservation and restoration of the Sanctuary still requires full-scale academic study in the future and the Ministry of Information and Culture and the CMHC plan to jointly implement such study with researchers and experts at home and abroad. The planned facilities are expected to provide a work room to assist the field work of external researchers and experts at the Sanctuary site.

All of the requested items are necessary in the light of the current conservation situation at the Sanctuary. The Project will, therefore, contribute to the progress of future conservation and restoration work at the Sanctuary by the Quang Nam Provincial Government as it will assist the work to improve the facilities for the conservation of the Sanctuary, i.e. the first phase of the Master Plan.

There have been several cooperation projects by other donors to improve the conservation environment at the My Son Sanctuary, i.e. a Polish cultural cooperation programme for the conservation of Ruins Groups B, C and D (1981 – 1991), cooperation for the collection and conservation of artefacts by a German NGO (1987 – 1991), cooperation by the UNESCO and the Government of Italy for the GPS mapping of the Sanctuary (1999 – 2000) and cooperation by an American NGO for improvement of the area around the Sanctuary (2002). The UNESCO and the Government of Italy plan to commence a Group G conservation and restoration programme in 2003. As there is no cooperation plan of other donors in regard to the construction of exhibition and storage facilities, it has been confirmed that the Project does not overlap with any other cooperation project.

(3) Status and Scale of Exhibition Building

1) Status of Exhibition Building

The city of Da Nang (the core city in central Vietnam and some 90 minutes travelling distance to the My Son Sanctuary by car) has the Da Nang Museum of Cham Sculpture which is a central facility for the display of Cham sculpture and art and many of the tourists visiting the Sanctuary also visit this museum. Some 300 sculptures are displayed at this museum which consists of an old building (approximately 800 m²) and a new building (2,400 m²) which was completed this year. While this museum and leading museums in Hanoi and Ho Chi Minh City are tourists attractions in their own right, the planned Exhibition Building is classified as a site museum of which the main purposes are the introduction of the My Son Sanctuary to visitors to the Sanctuary, the provision of information for researchers and the storage/management of artefacts. What is important for the Exhibition Building as a site museum is the quick introduction of the My Son Sanctuary to tourists visiting the Sanctuary. At present, the Sanctuary is not served by public transport and most tourists take day excursion tours from their places of stay, such as Da Nang and Hoi An, an ancient capital. As a result, ordinary tourists spend some two hours at the Sanctuary. Determination of the scale and exhibits of the Exhibition Building based on a likely short visit of 10 – 20 minutes, therefore, appears to be appropriate.

While the number of tourists visiting the My Son Sanctuary has been increasing annually (50,000 in 1999 to 78,158 in 2002), the scale of the exhibition and the extent of the information service at the Exhibition Building are not necessarily determined by the number of tourists. The adoption of a scale and exhibits which introduce the Sanctuary to visitors in a concise and appropriate manner is more realistic and the likely increase of the number of visitors in the future will be accommodated by the introduction of a spacious lobby and resting places.

The planned Exhibition Building under the Project does not fall under the category of a museum stipulated by the Cultural Heritage Law of Vietnam, Section III – Museum or the Implementing Regulations of the Cultural Heritage Law, Chapter IV – Organization and Operation of Museum. As such, there are no legal restrictions on this Exhibition Building in terms of its facilities, equipment, staff and activities, etc.

2) Exhibition Plan

It has been agreed that the Exhibition Work Committee (tentative name), the members of which comprise officials of the Cultural and Information Bureau of Quang Nam Province and experts of the CMHC, on the Vietnamese side will formulate an exhibition plan to introduce

visitors to the Sanctuary. However, Japanese assistance for the exhibits and display methods/ techniques will be provided as a soft component of the Project. The exhibition will basically be set up in accordance with the following composition.

Table 2-1 Contents of Exhibition

	Theme	Exhibit/Display Method	Description
1	Exchanges between the Champa Kingdom and neighbouring countries; historical and cultural background	Graphical presentation	<ul style="list-style-type: none"> • Kingdoms in Indo-China around Champa (map information) • History of Champa and neighbouring kingdoms (text information)
2	Champa Kingdom and distribution of historical remains; status of the My Son Sanctuary as a holy site	Graphical presentation	Map of remains in central and southern Vietnam (map/photographs)/explanatory texts
3	Layout of the My Son Sanctuary	Diorama model	Entire Sanctuary area and locations of Groups A through N
4	Introduction of each group of the My Son Sanctuary <ul style="list-style-type: none"> - Pre-My Son style - Dong Duong style - My Son style 	<ul style="list-style-type: none"> • Graphical presentation • Excavated artefacts 	<ul style="list-style-type: none"> • Layout of each group (map and explanatory texts) • Architectural drawings • Style by group (excavated artefacts/ replicas of wall reliefs or photographs)
5	History of surveys at the Sanctuary and conservation research	<ul style="list-style-type: none"> • Graphical presentation • Materials 	<ul style="list-style-type: none"> • Materials of the French Far East Academy • Polish PKZ • Italy and others

3) Scale of Display, Collection and Storage of Artefacts

As of June, 2003, 580 artefacts have been excavated and registered in the Sanctuary area. However, it is anticipated that many more artefacts will be found by future surveys. These 580 artefacts consist of 100 items which are stored and displayed in Tower D1 and Tower D2, 214 items which are scattered or temporarily placed around the towers, 216 foundation stones which were excavated and collected in July, 2002 as a result of embankment work at Ke The River and 50 items found when Group E and Group F were excavated.

The CMHC is planning to store and display some 100 artefacts in the planned facilities. The sizes of these artefacts considerably vary from the small decorative part of an arch (11 cm x 14 cm x 4.5 cm) to a large wall relief (246 cm wide, 166 cm high and 61 cm thick). However, most of the items are small and their total floor coverage is only some 20 m². As storage space is generally required to be four times larger than the floor coverage, some 80 m² will be required for the proper storage of these 100 artefacts. If all of these artefacts are displayed, the required floor area will be 160 m², i.e. double the simple storage space, with the dense display of the artefacts or 320 m², i.e. four times the simple storage space, with the roomy display of the artefacts. As display which focuses on introducing the Sanctuary is important for the

planned facilities under the Project, the selection of a smaller number of artefacts which are both important and effective to introduce the Sanctuary is desirable. For this reason, a strictly selected small number of artefacts will be stored in a roomy display space while others will be displayed in storage units in an efficient manner.

The CMHC has also requested an additional storage area of some 300 m². The indoor storage of all 580 registered artefacts is not only unrealistic but will also reduce the attractiveness of a visit to the Sanctuary proper. In regard to the conservation of artefacts, the Master Plan basically calls for the outdoor display of those artefacts of which restoration at the original location is difficult and of large artefacts. In the case of those artefacts of which relocation during excavation or construction work is necessary, these should be restored to the original location after temporary storage. The basic policy regarding artefacts at the Sanctuary site will, therefore, be the storage of those artefacts with a high conservation priority and those requiring indoor storage to prevent their theft in accordance with the results of the work relating to the conservation of the Sanctuary and its artefacts and archaeological and academic studies. These artefacts will then be returned to the original location for outdoor display after undergoing appropriate conservation treatment. Storage space totalling some 300 m², consisting of 100 m² for the storage and display of those artefacts which are included in the list of some 100 items for storage and display but which are not placed in the regular display space, some 100 m² for the storage of those artefacts with a higher priority and those requiring temporary storage and 100 m² for repair and restoration work and equipment storage, will be provided.

4) Administration Department

The Administration Department will be mainly responsible for the operation of the Exhibition Building, the storage, recording and repair of artefacts and the collection and supply of research-related materials. The research-related work includes the planning of the operation of the Exhibition Building, assistance for the activities of external researchers and work relating to the investigation and preservation of ruins and artefacts under the supervision of the CMHC. A staff strength of 18 members, including the Curator, is planned, consisting of 14 staff members (six specialists from the CMHC and eight new recruits) and four security personnel. The required rooms for the Administration Department will be planned by examining the current operating regime and activities of the CMHC, the number of persons who can be deployed at the new facilities at the time of their completion and the future plan for this site museum.

(4) Basic Design Policies

The annual number of tourists visiting the My Son Sanctuary has been steadily increasing. 80% of the tourists are foreigners, mainly from the US and Europe, as the Sanctuary is now attracting global attention since its inscription on the World Heritage List in 1999. The planned Exhibition Building will be required to have a suitable architectural design and exhibition as a site museum which will give tourists from all around the world a feeling of satisfaction.

- **Modern architectural design in harmony with the My Son Sanctuary**

The My Son Sanctuary features religious buildings made of bricks under the Hindu culture. As both the functions and scale of the site museum will differ from those of the Sanctuary, copying of the style of the Sanctuary using a modern construction method and technologies would result in the Exhibition Building being an imitation theme park building with no relation to the Sanctuary. Moreover, such imitation would simply generate an incorrect impression of the Sanctuary. As the culture and architectural style of present-day Vietnam have nothing in common with Champa, an architectural design of “Vietnamese” style will not be adopted either. A modern architectural style will be adopted for the Exhibition Building which is nevertheless harmonious with the natural environment and climate of the area around the Sanctuary while using materials which are harmonious with the Sanctuary.

- **Simple architecture using long-lasting materials to match the Sanctuary**

The My Son Sanctuary consists of surviving historical buildings constructed in the 8th Century to the 13th Century. The site museum will have natural stone walls which will give the impression of eternal life to match the long period of time during which the Sanctuary has existed. Such stone masonry walls will have a similarity to the brick masonry used for the buildings of the Sanctuary and a laying method which does not spoil the scale and sense of volume of the remaining towers will be adopted. All other basic building materials will also be long-lasting and simplicity will be the main feature of the new buildings.

- **Exhibition space using natural lighting**

Most of the tourists visiting the Sanctuary are on morning excursion tours from Hoi An, a major tourist site, and afternoon visits, if any, finish in the early afternoon. The exhibition space will use natural lighting through top lights as well as high side lights without relying on artificial lighting for the sake of simple maintenance. However, because of the

opening hours of the Sanctuary from 06:00 to 18:00, a lighting system will be installed to assist late afternoon visitors and to provide security lighting at night.

- **Open building design incorporating the natural scenery**

The planned site for the Exhibition Building faces Ke The River and the opposite bank is lined by the dense natural forests and mountains surrounding the Sanctuary. The Exhibition Building will have a wide balcony facing the river to allow visitors to enjoy the natural scenery from a cool shaded area. The open entrance to the building will constitute an inviting feature for tourists.

- **Tourists' Lavatory Building**

The provision of clean and pleasant toilet facilities is a very important requirement for an international tourist site. A low cost lavatory building with a sufficient capacity to deal with the estimated number of tourists will, therefore, be constructed in an appropriate position.

(5) Design Policies Regarding Natural Conditions

- The building design will ensure the maximum use of natural lighting and ventilation to reduce the maintenance burden as much as possible. Ultraviolet cut-off glass will be used for the top lights of the Exhibition Building to protect the exhibits from direct sunlight. In view of the prevailing wind direction at the site, i.e. SW-W in summer and NW-NE in winter, the correct positioning of the openings to ensure effective ventilation throughout the year will be examined.
- As the artefacts to be stored and displayed are mainly made of sandstone, bricks or are terracotta sculptures, humidity control using an air-conditioning system will not, in principle, be required. However, an air-conditioning unit will be installed in certain rooms in the Administration Building.
- Louvres will be installed at the openings (transoms) to prevent the entry of rain during the rainy season or monsoon season and the introduction of deep eaves will be considered to protect the walls and openings.
- Even though it has been confirmed that the planned construction site has never been flooded, the floor height of the building will be set at 70 cm – 110 cm above the present ground level to protect the exhibits and stored artefacts from a record-breaking flood.

(6) Policies Regarding Special Circumstances

As the site is located at the entrance to the Sanctuary area, it will be necessary for the construction work to consider the safety of tourists during the work. The work plan will, therefore, take the erection of temporary fencing, disposal of waste materials from the work, safety control of work vehicles and cleaning of the adjacent tourist path into proper consideration so that the tourism operation of the Sanctuary is not adversely affected.

Given the small size of the planned construction site, exterior work will be necessary to relocate the existing road on the site to create a large open space in front of the Exhibition Building. For this reason, the construction schedule will firstly involve the relocation of the existing road to ensure safe passage for tourists, followed by the construction of the Exhibition Building and the Administration Building.

(7) Policies Regarding Construction and Procurement

The project area is located within the Central Economic Zone of which Da Nang is the core city and such main construction materials as cement, reinforcing bars, bricks, stone and building service equipment, etc. can be mostly procured locally. However, the local procurement of some special finishing materials, such as light transmitting louvres and UV cut-off glass, etc., is difficult because of the absence of domestically manufactured products. After determining the required specifications and quality, the procurement of these special materials in Japan or a third country will be considered. In regard to local construction companies, there are state-owned companies which are controlled by the Ministry of Construction and private companies and both types have much experience of the type of work planned under the Project. It is, therefore, possible to use a local company as the subcontractor for the Japanese contractor in accordance with the grant aid scheme of the Government of Japan.

(8) Policies Regarding Facility Operation and Maintenance by Implementation Body

The operation and maintenance of the new facilities will be conducted by a new body (18 staff members, including the curator planned) to be established by the CMHC. The basic policies for the new facilities are the use of locally procured materials and the use of a local construction method to create durable and simple buildings in view of the ease of maintenance of the facilities and equipment, negating the necessity to employ special maintenance staff, in order to keep the maintenance cost as low as possible.

(9) Policies Regarding Grades of Facilities and Equipment

- As the Exhibition Building will be visited by tourists from all over the world, the grades of the materials, construction method and design will be characterised by age-defying and classy. Similar consideration will be given to the Administration Building and the Tourists' Lavatory Building while grades which can be constructed at low cost will be opted for.
- The equipment will be general-purpose, standard equipment which can be locally maintained and for which consumables can be locally procured. In connection with exhibition techniques, a suitable method of ensuring the quality of the graphic panels and some display equipment will be selected in view of the high grade expected of them.

(10) Policies Regarding Construction/Procurement Methods

- The site is reclaimed land at the side of Ke The River. The geological survey results indicate the necessity to use the bedrock at a depth of 6 – 9 m below the present ground surface as the supporting layer. The foundations will be concrete pile foundations.
- The conventional local construction method of reinforced concrete for the structural body and brick masonry for the partitions will basically be used. However, as a highly precise finish is required for the roof slabs and exposed concrete pillars of the Exhibition Building, a careful work execution system will be considered in relation to form work and cast-in-place concrete work.
- The exterior walls of the Exhibition Building will be made of locally produced granite and stone which will be laid with gaps between them. The stone size and precision of this stone masonry work will be determined within the capability of local stonemasons.
- While the equipment and materials will, in principle, be procured locally, the procurement of some special equipment, including the light transmitting louvres and UV cut-off glass, which is not manufactured in Vietnam in Japan or a third country will be considered with emphasis on the specifications, quality and durability. The manufacture/procurement of some display equipment in Japan will also be considered.

(11) Policies Regarding Construction Schedule

- Taking into consideration the fact that the construction schedule will be longer than usual because of the need to conduct pile foundation work, shortening of the structural, finishing and other work will be considered to shorten the overall length of the work.

- For construction purposes, the standard size of forms (900 x 1,800 mm) will be used as the minimum module in order to shorten the construction period by simplifying the form making process.
- Further efforts will be made to shorten the construction period by adopting factory-made units and parts for the finishing materials.

2.2.2 Basic Plan

(1) Facility Layout Plan

The Exhibition Building will be located at the side of the bridge which is the gateway for tourists visiting the Sanctuary. From the viewpoint of the line of flow of visitors on foot, this location is selected so that tourists leaving their vehicles in the car park will come across the Exhibition Building before and after visiting the Sanctuary. The location is a strategic position for tourists to reconfirm the information obtained during their visit to the Sanctuary and to have a rest.

The site is long, narrow reclaimed land sandwiched by Ke The River and a hill. In order to secure as large an open space as possible in front of the Exhibition Building, the building will have a long, narrow plan as near as possible to the river. The spatial requirement for the planned facilities is classified into three functional zones, i.e. exhibition zone, storage zone and administration zone. If these zones are incorporated into a single building, the resulting building would be too long, cutting Ke The River on the right and the opposite bank from the view of tourists approaching the building. For this reason, two buildings, i.e. the Exhibition Building (exhibition and storage) and the Administration Building, will be introduced to create an open space between them to allow visitors some access to the local scenery. In regard to the contents and grade of the facilities, a low cost finish is feasible by using different structural and finishing materials for the Administration Building from those for the Exhibition Building. The introduction of an open space between the two buildings will make the Exhibition Building simpler but more prominent.

Meanwhile, the Tourists' Lavatory Building will be located nearer to the bridge than the Exhibition Building for the convenience of tourists and its effect on the surrounding landscape will be taken into proper consideration. The Administration Building will be provided with outdoor parking space for staff. This parking space will not be provided with a roof due to budgetary constraints as such a roof is of low priority.

(2) Building Plan

1) Floor Planning

- **Exhibition Building**

The required spaces in the Exhibition Building are those for the exhibition hall, entrance lobby, balcony, storage rooms, work rooms (reception, recording, repair and temporary storage, etc.), reception/information (ticket counter), museum shop and drink stand.

The span between the pillars will be a long span to allow highly flexible floor planning for exhibition purposes. The scale of each space (room) in the Exhibition Building is calculated below based on its respective function for this site museum.

Table 2-2 Floor Area of Each Space/Room in Exhibition Building

Space/Room	Planned Floor Area	Function and Calculation Basis
• Exhibition Hall	291 m ² (effective area: 265 m ²)	Given the required time to see this site museum (15 – 20 minutes), a similar floor area to that of the Da Nang Museum of Cham Sculpture (display of 137 sculptures in Hall No.3 and Corridor 1,2,3 of 260 m ²) is set; mainly providing graphical explanations, a diorama model and models of restoration work together with the display of some 50 artefacts
• Storage Area	306 m ²	
- Storage Room 1	(107 m ²)	Storage and display of some 50 artefacts 50 x 2.0 m ² – 3.0 m ² /artifact
- Storage Room 2	(89 m ²)	Storage of some 100 artefacts 50 x 1.0 m ² – 1.5 m ² /artifact
- Work Room	(93 m ²)	Reception/shipment of artefacts : 30 m ² Measurement and repair of artefacts : 30 m ² Temporary storage space : 30 m ²
- Equipment Room	(18 m ²)	Storage of equipment for the restoration or transportation of artefacts
• Entrance Hall	180 m ²	Approximately 20% of the total floor area to allow up to 200 visitors
• Reception /Information	9 m ²	One for ticket sales and one for guidance (two night security guards)
• Balcony/Rest Area	130 m ²	With a drink stand, 10 tables, 40 chairs and some benches
Total	916m ²	

- **Tourists' Lavatory Building**

The number of visitors to the My Son Sanctuary was 78,158 in 2002. By month, more tourists visit the Sanctuary from November to March, and the highest monthly number of

visitors of 8,748 was recorded in November. The average daily number of visiting tourists in the same month was little less than 300 but the number of visitors could exceed 500 at the weekend. Although the Sanctuary is open from 06:00 to 18:00, most visitors arrive in the morning between 09:00 and noon. It is possible that many of these tourists will try to use the lavatory facilities on arrival along with tourists simultaneously arriving at the Sanctuary by two or more large sightseeing buses. For this reason, the scale of Tourist's Lavatory Building is determined on the basis of 500 users in the three peak morning hours and also taking a likely increase of tourists in the future into consideration. The Tourist's Lavatory shall provide facilities for disabled persons and be clean and pleasant for an international tourist site.

Table 2-3 Design Scale of Tourists' Lavatory Building

	Men	Women
Number of users in the morning (three hours)	250	250
Number of users per hour	84	84
Time spent per user	One minute	Three minutes
Number of users per bowl/urinal	60	20
Required number of bowls/urinals	Two urinals and one bowl	Five bowls
Design number of bowls/urinals	Urinal space for two or three persons; 2 bowls	5 bowls

- **Administration Building**

The following rooms in the Administration Building and their scale are planned based on the number of required staff, their activities and the assumed furniture and equipment layout to properly run this site museum.

- Administration Rooms

In addition to such staff rooms as the curator's office, administration office and guard/night duty room to run and manage the Exhibition Building, a small multi-purpose meeting room will be introduced for the purposes of staff meetings, meetings with external researchers and experts, simple lectures for visitors and publicity/extension activities, etc.

- Research Rooms

These include researchers' offices where researchers are engaged in academic activities, the planning of exhibitions, extension and educational activities and the preparation of reference materials and a reference room where records and reference materials related to

the Sanctuary and artefacts, etc. are stored and administered. In addition, there will be a reading/viewing room and a laboratory to assist research work by and exchanges with external researchers and experts. An open style will be adopted where possible for the research rooms to enable their flexible use depending on the type of activity planned.

- Common Space

In addition to corridors, an entrance hall and staff toilets, simple kitchenette space and a shower room for those on night duty will be provided.

Table 2-4 Floor Area of Planned Rooms in Administration Building

Room/Space	Accommodation Capacity	Planned Floor Area	Function and Calculation Basis
1. Administration Department Total		83 m ²	
Curator's Office	1	15 m ²	Work and reception by the curator; attached to the administration office
Administration Office	2 (clerk and assistant curator)	15 m ²	5 m ² /person + space for copying and reception, etc.
Meeting Room	Maximum: 20 (30 in the case of a lecture)	44 m ²	Based on the standard space requirement of 1.2 – 2.0 m ² /person
Guard Room	2 (in shifts)	9 m ²	Night duty and work space
2. Research Department Total		98 m ²	
Researchers' Office	Maximum: 6	30 m ²	5 m ² /person
Reference Room	1 + 1 (reserve)	19 m ²	5 m ² /person + equipment space
Storage Room		15 m ²	Storage for materials, record and equipment
Reading/Viewing Room	Up to around 4	34 m ²	Work and reference space for external experts and researchers (15 m ² + 15 m ²)
Laboratory	Up to around 4		
3. Common Space Total		66 m ²	
Toilets		12 m ²	Staff toilets; separate toilets for men and women
Shower /Kitchenette		7 m ²	
Corridors and Hall		47 m ²	Some 20 % of the total floor area
Total		247 m ²	(effective area)

* For the standard floor area per person, the following values based on actual examples in Japan are used as the reference values.

- General administration work space: 4.5 – 7.0 m²
- Meeting room: 1.0 (for lectures with chairs only) – 3.5 m²

2) Sectional Plan

The sectional plan for the Exhibition Building, Administration Building and Tourists' Lavatory Building is determined as follows taking such spatial conditions as the ceiling height, lighting, ventilation and decorative design required of each building in view of its purpose of use and also cost efficiency into consideration.

- **Floor Height**

- Exhibition Building

A high ceiling height (4,750 mm) as in the case of existing museums and art galleries will be employed.

- Administration Building

A floor height of 3.3 m will be employed to provide a sufficient air volume in view of such constant meteorological conditions as high temperatures and high relative humidity.

- Tourists' Lavatory Building

A floor height of 2.75 m will be employed with a sloping roof to create an open space for good ventilation.

- **Sectional Configuration**

- Exhibition Building

The walls will rise from the floor level up to two-thirds (3,200 mm) of the ceiling height with the remaining one-third (1,550 mm) being a transom for high side lighting and ventilation.

- Administration Building

A sloping roof will be introduced above concrete slabs to ensure the durability and heat insulation performance of the roof. While adopting the local configuration, small eaves will be introduced around the building with a wide transom employed below the eaves to achieve sufficient ventilation and to block solar radiation in order to maintain comfortable room conditions without air-conditioning.

- Tourists' Lavatory Building

An open configuration will be employed with screen block walls with sufficient ventilation encouraged by open-top partitions; a septic tank will be introduced beneath.

- The ceilings will be exposed concrete slab ceilings which are maintenance-free. In the case of the Administration Building and the Tourists' Lavatory Building with fewer partitions, an inverse beam structure will be employed so that the beams are concealed.
- A sloping roof with coated steel plates will be introduced above the roof slabs for the purposes of securing waterproofing and heat insulation and achieving harmony with the surrounding natural environment. A false ceiling below the steel roof will be employed in the case of the Tourists' Lavatory Building to shut out radiant heat from the steel plates.
- In order to utilise the small space as effectively as possible, a cantilevered beam structure where the floor and the eaves are stretched over the river bank will be employed for the Exhibition Building.
- The floor height will be approximately 700 mm – 1,100 mm (as determined by fluctuations of the ground level at the site) above the ground level to ensure safety at the time of flooding. For this purpose, a reinforced slab structure will be employed.

3) Structural Plan

- **Structural Methods**

The structure of the planned buildings will be a single story framed structure using reinforced concrete pillars and beams which is the most common structure in Vietnam. The boring test for the Project has already established that the surface layer up to 4 – 8 m below the ground is unsuitable as supporting ground as the uneven subsidence of even a relatively light single story building may occur with this deposited layer which partly consists of a soft layer. Accordingly, pile foundations using PC piles manufactured in situ will be employed for the Project.

All of the walls will be non-bearing walls and will be made of bricks, stones and/or screen blocks. However, the necessary reinforcement will be provided to meet the structural standards. The floors will be structural slab floors due to their height while the structure of the sloping roof will basically consist of concrete slabs and coated steel plates to achieve durability and heat insulation.

- **Structural Standards**

The structural design for the Project is based on the Building Code of Vietnam (Ministry of Construction) and Vietnamese Standards TCVN 2739-'95 and others (Construction

Publishing House) while referring to Japanese standards (AIJ) or US standards (ACI) for the seismic force and others if necessary.

- Live load

Roof	: 150 kg/m ² (30 kg/m ² for non-walking sections)
General offices	: 200 kg/m ²
Exhibition and storage room	: 400 kg/m ²
Corridors and hall, etc.	: 300 kg/m ²
Book stacks	: 400 kg/m ²

* The live load for the exhibition and storage room will be checked when the weight of the items to be stored is known.

- Wind load (reference wind velocity pressure) : 127 kg/m² (Region II)
- Seismic force : based on $V = ZIC/12 \times W$

where,

- W : building weight
- Z : regional coefficient
- I : coefficient for importance of use
- C : standard shearing factor

4) Building Services Plan

Common building services for the existing facilities near the Sanctuary are a water supply and drainage system, plug sockets, lighting system and telephone system. No air-conditioned ventilation system is used. The following building service contents are adopted for the Project based on the principle that natural lighting and ventilation will be used to the maximum to reduce the maintenance cost.

- **Services by Building**

- Exhibition Building

Natural lighting and ventilation will be used with no mechanical lighting or ventilation at normal times. A general lighting system to assist work in the early morning, at night and during cloudy weather and a power supply system with plug sockets and a water supply system to assist the repair of artefacts and cleaning work will be installed. In addition, an adequate security system is planned to prevent the theft of artefacts.

- Tourists' Lavatory Building

An electrical lighting system and a water supply system for the flushing of toilets and for hand washing will be installed. A septic tank will be installed for drainage purposes as part of the building work.

- Administration Building

As staff members will be constantly working in this building during the ordinary opening hours of the Exhibition Building, an air-conditioning system which is appropriate for the local meteorological conditions of high temperatures and high humidity will be installed in the main rooms despite the overall principle of relying on natural lighting and ventilation. In addition, a lighting system and a telephone system will be installed along with plug sockets. Furthermore, a water supply system will be installed to serve the toilets, kitchenette (hot water) and shower in the guard room.

An emergency power supply system will not be installed because of the fact that the basic principle of planning is to enable the normal operation of the planned facilities without relying on electrical equipment, and also because the planned facilities do not demand urgent restoration of the power supply as, for example, in the case of a hospital.

The main design contents of each type of building service are described below.

• **Electrical Systems**

- Power Receiving and Transforming and Trunk Power Supply

Power supply will be extended to the site using three phase 220 V low voltage. The main distribution panel will be installed in front of the guard room in the Administration Building while a distribution panel for lighting will be installed in the Exhibition Building and Tourists' Lavatory Building. Power supply between the buildings will be made via underground cable.

- Lighting System

The use of lighting in the Exhibition Building at normal times is not assumed and general lighting will be provided by long-lasting mercury lamps. The lighting system for rooms in the Administration Building will principally use fluorescent lamps which can be easily procured and which promise easy maintenance and a low running cost.

- Outdoor Lighting System

Ball lights and garden lights will be installed to assist external work and security at night.

- Plug Sockets

Plug sockets will be installed in accordance with the planned location and mode of use of equipment. The Exhibition Building will be provided with plug sockets for repair equipment and refrigeration and also for general use. Meanwhile, the Administration Building will be provided with plug sockets for air-conditioning units and the office as well as for special equipment together with those for general use.

- Alarm System

Given the non-combustible nature of the planned buildings together with the basically non-combustible exhibition and storage items, such as stones and bricks, the likelihood of ignition is judged to be extremely low. In the case of the Exhibition Building, a fire alarm system (of the smoke and heat detection type) will not function due to the high ceiling and free air circulation through the building via the transoms and slits on the stone external walls. For this reason, the fire alarm system requested by the Vietnamese side will not be provided and only an alarm system to prevent the theft of artefacts will be installed. This alarm system will consist of a sensor at each entrance of the Exhibition Building so that an alarm bell sounds at the entry of any suspicious person together with the display of an alarm signal in the guard room in the Administration Building. In the case of the Administration Building, a fire alarm system will be installed to ensure the safe storage of the collection of research materials, including important documents. Fire extinguishers will be installed by the Vietnamese side as they are classified as consumables.

No security monitoring camera will be installed at the exhibition hall or storage rooms as the floor area of these rooms is small enough for a permanently stationed receptionist during the day and a guard at night to take in at a glance. No public address system will be introduced for the exhibition hall as the use of such a vocal system is deemed to be inappropriate in view of the limited floor area of the hall.

- Telephone System

The installation of three telephone lines is planned to serve not only ordinary telephone calls and facsimile transmission but also Internet connection for research, publicity and extension purposes as well as visitors. A facsimile machine will be installed in the

administration office while a telephone will be installed in various rooms to make the overall system capable of both internal and external communication.

- Lightning Arrester

The installation of a lightning arrester is a compulsory requirement for any building in Vietnam of two storeys or higher. However, there is no similar regulation for single story buildings. Given the common occurrence of severe thunderstorms during the rainy season, particularly in mountainous areas, and the character of the planned facilities to store precious artefacts and materials, the installation of a lightning arrester is planned under the Project.

• **Air-Conditioning System**

Individual air-conditioning units will be installed in the curator's office, administration office, meeting room, researchers' room and reference room/laboratory.

• **Plumbing Systems**

- Water Supply System

Local residents generally rely on bottled water for drinking water and, therefore, water supply is required for the flush toilets, shower and hot water supply. The provision of a pumped well at the site is planned under the Project to supply water. In addition, the minimum sprinkler system is planned to assist external work, including the repair of remains and the maintenance of landscaping and paving.

- Drainage System

Both sewage and miscellaneous waste water will be directed to a septic tank in a combined system and treated water will be infiltrated to the ground via a seepage pit. This system is commonly used in Vietnam. The septic tank will consist of three tanks to meet the relevant Vietnamese standards and facility standards adopted by the Master Plan.

- Gas Supply System

Small capacity gas cylinders which are commonly used in Vietnam will be used for gas supply to heat water.

5) Building Materials Plan

The building materials listed in Table 2-5 are selected in view of the required grade, strength and durability while principally referring to the building finishing standards adopted by the Master Plan and general specifications in Vietnam.

Table 2-5 Comparison of Construction Methods for Building Components

Component		Selected Method	Local Standards	Reason for Selection
Exhibition Building				
Roof	Roof Frame	Inverse beams with RC roof slabs and a steel frame main house	Wooden or steel frame with or without RC roof slabs	Double roof for excellent heat insulation, weather resistance and wind resistance
	Roofing Material	Corrugated metal roofing (sloping roof)	Plain tiles; corrugated metal roofing; flat roof with concrete asphalt waterproofing	Durability, wind resistance and light roof weight
	Top Lights	Clear glass + polycarbonate panels with UV absorption and glass scattering prevention film	Clear glass	Suitable specifications for a museum and safety; shutting out and dispersion of direct sunlight
Walls	Main Structure	RC rigid structure	RC rigid structure; brick masonry	Conventional method with high durability
	Exterior Walls	Natural stone blocks; masonry with gaps	Brick masonry; mortar with paint finish	Weather resistance and good design feature; maintenance-free
Openings	Windows and Transoms	Security grills (steel pipes); light transmitting louvres (polycarbonate)	Wooden or aluminium window frames	Necessity for high security function; polycarbonate is ultra-light and has an excellent light transmission and impact-resistance performance
	Doors	Steel; steel shutters	Wooden or steel; steel shutters	Good strength and durability
Interior Finishing	Ceilings	Exposed concrete	Painted mortar (RC surface); painted wood or cement boards (false ceilings)	Maintenance-free
	Walls	Natural stone masonry	Brick masonry + mortar with paint finish	Maintenance-free
	Floors	Terrazzo tiles (for exhibition and storage spaces); ceramic tiles (lobby, etc.)	Mortar; terrazzo tiles; ceramic tiles	Good durability; suitable grade; easy maintenance
Tourists' Lavatory Building				
Roof	Roof Frame	Steel frame with partial RC roof slabs	With or without RC roof slabs and wooden or steel frame	Better weather resistance and wind resistance
	Roofing Material	Corrugated metal roofing (sloping roof)	Plain tiles; corrugated metal roofing; flat roof with concrete asphalt waterproofing	Durability, wind resistance and light roof weight
Walls	Main Structure	RC rigid structure	RC rigid structure; brick masonry	Conventional method with high durability
	Exterior Walls	Core concrete block masonry	Brick masonry; mortar with paint finish	Ventilation and good design feature
Interior Finishing	Ceilings	Bamboo; mortar with paint finish (RC surface)	Mortar with paint finish; wood or cement boards with paint finish (false ceilings)	Heat insulation; good design feature; economy
	Walls	Ceramic tiles	Ceramic tiles; brick masonry + mortar with paint finish	Easy maintenance
	Floors	Ceramic tiles	Mortar; terrazzo tiles; ceramic tiles	Durability and easy maintenance

Component	Selected Method	Local Standards	Reason for Selection	
Administration Building				
Roof	Roof Frame	Steel frame above RC roof slabs	With or without RC roof slabs and wooden or steel frame	Double roof for excellent heat insulation, weather resistance and wind resistance
	Roofing Material	Corrugated metal roofing (sloping roof)	Plain tiles; corrugated metal roofing (sloping roof)	Durability and wind resistance
Walls	Main Structure	Brick masonry	Brick masonry	Locally the most popular method without any performance problems
	Exterior Finish	Mortar with paint finish	Mortar with paint finish	Quality problem with fair-faced brickwork; easy maintenance
Openings	Windows	Aluminium jalousie windows; casement windows + steel security grills	Steel, aluminium and wooden frames	Lighting, ventilation and security aspects taken into consideration
	Doors	Wooden and steel doors	Wooden doors	The main exterior doors will be steel for security purposes.
Interior Finishing	Ceilings	Concrete with paint finish (RC surface)	Mortar with paint finish (RC surface) or cement board with paint finish (false ceilings)	Omission of mortar base using plywood forms
	Walls	Mortar with paint finish	Mortar with paint finish	Locally the most popular method without any performance problems
	Floors	Terrazzo tiles; ceramic tiles	Mortar; ceramic tiles; terrazzo tiles	Durability; suitable grade; easy maintenance

6) Display Equipment Plan

Display tables, cases and panels were originally requested. In regard to display tables and cases, their types and the required quantity were calculated based on the shape and size of 100 artefacts listed by the Vietnamese side for display. The manufacture and procurement of these tables and cases will be considered with particular emphasis on their quality. Thirty graphical panels will be configured to match the wall size of the Exhibition Hall. The display theme and contents will be presented by means of photographs, illustrations and explanatory texts. These texts will be created in Vietnamese and English by the Exhibition Work Committee in Vietnam. The actual panels will be produced in Japan because of the need for translation into Japanese and the better production techniques, including layout and printing, in Japan.

The planned important items for display include a diorama model of the entire Sanctuary and a restored model of the A1 Tower. As it is believed that the precision finishing and high quality of these two items will significantly determine the overall effect of the display, their production in Japan using special techniques is desirable. As the production of the restored model of the A1 Tower will require on-site work based on verification of the data and future research results because of many uncertainties regarding the original, however, it has been omitted from the Project in view of incompatibility with the procurement method based on

tender under the Project. Instead of a restored model of the A1 Tower, a panel display of a drawing of the restored A1 Tower will be considered as such a drawing can be prepared based on existing information. The Japanese side will, therefore, produce the diorama model of the Sanctuary for the Project which can be produced based on existing information and data with the reasonably reliable accuracy and scale of the restoration work.

Table 2-6 List of Planned Display Units

Room	Unit	Quantity	Dimensions (Reference)
Exhibition Hall / Storage Room	Display Table A	14	W 900 x D 900 x H 700 mm
	Display Table B	23	W 1,800 x D 600 x H 450 mm
	Display Table C	26	W 1,800 x D 600 x H 700 mm
	Display Case	3	W 1,800 x D 900 x H 900 mm
Exhibition Hall	Graphic Panel A	20	W 900 x H 1,500 mm
	Graphic Panel B	10	W 1800 x H 1,500 mm
	Diorama Model	1	W3000 x W3000

(3) Equipment Plan

1) Examination of Requested Equipment

The originally requested equipment was information processing equipment for recording, data management and office management purposes, photographic and image recording equipment, transportation equipment for artefacts and other remains, artefact repair and reproduction equipment, furniture and fixtures, including storage cabinets and display/presentation equipment.

- **Information Processing Equipment for Recording, Data Management and Office Management**

Computers, colour printers, scanner and copier, etc. are required for the storage and editing of records. Although four desktop PCs and one notebook PCs were requested, all of the PCs to be provided will be desktop PCs in view of the planned work and staff distribution. Four PCs will be provided for the research department and one PC will be provided for the administration department. One colour printer and one scanner will be provided for the research department and one monochrome printer and one copier will be provided for the administration department. The originally requested desk calculator has been omitted. As information processing equipment requires a local maintenance service, imported equipment for which a quality guarantee is available will be procured in Vietnam.

- **Photographic and Imaging Equipment**

The range of equipment required to film remains and artefacts, for preservation/restoration activities and for the storage of visual reference materials includes a 35 mm still camera, digital camera, video camera and monitor-video desk, etc. and these will be provided for the research department. The original request also included a video projector and screen as a visual presentation system. As these items can be used for the educational, extension and publicity activities of the Sanctuary in addition to their use for meetings and exchanges with external researchers, they will be installed in the meeting room. In regard to visual presentations in the Exhibition Building, no clear system for the planning and management of contents production and supply has yet been established. Accordingly, the installation of equipment in the Exhibition Building at the time of its opening is not included in the Project. Photographic and imaging equipment will be standard products of a Japanese manufacturer(s) which can be locally maintained and will be procured in Japan or a third country.

- **Transportation Equipment for Artefacts**

One vehicle and two mobile lifting equipments are planned for the transportation of artefacts to and from the Sanctuary. As the largest target artefacts are stone columns of approximately 500 kg in weight, the planned vehicle is a light truck. One each of the mobile lifting equipment will be used for site work and storage work. Considering the need for after-service, a light truck of a model with standard specifications which is handled by a local agent will be procured locally.

- **Artefact Repair and Restoration Equipment**

Various equipment will be required for the repair and reproduction of artefacts. Raw stone for reproduction will be cut to the required size and will be obtained from a supplier and the planned equipment will not be large power-driven equipment but will, in fact, consist of tools for manual work to be conducted in the work room in the storage area. Ordinary tools, such as chisels and hammers can be easily obtained locally and, therefore, will not be included in the planned equipment under the Project.

- **Furniture and Fixtures, Including Storage Cabinets**

In addition to the provision of furniture and fixtures corresponding to the planned equipment for the researchers' office, storage room (area) and administration office in the Administration Building, cabinets for the storage of collected reference materials will be

provided in the reference room and the reading/viewing room. Desks and chairs (to seat 18 persons) will be provided for the meeting room.

In regard to the Exhibition Building, tables and chairs for 40 visitors will be provided for the rest area and equipment shelves will be provided for the equipment room next to the work room. All furniture and fixtures will be locally procured. No visitors' lockers will be introduced. As there is no public transport to the Sanctuary, visitors must use a tour coach, privately hired bus or private car. As such, there is no need for lockers for visitors to leave their belongings/luggage. Even if some visitors do need to leave their luggage at the reception desk of the Exhibition Building before visiting the actual Sanctuary, their number is expected to be small enough to be dealt with by the reception desk.

2) List of Planned Equipment

The planned equipment to be provided under the Project is listed in Table 2-7/8.

Table 2-7 List of Planned Equipment

Purpose of Use	Equipment	Specifications	QTY
Recording and Data/Information Processing Equipment	Desktop computers	CPU: Pentium IV or higher; 1.8 GHz or higher HDD: 40 GB or more; memory: 128 MB or more 15" CRT; Vietnamese software	5
	Colour laser printer	A3 size, colour; printing resolution: 1,200 x 600dpi or higher;	1
	Monochrome laser printer	A4 size, printing resolution: 600dpi or higher;	1
	Scanner	A4 size, colour scanner;	1
	Copier	Maximum A3 size copying: zoom	1
Photographic and Imaging Equipment	35 mm single lens reflex camera	Short focus/macro lens; zoom lens; strobe light; tripod	1 set
	Digital camera	Four million pixels or more; zoom lens; tripod	1 set
	Digital Video camera	Mini-DV format; tripod	1 set
	TV monitor/ video deck	Monitor size of 27" with video stand;	1
	Projector and screen	Video projector; image display unit: video player; 60" screen; tripod	1 set
Artefact Transportation Equipment	Small, light truck	Pick-up truck; 2 WD; diesel engine 2500cc or higher; loading capacity: 500 kg or more	1
	Lifting chain blocks	Manual chain block; lifting load: one ton; tripod head; steel pole	2
	Hand pallet truck	Manual truck; loading capacity: one ton or more; resin pallets x 2 (1 m x 1 m each)	1
Artefact Repair/ Reproduction Equipment	Stone carver Resin forming tools		1 set

Table 2-8 List of Planned Furniture and Fixtures

Room	Item	Q'ty	Room	Item	Q'ty
Director's Office/ Administration Office	Director's Desk and Chair A	1set	Meeting Room	Conference Desk	6
	Desk and Chair B	2 set		Chair F	30
	Equipment Table	1	Reference, Reading and Work Rooms	Work Desk	2
	Filing Cabinet A(H 1,800 mm)	4		Reading Desk	1
Curator's & Researchers' Office	Work Desk B	7		Work Desk B	3
	Chair C	2		Chair D	7
	Chair D	4		Chair E	4
	Filing Cabinet B(H 1,200 mm)	2		Storage Cabinet A(H 900 mm)	2
	Filing Cabinet A(H 1,800 mm)	3		Storage Cabinet B	4
Storage Room	Storage Cabinet B(H 1,800 mm)	4	Exhibition Stg.	Equipment Cabinet(H 1,800 mm)	8
	Equipment Cabinet(H 1,800 mm)	4	Balcony	Table and chairs	10 set

2.2.3 Basic Design Drawings

(1) Floor Area by Building

	Total Floor Area	Remarks
Exhibition Building	916.7m ²	Indoor area : 602.7m ² Terrace and entrance lobby, etc : 314.0m ²
Tourists' Lavatory Building	101.9m ²	Lavatory : 81.8m ² Covered way : 20.1m ²
Administration Building	261.5m ²	Effective floor area : 246.9m ² Porch, etc : 14.6m ²
Total	1,280.1m ²	

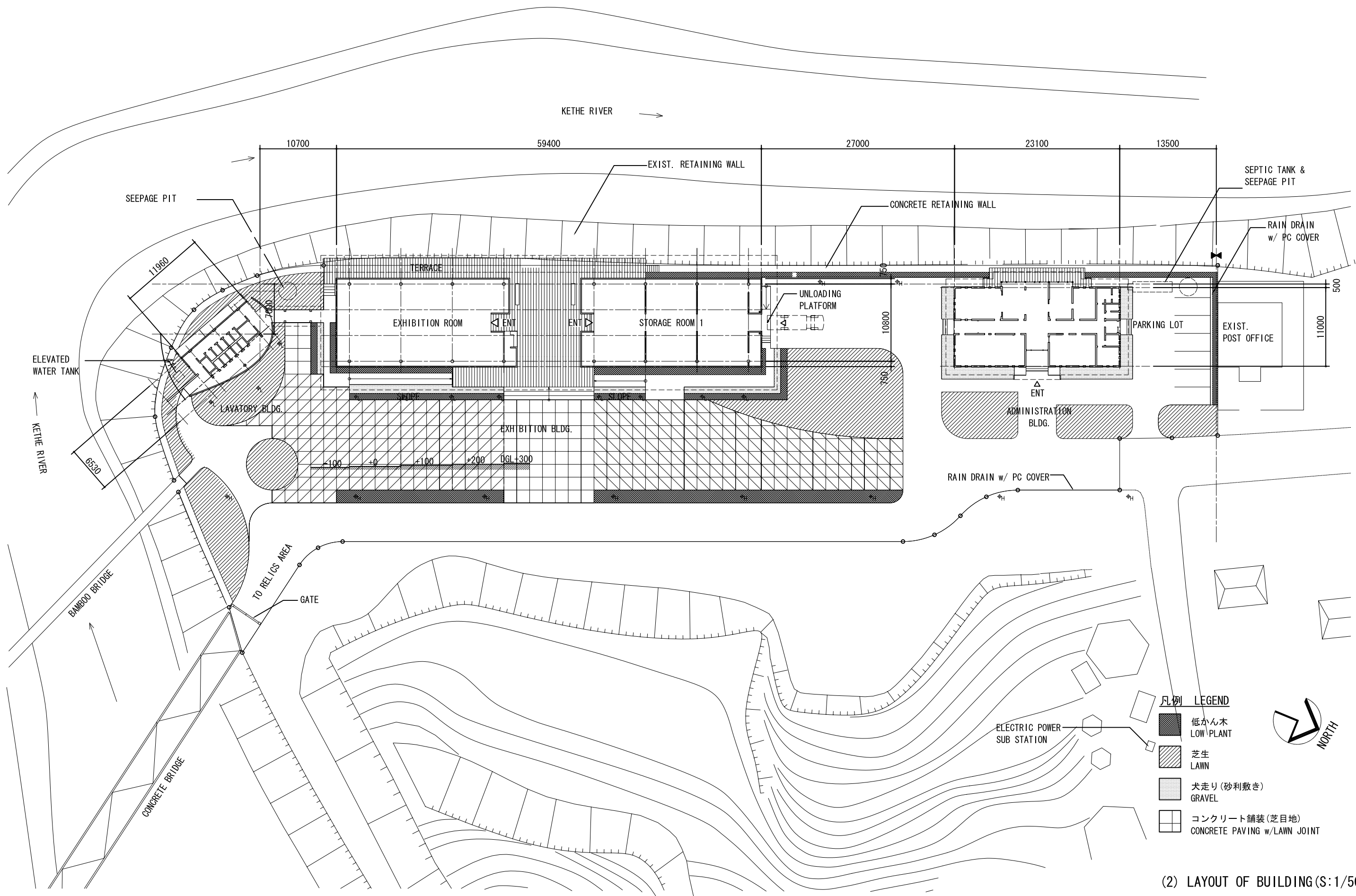
(2) Layout of Buildings

(3) Basic Design Drawings for Exhibition Building

- Plan and Elevation
- Roof Plan, Elevation and Cross-Section
- Detail Section

(4) Basic Design Drawing for Tourists' Lavatory Building

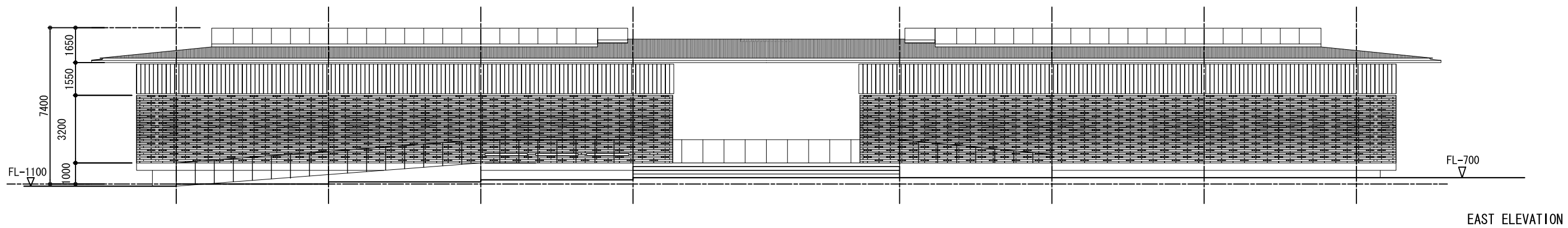
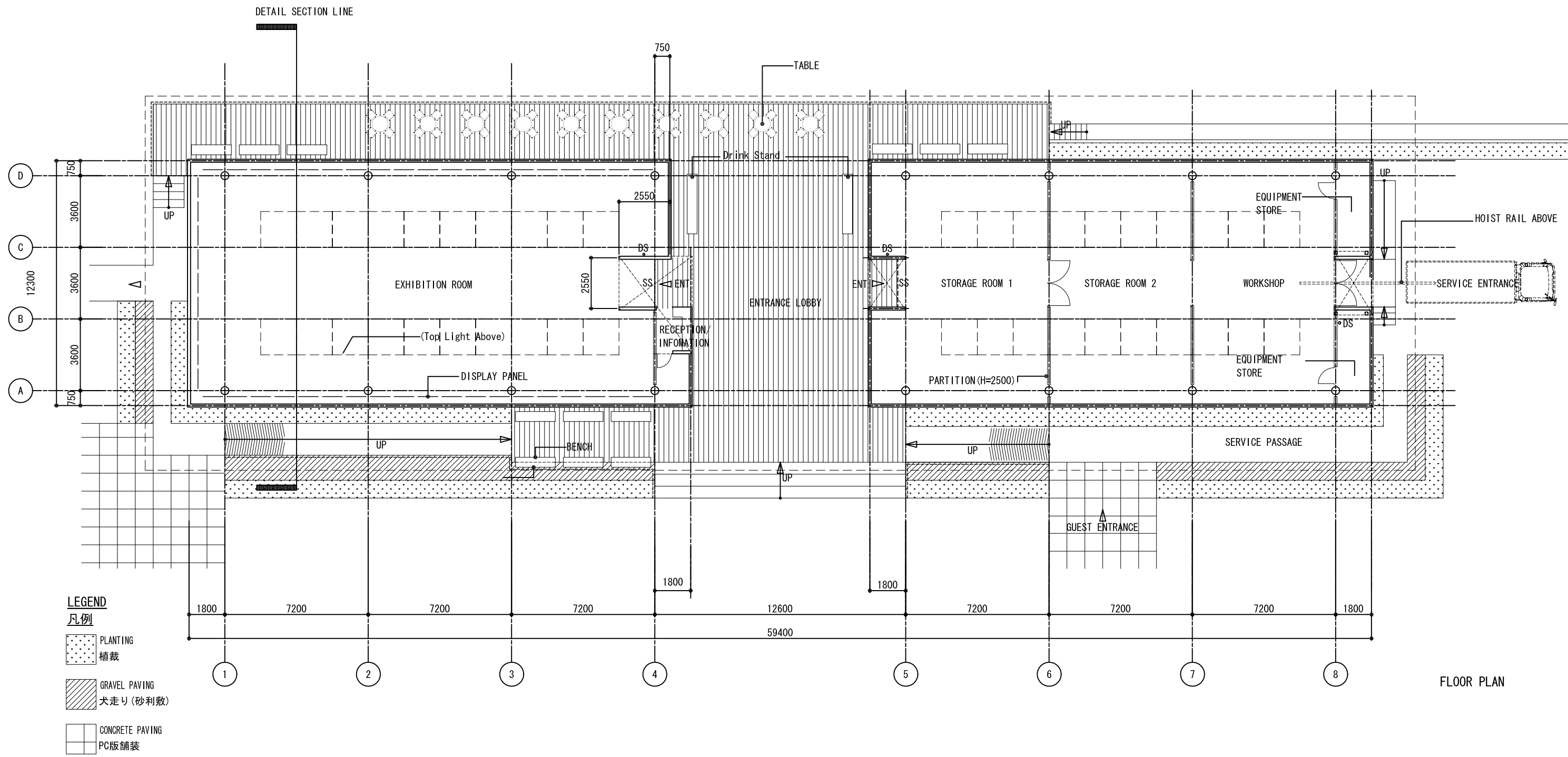
(5) Basic Design Drawing for Administration Building



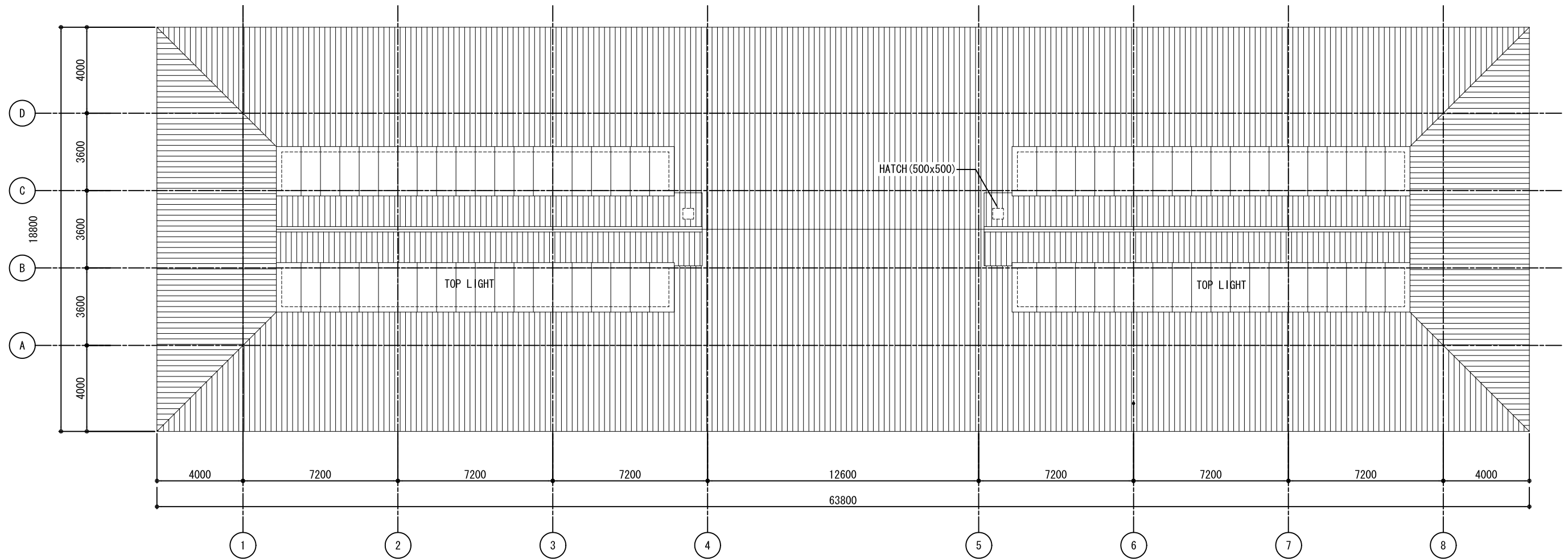
凡例	LEGEND
	低かん木 LOW PLANT
	芝生 LAWN
	犬走り (砂利敷き) GRAVEL
	コンクリート舗装 (芝目地) CONCRETE PAVING w/LAWN JOINT



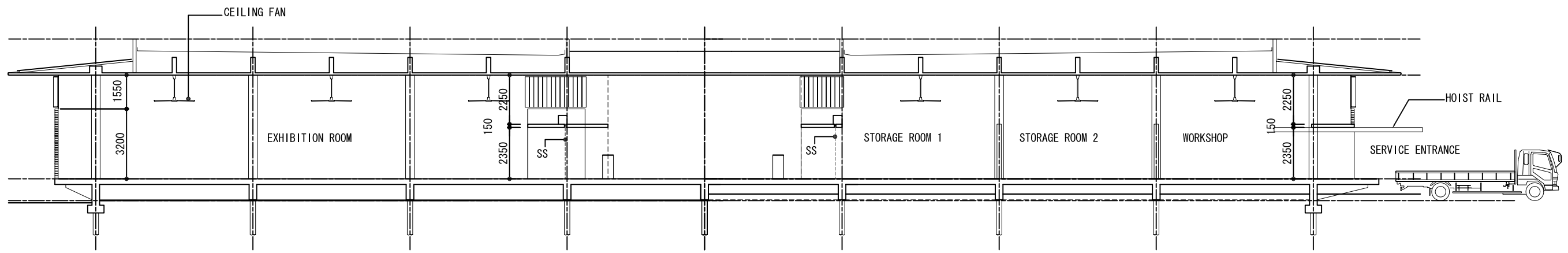
(2) LAYOUT OF BUILDING (S:1/500)



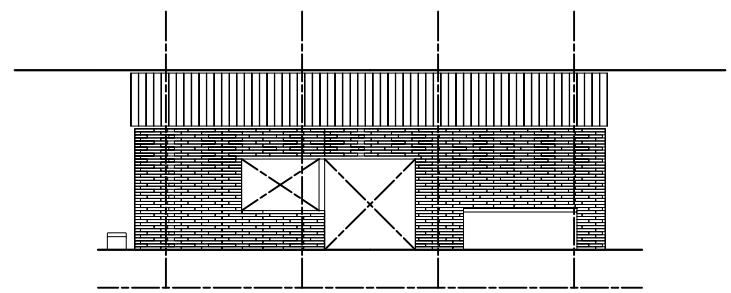
(3) BASIC DESIGN DRAWING FOR EXHIBITION BUILDING (1/200)



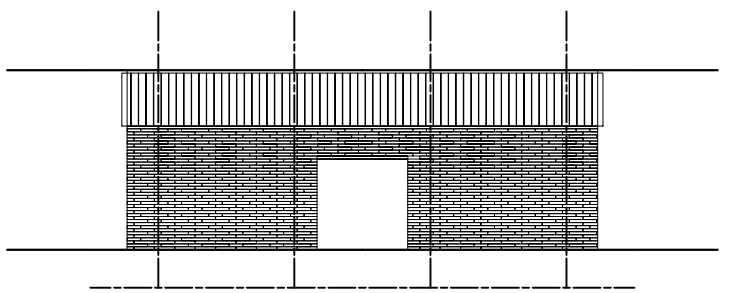
ROOF PLAN



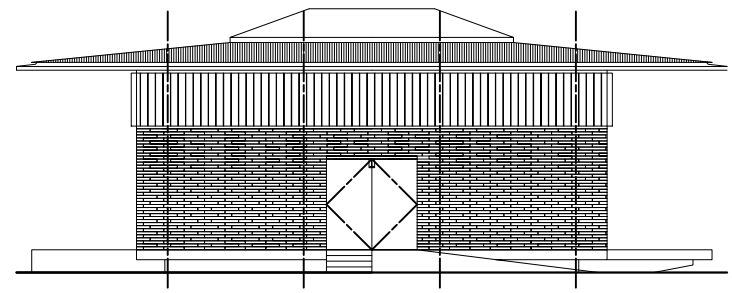
SECTION



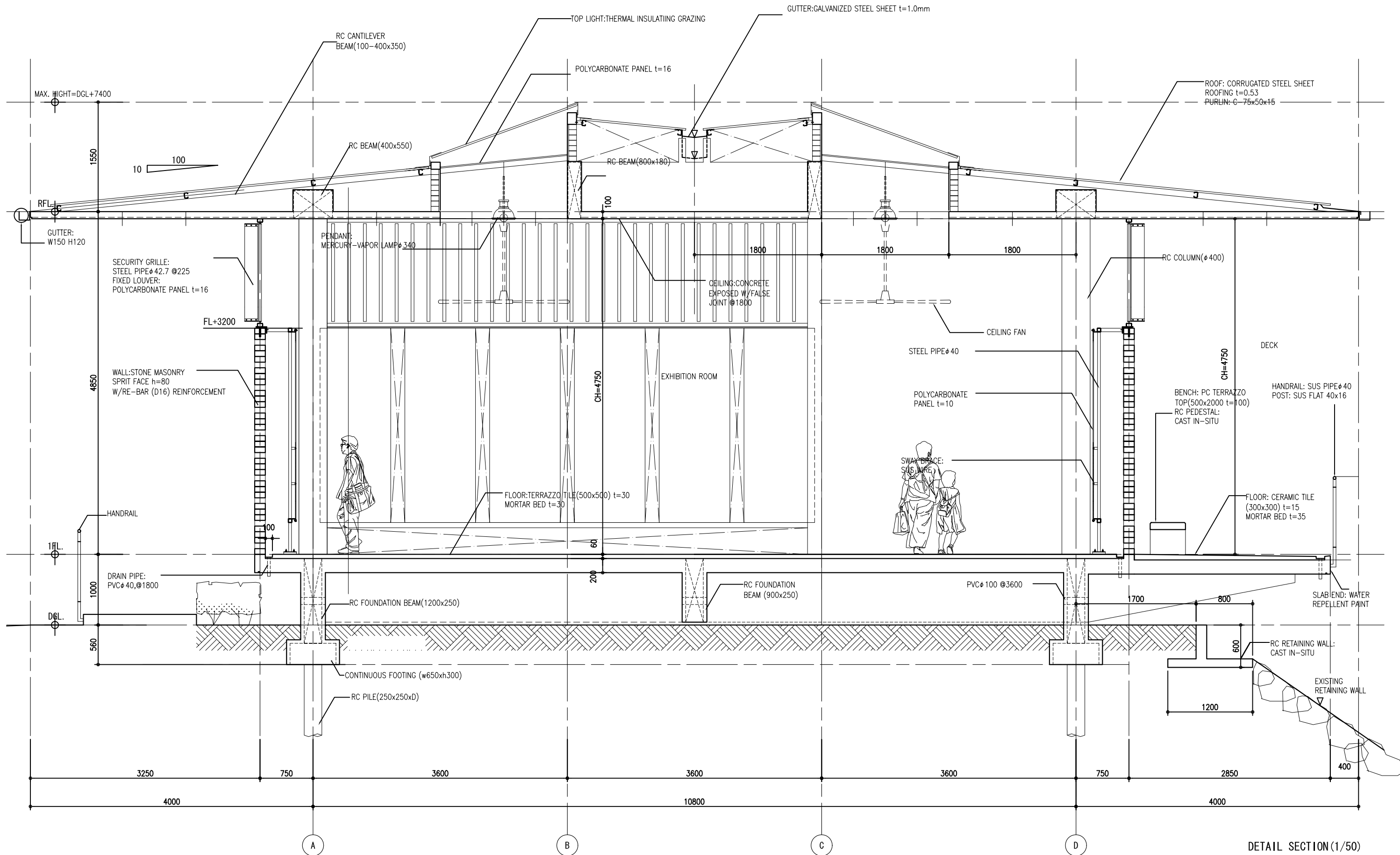
ELEVATION:
EXHIBITION ENT.



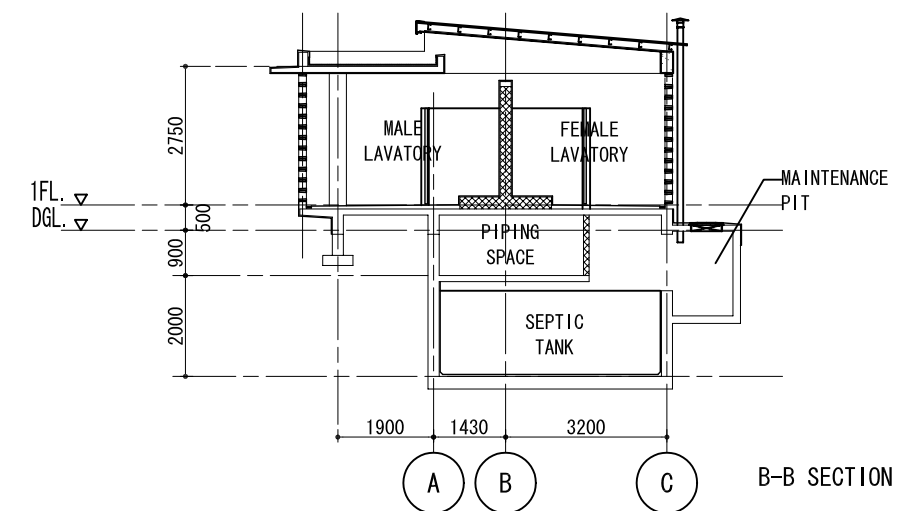
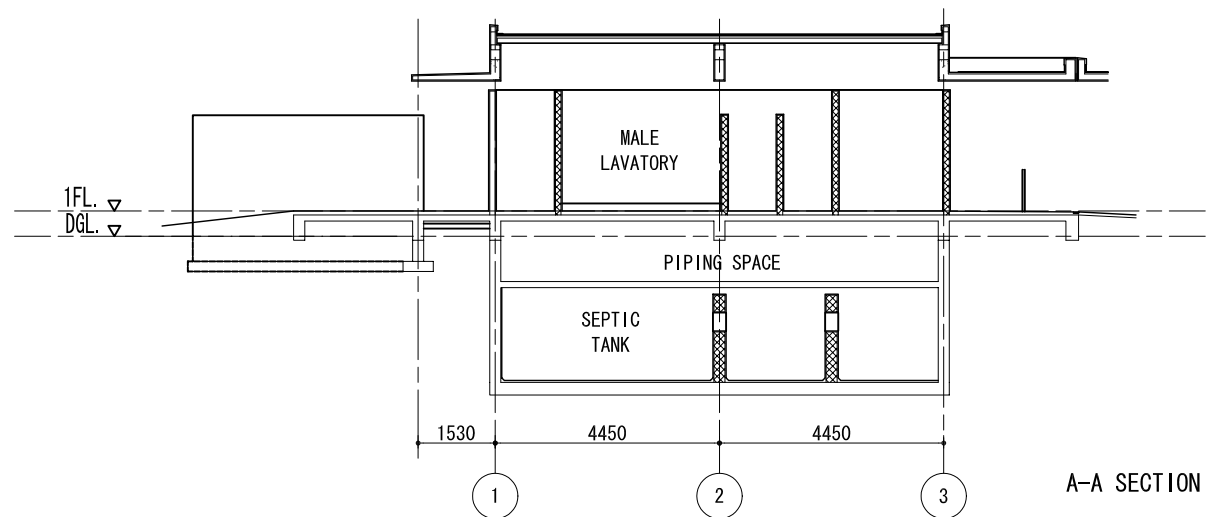
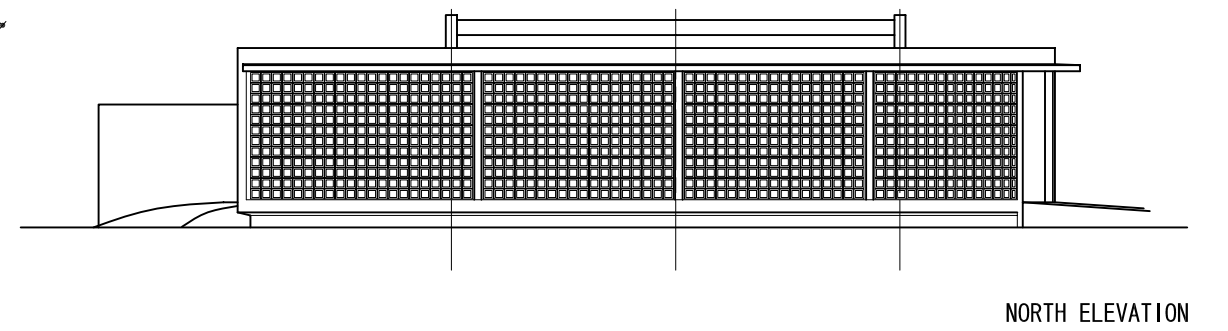
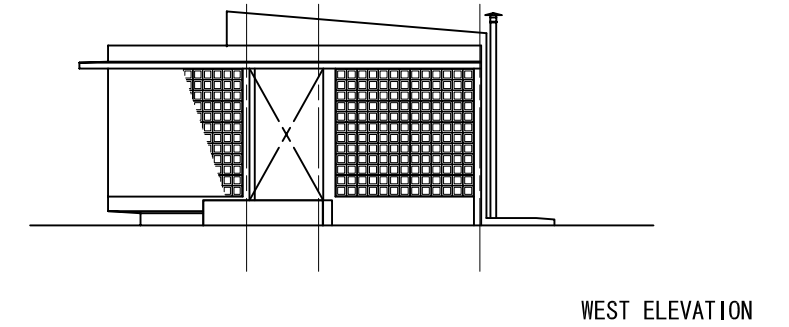
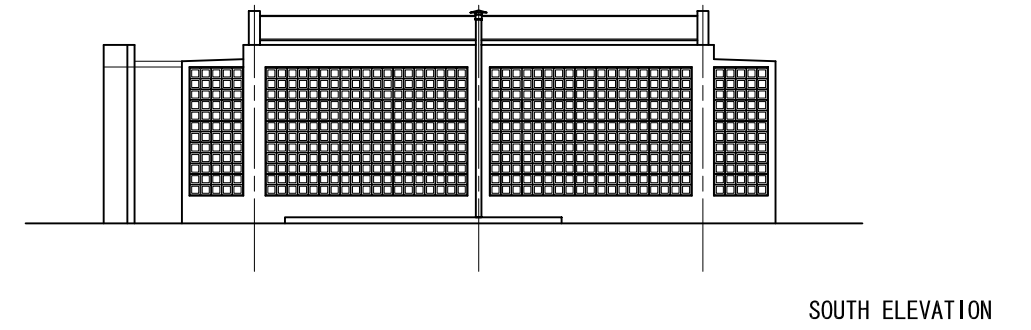
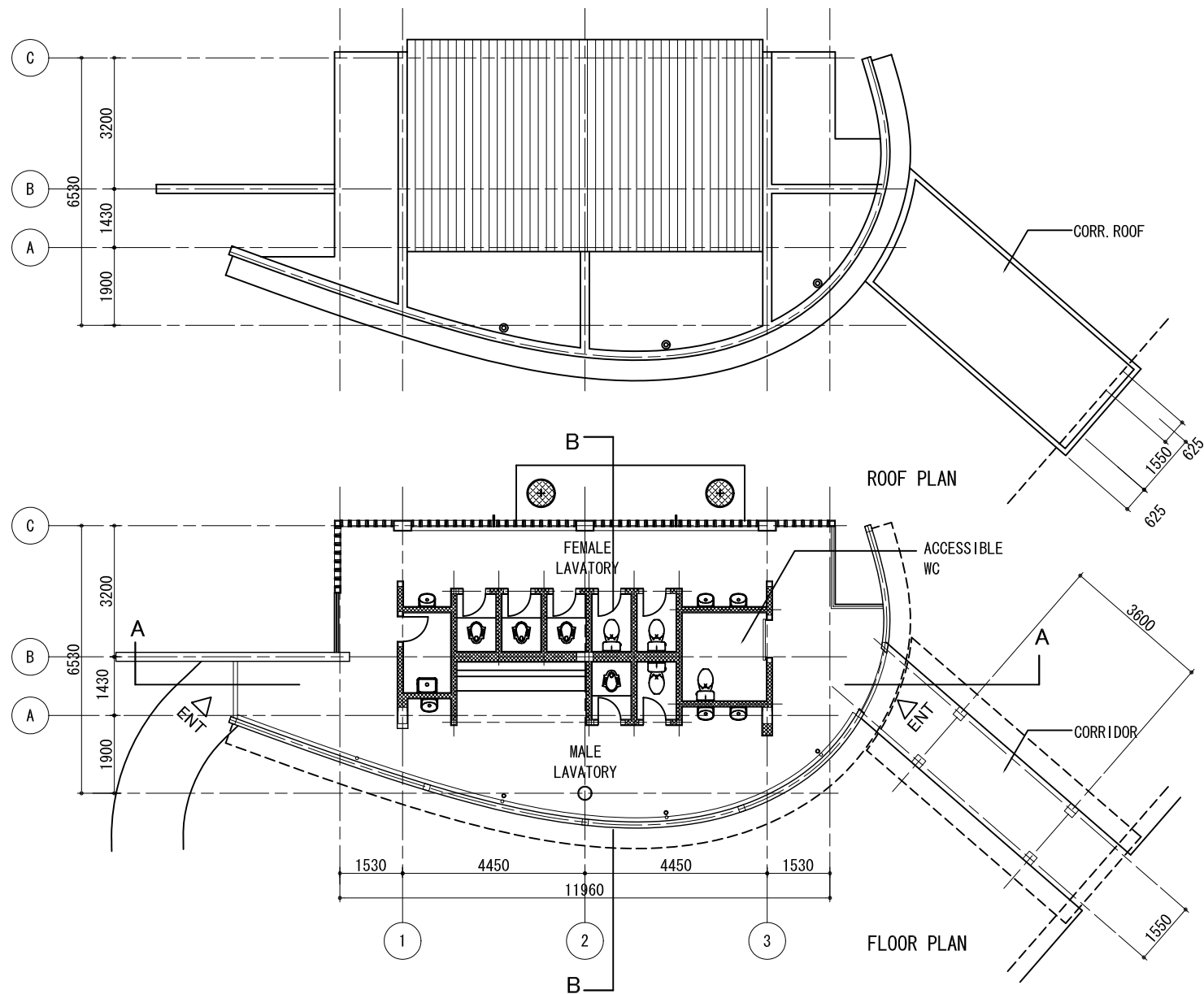
ELEVATION:
STORAGE ENT.



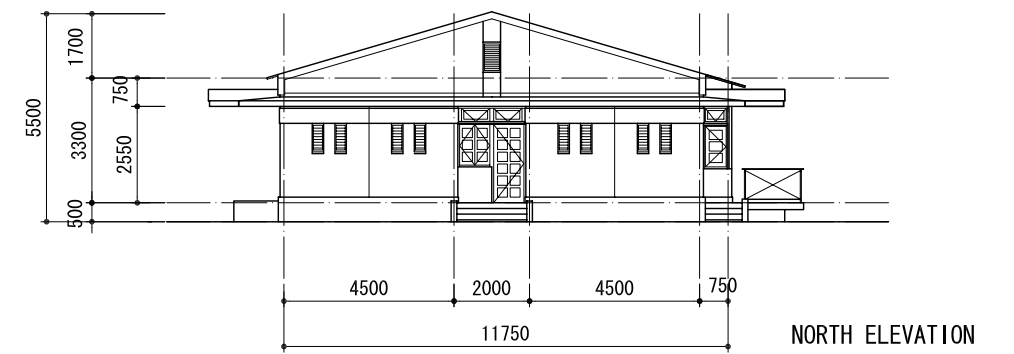
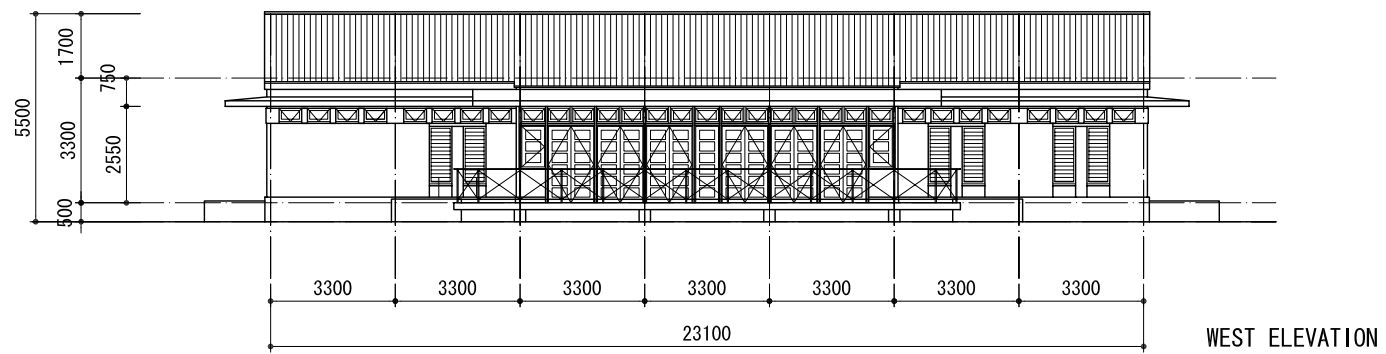
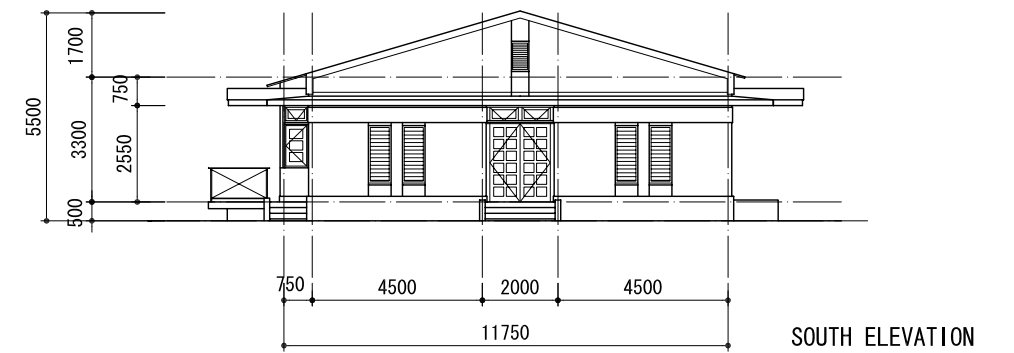
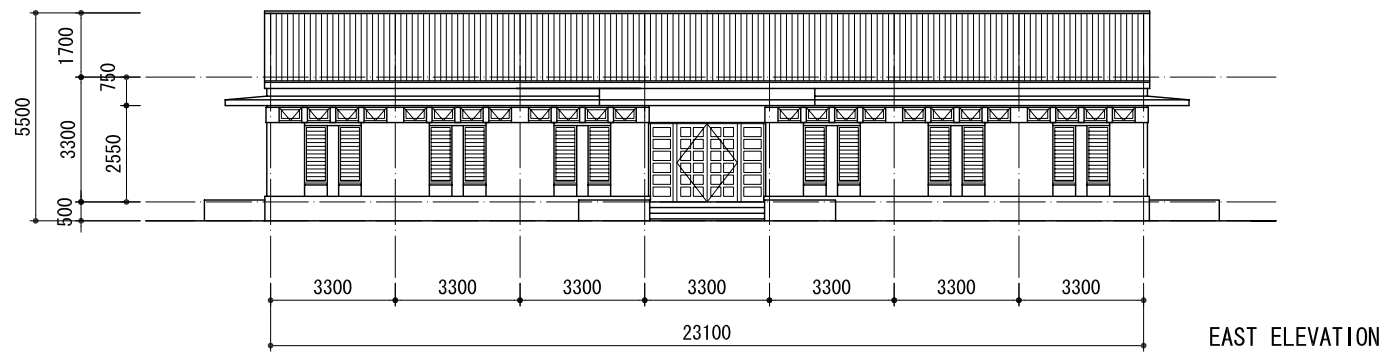
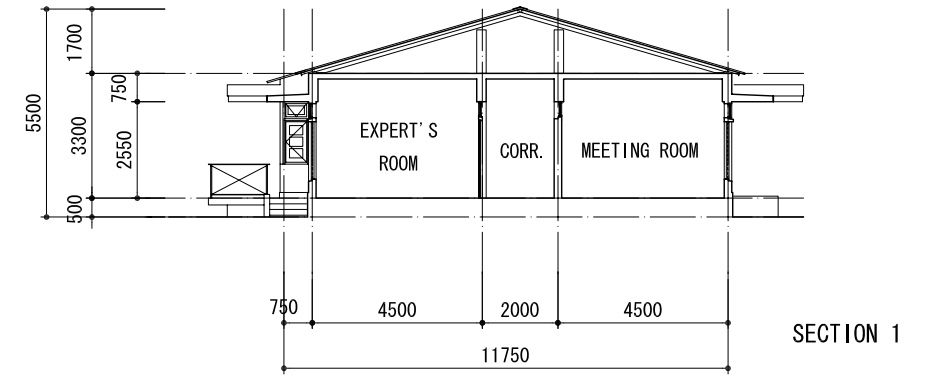
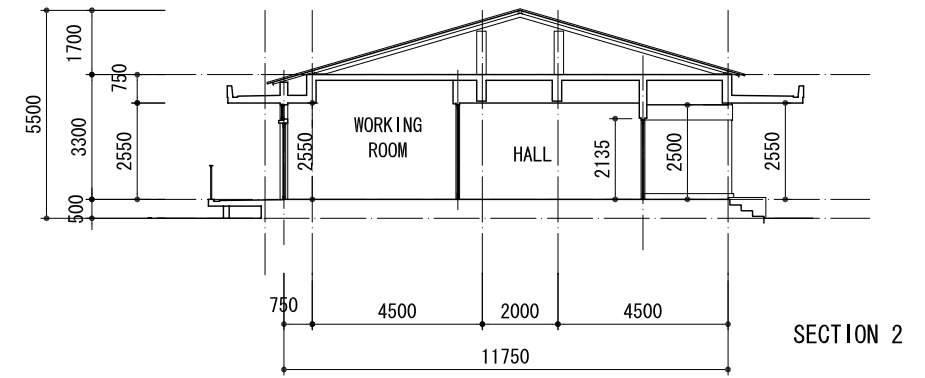
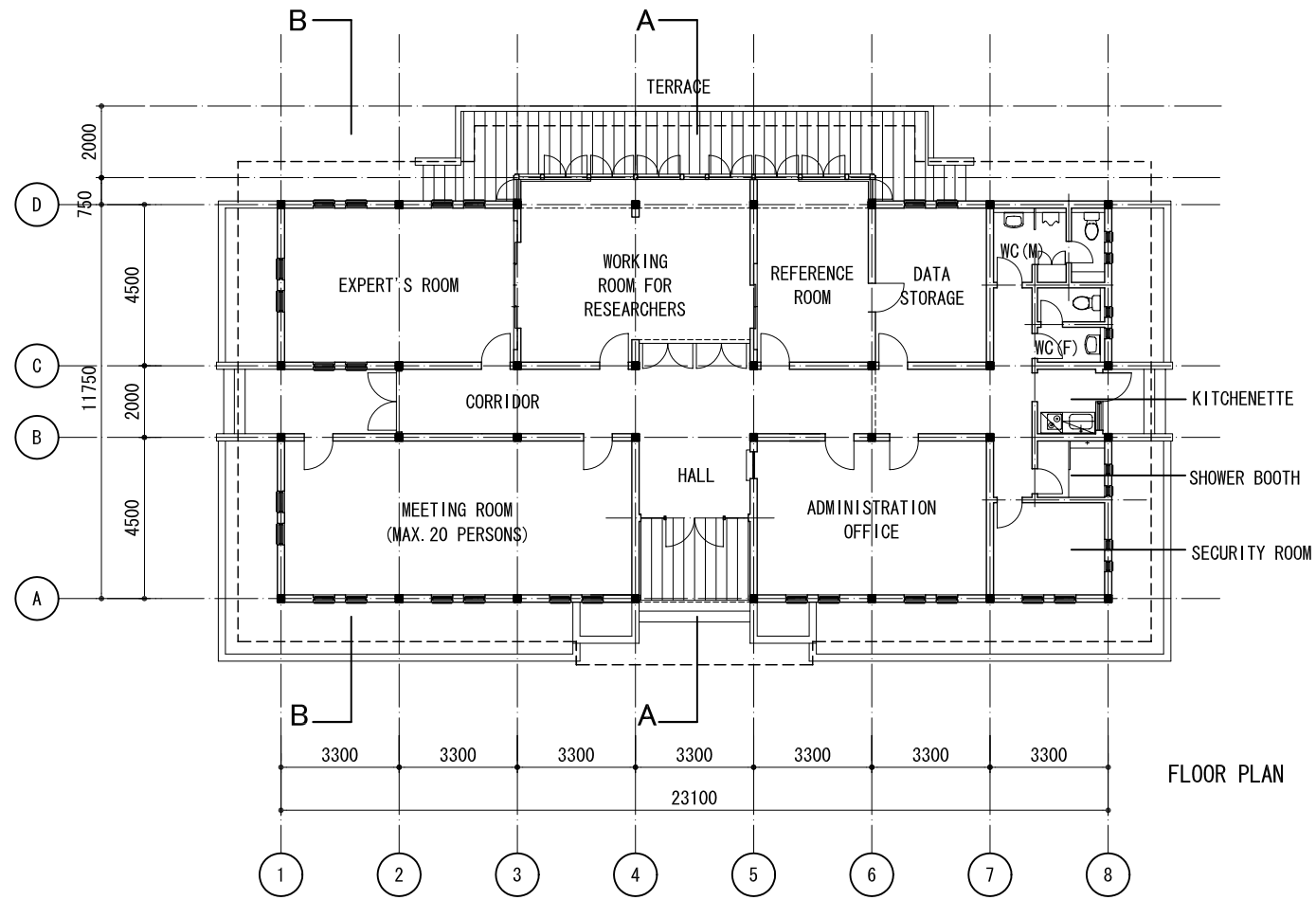
NORTH ELEVATION



DETAIL SECTION (1/50)



(4) BASIC DESIGN DRAWING FOR TOURIST'S LAVATORY BUILDING (1/150)



(5) BASIC DESIGN DRAWING FOR ADMINISTRATION BUILDING (1/200)

2.2.4 Implementation Plan

2.2.4.1 Implementation Policy

(1) Basic Issues for Project Implementation

The Project will be implemented within the framework of the grant aid system of the Government of Japan after the signing of the Exchange of Notes (E/N) by the Government of Japan and the Government of Vietnam following approval of the Project by the Japanese Cabinet. This will be followed by the conclusion of a consultancy agreement with the Government of Vietnam to proceed to the detailed design stage for the facilities and equipment. After the completion of the detailed design drawings and tender documents, a competitive tender will be held for Japanese contractors which meet certain qualifications. The successful bidder and the Government of Vietnam will then conclude a construction and procurement agreement to proceed to the construction of the facilities and the procurement and installation of the equipment. This two agreements will only become valid after their verification by the Government of Japan.

(2) Project Implementation System

1) Project Implementation System on Vietnamese Side

The Ministry of Information and Culture will act as the government office supervising the implementation of the Project on the Vietnamese side and its Department of International Relations will coordinate the Project and will sign the official document (E/N). Meanwhile, the Center for Monuments and Heritage Conservation (CMHC) of the Ministry of Information and Culture under the supervision of the Quang Nam Province's People's Committee will be responsible for the practical implementation of the Project. As the implementation agency, the CMHC will coordinate and facilitate the actual work involved in the Project. Given the fact that a new body will be responsible for the management of the new facilities after their completion, however, the formulation of a preparatory committee for the establishment of the museum, the members of which include those to be assigned to the new facilities, as soon as possible to conduct concrete arrangements is important. The Quang Nam Province's People's Committee will organize its various offices to implement the undertakings by the Vietnamese side and to obtain the necessary permits, approval and consent via the CMHC. It is assumed that this Committee will act as the Vietnamese party to the agreements for the Project.

The CMHC, which will act as the implementation agency for the Project, specialises in the conservation and restoration of remains and has only limited administrative authority. It is, therefore, important that all project-related organizations at both the central and local (district

and village) levels fully understand the contents of the Project and establish a cooperation system for the smooth progress of the Project under the leadership of the Quang Nam Province's People's Committee.

2) Consultant

The consultant will conduct the detailed design of the facilities and equipment based on the present Basic Design Study Report and supervision of the construction work and procurement in accordance with the design and supervision agreement to be concluded with the body responsible for the implementation of the Project on the Vietnamese side. The consultant will also prepare the tender documents and will assist the selection of the contractor and the conclusion of the construction agreement with the contractor. In order to efficiently proceed with the above work, the consultant will establish a cooperation system with the person in charge of the Project as well as technical staff members of the CMHC while dispatching the necessary supervisors to the project site during the construction period. The consultant will also dispatch engineers to implement technical cooperation in accordance with the soft component plan of the Project to assist the planning and setting-up of the exhibition which is to be undertaken by the Vietnamese side.

3) Contractor

The contractor, which will be a Japanese corporation with certain qualifications selected through an open competitive tender, will conclude a lump sum contract with the implementation agency on the Vietnamese side to construct the facilities and to procure the equipment. The contractor will establish an efficient work system which is compatible with the scale and contents of the planned facilities under the Project while ensuring the safety of workers and tourists during the work to be conducted at the limited space at the project site.

(3) Construction and Procurement Policies

The Project aims at the construction of facilities at the entry point to an international tourist site which is certified as a World Heritage in order to provide information on the My Son Sanctuary for domestic and foreign tourists and researchers. For this purpose, the completion of high quality facilities and exhibits to serve domestic and foreign visitors in an efficient manner as required by the grant aid scheme of the Government of Japan is essential while giving careful consideration to visitors and the surrounding environment during the construction period. The basic policies regarding construction and procurement are listed below.

- The construction work must ensure the smooth running of the Sanctuary, safety of visitors and preservation of the surrounding environment.
- An appropriate work management system must be established together with the use of a local subcontractor for the purpose of efficiently implementing the Project and achieving the required quality level while reflecting the local conditions.
- Quality control, schedule control and safety control must be thoroughly implemented and efforts must be made to transfer higher skills than the locally available skills at present to the construction staff.
- The construction work must proceed with the full understanding and cooperation of the various organizations involved in the operation, management and research regarding the Sanctuary.
- The construction work must proceed with proper coordination of the work of the Vietnamese side to establish the management system and to prepare the exhibition plan.

2.2.4.2 Implementation Conditions

(1) Situation of Local Construction Industry and Regional Characteristics

1) Situation of Local Construction Industry

- **Construction Companies**

Many construction companies, mainly based in Da Nang, the key city in Central Vietnam, operate in the area near the project site. In addition, there is a cluster of construction companies in Tam Ky, the provincial capital of Quang Nam, as the large-scale development of administrative facilities and infrastructure is in progress following the creation of the new province. Construction companies in Vietnam are classified as publicly-owned companies controlled by the Ministry of Construction and the Ministry of Transport and private companies established since the introduction of a market economy. A few medium size companies with experience of work demanding relatively high specifications and quality exist today because of their involvement in the construction of not only various infrastructure and public facilities but also factories of foreign subsidiaries, private offices and hotels for foreign visitors in urban areas as a result of the country's economic growth in recent years. In regard to the Project, the selection of a subcontractor from among these local companies is appropriate in consideration of their technical capability and past performance.

- **Labour Conditions**

As the construction market in Vietnam is fairly large, the recruitment of engineers, skilled workers and ordinary workers near the project site is possible. However, there are few skilled workers for locally unfamiliar work, such as stone masonry, form joinery and building services. For those types of work demanding a high level of precision, the recruitment of technicians/skilled workers with the required level of skills from large cities and the provision of sufficient supervision and guidance by Japanese engineers will be necessary.

- **Procurement of Construction Materials**

Construction materials which are commonly used locally can be locally procured without any problems in terms of quality or quantity. However, as many construction methods and materials will be required under the Project because of the special characteristics of the planned facilities, it will be necessary to consider the procurement of some materials, such as forms, windows, doors and some special finishing materials, from Hanoi or Ho Chi Minh City.

2) Local Availability of Equipment

There are medium size suppliers of general office equipment, PCs and vehicles, etc. in Da Nang. As these items are widely used, general after-services for repair and maintenance are locally available. Meanwhile, the local market for exhibition-related items is quite limited and the local procurement of quality items of an international level as observed at existing similar facilities is difficult.

(2) Important Points for Construction and Procurement

Important points for construction and procurement in view of the construction/procurement policies and relevant local conditions described above are listed below.

- As the construction work will be conducted while the Sanctuary remains open to the public, special attention should be paid to safety measures for tourists, their lines of flow and preservation of the beautiful scenery. The work should be implemented with careful examination of the plans relating to temporary facilities and the work schedule well in advance.
- Careful arrangements should be made to prevent the crossing of work-related people and vehicles with tourists to ensure their safety. In addition, safety measures, including

temporary fencing and gates, should be introduced so that entry and exit from the work site can be controlled by guardsmen.

- The arrival of heavy machinery and construction materials at the project site and types of work which cause vibration and/or noise should be avoided during the peak periods and hours of tourists visiting the Sanctuary.
- The project site and its surrounding area should be thoroughly cleaned and tidied and careful attention should be paid to the disposal of foul water and waste produced by the work to avoid any damage to the current environment of this World Heritage site.
- Details of the safety measures should be decided through consultations with the people concerned, including those working at the My Son Management Office in view of the smooth management of the construction work and smooth operation of the Sanctuary without either negatively impacting on the other.
- As the monthly rainfall may exceed 500 mm in the principal rainy season from October to January, possibly interrupting the transport routes in the lowland due to flooding, completion of the main structural work and the procurement and delivery of the construction materials before the principal rainy season will be necessary.
- In regard to construction methods which are not common locally and work for sections demanding a high level of precision, training for workers should be provided by means of advance demonstration and experimental work. In addition, the actual work should be carefully supervised by Japanese engineers to ensure the achievement of the required quality and the transfer of construction skills.
- Given the small scale of the planned facilities, a large on-site management regime is unrealistic and a small number of full-time supervisors should instead conduct a wide range of supervisory work. Efficient work implementation should be planned by means of (i) spot management based on the short-term dispatch of experts and (ii) the skilful use of local engineers.
- In regard to the procurement and installation of the display equipment, coordination with the exhibition plan and setting up of the exhibits to be conducted by the Vietnamese side will be crucial. Such management practices as verification of the progress and schedule adjustment must be properly implemented together with the provision of assistance for the Vietnamese side through technical cooperation.

- In regard to the installation and test operation of the building service equipment, etc., proper guidance and instructions regarding its handling, periodic inspections and parts replacement methods, etc. must be provided.

2.2.4.3 Scope of Work

The following division of work between the two governments is deemed to be appropriate for the Project.

(1) Work to be Undertaken by Government of Japan

- **Construction of Facilities**
 - Construction of the Exhibition Building (exhibition and storage functions), Tourists' Lavatory Building and Administration Building (management and research support functions)
 - Water supply, drainage, sanitation, air-conditioning (office areas only), electricity supply and telephone work for the planned buildings and on the premises
 - Exterior and landscaping work (consisting of the minimum requirements, i.e. turfing or similar) on the premises
 - Procurement of display tables/cases, display panels and display models (setting-up not included)
- **Procurement of Equipment**
 - Administration and general-purpose equipment : PCs and peripherals, copiers and others
 - Recording and video equipment : cameras, AV equipment and others
 - Restoration equipment : vehicles (collection and transportation of artefacts) and restoration/reproduction equipment
 - Furniture : furniture for visitors and office furniture (that necessary for the operation of the Exhibition Building)

(2) Work to be Undertaken by Vietnamese Side

- Confirmation of the construction site for the new facilities and removal of land mines and archaeological survey at the confirmed site

- Removal or relocation of existing facilities and structures which will hamper the progress of the planned work
- Electricity and telephone extension work
- Planting work which is not included in the scope of work to be undertaken by the Japanese side
- Procurement of furniture, utensils and fixtures which are not included in the scope of work to be undertaken by the Japanese side
- Preparation of exhibits/displays and their installation which are not included in the scope of work to be undertaken by the Japanese side

2.2.4.4 Consultant Supervision

(1) Basic Policies for Consultant Supervision

Based on the objectives of the Basic Design, the consultant will try to smoothly conduct the series of work from the detailed design and tender to work supervision and handing over in a consistent manner in accordance with the framework of the grant aid scheme of the Government of Japan. At the work supervision stage, the consultant will maintain close contact with and shall regularly report to the project-related bodies and persons in charge in the two countries. At the same time, the consultant will provide swift and appropriate guidance and advice for work-related personnel so that facilities meeting the quality demanded by the design documents are completed without delay. The consultant will particularly note the following matters for the implementation of the Project.

- The consultant should use Japanese engineers to provide detailed supervision for the purpose of securing the predetermined work quality suitable for facilities to be located at the entry point to a World Heritage site while trying to achieve the transfer of skills to the subcontractor and its engineers/technicians.
- The consultant should make appropriate arrangements and provide advice in regard to the displays and the operation and maintenance of the facilities after their completion with a view to facilitating the smooth operation of the facilities and equipment.
- The consultant should fully coordinate with the My Son Management Office and other related bodies in regard to the provision of suitable lines of flow for visitors to the Sanctuary during the work period, the implementation of safety measures and the preservation of the environment (in relation to the scenery and reducing the impact of noise, etc.) and should provide adequate guidance for the work personnel.

(2) Supervisory Regime

In accordance with the policies described in (1) above, the consultant will dispatch one Japanese building engineer to the project site as a full-time site supervisor throughout the work period in order to provide general supervision and to liaise and coordinate with the project-related bodies. As this supervisor will also be responsible for on-site supervision and liaison regarding equipment procurement and installation and technical cooperation for the exhibition, this person should have expert knowledge of not only building work but also building services work, equipment installation work and Japan's grant aid scheme.

In consideration of the necessity for the transfer of Japanese skills relating to construction work and management, close coordination with the Vietnamese side during the construction period and the smooth implementation of maintenance work after the handing over of the facilities to the Vietnamese side, the participation of a building engineer who is currently involved in the planning and construction supervision of facilities related to the historical remains at the CMHC in the supervisory team is highly desirable.

The consultant will appoint a general project manager in Japan and will assign engineers relating to the building, structural, electrical installation, building services, equipment and exhibition planning work under his command with a view to providing the necessary support for the site supervisor. In addition, the consultant will dispatch engineers to the project site for a short period of time in line with the work progress to conduct inspections and to provide guidance for the various types of work.

(3) Details of Supervisory Work

The main work of the supervisor at the work supervision stage is described below.

- Checking of the shop drawings and materials submitted by the contractor and implementation of the necessary inspections/tests
- Inspection of the quality and finish of various types of work and provision of any necessary guidance for the contractor
- Examination of the work plans, schedule plans and work outlines, etc. for the purposes of providing guidance for the contractor and reporting to the owner
- Supervision of the work progress and reporting to the project-related bodies in the two countries
- Coordination of the work to be undertaken by the Vietnamese side and confirmation of the work progress

- Implementation of the completion inspection, witnessing of the handing over of the facilities and equipment and the provision of any necessary guidance
- Support for the approval of payments and the implementation of various procedures at the time of work completion
- Confirmation of the specifications and other details of the equipment to be procured and implementation of the necessary inspections
- Witnessing of the delivery and installation of the equipment and checking of the contents of the guidance on operation and maintenance
- Liaisoning and coordination with the recipient side in connection with the implementation of the technical cooperation

(4) Project Management System

The work supervision system and the relationship between the various bodies/organizations involved are shown in Fig. 2-1, taking the supervisory regime and details of the supervisory work described above into consideration.

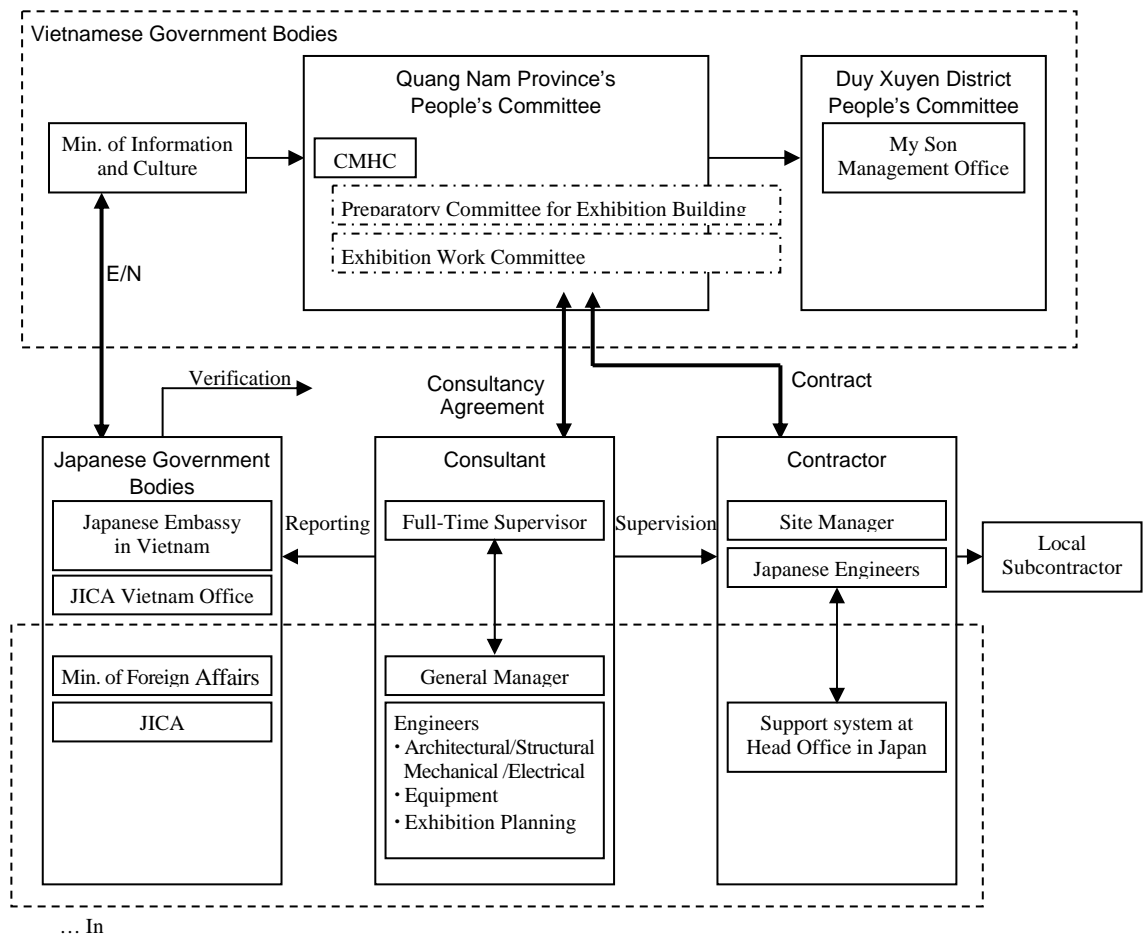


Fig. 2-2 Project Management System

2.2.4.5 Procurement Plan

(1) Construction Materials

The recent liberalisation and development of the economy has facilitated the import of foreign products, production by joint ventures and foreign subsidiaries and the technological advancement of domestic manufacturers in Vietnam, resulting in the distribution of relatively good quality construction materials throughout the country and all of the materials required for the construction of the planned facilities under the Project can be procured in Vietnam. In principle, all of the construction materials will, therefore, be procured in the province or near Da Nang where possible in consideration of the procurement cost and repair prospects. The supply capacity, quality and durability will be properly examined in the selection of the suppliers. The procurement plan for the main materials is outlined below.

- **Structural Materials**

- Cement

High quality domestic cement manufactured by a plant using a horizontal rotary furnace will be procured.

- Gravel/sand

Crusher run and river sand from suitable sites in the province will be procured.

- Reinforcing bars

Widely available SD295 standard products manufactured by a joint venture or domestic capital will be procured after checking the plant test data.

- Forms

The plywood forms required to achieve a precise finish will be procured from either Hanoi or Ho Chi Minh City.

- Structural steel

High quality domestic products manufactured by a plant in Da Nang owned by a foreign capital will be procured.

- Bricks

The bricks produced by a plant owned by the provincial government (one such plant exists in each province) have relatively stable quality. There are two standard grades (A and B) and the appropriate grade will be selected depending on the purpose of use.

- **Finishing Materials**

- Roofing materials

In addition to the steel roofing materials manufactured by a foreign subsidiary which have excellent durability and corrosion-resistance, the products of several domestic manufacturers are available.

- Paint

The products of domestic manufacturers are inexpensive but poor in terms of durability. Because of the wide availability of superior products produced by a Japanese joint venture and others, the procurement of such superior products is planned.

- Stone

Stone produced in central Vietnam will be procured. The selection of low cost stone is necessary while taking the supply and processing capacities, processing precision and quality fluctuations into consideration in an integral manner.

- Windows and doors

Aluminium products are not commonly used except in some parts of large cities and, therefore, factory-made wooden or steel products will be procured. As factories capable of producing high quality and high precision products are only found in two major cities, the procurement of these products from Hanoi or Ho Chi Minh City will be considered.

- **Building Service Materials**

- Electrical materials and lighting equipment

As local products face problems in terms of their quality, supply volume and variety, imported products which are readily available in the domestic market will be procured.

- Piping and sanitary apparatus

Good quality domestic products manufactured by joint ventures are widely marketed.

- Pumps, air-conditioning units and other building service equipment

Imported products which are readily available in the domestic market will be procured.

(2) Exhibition/Display Equipment

While the quality of exhibition/display equipment produced in Vietnam is gradually improving, it still falls short of the necessary level to satisfy international tourists. The procurement of the main exhibition/display equipment in Japan is, therefore, planned under the Project. In the case of display tables and cases, however, the decision will be made based on the examination of various options, including local products manufactured in Hanoi and other places and products made in neighbouring countries, and taking flexibility to accommodate future changes of the exhibition and the initial procurement cost into consideration in a comprehensive manner.

The Exhibition Work Committee will play a leading role in the formulation of the detailed exhibition plan with the technical support of the Japanese consultant (see 2.2.4.6 – Soft Component Plan). For this reason, the manufacture of the exhibition/display equipment will be closely related to the progress of the detailed exhibition plan formulation work of the Exhibition Work Committee and a procurement system which is capable of corresponding to such progress will be established.

(3) General Equipment

Furniture, office equipment, PCs, vehicles and other types of general equipment, including that made in Japan, can be procured in Da Nang, Hanoi and Ho Chi Minh City. In consideration of the ease of repair and maintenance and use of the local language, the procurement of these items in Japan or Japanese products (local products in the case of furniture) in Vietnam is planned. At present, local procurement is believed to be preferable for the following items.

- PCs and peripherals (operation in Vietnamese is necessary)
- Copiers and vehicles (regular maintenance is required)
- Furniture (locally manufactured products are procurable)

The planned equipment does not include that equipment which requires the constant provision of spare parts. In the case of AV equipment, office equipment, PCs and peripherals, guaranteed after-service by a local agent is a precondition for their selection.

2.2.4.6 Soft Component Plan

(1) Necessity for Technical Cooperation and Analysis

The CMHC, the counterpart organization for the Project, has requested the transfer of technology relating to the following matters as part of the Project.

- Exhibition
- Reproduction of artefacts
- Restoration of artefacts
- Museum management, including the preparation of pamphlets

1) Exhibition

For exhibition purposes, the Vietnamese side plans to establish the Exhibition Work Committee with the following members.

Mr. Nguyen Van Ham	: Deputy Director of the CMHC (Sculpture)
Mr. Nguyen Thuong Hy	: Head of the Technical Division, CMHC (Fine Arts)
Mr. Ho Xuan Tinh	: Curator of Museum, Department of Information and Culture, Quang Nam Province
Mr. Ho Van Quang	: Expert, CMHC (Museum)
Mr. Thanh Van Binh	: Architect, CMHC

While the CMHC has previously formulated an exhibition plan and produced pamphlets for the museum of the Chien Dan Sanctuary of the Quang Nam Group of Sanctuaries under the guidance of the Department of Museums of the Ministry of Information and Culture, there are few staff members who are conversant with exhibition techniques and technologies. The request for Japanese technical cooperation for techniques and manufacturing regarding graphical information panels, including their layout, was made in view of the fact that the local level of manufacturing skills could not guarantee sufficient precision. In order to improve the grade of the exhibits, the dispatch of Japanese consultants (exhibition) will be necessary to technically assist the formulation of a detailed exhibition plan covering such aspects as exhibition techniques, layout and spatial configuration, etc., manufacture of the actual exhibits and display work. The addition of the Japanese language to the Vietnamese and English for the graphical displays is desirable. For this reason, the manufacture of some of the displays in Japan after finalisation of the detailed plan is judged to be necessary.

2) Reproduction of Artefacts

In addition to stone sculptures, reliefs on the brick walls and terracotta reliefs constitute precious cultural remains as well as important artistic elements of the My Son Sanctuary. The Vietnamese side wants to learn advanced techniques for the reproduction of brick and terracotta reliefs using silicone resin. The transfer of skills to produce replicas of the brick and terracotta reliefs warrants a serious consideration from the viewpoint of the necessity and urgency of leaving the artefacts of the Sanctuary for future generations. However, as production of replicas using the resin moulding technique demands tutorial teaching and training over a long period of time on such skills as moulding, final shaping and colour finishing, it is difficult to transfer these skills in the form of a soft component of the Project under the technology transfer scheme.

3) Restoration of Artefacts

The artefacts and reliefs at the My Son Sanctuary mainly consist of sandstone and brick sculptures. Their restoration must, therefore, be preceded by archaeological verification, a physio-chemical survey and analysis of the original materials and research on the restoration techniques. This process will require the long-term involvement of experts, craftsmen and engineers and will be difficult to include in the scope of the Project which aims at the construction of an exhibition building.

4) Management of Museum, Including Preparation of Pamphlets

Possible cooperation for the preparation of pamphlets includes examination of the contents, translation into Japanese and the transfer of editing and layout techniques. As editing of the pamphlets to include photographs of the completed Exhibition Building and its exhibits is desirable, preparation of the pamphlets after the completion of the facility construction and arrangement of the exhibits is proposed. An example of similar cooperation is the Japanese pamphlets for the Hanoi Museum of History. These pamphlets were prepared under a JICA project by the Women's Society of the Japanese Embassy in Vietnam with the cooperation of the VJCC and have proved to be very popular. It will, therefore, be appropriate to examine the possibility of similar cooperation for the pamphlets for the new Exhibition Building will, therefore, be examined.

Based on the above considerations, the planned soft component of the Project consists of the formulation of a detailed exhibition plan and the provision of guidance for the production and arrangement of exhibits.

(2) Output of Soft Component (Direct Effect)

The arrangement of the exhibits will be completed by the time of the completion of the Exhibition Building making the said building ready to be opened to the general public.

(3) Planned Activities

1) Mode of Implementation

Japanese exhibition and architectural consultants will provide technical assistance for the formulation of the detailed exhibition plan and arrangement of the exhibits. All activities will be jointly conducted by staff members of the CMHC and the Department of Information and Culture of Quang Nam Province with technical assistance provided by Japanese consultants and engineers.

2) Formulation of Exhibition Plan and Arrangement of Exhibits

Guidance will be provided by Japanese consultants for such components of the detailed exhibition plan as the theme, configuration and contents of the exhibition, graphical explanations, selection of the artefacts to be displayed and layout of the exhibits and also for the actual arrangement of the exhibits when the Exhibition Building is completed. Based on museum exhibition techniques, the consultants will examine the display area distribution in correspondence with the theme, configuration and contents of the exhibition, selection of the exhibits and display methods, graphical design for the panels, photographs, reference information, explanatory texts and plates, etc. and the overall layout of the exhibits. Discussions and training relating to plan formulation will take place at the My Son Sanctuary site and the CMHC while guidance and training relating to display work will take place at the exhibition hall and storage room when the Exhibition Building is completed.

3) Output

The arrangement of the exhibits will be completed by the time that the Exhibition Building is handed over to the Vietnamese side, making the said building ready to be opened to the general public.

4) Service Procurement Method

Technical guidance will be provided in the form of direct assistance by Japanese consultants. The personnel cost and other expenses relating to the Vietnamese trainees will be borne by the Vietnamese side.

5) Implementation Schedule

The technical guidance for the formulation of the exhibition plan will be provided for three weeks from early December, 2003 in the early period of the D/D and for another three weeks in early February, 2004 in the final adjustment period of the D/D, followed by three weeks in May, 2004 for the detailed planning and verification respectively of the graphical information panels. The work to arrangement the exhibits will be conducted for three weeks from early February, 2005 when the arrangement of the exhibits will be possible at the final construction stage of the Exhibition Building.

Table 2-9 Soft Component Implementation Schedule

Type of Work (Month)	Design Stage				Construction Stage		
	1	2	3	4-5	1	2-8	10
Exhibition	■ 0.7M		■ 0.7M		■ 0.7M		■ 0.7M

2.2.4.7 Implementation Schedule

In the case of the Project's implementation with grant aid provided by the Government of Japan, the Project will be implemented in the following stages after the signing of the E/N.

(1) Detailed Design (approx. 3.5 months)

The consultant will conclude a design and supervision (consultancy) agreement with the Government of Vietnam and will prepare the detailed design drawings and tender documents based on the contents of the present Basic Design. The consultant will hold meetings with the project-related bodies on the Vietnamese side during the field survey periods at the beginning and end of the detailed design work and will complete the detailed design work with the approval of its final results.

(2) Tender (approx. 2.5 months)

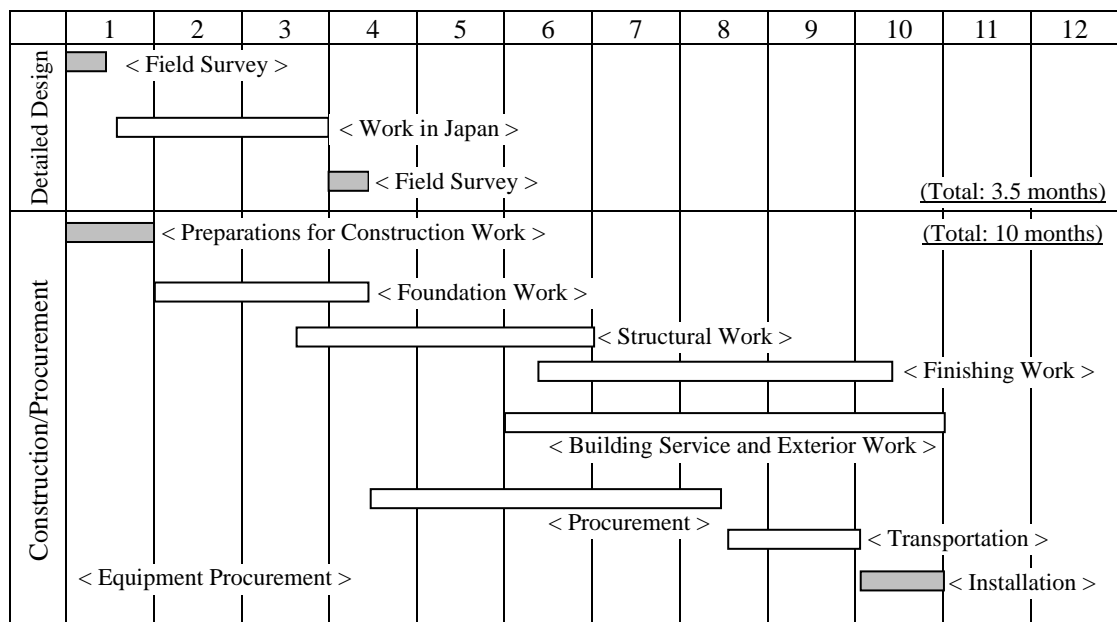
Following approval of the tender documents by the Government of Vietnam, the consultant will publicly announce and conduct the P/Q in Japan on behalf of the implementation agency and will organize the competitive bidder in which qualified Japanese construction companies will participate. The bidder with the lowest bid price will be declared the successful bidder when the bid contents have been assessed as proper and this successful bidder will conclude a construction and procurement agreement with the organization responsible for the said agreement on the Vietnamese side.

(3) Construction of Facilities and Procurement of Equipment (approx. 10 months)

Following the signing of the construction agreement and verification of the agreement by the Government of Japan, the contractor will commence the construction work. Given the scale and contents of the planned facilities and equipment under the Project, a work period, including equipment procurement and installation, of approximately 10 months is judged to be necessary. As interruption of the transport routes due to flooding can occur during the principal rainy season from October to January, completion of at least the main structural work prior to the commencement of the rainy season is desirable. The smooth completion of various procedures and undertakings by the Vietnamese side which are essential for the implementation of the construction work and equipment procurement will be necessary. An early decision on the exhibition contents will be particularly important.

During this period, the consultant will supervise the construction work and procurement in accordance with the agreement together with the implementation of the technical cooperation planned as the soft component of the Project.

Table 2-10 Project Implementation Schedule



2.3 Obligations of Recipient Country

(1) Undertakings of Vietnamese Side

The following undertakings of the Vietnamese side were confirmed during the Basic Design Study period in relation to the implementation of the Project.

- 1) Appropriation of the necessary budget which is required for the effective operation and maintenance of the facilities and equipment to be provided under the Project and deployment of the necessary human resources
- 2) Establishment of the Exhibition Work Committee consisting of experts and others to formulate the Exhibition Plan by May, 2004
- 3) Publicity of the exhibition to domestic as well as foreign media, tourists, travel agents and academics throughout the project implementation period and in the post-project period
- 4) Implementation of an archaeological survey and a land mine survey at the project site by December, 2003
- 5) Removal or relocation of existing facilities and structures from the project site and land preparation by February, 2004
- 6) Extension of electricity and telephone lines to the site
- 7) Procurement of general furniture, equipment, utensils and fixtures which are not included in the scope of work to be undertaken by the Japanese side
- 8) Smooth implementation of landing, tax exemption and customs clearance of the equipment and materials procured with grant aid
- 9) Exemption of Japanese nationals and Japanese corporations with respect to their supply of products and services under the verified contracts from customs duties, internal taxes, including value-added tax, and other fiscal levies which are imposed in Vietnam
- 10) Provision of such facilities as may be necessary for the entry to Vietnam and stay therein of Japanese nationals whose services may be required in connection with the supply of products and services under the verified contracts
- 11) Payment of any charges for A/P and other commissions to a Japanese bank based on the banking arrangements

- 12) Issue of all permits, including building permits, which are required for the implementation of the Project
- 13) Production and arrangement of exhibits which are not included in the scope of work to be undertaken by the Japanese side

The Quang Nam Province's People's Committee which will be responsible for completing the work to be undertaken by the Vietnamese side has sufficient experience of the grant aid scheme of the Government of Japan and no problems are anticipated in regard to the implementation of the common items of the said scheme. In the case of Item 5 (removal or relocation of existing facilities, etc.), the prospective budget was presented to the People's Committee during the Basic Design Study period and the People's Committee agreed to undertake this work. In the case of Item 2 (exhibition plan) and Item 13 (production and arrangement of exhibits), technical cooperation will be provided as a soft component of the Project to facilitate the implementation of these matters.

(2) Work to be Conducted by Vietnamese Side

Concrete details of the work which is essential for the successful implementation of the Project are given below.

1) Work to be Completed by Vietnamese Side Prior to Commencement of Construction Work Under the Project

- Removal of land mines and the implementation of an archaeological survey in an area of some 6,000 m², including the project site
- Removal or relocation of existing facilities and structures from the project site
 - Work office (RC & brick structure, approx. 132 m²); workers' dormitory (RC & brick structure, approx. 65 m²); visitors' toilets (RC & brick structure, approx. 18 m²); bicycle park shed (light gauge steel structure, approx. 20 m²); rest area shed (wooden structure, total area of approx. 185 m²); workers' toilets (brick construction, approx. 6 m²); storage (wooden structure, total area of 8 m²)
 - Removal of the existing well, septic tank and other underground structures
 - Removal of the existing electricity, telephone and emergency broadcasting systems
 - Land preparation after removal/relocation and reinforcement of the river retaining wall

2) Work to be Completed by Completion of Construction Work Under the Project

- Extension and connection of electricity supply (installation of a meter in the hand-hole on the premises and cable connection work)
- Extension and connection of telephone lines (extension to the hand-hole on the premises and connection work)
- Production of exhibits and arrangement of their display

2.4 Project Operation Plan

(1) Operation and Maintenance System

The operation and maintenance of the planned facilities under the Project will be conducted by establishing a new body (My Son Museum: tentative name) under the jurisdiction of the CMHC which is the implementation agency for the Project. The function of the new facilities agreed upon through discussions are (i) the provision of information (exhibition) for visitors to the Sanctuary, (ii) the collection and storage of artefacts and (iii) the collection of research materials and the provision of information for researchers. The CMHC is planning to conduct the operation of the facilities under the regime described below to perform these functions. Among the planned staff, 12 persons, excluding guards, cleaners, receptionists and guides, will be full-time employees. Approximately six persons for the academic department, including the Curator, will be transferred from the CMHC while the remainder will be newly recruited.

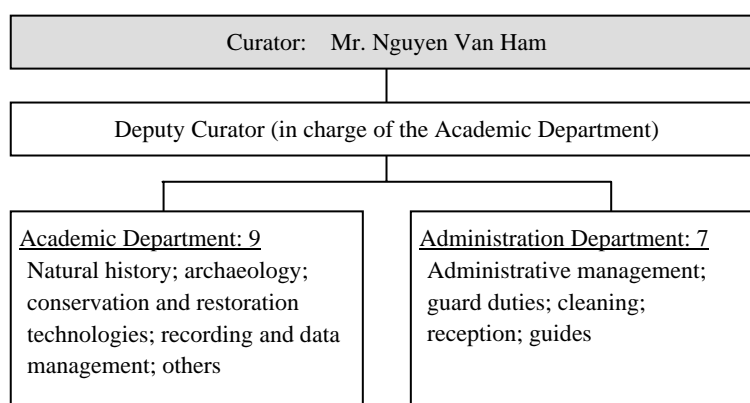


Fig. 2-3 Museum Operation System (Planned by the CMHC)

The above plan is in line with the CMHC's planned consolidation of activities in academic and specialist fields in anticipation of full-scale survey and restoration activities based on the Master Plan for Conservation and Value Promotion of My Son Sanctuary. The assignment of 10 specialists, including a leader, is planned. However, the employment of a group of specialists rivalling the number of specialists currently employed by the CMHC (10 specialists) is unrealistic from the short or medium-term viewpoint. It is, therefore, judged to be more appropriate to start with the minimum manpower, mainly consisting of staff members with some experience at the CMHC, with a view to the gradual recruitment and training of new staff members in line with the future expansion of activities. In the case of staff members which are required to conduct short-term activities, the adoption of a flexible regime, including shared work with current members of the CMHC and the invitation of guest researchers from research institutions at home and abroad, utilising the network for specialist work is preferable. In regard to the guide service planned by the CMHC, the effective use of the sanctuary guides currently available for the convenience of visitors is an appropriate option.

Based on the above analysis, the following staff members are planned to meet the manpower requirements at the time of the completion of the new facilities.

- Curator (1) : Control of the museum's operation and activities
- Administrator (1) : General administration and accounting work
- Specialist/researcher
(3, including deputy curator) : Wide-ranging professional activities, including control of exhibition planning and contents, surveys, research, control of and publicity and extension activities regarding the artefacts at the Sanctuary; it is desirable that one of these is a specialist in museum management
- Reference materials and records (1) : Preparation and storage of reference materials and records; information service for external researchers and others
- Restoration technician (1) : Collection and restoration of artefacts
- Receptionist (2 working shifts) : Reception at the Exhibition Building and sale of souvenirs, etc.
- Cleaning and miscellaneous work (1) : Cleaning and simple maintenance of the facilities
- Guard (2 working shifts) : Provision of around the clock security, i.e. 24 hours a day) for the facilities

(2) Operation and Maintenance Budget

From the procedural point of view, the operation and maintenance budget for the planned facilities under the Project will be appropriated from the budget of the Quang Nam government in response to the application for such budget. As the CMHC plans to charge an admission fee for the Exhibition Building, it is hoped that the running cost of the facilities can be met by the income from such admission fee.

• Establishment of Admission Fee

An admission fee of VND 50,000 for foreigners and VND 15,000 for Vietnamese is charged at the My Son Sanctuary. This money is paid by the My Son Management Office to the Duy Xuyen District Authority. The CMHC plans to introduce a common visitor's ticket for the Sanctuary and museum to earn approximately one-third of the ticket sales as agreed in the M/D for the Basic Design Study. In reality, however, the introduction of income distribution arrangements which will mean reduced income for the Duy Xuyen District Authority will be difficult. Moreover, given the nature of the grant aid, setting of an admission fee level which far exceeds the level of income required for the operation and maintenance of the planned facilities is undesirable. The following admission fee is, therefore, planned under the Project have referred to the admission charges of similar tourist facilities nearby.

Table 2-11 Planned Admission Fee

(Unit: VND)	Foreigners	Vietnamese	Remarks
Planned Museum	10,000	5,000	60,000/20,000 for a common ticket, including a visit to the Sanctuary
Hoi An Old Town	50,000	10,000	Sheet of five tickets, each of which allows the purchaser to visit a specified place
Da Nang Museum of Cham Sculpture	20,000	20,000	Additional fee to use a camera or video camcorder
Hanoi Museum of History	15,000	15,000	

• Estimation of Number of Visitors and Total Admission Receipts

Here, the number of visitors in the year of completion of the new facilities (2005) is estimated based on the past trends of fee paying visitors to the My Son Sanctuary and the total admission receipts are estimated. For the estimation of foreign visitors, the rate of increase after registration as a World Heritage site is used while the average increase rate is used for the number of Vietnamese visitors due to their sharp increase in 2001. The estimation results are shown in Table 2-13, suggesting income of some VND 950 million (approximately ¥7.5 million) in 2005.

Table 2-12 Number of Past Visitors to My Son Sanctuary and Estimation of Future Visitors

Actual Data	1996	1997	1998	1999	2000	2001	2002	2003*
Foreigners	15,700	22,300	24,100	27,200	47,900	48,239	62,397	65,687
Vietnamese	3,300	1,800	1,920	2,280	3,450	14,755	15,761	25,008
Total	19,000	24,100	26,020	29,480	51,350	62,994	78,158	90,695

* The number of visitors in 2003 is estimated based on the actual number from January to April.

Estimated Data	Average Annual Increase Rate	2004	2005	Admission Receipts in 2005
Foreigners	2000 – 2003: 12.4%	71,616	77,545	VND 775.5 million
Vietnamese	2001 – 2003: 34.7%	30,135	35,261	VND 176.3 million
Total		101,751	112,806	VND 951.8 million

In view of the current budget, inclusive of the personnel cost, of VND 560 million in 2002 and an estimated VND 880 million in 2003, the figures in Table 2-13 are judged to be appropriate for the new museum to conduct activities which are similar to or even of a higher level than those of the CMHC. As it is estimated that the number of tourists will continually increase after 2005 except in exceptional circumstances, it is reasonable to anticipate that the necessary budget will continue to be funded by the admission receipts. The likely increases of the operation and maintenance cost are estimated in (4) Operation and Maintenance cost.

(3) Operation and Maintenance Methods

1) Facility Operation Method

- **Visitor Control**

Tickets to enter the Sanctuary are currently sold by the My Son Management Office under the jurisdiction of the Duy Xuyen District Authority. Discussions between the said Management Office and the museum will be required if the adoption of common tickets is planned regarding the ticket sale and cost sharing methods and the admission receipt distribution method, etc. to ensure that the operational arrangements are not inconvenient for visitors. In principle, visitors will walk to the museum from the car park for an introduction in front of the existing post office and will then proceed to the Sanctuary proper after obtaining the necessary information at the museum. A receptionist (working in shifts) will be permanently stationed at the entrance to the Exhibition Building for visitor control.

- **Management of Exhibition and Specialist Activities**

The most important functions of the new facilities are the showing of high quality exhibits for visitors and the recording and restoration of collected artefacts for proper storage in suitable facilities. For these purposes, specialists in museum management and

in ruins and artefacts will be deployed from the CMHC. In regard to the exhibition, technical assistance for which is planned as part of the Project, it will be necessary for staff members who have undergone the transfer of techniques to continually utilise such techniques for the management of the museum. As there are not many staff members conversant with the regular management of a museum at the CMHC, the establishment of a steering committee with internal and external specialists is desirable in addition to a cooperation network in the academic field to improve the quality of activities and to improve the abilities of staff members through exchanges.

- **Services for Researchers at Home and Abroad**

The planned facilities will provide work space and reference materials for researchers at home and abroad to assist the field work of researchers. Although the appointment of a staff member to be responsible for the provision of reference materials and information is planned, staff members acting as joint researchers in the academic department will, in principle, support the use of the facilities by external researchers.

2) Facility Maintenance

The key points for facility maintenance are (i) routine cleaning, (ii) proper repair of any wear, damage or aging and (iii) policing to ensure security and crime prevention. Among these, the routine cleaning and ordinary policing of the facilities will be conducted by a full-time cleaner and guards. There are two types of repair work, i.e. such regular repair work as painting and such irregular work as the repair of minor damage.

- **Regular Cleaning**

The exhibition room, hall and toilets, etc. which will receive visitors must be maintained in a clean state and a full-time cleaner will be employed to conduct daily cleaning. In the case of the Administration Building housing mainly offices, etc., the introduction of a system under which cleaning is mainly conducted by the staff members with full-time cleaners cleaning the entire building on approximately a weekly basis and common-use areas every day is desirable.

- **Security**

The Sanctuary is currently patrolled day and night by guards working for the existing My Son Management Office. In view of the character of the new facilities of storing and housing precious artefacts, around the clock security is planned with the employment of full-time guards. These guards will closely monitor the interior and exterior of the Exhibition during opening hours and will conduct regular patrols from the guardhouse after closing time. For the effective implementation of security, the establishment of a local crime and disaster

prevention system for the entire Sanctuary and future facilities, incorporating the existing My Son Management Office and security offices for the new facilities, will be necessary.

- **Routine Maintenance and Repair**

The Project will basically use maintenance-free materials and finishings to minimise the future maintenance cost and properly conducted routine maintenance work will ensure that there is no repair requirement for several years after the handing-over of the facilities. What is crucial is the implementation of regular checks and cleaning in accordance with the maintenance manual to be submitted by the contractor at the time of handing over. The main check items and recommended frequency are shown in Table 4-4.

Table 2-13 Regular Check Items for the Facilities

Check Item	Check Frequency			
	Exhibition Building		Lavatory Building	Administration Building
Repair and repainting of exterior walls	Cleaning	: annually	Repair and repainting: every 5 years	
Checking and repair of roofing materials	Checking	: annually	As left	
	Repair	: every 10 years		
Repair and repainting of exterior doors and windows	Checking and adjustment	: annually		
	Repair	: every 5 years		
Checking and repair of shutters	Checking and oiling	: twice a year	-	-
	Repair and repainting	: every 5 years		
Checking and cleaning of side ditches	Annually			
Repair and repainting of interior	Cleaning	: annually	Repair and repainting: every 5 years	
Repair and repainting of interior doors and windows	Checking and adjustment	: annually		
	Repair	: every 5 years		
Replacement of broken glass	-		As required; approximately replacing 5% a year	

3) Maintenance of Building Service Systems

In regard to building service systems, the important issues are routine operation management and regular checking before the repair and replacement of parts. As almost all of the systems planned under the Project are widely used locally without the existence of any complicated systems, the assignment of a full-time person to be responsible for maintenance of the building service systems is not planned. Accordingly, routine management will be conducted by a person selected from among ordinary staff members in accordance with the operation and maintenance manual. Regular checks will be conducted by a suitable person from the CMHC or an outside contractor and the replacement of worn parts and other work will be conducted as and when necessary. The general check items and expected service life of the main equipment are shown in Table 2-15.

Table 2-14 Expected Service Life of Main Building Service Equipment

	Type of Equipment	Checking Frequency	Service Life
Electrical	Distribution Panels	Annually	20 – 30 years
	Fluorescent Lamps	-	5,000 – 10,000 hours
	Incandescent Lamps	-	1,000 – 1,500 hours
	Mercury Lamps	-	6,000 – 12,000 hours
Water Supply and Drainage	Pumps, Piping and Valves	Annually	15 – 20 years
	Sanitary-Ware	-	20 years
	Septic Tank	Annually; sludge treatment and cleaning	-
Air-Conditioning	Air-Conditioning Units	Annually	10 – 20 years
	Piping	Annually	15 – 20 years

4) Maintenance of Exterior and Plants

A full-time cleaner will be responsible for the daily cleaning of the main exterior spaces constituting the lines of flow for visitors and for such routine maintenance work as the watering of plants. In addition, the weeding of paved areas, pruning of trees and inspection/cleaning of side ditches and drainage pits approximately twice a year will be necessary. This work will be conducted by a contractor or the employment of temporary workers.

5) Equipment Maintenance

There are several types of equipment maintenance, i.e. (i) routine checking at the operator level, (ii) regular checking with a frequency of once or twice a year and (iii) inspection and the repair of breakdowns by an external engineer. Even though no special equipment requiring advanced maintenance skills is included in the Project, the copiers, PCs and peripherals and cameras will still require specialist knowledge for their repair, making it necessary to make a request to their local agents for inspection and repair. The maintenance work required for the various types of equipment is outlined in Table 2-16.

Table 2-15 Outline of Equipment Inspection

Type of Equipment	Internal Regular Checking	Externally Entrusted Regular Inspection	Renewal Timing
PCs and Peripherals	Monthly	Approximately twice a year (at the time of a breakdown)	5 – 10 years
Copiers	Weekly	Monthly or twice a month depending on the frequency of use	Approximately 10 years
Video Equipment	Monthly	Approximately twice a year (at the time of a breakdown); biannual inspection for cameras, etc.	5 – 15 years
Vehicles	Each day of use	Annually	15 – 20 years
Restoration Equipment	Monthly	Only when a breakdown occurs	More than 20 years
Display Equipment	Daily cleaning	-	More than 20 years

2.5 Estimated Project Cost

2.5.1 Estimated Project Cost

The total cost of the implementation of the Project is ¥296 million (US\$ 2.49 million) and the breakdown of the costs based on (i) the division of work between the Japanese and Vietnamese sides and (ii) the estimation conditions is shown below.

(1) Costs to be Borne by Japanese Side : JPY 293 million (approx. US\$2.47 million)

Item	Estimated Cost	¥ million (US\$ million)
(1) Facilities	211 (1.78)	223 (1.88)
1) Exhibition Building	161	
2) Tourists' Lavatory Building	5	
3) Administration Building	19	
4) Exterior	26	
(2) Equipment	12 (0.10)	
(3) Detailed Design; Work Supervision	60 (0.51)	70 (0.59)
(4) Soft Component	10 (0.08)	
Total		293 (2.47)

* This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant.

(2) Costs to be Borne by Vietnamese Side : VND 330.84 million (approx. US\$21.4 thousand)

- 1) Site preparation cost : VND 96.00 million
- 2) Removal cost of existing structures : VND 73.73 million
- 3) Electricity and telephone extension cost : VND 4.81 million

- 4) Exhibits production and installation cost : VND 86.80 million
 5) Others (planting, furniture and fixtures, etc.) : VND 69.50 million

* See the Appendix for details.

(3) Estimation Conditions

- 1) Date of estimation : September, 2003
 2) Foreign exchange rate : (average for the period from March, 2003 to August, 2003)
 US\$ 1 = ¥118.66 / US\$ 1 = VND 15,484
 3) Construction period : As shown in the project implementation schedule.
 4) Miscellaneous : The Project will be implemented in accordance with the grant aid scheme of the Government of Japan.

2.5.2 Operation and Maintenance Cost

The operation and maintenance cost for the facilities planned under the Project after their completion is estimated below together with the costs of various activities which it is assumed will be conducted.

(1) Facility Operation Cost

1) Personnel Cost

The personnel cost for public servants in Vietnam consists of the basic salary, position-related remuneration, bonuses, welfare cost, social and medical insurance cost and union cost. In addition, travelling allowances are paid. As personal income varies depending on position and other conditions, three grades of unit cost are established for those persons listed in 4-(1) – Operation and Maintenance Regime to calculate the personnel cost for the My Son Museum as shown in Table 2-17.

Table 2-16 Estimated Personnel Cost

Grade	Unit Personnel Cost (VND '000)		Number	Annual Cost
	Month	Year		
Upper	1,200	14,400	3	43,200
Middle	700	8,400	4	33,600
Lower and Temporary	400	4,800	5	24,000
Total			12	100,800

Upper Grade : Curator, administrator and head of academic department

Middle Grade : Specialists (researchers, persons responsible for reference materials, restoration technicians)

Lower Grade : Guards, cleaners and receptionists

2) System Operation Cost

The electricity, water supply and drainage and communication costs are estimated based on the following conditions of the system operation cost.

- The opening hours of the Exhibition Building are from 06:30 to 17:30 throughout the year (one hour is added to the current opening hours of the Sanctuary from 06:30 to 16:30 for the preparatory work, etc.)
- In the case of the Administration Building, it is assumed that the normal working hours will be 07:30 to 16:30 for 253 days of the year, excluding weekends and eight national holidays. To cover the opening hours of the Exhibition Building, it is assumed that one or two staff members will work shifts together with a guard.

Electricity Bill

The electricity consumption is calculated by multiplying the operating hours of each load by the assumed rate of operation to establish the overall electricity bill. Under the Project, each building is designed for the maximum use of natural lighting and ventilation and the constant use of lighting apparatus and air-conditioning units is not assumed.

- Operating hours of Exhibition Building and Tourists' Lavatory Building = 11 hours/day x 365 days = 4,015 hours
- Operating hours of Administration Building = 9 hours/day x 253 days = 2,277 hours
Weekends and outside normal working hours = 11 hours/day x 112 days + 2 hours/day x 253 days = 1,738 hours
- Unit electricity cost (for ordinary government facilities) = VND 920/kWh (meter rate charge only)

Table 2-17 Estimated Electricity Bill

Building	Type of Load	Loading Capacity (kVA)	Assumed Operation Rate	Operating Hours (year)	Electricity Consumption (kWh)
Exhibition Building	Lighting	3.0	0.1	4,105	1,204.5
	Refrigerating Equipment	0.5	0.9	8,760 (24 hour operation)	3,942.0
	Equipment	1.0	0.1	4,015	401.5
	Ceiling Fan	0.6	0.2	4,015	481.8
Administration Building	Lighting	2.0	0.2 for normal working hours	2,277	1,258.4
	Air-Conditioning	12.0	0.1 for holidays and outside working hours		7,550.4
	Equipment	1.5		1,738	943.8
Exterior	Lighting	4.7			3,431.0
	Pump	3.4	0.3	4,015	4,095.3
Total					23,308.7
Annual Electricity Bill: total electricity consumption x VND 920/kWh → VND 21,000,000					

Water Supply and Drainage

As the Project plans water supply from a well on the premises and water disposal on the premises using a septic tank, there will be neither any water supply cost nor waste water treatment cost. However, the water supply will incur a pump operation cost while the drainage will incur a septic tank cleaning cost. These costs are included in other costing calculations.

Communication Cost

A frequency of use similar to that of the CMHC is assumed and the following telephone bill is estimated based on the CMHC budget for the year of 2003. The domestic call charge includes the Internet connection charge.

- Domestic call charge : VND 300,000/month/unit x 3 units = VND 10,800,000

(including the basic charge of VND 27,000/month x 3 lines x 12 months and the mail account charge of VND 27,300/month x 3 accounts x 12 months = VND 982,800)

- International call charge : VND 500,000/month x 12 months = VND 6,000,000

- Facsimile charge : VND 250,000/month x 1 unit x 12 months = VND 3,000,000

Fuel Cost

The fuel cost to supply hot water (using a gas cylinder) in the Administration Building is calculated based on 253 normal working days a year.

- Assumed gas consumption : 1 hour/day x 253 days x 0.25 kg/hour → 65 kg

- Gas purchase cost : VND 12,000/kg x 65 kg = VND 780,000

3) Cost of Activities

The planned goal of the Project can only be achieved if appropriate activities are conducted using the constructed facilities and the necessary cost of the activities expected of the museum are estimated based on the standard budget items in Vietnam. This estimation is based on the CMHC budget for 2003, taking the planned contents of the facilities and equipment, scale of organization and expected activities into consideration. Only the current cost of ordinary activities is estimated here as it is assumed that such specialist activities as major excavation, ruins surveys and seminars, etc. will be principally conducted as activities of the CMHC proper with likely funding by the central government under the relevant national programmes, etc.

Table 2-18 Estimation of Cost of Activities

Item	Description	Amount (VND '000)	Basis for Calculation
Office Supplies	Purchase of office equipment and consumables	24,000	The same amount as the CMHC 2003 budget.
Communication and Information	Postage and purchase of periodicals, etc.	10,800	The same amount as the CMHC 2003 budget.
Conferences	Materials, remuneration for lecturers, transport and accommodation, etc.	28,500	The CMHC 2003 budget x 50%, because only small to medium-size conferences at the site are assumed.
Business Trips	Travelling, accommodation and daily allowance, etc.	11,400	The CMHC 2003 budget x 50%, based on the number of staff.
Rental	Employment of workers and accompanying vehicle rental cost	15,000	The same amount as the CMHC 2003 budget.
Specialist Activities	Purchase of equipment and reference materials, etc. for specialist activities	139,000	The CMHC 2003 budget x 50%, based on the number of specialists.
Others	Accounting, welfare and reserve	13,700	The CMHC 2003 budget x 50%, due to the number of staff.
Total		242,400	

(2) Facility Maintenance Cost

- **Building Maintenance Cost**

The level of the building maintenance cost considerably changes with the passing of time. No major repair will be required for some 30 years after completion and, during this period, the average cost of ordinary repair work is said to be 0.4 – 0.6%/year of the original construction cost. In view of the simple construction and use of mainly maintenance-free materials and finishings, the building maintenance cost is estimated to be 0.2% of the original construction cost under the Project.

- Building maintenance cost (annual) :

construction cost of VND 17,000 million x 0.2% = VND 34,000,000

- **Building Service Systems Maintenance Cost**

The building service systems repair cost will be low for the first five years after the completion of the buildings. Thereafter, the change of spare parts and the renewal of equipment due to aging will be required. The normal building service systems repair cost viewed from the lifecycle of a building is approximately 1 – 3% of the original building service system cost. In view of the relatively simple systems used, the annual maintenance cost for approximately 15 years in time for major repair is estimated to be 0.5% of the original systems cost.

- Building service systems maintenance cost (annual):

systems cost of VND 2,000 million x 0.5% = VND 10,000,000

- **Regular Maintenance Cost of Exterior and Plants**

The cost of weeding, pruning and inspection/cleaning of side ditches, etc. for the exterior and the planting area of some 2,500 m² is estimated based on the employment of four workers for three days twice a year. In addition, the following septic tank cleaning cost is also assumed.

- Weeding, pruning and cleaning cost :
12 person-days x twice/year x VND 50,000/day = VND 1,200,000
- Septic tank cleaning cost (once/year) = VND 1,000,000

(3) **Equipment Maintenance Cost**

The necessary cost of using and maintaining the equipment to be procured under the Project is calculated below.

- **Vehicle Maintenance Cost**

The planned vehicles will be used for the transportation and collection of artefacts. However, it is assumed that they will be also be used for the routine transportation of equipment and materials required for the operation of the facilities and the cost of such work is accordingly calculated. As it is assumed that these vehicles will be replaced after their period of depreciation by means of application for the provincial investment budget, no depreciation cost is included in the calculation.

- Fuel cost : 3 hours/day x 253 days a year, excluding holidays
Annual consumption : 253 days x 3 hours/day x 180 PS x 0.041/PS_h = 5,465 litres
→ 5,400 litres
Total fuel cost : 5,400 litres x VND 5,500/litre = VND 29,700,000
- Vehicle insurance cost: VND 5,000,000/vehicle (same as the CMHC budget)
- Vehicle repair cost : VND 5,000,000/vehicle (same as the CMHC budget)

- **Maintenance Cost of PCs, Peripherals and Office Equipment**

There is no special equipment among the equipment to be procured under the Project and all of the equipment is similar to that currently used by the CMHC. However, in view of the slightly higher specifications and difference in quantity, the CMHC's maintenance budget amount is increased by 20%.

- Equipment inspection and repair cost : VND 250,000/month x 12 = VND 3,000,000
- Software renewal cost : VND 3,000,000 (same as the CMHC budget)

- **Maintenance Cost of AV Equipment**

As in the case of the above, the CMHC maintenance budget amount for 2003 is increased by 20%.

- AV equipment inspection and repair cost :
VND 250,000/month x 12 months = VND 3,000,000

- **Furniture Repair Cost**

The furniture repair cost is estimated to be 1% of the original purchase cost and is VND 2,000,000.

The estimation results of (1) through (3) above are compiled in Table 2-19.

Table 2-19 Operation and Maintenance Cost Estimation Results

Cost Item	Description	Annual Cost (VND '000)
Operating Cost		<u>385,280</u>
- Personnel Cost	Salaries and expenses for 12 staff members	100,800
- Facility Operation Cost	Lighting, heating and communication costs	42,080
- Activity Cost	Office cost and special activity cost	242,400
Facility Maintenance Cost		<u>44,200</u>
- Building	Regular maintenance, cleaning and repair costs	32,000
- Building Service Systems	As above	10,000
- Exterior	Plant and exterior maintenance cost	2,200
Equipment Maintenance Cost		<u>50,700</u>
- Vehicle	Fuel, insurance and repair costs	39,700
- General Equipment	PCs, AV equipment and furniture, etc.	11,000
Total		480,180

The total operation and maintenance cost of VND 481.68 million is slightly more than half of the current budget of the CMHC for 2003 of VND 883.5 million. Taking price inflation into consideration (IMF forecast for consumer price inflation in Vietnam in 2003: 3.8%), the total cost in 2005 when the facilities are completed is estimated to be approximately VND 520 million. In contrast, the income from admission receipts in 2005 estimated in 4-(2) – Operation and Maintenance Budget is VND 951.8 million, suggesting that the operation and maintenance cost of the planned facilities can be sufficiently met by the admission receipts.

For the first year of operation and maintenance, however, the necessary budget should be provided by the Quang Nam provincial government in accordance with the budgetary system in Vietnam. As the accounting year in Vietnam is from January to December with the budget request process for the following year starting in June, it is essential that the project implementation body in Vietnam complete the operation and budget planning processes by June to ensure that the request for budgetary appropriation is properly made.

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

3.1 Project Effects

The absence of on-site facilities to explain the My Son Sanctuary to tourists makes it practically impossible to effectively publicise this valuable heritage site at home and abroad. At present, some 100 artefacts are temporarily stored using the remains but the lack of facilities to store other artefacts means that these artefacts are exposed to a danger of deterioration, scattering and/or theft. The construction of exhibition and storage facilities as well as administration facilities and the provision of equipment under the Project are expected to have the following effects.

(1) Positive Effects

- More than 70,000 visitors (based on the figure for 2002) will acquire knowledge on the historical significance and characteristics of the My Son Sanctuary.
- Artefacts with a high risk of deterioration or theft and historically valuable artefacts will be safely stored.
- Survey and research materials on the Sanctuary will be collected and stored at a single site, enabling the effective supply of information for researchers.

(2) Indirect Effects

- Understanding of the historical significance and characteristics of the Sanctuary by visitors will enhance awareness of the importance of preserving the Sanctuary.
- Research activities on the Sanctuary will be facilitated.
- The introduction of toilet facilities (including those for the disabled) in the gateway area to the sanctuary site will improve the convenience for tourists.

3.2 Recommendations

(1) Operation and Maintenance System

For the maintenance of the new facilities, the establishment of a new body under the jurisdiction of the CMHC is planned. This body will comprise 12 staff members (excluding the guards, receptionists and cleaners) and will consist of six academic staff, including the curator, all of which will be transferred from the CMHC, and six newly recruited specialists. Given the fact that 10 specialists are currently working at the CMHC, more than half of them

will be transferred to boost activities in the academic/specialist fields at the new facilities. However, as it is unrealistic to secure all 12 staff members from the beginning to run the facilities, it is judged to be more appropriate to start with the minimum manpower, mainly consisting of the current CMHC specialists, with a view to the gradual recruitment of new staff members in line with the future expansion of activities.

No special skills will be required for the maintenance of the new facilities and the conventional scope of the maintenance work will not require expansion. However, the daily checking and cleaning of certain facilities serving tourists will be essential. Special attention should be paid to the maintenance of clean toilets for tourists.

(2) Publicity Activities

Active publicity of the My Son Sanctuary and the Exhibition Building through the media is essential to make the Exhibition Building a popular spot for tourists. Equally important are active marketing activities with travel agents, airlines and tourism organizations to appeal to both Vietnamese and foreign tourists. Moreover, educational institutions and schools should be approached to educate students on the historical significance of and need for conservation of the Sanctuary and also to attract visitors to the Sanctuary. It is also necessary to develop and consolidate an information network serving researchers, students and experts. It is highly desirable for these marketing and publicity activities to continue in a diverse manner after the opening of the Exhibition Building, following up similar activities at the initial stage of the Project. The production of high quality posters and pamphlets introducing the Sanctuary and the Exhibition Building will play an important role as advertising media, which should be considered as an essential activity of the operation of Exhibition Building.

(3) Technical Cooperation and Collaboration with Other Donors

The necessity for and effectiveness of technical cooperation regarding the exhibition contents, method and management are already described in the soft component plan. Examination of the implementation of the following matters is recommended for other types of technical cooperation.

1) Transfer of Replica Production Techniques

The building walls at the My Son Sanctuary are decorated with various plant patterns and terracotta sculptures carved on the bricks, constituting precious materials which convey the specific style of each period of the Champa Kingdom. These decorative arts, however, face a danger of disappearance along with the collapse of the remains. While the conservation of the Sanctuary requires the formulation of an appropriate plan based on future studies, the

production of replicas of the brick as well as terracotta relief work, the disappearance of which is a matter of strong concern even today, so that they can be passed on to future generations is of urgent important and can be conducted today. However, the transfer of the necessary techniques to produce replicas as a soft component of the Project is difficult because of the implications in terms of facilities, equipment and system to receive such cooperation. Accordingly, examination of the feasibility of a plan which involves on-site training in Vietnam and technical training in Japan when facilities to conduct replica production work are in place following the implementation of the Project is desirable.

2) Cooperation for Production of Pamphlets in Japanese

There is a strong demand for pamphlets in Japanese for the convenience of Japanese tourists who account for a sizable portion of the foreign tourists. Cooperation for the production of such pamphlets can clearly identify Japan's aid efforts. Feasible subjects for this cooperation include examination of the contents, translation into Japanese and editing as well as layout techniques. The Japanese pamphlets for the Hanoi Museum of History are an example of similar cooperation. These pamphlets were prepared under a JICA project by the Women's Society of the Japanese Embassy in Vietnam with the cooperation of the VJCC and have proved to be very popular. As the contents of the pamphlets for the My Son Sanctuary must reflect the actual contents of the exhibition, pamphlet preparation after the arrangements for the exhibits have been completed is desirable.

3) Collaboration with Research and Conservation Activities Conducted by Other Countries

The wide publicity of and education on the significance of the conservation of the My Son Sanctuary is one of the important roles to be played by the Exhibition Building. Needless to say, academic research is extremely important and essential for conservation efforts. As part of the education on the exhibits, introduction of the history and achievements of the recent research and conservation activities of Poland, Italy and other countries is necessary in addition to earlier study reports of the French School of the Far East

4) Technical Cooperation for Preservation and Restoration of the Sanctuary

The necessity and urgency of international cooperation for the preservation and restoration of the My Son Sanctuary has been duly pointed out in view of the importance of the Sanctuary as a cultural heritage, the present situation of the Sanctuary facing collapse and disappearance and the domestic limitations in terms of human resources and finance in Vietnam. As the My Son Sanctuary is primarily built of bricks, many of the remains which have survived the destructive war are in the process of disappearance due to collapse caused by natural erosion. Unfortunately, no technically effective method to preserve the existing state of the brick-based

remains has yet been fully established. In fact, removal of the collapsed bricks around the towers destroyed by the war has the unintended effect of facilitating the collapse of the towers which have somehow managed to remain standing (F Group), necessitating careful technical examination as well as the introduction of suitable conservation measures. In the meantime, there are reports that the partial restoration work of the historical remains in recent years has attracted criticism of the outcome of such work as it has been conducted at a stage where the academic study of the remains and research work on restoration techniques have not been fully completed. It is extremely difficult to identify the original form of the collapsed and lost ruins and the Master Plan demands that hasty restoration is not proceeded with.

While the My Son Sanctuary has been the subject of international cooperation, a genuinely comprehensive academic study still depends on future cooperation. In view of these circumstances, it is necessary for an academic study on the Sanctuary to be conducted prior to technical cooperation for the preservation and restoration of the Sanctuary as such a study should be able to clarify the action most urgently required, feasible action and research tasks, etc.

Appendices

1. Member List of the Study Team
2. Study Schedule
3. List of Parties Concerned in Recipient Country
4. Minutes of Discussions
5. Cost Estimation Borne by the Recipient Country
6. Other Relevant Data
7. References

Appendix-1. Member List of The Survey Team

1-1 Member of the Basic Design Study (May 22 to June 14, 2003)

1. Ms. Yumiko ASAKUMA Team Leader
Second Project Management Division,
Grant Aid Management,
Japan International Cooperation Agency
2. Ms. Kyoko ODAKA Grant Aid Cultural Policy Division,
Ministry of Foreign Affairs
3. Mr. Akihiko TAKEUCHI Chief Consultant/ Facility Planner
Matsuda Consultants International Co., Ltd.
4. Mr. Tomohiro OSAWA Architectural Design
Matsuda Consultants International Co., Ltd.
5. Mr. Shuhei KUBOTA Exhibition & Equipment Planner
Matsuda Consultants international Co., Ltd.
6. Mr. Masato KODA Construction & Procurement Planner / Quantity Survey
Matsuda Consultants international Co., Ltd.
7. Ms. Yoshiko FUSE Interpreter
Matsuda Consultants international Co., Ltd.

1-2 Member of the Draft Explanation (September 1 to September 12, 2003)

1. Ms. Yumiko ASAKUMA Team Leader
Second Project Management Division,
Grant Aid Management,
Japan International Cooperation Agency
2. Ms. Kyoko ODAKA Grant Aid Cultural Policy Division,
Ministry of Foreign Affairs
3. Mr. Akihiko TAKEUCHI Chief Consultant/ Facility Planner
Matsuda Consultants International Co., Ltd.
4. Mr. Tomohiro OSAWA Architectural Design
Matsuda Consultants International Co., Ltd.
5. Mr. Shuhei KUBOTA Exhibition & Equipment Planner
Matsuda Consultants international Co., Ltd.
6. Ms. Yoshiko FUSE Interpreter
Matsuda Consultants international Co., Ltd.

Appendix-2. Study Schedule

2-1 Study Schedule of Basic Design Study

	Day		Official		Consultant					
			Leader	Grant Aid	Chief Consultant	Interpreter	Exhibition Planner	Facility Planner	Construction Planner	
			Asakuma	Odaka	Takeuchi	Fuse	Kubota	Osawa	Koda	
1	22-May	Thu	•Narita(JL717) → Bangkok •Bangkok (TG684) → Hanoi							
2	23-May	Fri	•Courtesy Call to JICA Vietnam Office •Courtesy Call to Embassy of Japan •Courtesy Call to Ministry of Culture and Information •Courtesy Call to UNESCO HANOI •Report to JICA							
3	24-May	Sat	•Hanoi (VN311) → Da Nang •Visit at Da Nang Cham Museum •Visit at Hoi An World Heritage							
4	25-May	Sun	•Da Nang → MySon Sanctuary •Survey on MySon Sanctuary							
5	26-May	Mon	•Meeting with CMHC •Meeting with CMHC/Duy Xuyen People's Committee •Visit at Chien Dan Relic							•Narita (JL751) → Hanoi
6	27-May	Tue	•Meeting with CMHC •Meeting with CMHC •Visit at Khuong My Relic							•Hanoi (VN311)→Da Nang •Visit at Da Nang Cham Museum
7	28-May	Wed	•Meeting with CMHC •Meeting with CMHC •Signing Minutes of Meeting				•Narita (JL751) → Hanoi		•Survey on construction materials •Survey on construction cost	
8	29-May	Thu	•Survey on My Son Sanctuary				•Visit on suppliers		•Site survey	
9	30-May	Fri	•Da Nang (VN310)→ Hanoi •Report to JICA		•Site survey on My Son		•Visit on suppliers		•Site survey on My Son Sanctuary	
10	31-May	Sat	•Hanoi (JL766) → Narita		•Facility planning		•Hanoi→Da Nang		•Visit on contractors •Arrangement for site survey	
11	1-Jun	Sun			•Data processing					
12	2-Jun	Mon			•Meeting with CMHC					
13	3-Jun	Tue			•Meeting with CMHC					•Site survey
14	4-Jun	Wed			•Meeting with CMHC •Site survey					•Site survey
15	5-Jun	Thu			•Planning of facility	•Da Nang→ Hanoi •Visit on suppliers	•Data processing		•Survey on materials at DaNang	
16	6-Jun	Fri			•Meeting with CMHC	•Visit on suppliers	•Meeting with CMHC		•Cost survey	
17	7-Jun	Sat			•Meeting with My Son Management Board •Meeting with CMHC (exhibition) •Visit at Ban An Relic	•Hanoi (JL766) →Narita			•Cost survey	
18	8-Jun	Sun			•Data processing				•Da Nang →Hanoi	
19	9-Jun	Mon			•Meeting with CMHC •Meeting with Quang Nam Peoples' Committee				•Cost survey •Hanoi (JL752)	
20	10-Jun	Tue			•Da Nang (VN310) → Hanoi				→ Narita	

	Day		Official		Consultant				
			Leader	Grant Aid	Chief Consultant	Interpreter	Exhibition Planner	Facility Planner	Construction Planner
			Asakuma	Odaka	Takeuchi	Fuse	Kubota	Osawa	Koda
21	11-Jun	Wed			<ul style="list-style-type: none"> • Meeting with Ministry of Culture and Information • Meeting with Relic Restoration and Design Center, MoCI • Meeting with UNESCO Hanoi 				
22	12-Jun	Thu			<ul style="list-style-type: none"> • Hanoi National Museum • Meeting with Relic Restoration and Design Center 				
23	13-Jun	Fri			<ul style="list-style-type: none"> • Report to JICA 				
24	14-Jun	Sat			<ul style="list-style-type: none"> • Hanoi (JL766) → Narita 				

2-2 Study Schedule of Draft Explanation

	Day		Official		Consultant			
			Leader	Grant Aid	Chief Consultant	Interpreter	Exhibition Planner	Facility Planner
			Asakuma	Odaka	Takeuchi	Fuse	Kubota	Osawa
1	1-Sep	Mon	•Tokyo (JL717) → Bangkok		•Tokyo(JL751) → Hanoi			
2	2-Sep	Tue	<ul style="list-style-type: none"> •Courtesy Call to UNESCO Asia Pacific Regional Office •Courtesy Call to Embassy of Japan in Thailand •Bangkok (TG684) → Hanoi 		•Hanoi (VN317) → Da Nang			
3	3-Sep	Wed	<ul style="list-style-type: none"> •Courtesy Call to JICA Vietnam Office •Courtesy Call to Embassy of Japan •Courtesy Call to Ministry of Foreign Affairs •Courtesy Call to Ministry of Culture and Information 		•Courtesy Call to CMHC (Submission of the Basic Study)			
4	4-Sep	Thu	<ul style="list-style-type: none"> •Courtesy Call to UNESCO HANOI •Courtesy Call to Embassy of Italy in Vietnam •Hanoi (VN317) → Da Nang → Tam Ky 		•Meeting with CMHC (Explanation of the Draft Report)			
5	5-Sep	Fri	<ul style="list-style-type: none"> •Meeting with CMHC (Explanation of the Draft Report) •Meeting with CMHC (Discussion on the Draft Report) 					
6	6-Sep	Sat	•Meeting with CMHC (Discussion on the Draft Report)					
7	7-Sep	Sun	•Site Survey at My Son Sanctuary					
8	8-Sep	Mon	<ul style="list-style-type: none"> •Meeting with CMHC (Minutes of Meeting) •Courtesy Call to People's Committee of Quang Nam Province 					
9	9-Sep	Tue	<ul style="list-style-type: none"> •Meeting with CMHC (Minutes of Meeting) •Signing Minutes of Meeting 					
10	10-Sep	Wed	<ul style="list-style-type: none"> •Da Nang (VN310) → Hanoi •Meeting with Ministry of Culture and Information •Report to JICA 					
11	11-Sep	Thu	•Hanoi (JL766) → Tokyo		•Meeting with Relic Restoration and Design Center, MoCI			
12	12-Sep	Fri	•Hanoi (VN790) →HK (CX508)→Tokyo					

Appendix-3. List of Parties Concerned

3-1 List of Vietnamese Parties Concerned

1) Ministry of Foreign Affairs of Vietnam

Mr. Mr. Luu Van Ke Deputy General Director, The ASIA
Department 1

2) Ministry of Culture and Information

Mr. Pham Xuan Sinh Director General, International Cooperation
Department

Mr. Nguyen Van Tinh Deputy Director General, International
Cooperation Department

Dr. Dong Van Bai General Director, Department of Conservation
and Museology

Prof. Dr. Nguyen Quoc Hung Deputy Director, Department of Conservation
and Museology

Mr. Le Ngoc Dinh International Cooperation Department

Mr. Le Thanh Vinh Architect, Director, Center for Conservation of
Monuments

3) People's Committee of Quang Nam Province (Q.N.P.C)

Ms. Ho Thi Thanh Lam Vice Chairperson

Ms. Truong Cong Lu Director, Management Division

Mr. Luu Van Lao Deputy Head of Foreign Affairs Division

Ms. Tran Thi Hong Thui Expert, Foreign Affairs Division

Ms. Dong Thi Bach Chinh Planning and Investment Division

Mr. Tran Dinh Nhi Planning and Investment Division

4) Quang Nam Center for Conservation of Monuments and Heritage (CMHC)

Mr. Phan Thanh Bao Director

Mr. Nguyen Van Ham Vice Director

Mr. Nguyen Thuong Hy Chief of the Technical and Professional Office

Mr. Than Van Binh Architect,

Mr. Phon Thanh Tung Interpreter,

Mr. Tran Hong Nhau Technical and Professional Office

Mr. Huynh Quang Nen Technical and Professional Office

5) People's Committee of Duy Xuyen District

Mr. Tran Cong Tam Chairman

Mr. Nguyen Van Khong Vice Chairman

Mr. Nguyen Dung Quang	Vice Chairman
Mr. Nguyen Van Tam	Director, Dept. of Land Register

6) The Management Board of My Son Relics

Mr. Nguyen Cong Huong	Manager
Mr. Thai Son	Deputy Manager,
Mr. Huynh Tan Lap	Deputy Manager

3-2 International Organization

1) UNESCO Office of The Regional Advisor for Culture in Asia and Pacific

Mr. Richard A Engelhardt	Regional Advisor
Ms. Beatice Kaldun	

2) Embassy of Italy in Vietnam

Mr. Pietro Sequi	Director
------------------	----------

3) UNESCO Office Hanoi

Mr. Chu Shiu - Kee	Head and Representative
Ms. Yayoi Segi - Vitcek	Programmer Specialist
Mr. Brian Zottoni	Project Officer

3-3 List of Japanese Parties Concerned

1) Embassy of Japan in Vietnam

Mr. Mitsuru Kitano	Minister
Mr. Kazuyoshi Yamaguchi	Secretary

2) Embassy of Japan in Thailand

Mr. Akihiko Fujii	Director Councilor
Mr. Toshiyuki Takebayashi	Second Secretary
Mr. Hisaki Nakasuji	Second Secretary

3) JICA Vietnam Office

Mr. Fumio Kikuchi	Resident representative
Mr. Masato Togawa	Senior Deputy Resident Representative
Mr. Hiroyuki Kobayashi	Deputy Resident Representative
Dr. Hiroshi Sirakawa	Deputy Resident Representative

Appendix-4. Minutes of Discussions

4-1 Minutes of Discussions (Basic Design Study)

MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF THE SURROUNDING AREA
OF MY SON SANCTUARY
IN THE SOCIALIST REPUBLIC OF VIET NAM

In response to a request from the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "Viet Nam"), the Government of Japan decided to conduct a basic design study on the Project for Improvement of the Surrounding Area of My Son Sanctuary (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Viet Nam the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Ms. Yumiko Asakuma, Second Management Division, Grant Aid Management Department, Japan International Cooperation Agency, and is scheduled to stay in the country from 22 May to 14 June, 2003.


The Team held discussions with the officials concerned of the Government of Viet Nam and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Tam Ky, 28 May, 2003



Ms. Yumiko Asakuma
Leader
Basic Design Study Team
Japan International Cooperation Agency
Japan



Ms. Ho Thi Thanh Lam
Vice Chairman
The People's Committee of Quang Nam
Province
Socialist Republic of Viet Nam

ATTACHMENT

1. Objective of the Project

The objective of the Project is to preserve relics from My Son Sanctuary in the Socialist Republic of Viet Nam and provide necessary information for visitors and researchers, through construction of a site museum and an administrative office for the museum, and procurement of equipment for the museum.

2. Responsible and Implementing Agency

2-1. Responsible Agency

Quang Nam People's Committee

2-2. Implementing Agency

Quang Nam Center of Monuments and Heritage Conservation

3. Items requested by the Government of Viet Nam

After discussions with the Team, the buildings described in Annex-1 and the equipment for the museum were finally requested by the Vietnamese side. JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

4. Japan's Grant Aid Scheme

4-1 The Vietnamese side understands the Japan's Grant Aid Scheme explained by the Team, as described in Annex -2.

4-2 The Vietnamese side will take the necessary measures, as described in Annex-3, for smooth implementation of the Project, as a condition for the Japan's Grant Aid to be implemented.

5. Schedule of the Study

5-1 The consultants will proceed to further studies in Viet Nam until 14 June, 2003.

5-2 JICA will prepare the draft report in English and dispatch a mission in order to explain its contents in August 2003.

5-3 In case that the contents of the report is accepted in principle by the Government of Viet Nam, JICA will complete the final report and send it to the Government of Viet Nam around December, 2003.

6. Other relevant issues

6-1 The Vietnamese side has agreed to secure and allocate the enough budgets to



operate and maintain the buildings and the equipment built and supplied by the Grant Aid properly and effectively.

- 6-2 The Vietnamese side will set up "Exhibition Work Committee" composed of researchers, curators, and experts to draw up exhibition program by the end of May, 2004.
- 6-3 Both sides have agreed that the site museum would have following functions:
 - to provide concise information on My Son Sanctuary for visitors through exhibition
 - to collect and preserve relics from My Son Sanctuary
 - to collect research papers on My Son Sanctuary and provide information for researchers as the occasion demands
- 6-4 The Vietnamese side has declared that the site museum would be along a main street to the bridge led to the Sanctuary and be located beyond the approach parking area and the ticket office and before the transfer area to a carriage/jeep/ship, as mentioned in Annex -1.
- 6-5 Both sides have agreed that public relations to the media, travel agents, foreign and domestic tourists, researchers, and students are important to achieve success of the Project. The Vietnamese side will conduct public relations during and after completion of the Project.
- 6-6 The Vietnamese side mentioned that there are not any relics or mines under the ground of the site for the museum or the administrative office. To make sure of it, the Vietnamese side will conduct archaeological research and mine detection of the construction site by the end of December, 2003.
- 6-7 The Vietnamese side requested the consultant services as one of the components of the Grant Aid and/or technical cooperation for exhibition, relics reproduction, artifacts restoration, and museum management (ex. brochure editing). They also understood that another official request on technical cooperation should be submitted through diplomatic channels such as the Embassy of Japan and/or the JICA Office.
- 6-8 Both sides have confirmed that residents transfer would not be necessary for the Grant Aid.
- 6-9 The Japanese side recommended that an admission ticket of the site museum should not be separated from the ticket of My Son Sanctuary to make more visitors enter the museum, and the Vietnamese side has agreed it.
- 6-10 Vietnamese side will remove the existing management office building and clear the site as shown in Annex-1 by the end of February, 2004.

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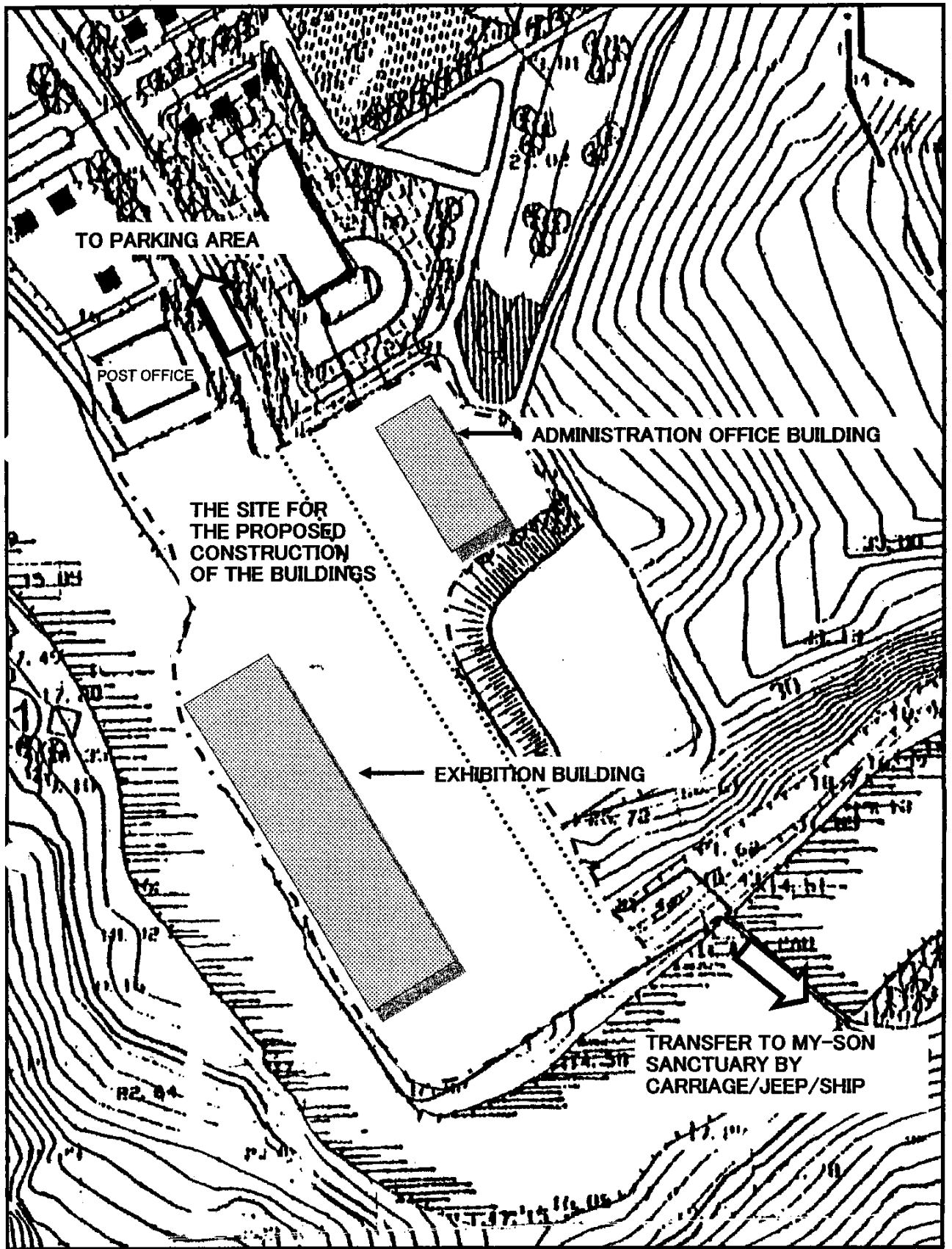
Annex-1: Draft of the buildings

Annex-2: Japan's Grant Aid Scheme

Annex-3: Major Undertakings to be taken by Each Government

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Japan's Grant Aid Program

1. Japan's Grant Aid Procedures

(1) The Japan's Grant Aid Program is executed by the following procedures.

Application (request made by a recipient country)

Study (Basic Design Study conducted by JICA)

Appraisal & Approval (appraisal by the Government of Japan and approval by the Cabinet of Japan)

Determination of Implementation (Exchange of Notes between both Governments)

Implementation (implementation of the Project)

(2) Firstly, an application or a request for a Grant Aid project submitted by the recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Japan's Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study Report prepared by JICA and the results are then submitted to the cabinet for approval.

Fourth, the project approved by the cabinet becomes official with the Exchange of Notes signed by the Government of Japan and the recipient country.

Finally, for the implementation of the Project, JICA assists the recipient country in preparing contracts and so on.

2. Contents of the Study

(1) Contents of the Study

The purpose of the Basic Design Study conducted by JICA on a requested project is to provide a basic document necessary for appraisal of the project by the

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Japanese Government. The contents of the Study are as follows:

- a) confirmation of the background, objectives, benefits of the project and also institutional capacity of agencies concerned of the recipient country necessary for project implementation,
- b) evaluation of the appropriateness of the project for the Grant Aid Scheme from a technical, social and economical point of view,
- c) confirmation of items agreed on by the both parties concerning a basic concept of the project,
- d) preparation of a basic design of the project,
- e) estimation of cost of the project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

Final project components are subject to approval by the Government of Japan and therefore may differ from an original request. Implementing the project, the Government of Japan requests the recipient country to take necessary measures involved which are itemized on Exchange of Notes.

(2) Selection of Consultants

For smooth implementation of the study, JICA uses (a) registered consulting firm(s). JICA selects (a) firm(s) based on the proposals submitted by the interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the study is (are) recommended by JICA to a recipient country after Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

(1) What is Grant Aid?

The Grant Aid Program provides a recipient country with non reimbursable funds to procure the equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials or such.

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(2) Exchange of Notes (E/N)

Both Governments concerned extend Japan's Grant Aid in accordance with the Exchange of Notes in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid etc., are confirmed.

(3) "The period of the Grant Aid" means one Japanese fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedure such as Exchange of Notes, concluding a contract with (a) consulting firm(s) and (a) contractor(s) and a final payment to them must be completed.

(4) Under the Grant, in principle, products and services of origins of Japan or the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant may be used for the purchase of products or services of a third country.

However the prime contractors, namely, consulting, contractor and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

(5) Necessity of the "Verification"

The Government of the recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. The Government of Japan shall verify those contracts. The "Verification" is deemed necessary to secure accountability to Japanese tax payers.

(6) Undertakings Required to the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

a) to secure land necessary for the sites of the project prior to the installation work in case the project is providing equipment,

b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities in and around the sites,

c) to secure buildings prior to the installation work in case the project is providing equipment,

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d) to ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid,

e) to exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts,

f) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) Proper Use

The recipient country is required to maintain and use the equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for the operation and maintenance as well as to bear all expenses other than those covered by the Grant Aid.

(8) Re-export

The products purchased under the Grant Aid shall not be re-exported from the recipient country.

(9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority shall open an account in the name of the Government of the recipient country in a bank in Japan. The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the bank to the Government of Japan under an Authorization to Pay issued by the Government of the recipient country or its designated authority.



Major Undertakings to be taken by Each Government

NO	Items	To be covered by Grant Aid	To be covered by
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lot		●
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the building	●	
7	To provide facilities for the distribution of electricity, water supply.		
	1)Electricity		
	a.The distributing line to the site		●
	b.The drop wiring and internal wiring within the site	●	
	c.The main circuit breaker and transformer	●	
	2)Water Supply		
	a.The city water distribution main to the site		●
	b.The supply system within the site (receiving and/or elevated	●	
	3)Drainage		
	a.The city drainage main (for storm, sewer and others) to		●
	b.The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4)Gas Supply		
	a.The city gas main to the site		●
	b.The gas supply system within the site	●	
	5)Telephone System		
	a.The telephone trunk line to the main distribution frame / panel (MDF) of the building		●
	b.The MDF and the extension after the frame / panel	●	
	6)Furniture and Equipment		
	a.General furniture		●
	b.Project equipment	●	
8	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the	(●)	(●)

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10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
13	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

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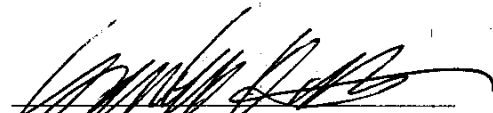
MINUTES OF DISCUSSIONS
ON THE BASIC DESIGN STUDY
ON THE PROJECT FOR IMPROVEMENT OF THE SURROUNDING AREA
OF MY SON SANCTUARY
IN THE SOCIALIST REPUBLIC OF VIET NAM
(EXPLANATION ON DRAFT REPORT)

In May 2003, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Improvement of the Surrounding Area of My Son Sanctuary (hereinafter referred to as "the Project") to the Socialist Republic of Viet Nam (hereinafter referred to as "Viet Nam"), and through discussion, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the Study.

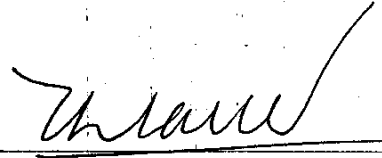
In order to explain to and consult with Vietnamese side on components of the draft report, JICA sent to Viet Nam the Draft Report Explanation Team (hereinafter referred to as "the Team") which is headed by Ms. Yumiko Asakuma, a project officer of the Second Project Management Division, Grant Aid Management Department, JICA, from September 1 to 12, 2003.

As a result of discussions, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

September 10, 2003



Ms. Yumiko Asakuma
Leader
Draft Final Explanation Team
Japan International Cooperation Agency
Japan



Ms. Ho Thi Thanh Lam
Vice Chairman
The People's Committee of Quang Nam
Province
Socialist Republic of Viet Nam

ATTACHMENT

1. Components of the Draft Report

The Government of Viet Nam agreed and accepted in principle the components of the draft report explained by the Team.

Modifications described in Annex-1 were requested by Vietnamese side, and will be reflected in the Basic Design Study Report.

The list of equipment is attached to Annex-2.

The final decision will be made by the Government of Japan based on the examination of the result of the Basic Design Study.

2. Japan's Grant Aid scheme

The Vietnamese side understands the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Viet Nam as explained by the Team and described in Annex-2 and Annex-3 of the Minutes of Discussions signed by both parties on May 28, 2003.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed items and send it to the Government of the Viet Nam in December 2003.

4. Other relevant issues

- 4-1 Both sides agreed that some modifications to the draft report, which were also requested by Vietnamese side, will not be reflected in the Basic Design Study Report as described in Annex-3.
- 4-2 Japanese side regrets that the Master Plan of My Son Sanctuary has not been approved by the government yet, even though Vietnamese side said to the Basic Design Study Team that it would be approved by the end of August. Ministry of Culture and Information will make all possible efforts to the hasten approval by the government.
- 4-3 Vietnamese side understands that the Project will be executed in a manner described in the Basic Design Study Report. The Project modifications will not be requested unless any unpredicted circumstances arise.

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- 4-4 Both sides confirmed that the equipment specifications and the other technical information shall be confidential before the tender to be held in the implementation stage of the Project.
- 4-5 Vietnamese side agreed to take necessary measures for the implementation of the Project as mentioned in Annex-4.
- 4-6 Japanese side requested Vietnamese side to set up "Exhibition Work Committee" by the end of November, 2003, ahead of schedule agreed by both sides on May 28, 2003. Vietnamese side agreed it.
- 4-7 Both sides confirmed that the site museum would be along a main street to the bridge led to the Sanctuary and be located between the car parking area and the transfer area to a carriage/jeep/ship. Tourist vehicles would be strictly prohibited from crossing the bridge. Both sides agreed that a gate would be set up as mentioned in Annex-5, to prevent tourist vehicles to go through the bridge.
- 4-8 Both sides reconfirmed the following items, which had already agreed on the Minutes of Discussions signed by both parties on May 28, 2003.
- Vietnamese side will secure and allocate the enough budgets to operate and maintain the buildings and the equipment built and supplied by the Grant Aid properly and effectively.
 - The site museum would have following functions: to provide concise information on My Son Sanctuary for visitors through exhibition, to collect and preserve relics from My Son Sanctuary, and to collect research papers on My Son Sanctuary and provide information for researchers as the occasion demands.
 - Public relations to the media, travel agents, foreign and domestic tourists, researchers, and students are important to achieve success of the Project. Vietnamese side will conduct public relations during and after completion of the Project.
 - Vietnamese side will conduct archaeological research and mine detection of the construction site by the end of December, 2003.
 - Residents transfer would not be necessary for the Project.
 - The admission ticket of the site museum will not be separated from the ticket of My Son Sanctuary to make more visitors enter the museum.
 - Vietnamese side will remove the existing management office building and clear the site by the end of February, 2004.

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Annex-1: Modifications to be reflected in the Basic Design Study Report

Annex-2: List of Equipment

Annex-3: Items not to be reflected in the Basic Design Study Report

Annex-4: Undertakings to be taken by the Government of Viet Nam

Annex-5: Gate to be set up at the site

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ANNEX-1

Modifications requested by the Vietnamese side to be incorporated in the Basic Design Study Report.

Building:

1. The location of the water supply tank will be inside of the boundary of the project site near the proposed building instead to be located on the hill because of easy access for maintenance.
2. The number of chairs at the meeting room in the administration building will be increased to meet 30 persons to sit, and the storage adjacent to the meeting room will be cancelled for enlargement of the space to accommodate the increased number of the furniture.
3. The high side light louver window will be closable for storm.
4. Ceiling fans will be provided for the exhibition room.
5. An umbrella stand and a raincoat hunger will be provided in the entrance of the exhibition building.
6. A roofed passage will be provided between the exhibition building and the tourist toilet building.
7. A partition board will be installed in the urinal of the male tourists' toilet.
8. A roof gutter will be provided for the eaves of the exhibition building.
9. The size of the storage room 1, 2 and the workshop in the exhibition building will be reduced in order to manage the cost increase to be caused by the requests described above.
10. Vietnamese side requested the design of the exterior wall of the exhibition building to be developed further during the detail design stage.

Equipment:

1. A measurement appliance for artifacts will be included in the Project equipment.

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ANNEX-2

The List of the Equipment

Code No.	Q'ty	Description
1		General equipment
1-1	5	Desktop Computer
1-2	1	Color Leaser Printer
1-3	1	Leaser Printer
1-4	1	PC Network Materials
1-5	1	Scanner
1-6	1	Photo Copy Machine
1-7	1	35mm Still Camera
1-8	1	Digital Photo Camera
1-9	1	Video Camera
1-10		TV & Video Set
	1	1)Monitor TV
	1	2)Video Deck
	1	3)TV & Video Stand
1-11		Video Display Equipment
	1	1)LCD Video Projector
	1	2)Video Presenter
	1	3)Video Player
	1	4)Tripod Screen
	1	5)Connection Cables
1-12	1	Pick-UP Vehicle
1-13		Chain-Block & Others
	2	1)Chain-Block
	2	2)Palette
	1	3)Hand Palette Track
1-14		Equipment for Conservation & Restoration of Relics
	2	1)Electric Hand Disk Cutter
	2	2)Electric Hand Disk Grainder
	1	3)Electric Hand Streght Grainder
	1	4)Fulx Hanmer typeA
	1	5)Fulx Hanmer TypeB
	1	6)Air Compressor
	1	7)Electric Vibretion Drill Machine
	2	8)Electric Mini Ruter Set
	1	9)Mcsurement Appliance for Artifact

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ANNEX-3

The requests not reflected in the Basic Design Study Report

1. Installation of private lockers for tourists in the entrance of the exhibition building/
It would be underutilized by the tourists of which the main purpose of visit is the My Son Sanctuary taking day excursion tours vehicle. The tourists would rarely or never bring their belongings to be kept to the site museum. Even if a tourist ask to keep his/her belongings, it would be possible to manage on keeping it at the ticket office because of very little demand.
2. Installation of a fire alarming system in the exhibition building/ A emergency alarm system will be installed instead of smoke or fire detector system which would not work for high ceiling with semi-open space where houses non flammable objects. Fire extinguishers will be provided by Vietnamese side.
3. Provision of Restored Model of the A1 Tower/ The production of the model of the A1 tower will require on-site work based on verification of the data and research result because of many uncertainties regarding the original, thus it would not match to procure the A1 tower through the tender of the Project.
4. Ceiling height of the administration building is 3.5m/ With provision of air-conditioning units and other architectural measures such as like ventilation windows, Japanese side judged that the original ceiling height described in the Report is appropriate.
5. A conventional style as a museum was requested for the design of the exhibition building and to adopt a motif of some style of CHAM culture in the exterior wall such as a column or an arch etc. Japanese Study Team explained that a modern architectural design will be adopted for the exhibition building in order not to generate an incorrect impression of the Sanctuary, which is harmonious with the natural environment and climate of the area around the Sanctuary while purely representing its scale and function as a site museum. However design of the entrance of the exhibition room and store room at the lobby inside the building will be arranged to display the columns of actual relic of My Son Sanctuary.
6. A public address system/ The exhibition building is not big scale to utilize a public address system.
7. A shed for a vehicle/ Japanese side judged that a shed have low priority for the Project and it is appropriate to be placed by Vietnamese side, if necessary.
8. Standby generator/ The site museum will not have any functions which need emergency recovery.

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ANNEX-4

Undertakings to be taken by Vietnamese side

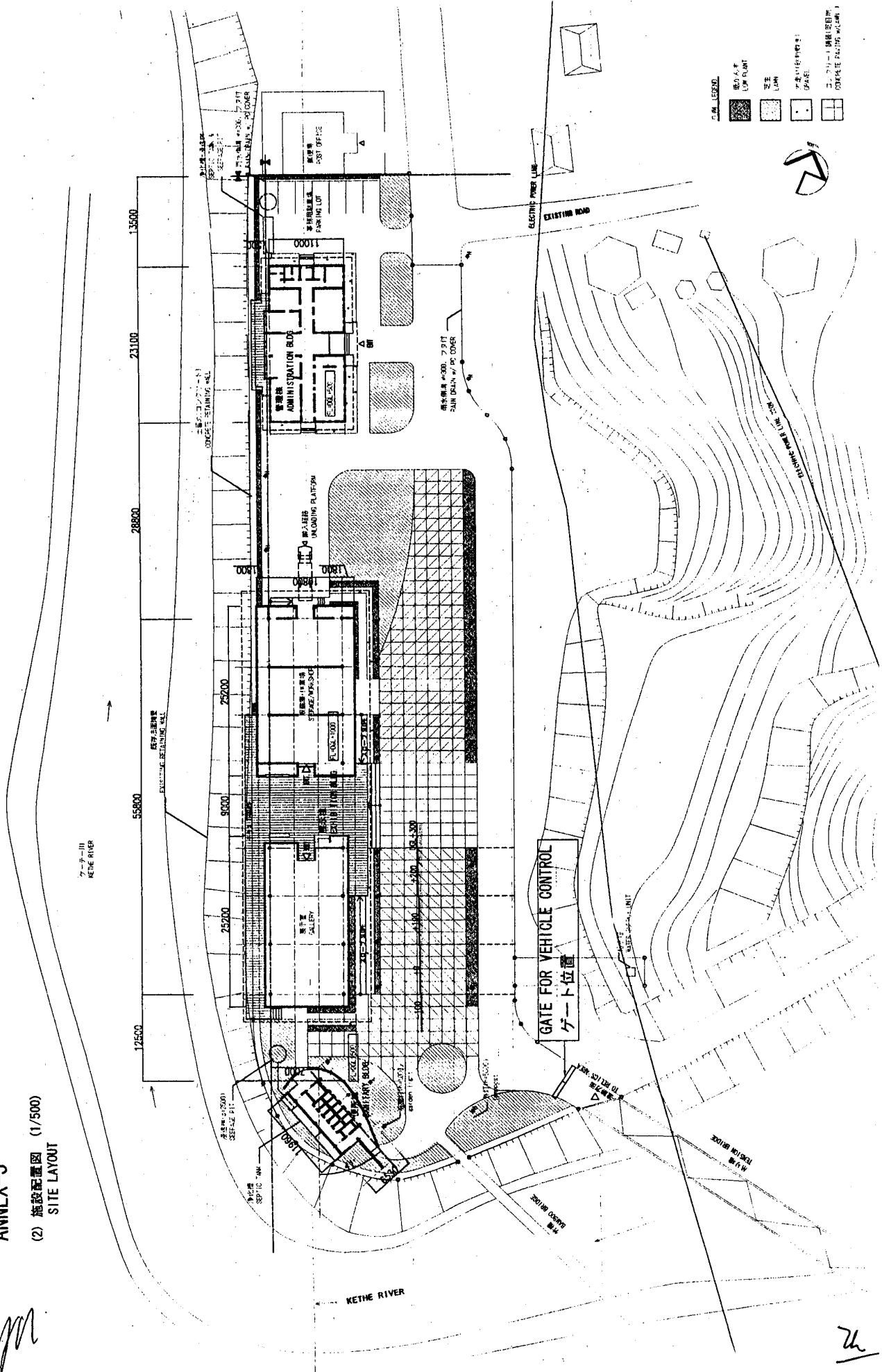
1. To distribute power line to the site by completion of the construction work.
2. To distribute telephone lines to the site by completion of the construction work.
3. To install gas supply and equipment, if necessary.
4. To implement planting work which is not included in the scope of work by the Japanese side, if necessary.
5. To procure general furniture, equipment, utensils and fixtures which are not included in the scope of the work by the Japanese side.
6. To prepare exhibits and displays which are not included in the scope of work by the Japanese side, by commencement of the display work.
7. To conduct display work immediately after completion of the construction work.
8. To obtain/issue all permits, such as general building approval and building permission within the heritage area, which are required for the implementation of the Project.
9. To bear advising commissions of Authorization to Pay (A/P) and payment commissions to a Japanese bank based upon the Banking Arrangement (B/A).
10. To ensure prompt unloading, tax exemption and customs clearance of the equipment and materials procured under the Project.
11. To exempt Japanese nationals from customs duties, internal taxes, including value-added tax and other fiscal levies which are imposed in Vietnam with respect to the supply of products and services under the verified contracts.
12. To provide such facilities as may be required necessary for the entry to Vietnam and stay therein of Japanese nationals whose service may be required in connection with the supply of products and services under the verified contract.

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ANNEX-5

(2) 施設配置図 (1/500)
SITE LAYOUT



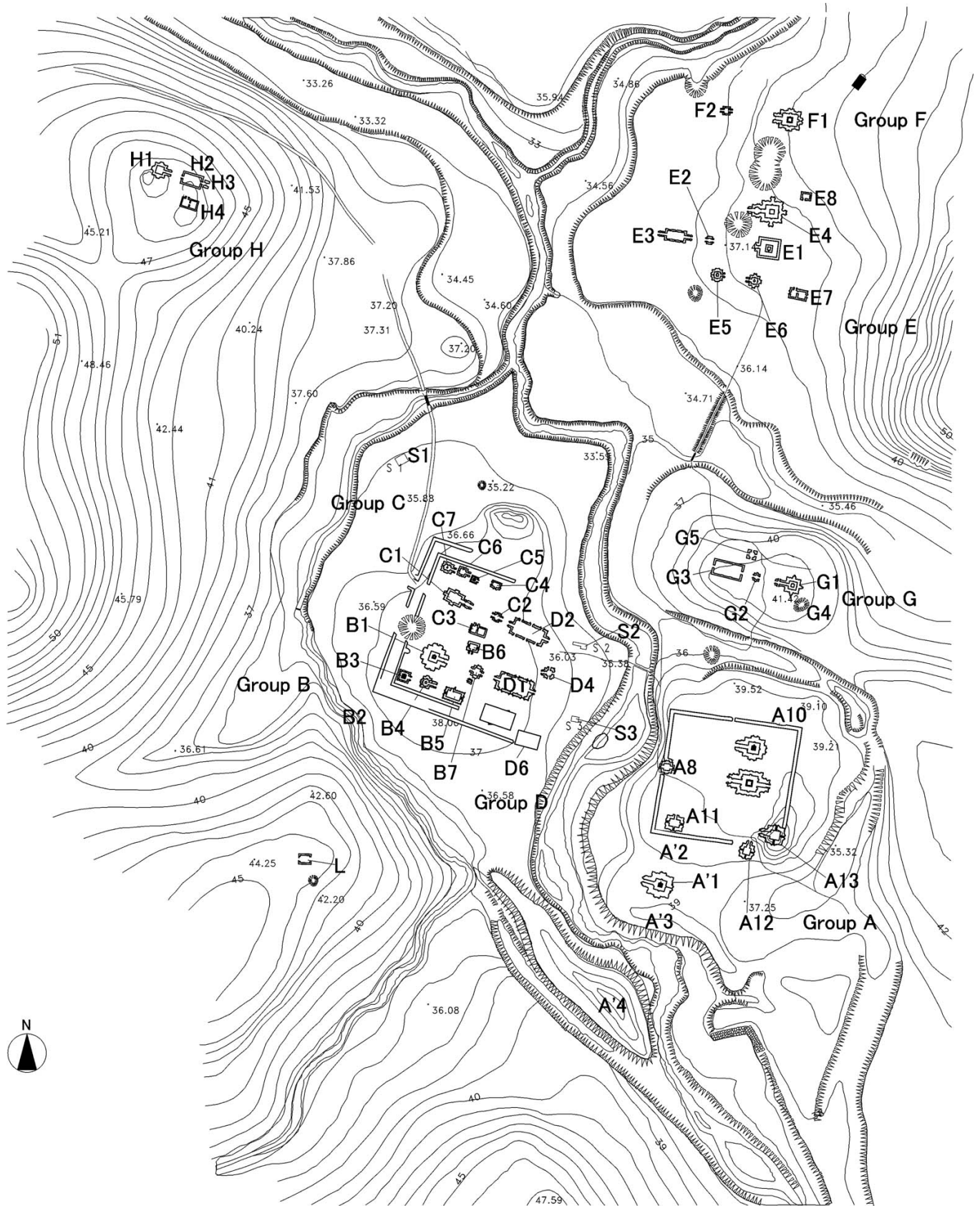
Appendix-5. Cost Estimation Borne by the Recipient Country

	Cost ('000VND)	Remarks
Works to be done prior to the commencement of construction		
<i>TOTAL</i>	<i>169,725</i>	<i>(Approx. 10,600US\$)</i>
Site Preparation	96,000	
Archeological investigation	48,000	6,000sq.m x @8,000VND
Bomb and land mine clearance	48,000	6,000sq.m x @8,000VND
Demolition/Removal of Existing Facilities (Buildings)	23,725	
Management building	6,600	RC/brick, 132sq.m x @50,000VND
Workers' accommodation	3,250	RC/brick, 65sq.m x @50,000VND
Guest Toilet	1,440	RC/brick, 18sq.m x @80,000VND
Staff Toilet	480	Brick, 6sq.m x @80,000VND
Moterbike shed	700	Steel frame, 20sq.m x @35,000VND
Resting shed 1/2	6,475	Wooden, 185sq.m x @35,000VND
Storage, ticket booth, etc.	280	Wooden, 8sq.m x @35,000VND
(Others)		
Removal of concrete platform/pavement	2,000	100sq.m x @20,000VND
Uprooting of existing trees	1,000	20 x @50,000VND
Removal of existing electric services	1,500	Power/telephone line, street lights, etc.
Site clearance and reclamation	40,000	Demolished part, 1,000sq.m x @40,000VND
Repair and touch-up of retaining wall	10,000	Around existing toilets, H=4.0m x 10m
Works to be done by the completion of the Project		
<i>TOTAL</i>	<i>161,110</i>	<i>(Approx. 10,100US\$)</i>
Connection of electricity	1,500	Including installation of meter
Connection of telephone line	3,310	
Installation charge	2,310	770,000VND/line x 3
Extention/connection work	1,000	
Planting and landscaping	19,500	
Shrubs for planting area	17,500	250sq.m x @70,000VND
Trees	2,000	3mx3m, 10 trees
Preparation/production of display items	70,000	
Designing of graphic panels, etc	N/A	By CMHC's ordinary activity
Scale model of the monument	50,000	A-1 tower, 1/20
Miscellaneous items	20,000	Plates, sign boards, etc.
Display work	16,800	
Collection of relics		30 for exhibition/170 for collection
* Experts		2 experts* 40 days, by CMHC's ordinary activity
* Workers	9,600	5 items/day by 4 workers+20% site expences
Setting of display		30 relics/panels/models, etc
* Experts		2 experts* 20 days, by CMHC's ordinary activity
* Workers	7,200	20 days by 6 workers+20% site expences
Others	50,000	
PC software for professional work	20,000	Graphic, DTP, CAD, Presentation
Furniture	5,000	Excluding items by Japanese portion
Fabrics and miscellaneous equipment	10,000	Curtains, stationaries, etc.
Printing of ticket/leaflet	15,000	Full color
<i>GRAND TOTAL</i>	<i>330,835</i>	<i>(Approx. 20,650US\$)</i>

Appendix-6. Other Relevant Data

- 6-1 Map of My Son Sanctuary
- 6-2 Explanation about Master Plan for Conservation and Value Promotion of My Son Sanctuary in Quang Nam Province
- 6-3 Survey Map
- 6-4 Geotechnical Profile

6-1 Map of My Son Sanctuary



Source: Quang Nam Center for Monuments and Heritage Conservation

QUANG NAM PROVINCE PEOPLE'S COMMITTEE

**EXPLANATION ABOUT
MASTER PLAN FOR CONSERVATION
AND VALUE PROMOTION OF
MY SON SANCTUARY
IN QUANG NAM PROVINCE**

(2004 – 2015)

EXTRACT

(Unofficial translation of the original document in Vietnamese)

Quang Nam Province
Department of Culture and Information

Quang Nam Province
People's Committee

MASTER PLAN MAKER:

RELIC CONSERVATION INSTITUTE – MINISTRY OF CULTURE & INFORMATION

- Project Planning:	Architect Nguyen Hung Son	Director of Institute:
- Designing:	Architect Nguyen Anh Tuan	
	Architect Bui Giang	
	Architect Pham Trieu Lam	
	Architect Nguyen Thanh Son	
- Electricity designing:	Engineer Nguyen Thi Lien	LE THANH VINH
- Water designing:	Engineer Nguyen Bich Van	
- Manager:	Architect Nguyen Hung Son	
- Technical Manager:	Architect Pham Thanh Quang	

- PART I NECESSITY AND BASIS FOR ESTABLISHMENT OF
MASTER PLAN FOR CONSERVATION AND VALUE
PROMOTION OF
MY SON SANCTUARY
- PART IV INTER-AREA SOCIO-ECONOMIC AND CULTURE
MATTERS
- PART V BASIC ORIENTATIONS IN MASTER PLAN FOR
CONSERVATION AND VALUE PROMOTION OF MY SON
SANCTUARY
- PART VI MASTER PLAN OF THE RELIC SITE
- PART VII SOLUTIONS FOR DETAIL MASTER PLAN:
PART VIII INVESTMENT PLAN
- PART IX IMPLEMENTING ORGANIZATION
- PART X ANALYSIS ON INVESTMENT EFFECTS OF MASTER
PLAN FOR CONSERVATION AND VALUE PROMOTION
OF MY SON HERITAGE.
- PART XI OUTSTANDING MATTERS AND PROPOSALS

PART I

NECESSITY AND BASIS FOR ESTABLISHMENT OF MASTER PLAN FOR CONSERVATION AND VALUE PROMOTION OF MY SON SANCTUARY

I. GENERAL INTRODUCTION

My Son is the old architectural relics of Champa minority. My Son is located in Duy Phu commune, Duy Xuyen district, Quang Nam province. My Son is located in a close valley, about 68km from Da Nang city in south – west direction, about 10km from Tra Kieu in western direction. My Son is the Hinduist holly land of Champa kingdom from 4th – 13th centuries. The cultural and historical values of My Son relics have been presented in architectural and carving arts of the remaining works. My Son is evaluated at the same level as famous relics in South East Asia such as Angkor (Cambodia), Pagan (Burma), Borobadna (Indonesia) etc. Time and war have destroyed and changed this tower and temple area into vestiges. Despite the remaining parts being existed sofar have been too small in comparison with those which once existed here, but My Son is still one of biggest architecture groups with highest culture value in Cham culture heritages.

This relic site was ranked as national art and architecture heritage area by Ministry of Culture & Information and recognized by UNESCO as the world heritage.

II. BASIS FOR MAKING UP MASTER PLAN FOR CONSERVATION AND VALUE PROMOTION OF MY SON SANCTUARY

II.1. Legal basis

- According to Decision on Champa My Son Sanctuary Recognition issued by Ministry of Culture and Information;
- Pursuant to the Law on Cultural Heritage approved by the National Assembly of the Socialist Republic of Vietnam, Section X, 9th Congress on 29 June 2001 and announced by President Tran Duc Luong on 12 July 2001;
- Based on Contract No. signed between Quang Nam Province's Dept., of Culture and Information & Relic Conservation and Design Center under Ministry of Culture and Information;
- Based on functions and duties of Relic Conservation Institute under Ministry of Culture and Information;
- Based on decree 52/CP-TT on investment and construction management.
- Based on regulation on urban planning and relic restoration issued by Ministry of Culture & Information.
- Letters providing guidance on making up and approving master plan;
- Circular 03/BXDKTQH
- Circular No. 35/TTg
- Decision No. 322/BXD-DT providing guidance on making up construction master plan;
- Circular No. 25/BXD-KTQH of Ministry of Construction guiding consideration and approval of urban construction master plan.

II.2. Scientific basis

- Based on master plan for the relic site to the year 2010.
- Decision No. 1018/1997 QD-TTg dated 29/11/1997 approving General Socio – economic Master Plan of Quang Nam province up to 2010;
- Based on Socio-Economic master plan for Duy Xuyen district, Quang Nam province.
- Decision No. 3024 dated 24/10/1996 of Quang Nam – Da Nang province People’s Committee approving General Master Plan for Tourism Development in Duy Xuyen district, period 1996 – 2010;
- Notice of meeting conclusion dated 5/9/1996 on General Master Plan for Tourism Development in Duy Xuyen district, period 1996 – 2010 of Quang Nam – Da Nang province People’s Committee;
- Based on Decree No. 45/CP dated 22/6/1993 in which Quang Nam, Da Nang and Hue are one of 3 focused tourism centers nation-wide;
- Based on General Master Plan for Tourism Development in Duy Xuyen district;
- Based on Vietnam design standard 4418-1987 TCVN issued by Ministry of Construction;
- Based on Vietnam design standard 4454-1987 TCVN issued by Ministry of Construction;
- According to General Master Plan for Conservation and Restoration of My Son Sanctuary made by Relic Conservation and Design Center in 1985 and approved by Quang Nam – Da Nang province People’s Committee;
- According to the recorded documents on historical study and scientific files prepared by Relic Conservation and Design Center;
- Based on archaeological survey results, current status study results concluded by Relic Conservation and Design Center;
- Based on historical and scientific documents made by Cham-study experts, archaeologists and scientists in other fields studying My Son relics;
- According to General Master Plan on Tourism Development in Duy Xuyen district in period 1996 – 2010 approved by Quang Nam – Da Nang province’s People’s Committee;
- According to location map issued by Relic Conservation and Design Center in 2002.

III. NECESSITY OF MAKING UP MASTER PLAN FOR MY SON SANCTUARY

- Since liberation of South Vietnam up to early 1980s, My Son had been left forgotten. During 10-year operation of Poland – Vietnam group for Cham relics conservation, such groups as B, C, D were reinforced, and a part of group A was found (1981 – 1991). Since then up to now, the conservation activities in My Son sanctuary have been carried out separately, without a long term and overall plan as well as unique orientation.
- Management work is lacking unique instructions from upper level, sector and clear classification in many aspects:
 - + Management of area, region
 - + Management of protection skills
 - + Management of conservation and restoration
 - + Management of exploitation
- Service activities without an unique control.

- Especially, no legal system, regulations, or detailed guidances are available.
- The above actions happen in this important relic area, while daily hourly My Son is seriously degrading. Therefore, making up of master plan for conservation and value promotion of My Son sanctuary is extremely urgent and necessary.

PART II

OBJECTIVES AND SCOPE OF MASTER PLAN STUDY FOR CONSERVATION AND VALUE PROMOTION OF MY SON SANCTUARY

I. OBJECTIVES OF MASTER PLAN

- Orientation of plan, strategy for stable and long-term conservation and value promotion of My Son sanctuary in natural and traditional scene;
- Orientation of tourism potential exploitation, organization of activities, service management for My Son sanctuary;
- Contribution to tourism development, change of socio-economic structure in Quang Nam province, Duy Xuyen district in particular, and nationwide in general.
- Being a basis for establishment and implementation of conservation and restoration projects and exploitation organization for this relic site.

II. SCOPE OF MASTER PLAN STUDY

- Analysis and evaluation of current status of master plan area, natural conditions – resources, construction, conservation and technique of the relics, general evaluation of land to withdraw conservation, restoration, exploitation possibilities as well as all the natural resources in master plan area for the purpose of socio-economic development.
- Organization of master plan structure, division of functional border and protection area in master plan.
- Defining long-term plan (to the year 2015) for each functional area, making plan and orientation of solutions for conservation and value promotion of the relics.
- Organization of technical infrastructure system, making up of plans for environment protection and improvement.
- Organization of exploitation management and promotion of all effects of the relics.

PART III

FEATURES AND CURRENT CONDITIONS OF THE SITE

- I. HISTORICAL FEATURES**
- II. NATURAL FEATURES**
- III. ANALYSIS AND EVALUATION OF CURRENT CONDITION**

III.1. Basis for evaluating current condition

Based on investigation and survey results:

- Topographical measurement results
- Survey results of current condition

III.2. Land using status

- Total area for design and master plan: 7,787,500m²
- Relic site: 17,946m²
 - Group H : 429m²
 - Groups B, C, D : 5,650m²
 - Groups A, A' : 2,575m²
 - Group G : 1,292m²
 - Groups E, F : 3,925m²
 - Group K : 500m²
 - Group L : 500m²
- Land for transport: 17,500m²
- Field land : 13,750m³
- Water (river, stream)
 - Dry season : 20,000m²
 - Flood season : 30,000m²
- Land of Management Unit: 5,020m²
- Reception building: 2,760m²
- Mixed forest : 363,730m²
- Natural forest : 7,328,090m²
- Vacant land : 24,100m²

III.3. Current status of the relic site

III.3.1. Technical status in conservation of the site

After the war, in My Son valley, there was no any undestroyed monument. The general feature of this site was ruins. According to survey, there were 30 monuments with wall of 1m or higher. Most of the ruins in My Son (except the relics restored in 1980s) were in the forms of being divided into pieces, collapsed or buried in soil piles, cracked or dilapidated by timing and bombing. Brick and rock were weathered due to high humidity and temperature differences. Trees grew everywhere on the whole site. All were in extremely bad status. The monuments were in danger of being collapsed at any time like Kalan G1 which was temporarily put fence around, nobody was allowed to approach or enter inside. Or many monuments still stand thanks to wild trees with interlacing roots.

III.3.2. General evaluation on actual status of the heritage

III.3.2. Reasons affecting technical status in conservation of the relics

II.3.3. Conservation and restoration status

- Since the first years of 20th century, the scientists from French university EFEO did not only come to My Son for study. They also organized clearance and collection of

artifacts then brought to display in Da Nang, Hanoi and Sai Gon. Urgent reinforcement of some foundations in danger of being collapse had been carried out.

- From 1981 to 1991, after 10 year establishment and operation, the Polish – Vietnamese team for restoration of Cham relics had obtained certain achievements:

- + Some temples in My Son were measured by photogrammetry (1981)
- + 1982 – 1986: focus on repair of groups B, C, D

Kalan C4 – C5 – C6 – C7, B3 – B4 – B7 – B9, Mandapa D1 – D2, Kosa Graha B5 – B6, C3, Posha D3 – D4 have been urgently reinforced or partly restored.

Thousands of artifacts or details have been collected, marked and put numbers before placing to their old locations or displayed at storage D1 and D2.

- + Foundation of B1, D1 was surveyed
- + From 1987 – 1991, continued in groups B – C – D (restoration of surrounding walls, master plan for road, new roofing of iron sheets for D1, D2...)
- + Clearance and moving all soil covering groups A1, A7, A10. Kalan A1 was cleared along with stone Linga – Yoni altar.
- + Restored surrounding walls of group A, technically improved all groups A – B – C – D.

- In the next years, from 1991 – the Relic Management Unit of Duy Xuyen District still continued clearing trees and grass in groups G – E – F – H.
- In 2001, archeological excavation in Khe The stream, found many artifacts
- In 2002, transport project: construction of road and bridge to the relic site performed by Duy Xuyen District.
- End of 2002, archeological excavation, found group F (towers F1, F2)

III.4. Present status of architecture and construction

House (level 4) 215m²: tile roof, brick wall, wooden ceiling structure, in which:

- Office of My Son Sanctuary Management Unit:	70 m ²
- Public toilet at Management Unit:	30 m ²
- Public toilet at Reception Station:	30 m ²
- Houses of staff to protect the relics at Reception Station:	40 m ²
- Guest house (called Doi house) for experts inside the relics area	45 m ²
Total:	215 m ²

Temporary house 730m²: wooden pillar, leave-covered roof, in which

- Service house at Management Unit:	150 m ²
- Service house at Reception Station:	100 m ²
- Performance house at Reception Station:	200 m ²
- 8-side stop-for-rest house at Reception Station:	40 m ²
- Performance house at Doi house area (built in 2002 for festival):	200 m ²
- 8-side stop-for-rest houses:	40 m ²
Total:	730 m ²

III.4.1. Transport status

III.4.1.a. Current status of transport outside the relic area:

At present, tourists come to My Son in 2 ways:

- Road transport: Along Highway No. 1, through Nam Phuoc cross, follow provincial road 610 to My Son. This road was improved in 2002.
- Waterway transport: From Hoi An to My Son by river way, through Giao Thuy port. Waterway is an advantageous means of transport which can be combined into a tourist site with other places such as Hon Kem, Da Dung, Dai Duong orchard, My Son holly land. However, at present, there's no strict management and organization as well as good means of transport as a result of limited number of tourists visiting My Son in this way. The number of tourists using waterway to visit My Son is average 30 persons/year.

III.4.1.b. Current status of transport inside the relic area:

- Previously, there was only one road accessible for car from the Relic Management Unit to the site. Connecting to this road is tracks toward groups B, C, D, A, F, G, H. Other tower groups still have no accessible road.
- Cross section of road: 5m
- Cross section of track: 0.8m – 1.5m
- Bridge made of wood
- At present, road from Khe The bridge to terminal inside the relic site has been improved:
 - + Cross section of road: 5.5m
 - + Structure: concrete with gravel on surface, thickness 3cm
- Some have been built with reinforced concrete:
 - + Bridge over stream to group B – C – D, reinforced concrete structure, cross section 3m
 - + Bridge over stream to group G – E – F, reinforced concrete structure, cross section 3m
- A new road from group E – F to terminal
 - + Structure: soil
 - + Cross section: 3m
- 2 new bridges on this road
 - + Structure: soil
 - + Cross section: 3m
- Means of transport inside the relic site: from Khe The bridge to the relic site mainly by small car (ZIP).

III.4.2. Drainage

- The whole master plan area has no drainage canal yet. Wastewater, a part absorbs by itself, the remaining freely runs down to streams or to The stream then Thach Ban lake.

- At present, “The” stream is the main way for water drainage. Due to being deposited and covered, stream flow have been narrowed, thus caused waterlogging in rainy season due to flood can not drain out.

III.4.3. Power supply

At present, a power line 0.4KVA - medium voltage supplies power to this tourism area. This power line supplies power to reception station. Electricity is used to serve for lighting and necessary living demand of Management Unit and Reception station. Currently, the generator is located near terminal inside the relic site.

III.4.4. Water supply

Inside the master plan area, there are many stream sources running through but unusable due to pollution and often dry in dry season.

The using water is from wells. At present, the Relic Management Unit had two drilled wells. Reception station and guard house also have 2 drilled wells. Water from these drilled wells is pumped to tanks locating in roof of toilets for using without treatment process. Water is found to be contaminated with alum.

III.4.5. Green trees

Natural forest area makes up a large part in the master plan area. Besides, around towers, there is hybrid forest with many eucalyptus but no typical green trees yet. The Relic Management Unit of Duy Xuyen District has also planted new trees on the roads. However, there’s still vacant ground due to previously being burnt for cultivation by local inhabitants.

III.4.6. Communications

Available telecommunication station at commune level which was built just outdoor of master plan area.

III.4.7 Environmental hygiene

At present, Management Unit arranged dustbins, collecting wastes and dust by manual power. In some areas like tower group H, group A, group K., etc, waste and dust have not been treated causing environmental pollution.

III.5. Current status of exploitation

Existing staff at Relic Management Unit

+ Leaders	: 2 people
+ Guard section	: 8
+ Tourist guides	: 6
+ Accountant, admin, finance	: 4
+ Professional	: 14

State’s and professional management at provincial level is Provincial Department of Culture & Information. Province People’s Committed established Quang Nam Center for Heritages & Monument Conservation in order for management of heritages and monuments in Quang Nam province. However, management classification has not been made clear, no regulation has been available for tourists as well as no regulation for management and protection of the relics.

III.5.1. At present, My Son Sanctuary is assigned to be managed by Duy Xuyen District People's Committee. A management unit was established by the Committee for direct management, protection and exploitation of My Son relic site. The exploitation management is mainly based on available natural resources, there is no supportive services yet.

III.6. Current status of services and facilities

- Up to present, in Duy Xuyen district, there is no any guest house nor inn where the tourists can stay overnight. This is an obstacle in tourism development.
- Food and drink services for tourists have not been considerably organized. Tourists have to find food and serve themselves.
- Souvenir services are spontaneous, without organization. Though there's strength in traditional handicrafts, the quality as well as model are not special and have no local features yet.
- Inside the relic site, at Management Unit, there is no facility to provide food and drink services as well as overnight accommodation. Such facilities are built by local residents, as a result of confusion and lack of good site control.
- The facilities (house at level IV) inside Management Unit and reception station were mainly built for staff of Management Unit. At Management Unit and reception station, currently there are only 2 public toilets and 2 stop-for-rest houses where drinks and souvenirs are sold to tourists.
- In early 2003, in order to serve festival, My Son Sanctuary Management Unit have built some tents using wood and covered with leaves as the performance place and providing services to Doi house area. (Please refers to status of architecture and construction).

PART IV

INTER-AREA SOCIO-ECONOMIC AND CULTURE MATTERS

- I. NATURAL FEATURES OF SOCIO-ECONOMY.
- II. SOCIO-ECONOMIC FEATURES OF DUY XUYEN.
- III. MY SON IN CULTURAL VALUE SYSTEM OF QUANG NAM PROVINCE AND IN CHAM VESTIGE SYSTEM IN CENTRAL PROVINCES.
- IV. FORECASTS ABOUT REGIONAL CULTURAL AND ECONOMIC DEVELOPMENT
- V. CONCLUSION:

My Son Heritage locates in an area potential and having condition for development in all aspects of socio-economy. Investment for value conservation and promotion of My Son heritage is one of the especially necessary works, in order to make a premise for culture and tourism development strategy for the whole area and province, and being

one of the target for changing and developing socio-economic structure of area and province.

PART V

BASIC ORIENTATIONS IN MASTER PLAN FOR CONSERVATION AND VALUE PROMOTION OF MY SON SANCTUARY

I. BASIS FOR ORIENTATIONS IN MASTER PLAN

- Based on the points of view and documents concerning restoration of modern relics with principles: “restoration first and foremost in order to conserve the relics” affirmed in Charter Aten in 1932 and Venice in 1964;
- Based on actual restoration of Cham relics in My Son as well as other Central provinces over the past 20 years carried out by the Relic Restoration and Design Center;
- Based on present conditions of the site.

II. ORIENTATIONS IN MASTER PLAN

II.1. Restoration work

- Basic method: “Saving, prolonged and full conservation of all the relics, all architectural details and decorations of My Son in system of the relics, landscape and ecological system of My Son – Tra Kieu – Thu Bon river – other Cham relics – Hoi An – Cu Lao Cham”.
- Urgent tasks: priority given to save the relics that are buried, collapsed, brought them to safer status.
- Maintain current status
- Restoration: priority given to maintain and protect to avoid deforming, removing from original status, careful and limit restoration works.

II.2. Restoration and exploitation

Conservation and recreation of landscape, biology inside the valley, surrounding mountains as a forbidden forest. Master plan for landscape and tourism under the form of a historical and cultural park, to ensure the relic site exist in natural space, ensure distance between modern life and relics.

III. PROPOSAL ON PLANNING BOUNDARY

III.1 Basis for proposal on planning boundary

- Based on proposal on protection boundary of the project on conservation and value promotion of My Son Heritage approved by Da Nang People’s Committee.

- Based on proposal on protection boundary of engineers from Milan Carlo Maurilio University proposed in 1999.
- Based on topography and landscape of the area as well as on specific & traditional values of landscape.
- Based on the orientation for conservation and value promotion of My Son.

III.2 Proposal on scope of research for Master Planning.

- Because the heritage locates in the middle of My Son valley, within a typical natural land-scape, scope of research for master planning shall be in My Son valley and limited by surrounding mountains with diameters of around 2km, including Van Chi mountain peak, Hon Ngang mountain peak, Da Beo mountain peak, Ky Vi mountain peak and Mat Ma mountain peak.
- Planning boundary in the North and Western North is Thach Ban Tourism area and Thach Ban reservoir (under design)
- In the South, East and West, is natural forests.

PART VI MASTER PLAN OF THE RELIC SITE

I. AREA DELINEATION FOR PROTECTION

I.1. Basis for specifying protection areas

- Pursuant to Article 32 of the Law on Cultural Heritage of the Socialist Republic of Vietnam;
- According to Guidance on Relic Protection Area – Vietnam Standard QCXDVN Volume I in 1997 and TCVN 4449 – 1987;
- According to the latest archeological survey results issued by the Relic Restoration and Design Center and Institute of Archeology;
- Based on other scientific documents.

I.2. Detailed master plan for area delineation

I.2.1. Protection Area No. I

This area is located inside tower groups and surrounded by walls (from walls outward – average 100m).

Total area of Protection Area No. I: 324,600m²

Area H:	6,945m ²
Area B, C, D:	13,700m ²
Area G, A, A*:	27,675m ²
Area K:	5,600m ²
Area N:	5,600m ²

Area L:	2,500m ²
Area M:	5,600m ²
Area O:	5,600m ²

I.2.2. Protection Area No.II

Is the area for revised planning, landscape improvement and heritage protection, total is 7,418,220m², marked as LII and being divided into 2 areas:

1.2.2.a The revised planning area includes Management Unit area, landscape on both sides of road toward the relic site and area surrounding Area No. I.

These areas include:

- The whole Management Unit area to bridge over Khe The
- Along the road, on mountain side, taking account of 100m from center line, on stream side taking account of whole stream bed and 100m outward from stream bank
- On the relic site, the area surrounding Area No. I, taking account from Area No. I outward 50m

Total area of Area No. II: 719,412m², marked LIIA

I.2.2.2.b Protection Area No LIIB.

The whole remaining area is in the research scope of master plan. This area is calculated by limit of mountain peaks around My Son valley along both road sides from Khe The to the relic site and a part borders the Management Unit.

Total area of Area No.3: 6,698,808m², marked LIIB

This is the protection area for the purpose of natural protection and ecological tourism.

II. MASTER PLAN FOR LAND USING

Due to special features of master plan area, specifications are differently applicable for each area in maser plan.

The allowable area and unallowable construction areas are applied the following specifications:

1. Construction density: from 5% - 20% in accordance with land lot features.
2. Number of floor: max. 1 floor
3. Power supply:
 - Power KWh/person/year: 200 (first stage), 7000 (long-term after 10 years)
 - Additional power KW/1000 persons: 100 (first stage), 230 (long term after 10 years)
 - Number of hours using power /year: 2,000 hours
4. Water supply
 - Water supply litre/person/day: 80 – 100 (first term for 10 years), 120 – 130 (long term after 20 years)
 - Public water: 40 litres/person/day

5. Drainage:

- Specifications for wastewater use same as water supply specifications
- Frequency of natural drainage exceeds calculation $P = 2$ years

6. Waste treatment management

- Waste kg/person/day: 0.7 – 0.8 kg
- Collectable waste: 60 – 70%

II.1. Master plan structure

II.1.1. Option I: (selected option)

6-3 II.1.1.1. Planning structure

a. Organization of planned space

- Master Plan for conservation and value promotion of My Son heritage takes the heritage protection area (Area I) as the center point for organization of planning space. All supporting areas will be removed from this area in order to avoid any impacts to the heritage and to separate modern activities from the heritage.
 - Outside area I, to organize supporting items in order to manage, protect and serve for tourism and visit purposes.
 - Management area, service area and parking area shall be arranged outside Khe The. In this place, items served for Management Unit will be arranged: one museum to give introduction to visitors before entry into the heritage, one parking area for visitor, one residential and working area for experts, one service area serving for visitor's necessity and some small motels for those who wish to stay overnight. All these items shall be planned in the land lot LIIA1, LIIA2, LIIA3. All modern transport modes must be stopped in this area (before Khe The bridge), not allowed for coming into heritage (not allowed to go through Khe The bridge).
 - Reception station is planned for locating near area I (Protection area No. I) as a terminal for visitors. In this area, to organize reception works and small services for visitors, to arrange working station for heritage's guards. Besides, there will be planned for some other functions to promote intangible values and to serve visitor's accommodation demands like: festival ground, performance house, camping area.
- b. Starting from Khe The, visitors are required to walk or use transport's modes provided by Management Unit. Planned transport's modes are horse cart. Transport system is organized as follows:
- + Transport by horse cart: going through Khe The by existing transport modes in the heritage (which will be upgraded), then gathering in the reception station, from here, visitors will walk for visiting.
 - + Open a walkway along The river (in the north side of The river), in combination with other ecological walk organized in area II which going through the immersed road across THE river and gathering in reception station. From here, visitors walk to the heritage (area I.)

In this planning structure, reception station is acted as a big transport intersection/ terminal before entry into the heritage.

The remaining areas in the area II will be reserved for improvement of landscape, development of forest and ecological tourism.

6-4 II.1.1.2 Detailed master plan for Area No. 1

- Mark LI, area 324,600m², making up 4.2% of the whole area. This is Protection Area No. I – inviolable area being protected by the Law on Cultural Heritage.
- In this area, all the remaining traces needed to be conserved for a long time and not allowed to change. The works that are necessary to be carried out in this area:
 - + Basic study on the relics such as material used for building the monuments (brick, rock, cohesive...)
 - + Combination structure of the relics: construction structure, bearing capacity of blocks, foundations of the relics, geological conditions...
 - + Factors affecting the relics: mould, climate, hydro-meteorology, geology, biological system
 - + Clearance of the relics:
 - * Archeological survey on area of 324,600m²
 - * Survey to find exploitation location, construction material production
- Set up an information and documentary system for the relic areas
- Restoration: reinforcement, description of existing original components in order to prevent degrading of the relics based on the traces specified after discovering archeological monuments and study results.
- Restoration of each relic based on the original documents
- Unique conservation of the whole ruins using advanced technology.
- Collection of discovered artifacts and display on the spot.
- Protection and improvement of landscape, restoration of the relic site
- Adjustment of road system inside Area No. 1 for helping the tourists to orient the entrance.
- Open some more roads inside the relic site to approach tower groups which now don't have connecting roads such as groups A', L', K, N, M, O.
- Connect roads inside the relic site to create a closed sight-seeing route
- Move all the available reception station in Area No. 1 to Area No. 2 (LIIA4)

II.1.1.3. Detailed master plan for Area No. 2: Mark LII including land lots LIIA, LIIB. Total area is 7,462,900 m²

This is the revised construction area. In this area, beside improvement of the only road from Khe The to reception house (Lot LIIC), open one more road for ecological tourists (pedestrian) on other side of Khe The to the relic site.

- Construction: Management Unit area (Lot LIIA1)
Museum (Lot LIIA2)
Parking & service area (Lot LIIA3)
- Move all the existing reception station in Area No. 1 to lot LIIA4 of Area No. II.

LAND USE BALANCE TABLE

No.	Land type	Mark	Area	Proportion	Remark
1	Area I – Inviolable area	LI	324,600	4.2%	
2	Area II	LII	7,462,900	95.8%	
	Area of revised planning for improvement of landscape	LIIA	719,412	9.2%	
	Area of landscape protection	LIIB	6,743,488	86.6%	

II.1.2. Option II

- Improve the whole existing road and construction of additional route for ecological tourism, adjust the current roads inside the relic site and construction of some new roads same as Option I.
- Build outside of Khe The Management Unit, parking and guest houses for visitors.
- Adjust and re-build the existing reception house at the same time, master plan at camping area and festival yard
- Build car parking area outside Khe The and inside the relic site

II.1.3. Comparison of 2 options

6-5 II.1.3.1. Advantages and disadvantages of 2 options

In general, transport and master plan in delineation of protection area in two options are the same.

Option I

Advantage:

- + Move reception house outward of the focused relic site to create a transition between pedestrian and vehicle transport is considered reasonable regarding to sight-seeing route.
- + Provide favorable conditions for better protection and management of the relic site, more convenient in new construction but not affect the relics.

Disadvantages:

- + More costly in investment

Option II

Advantage:

- + Improve and develop the old reception station are less costly.
- + Service area for tourists put close to the relic site would be more attractive.

Disadvantages:

- + This option violates protection areas and cause difficulties for management and protection of the relic site. Organization of construction will affect the heritage.

6-6 II.1.3.2. Selection of option

Comparing advantages and disadvantages of both options: though option 1 is more costly in investment since it will require to move the old reception house, but in respect of protection, this option is more suitable. Moreover, it will also invest in new management services, we therefore request to select option I.

II.2. Master plan of total area for land using

(Total area: 7,787,500m²)

No	Land Type	Mark	Area	Proportion (%)	Remark
I	Area I	LI	324,600	4.2	Of the whole area
II	Area II	LII	7,462,900	95.8	Of the whole area
1	Land for construction of Management Unit	LIIA1	1500	0.02	of the Area
2	Land for construction of museum	LIIA2	4,865	0.6	of Area LII A
3	Land for construction of parking + services	LIIA3	5,491	0.07	of the Area
4	Land for construction of reception station	LIIA4	19,028	0.24	of the Area LIIA
5	Land for adjustment of natural forest	Remaining parts	688,528	8.8	of Area LIIA
III	Land for transport	GT	16,000	0.2	On the whole area
	Main transport	GT1	9,000		On the whole area
	Pedestrian transport	GT2	7,000		
IV	Water surface	MN	30,000	0.38	On the whole area
	TOTAL			100%	

III. CONTENT OF MASTER PLAN FOR INFRASTRUCTURE

III.1. Transport

Road for transport from outside to the Relic Management Unit has cross section 15.5m connecting from Road 610 to Management Unit. Within scale from Management Unit to the relic site, there is a main road with cross section of 5m through Khe The bridge to the reception house. From reception house to the relic site, there is a pedestrian road with cross section of 2m.

- Besides, there is a road with cross section of 2m for ecological tourism along The river bank to reception house.

- Transport inside the relic site is pedestrian road with cross section from 1.5 – 2m
- Waterway transport from Khe The bridge along The river to reception house

III.2. Power supply

Use power from power line connecting from proposed generator of My Son – Thach Ban town to the Relic Management Unit. Installation of a separate generator for the relic site.

Provide lighting system.

III.3. Water supply

Use water from wells (1 at reception house and 1 at Management Unit) then pump to treatment section and supply to each items.

III.4. Drainage

Mainly natural drainage. Along the road 5m, there is drainage canal on the mountain side to gas hole then to The stream.

- Wastewater through treatment tank then runs to The stream
- Flood drainage is an important and complicated work. To combine with My Son – Thach Ban tourism resort to build a dam in Thach Ban lake's direction and reception house to reserve water in dry season, dredge stream sources in flood season, at the same time, rehabilitate Thach Ban lake for water reservation.
- Open new water sources, build dam to divide water flows into branches for better drainage

III.5. Leveling

Leveling on master plan area is limited. Inside construction site, it is necessary to level based on topographical conditions. Slope toward Thach Ban lake for drainage. Embankment at some stream sections, especially which run through the relic site for prevention of soil collapse during rainy season.

III.6. Trees

- In master plan area mainly plant natural forest and partly mixed forest with unsuitable trees such as eucalyptus.
- Protect and develop natural forest (mainly in Protection Area III)
- Areas I and II: eliminate eucalyptus in the mixed forest. Plant suitable trees with flower and cool shade such as cajuput, flamboyant, pine trees (LIIA4).
- The sanctuary management office area (Lot LIIA1 and LIIA4), reception house area (Lot LIIA4) shall be combined in the plan for new construction and the local orchards plantation, in order to take the full advantage of their shade and to satisfy the visitor's demand for enjoying the local products on the place.

III.7. Environment hygiene:

In the planned area, there are mainly rubbish from nature and waste discharged from visitors. It should place dustbins along the travelling road lines, collect the rubbish to 2 places: the management office and reception house, then transport them to rubbish dump at My Son – Thach Ban tourism area.

III.8. Fire prevention

To arrange fire prevention system, forest fire precaution station and equipment for fire prevention in office buildings and relic site.

III.9 Organization of management mechanism for protection and tourism exploitation activities

Purpose: to enhance management and protection of heritage exploitation. To strengthen tourism activities in order to attract visitors and keep them staying longer.

PART VII SOLUTIONS FOR DETAIL MASTER PLAN:

I. Detail master plan solutions

LAND USE BALANCE TABLE

No	Land Category	Marked	Area	Proportion to the area	Proportion to the whole area	Remarks
I	Area No.I	LI	324,600	100	31.09	
	Heritage	DT	17,946	5.52	1.72	
II	Revised master planning Area	LIIA	7,642,900	100	68	
1	Management Unit Area	LIIA1	5,491	0.2	0.02	
2	Parking & Service Area	LIIA4	5,491	0.76	0.07	
3	Museum	LIIA2	4,865	0.67		
4	Construction land for Reception station	LIIA4	19,028	2.6	0.25	
III	Water	MN	25,000		0.33	
IV	Transport	GT	16,000		0.21	

DETAILED SPECIFICATIONS FOR EACH AREA

No	Land Category	Marked	Area	Floor area	Constructi on density	Number of storey	Trees (%)
I	Area No.I	LI	324,600	Not allowed for construction			
II	Area No. II	LII	7,462,900				
1	Management Unit Area	LIIA1	1,500	500	≤ 20	1	55
2	Parking & Service Area	LIIA3	5,491	550	≤ 5	1	50.1
3	Museum	LIIA2	4,865	1400	≤ 30%	1	55
4	Construction land for Reception station	LIIA2	19,028	1000	≤ 6	1	81.7
5	Remaining areas				0.1	1	

II. Solutions for conservation and restoration

II.1 Main contents of conservation and restoration works

II.1.1 Bomb and land mine clearance:

This is the work should be done in advance, although the war has gone over long time ago. Bomb and land mine clearance have been executed many times, but it has not been executed yet in the whole area (especially in the area I and II).

Bomb clearance scale: 1,044,012m²

II.1.2. Basic study:

- Basic study should be carried out comprehensively and completely in the sanctuary and its surrounding area to support for conservation & restoration.
- Basic study includes:
 - + To do archeological survey
 - + To carry out the research on materials used inside the monuments area including brick, rock, adhesive, ...
 - + To study structure construction: existing loading capacity of masonry, monuments foundation, engineering geology.
 - + To study generally the environment surrounding the sanctuary area, the factors affecting the monuments: climate, natural calamity, hydro-geology, plantation, creature, mould.

II.1.3. Monuments restoration works

- Clean the masses of earth, collect the artifacts of collapsed monuments.
- Check, record and make the current status profile.
- Pick up wild grass and shrubs in the temples, carry out urgent preservation.
- Relocate the objects and debris.
- Reinforce the remains, prevent the collapse in part, whole of the remaining structures.
- Organize the space of temples groups to ensure the good conditions for monuments existence and the convenience for visitors.
- Restore each very small part of lost objects following the principle of document research and in-site restoration.
- Organize open-air exhibitions of artifacts, which are big size and impossible to relocate in the original positions.
- Carry out preservation to prevent brick weathered, pick up wild grass and shrubs in the monuments by the best advanced technology without causing the damage to monuments and environment.
- Drainage surface water to prevent the flood.
- Construct dams (through spring) to keep water in dry season, drain water in flooding season.

II.1.4. Basic solutions in archeological works

- Archeological excavation work should be carried out carefully and meticulously. This would be done only after having sufficient conditions for consolidation and restoration of vestiges.
- In case it is unable to maintain vestige, archeological excavation should not be carried out.
- Archeological excavation should use measures which will not touch vestige, such as distance measuring, hole boring for investigation or digging canal for checking.
- Archeological excavation should be done at the same time with camp construction for vestige restoration.

II.1.5. Some basic solutions in conservation & restoration:

- Consolidation measure: This is major measure for conservation & restoration of My Son ruins. It is possible to use new materials such as cement, concrete, steel, epoxy by exposed or unexposed measures in conservation & restoration. These consolidated structures are built to keep the remains from falling only, not to restore as their originals. The experiences in restoration of Cham temples in the central region in the past 20 years have shown that the ruins are stable after being consolidated.
- Relocation measure (anastilose): Collect the debris/pieces of the originals lying scattered and place them in their original positions; Arrange and join the collapsed parts as their originals. This is also major solutions in conservation and restoration of My Son sanctuary.
- Partial rehabilitation:
 - + This solution should be carried out very carefully, mainly to hire the missing parts due to bomb inside the temple structures. Partial rehabilitation measure is adopted sometime as a solution to consolidate the original parts aesthetically. In partial rehabilitation, the restored parts must be easily distinguished from original parts.
 - + Exhibition organization at the sanctuary (lapidarition):

This is the solution to restore and develop the monuments. During the exposition of the masses of ruin and buried temple blocks, site clearance, it is necessary to collect the original ornamental pieces. These pieces will be preserved and displayed on place until their original places are defined, they will be relocated.

II.1.6 Some maintaining measures:

II.1.6.1. Vegetation extermination

Using chemical substances for extermination of vegetation, to prevent their growth in tower's wall. Chemical substances should not make harm to other bricks, stone and materials.

II.1.6.2. Fungi and mould destroying

Due to soft features of brick and stone, usage of mechanical measures will not clean all fungi and mould in the surface of brick and stone. It is necessary to use a system of suitable chemicals to clean all fungi and mould without causing damage to brick and stone.

II.1.6.3. To glue cracks on the surface

Using sticky materials with expansive co-efficient equivalent to that of brick and stone, and without containing components may cause harm to brick & stone surface, in order to glue cracks on the surface – the place where spore may grow and cause damage to the vestige.

II.1.6.4. To glue cracks on the surface

Using surface coverings for prevention of erosion and abrasion of environment to vestige. Surface cover must ensure that it would not change vestige's surface, would prevent water from outside but would not prevent evaporation from inside, would ensure expansion caused by temperature, cracks, and would ensure intensity for prevention of erosion and abrasion of environment.

II.1.7. Basic solutions for surface drainage and flood prevention for the whole area and for each tower group.

II.1.7.1 Solutions on drainage

- In order to create quick drainage – it is necessary to have solutions for dredging of The river.
- Create additional water stream branches in mountain's side, in order to restrict devastation power of flood.
- Re-dredge old water current of The stream which were buried in the West of relic site, divert the current to this direction.
- Widen the bottleneck section of The stream in outside relic area for quicker drainage.
- Dredging of The stream will contribute to rehabilitate traditional landscape of tourism area.

II.1.7.2. Anti-erosion Solutions (Lot LII A4)

- To combat erosion caused by rain and flood and ensure ecological environment, use biological solutions to keep soil at the two banks of stream and hill slopes to prevent soil erosion, such as:
 - + Use some botanical species like grass and trees having root spreading deeply to keep soil.
 - + Do not use measures like constructing concrete slope protection dyke.

II.1.7.3. Solutions for anti-partial waterlogging.

- To resolve partial waterlogging in each tower groups, it is necessary to combine excavation of tower's foundations to their original base with organization of natural drainage to streams.
- To dredge some underground ditches surrounding tower groups to draw surface water, then let water running to streams.

II.1.7.4. Solutions for water in dry season

- To construct a dam in combination with immersed way through stream in area of Lot LIIA4 in order to keep water in The stream in dry season.

III. Solutions on planning, improvement and exploitation organization

II.1 Contents of planning and improvement

- Protect, create the natural landscape, floristic composition
- Arrange the walkway system in the area I convenient for going to the monument area. Make more walkways inside the monuments area to go to the temple area which have not and walkway to go inside such as temple groups A', L, K, N, M. Link the transportation road lines to be the continuous travelling road line.
- Additionally construct some items serving tourists
- Upgrade the road from the Management Office to the reception station. Make more walkways for traveling along Khe The stream from the management office to the reception station.
- Remove the existing reception area in the Area I to the Area II (Lot AII A4)
- Make planning for signboard and introduction indicators about relic site.
- Improve the management office area, parking place (Lot LiiA1, LIIA4).
- Construct 2 water supply stations in the Area LIIA3 and LiiA4 for water supply in the initial stage.
- Construct electricity supply station 35kVA to supply electricity in the initial stage.

II.2 Solutions for planning and exploitation organization

- Consolidate Heritage Management Board with professionally trained staff for relic management with the following functions and duties:
 - + Protect, receive, introduce and instruct tourism and visits.
 - + Frequently take care, supervise and eliminate botanical growth and violations of visitors.
 - + Provide support and emergency help when necessary.
 - + Manage, control technical system.
 - + Organize service system in the relic site.

It is planned for Relic's Management Unit including: (in accordance with standard 1 of sectors and branches TCVN 4448: 1997):

- + Leaders : 2 people
- + Reception and admin section : 4
- + Technical section : 7
- + Guard section : 8
- + Guidance and introduction section: 6
- + Accounting section : 1
- + Cashier : 1
- + Clerk : 1

Total : 30

- Establish a team of 5 people to be well trained for supervising and eliminating botanical erosion and mould growth, do maintenance works for heritages and roads.

II.2.2. Organization of research and supervision for rehabilitation projects shall be gathered in one clue which is Quang Nam Heritages & Monuments Conservation Center (under Quang Nam People's Committee).

- To promulgate regulations on tourism and visits, and exploitation organization in order to protect the heritage and prevent harmful factors.

II.2.3. Organize reception and transport for tourists.

- To organize a mechanism and vehicles for transport tourists to My Son Heritage by 2 ways: roadway and waterway:

Receiving point for roadway:

+ From Da Nang to My Son

+ From Hoi An town to My Son along Thu Bon river

Receiving point for waterway

+ From Hoi An town to My Son

Organize receiving vehicles inside My Son site:

+ Walk along ecological road

+ Horse cart from Khe The Bridge to reception station.

- To organize ecological tours to serve different demands:

Culture visit: within Quang Nam province, some culture tours can be organized like: Hoi An – Tra Kieu – My Son.

Champa culture visit: in Quang Nam province, it is possible to organize tours visiting Champa vestiges in Quang Nam with My Son is the focal point. From the North, it is possible to follow tours: Bang An, Tra Kieu, My Son, Chien Dan, Khuong My.

Culture tourism in combination with ecological tourism with My Son being the focal place: by waterway in Thu Bon river through Hon Kem Da Dung, Dai Buong fruit garden to My Son heritage, or by roadway to visit Duy Son II hydropower plant area (where landscape is nice) and by horse cart through Lon field, passing Lon hill to My Son.

In central region, it is possible to organize tourism route: visiting the World's culture heritages: Hue, Hoi An, My Son.

Visit Cham culture with My Son being the focal place: from the North, departure from Da Nang, visiting Cham antique museum then coming to Bang An, My Son. From My Son, visit Chien Dan, Khuong My and continue with other Cham's vestiges in other provinces like Twin tower, Banh It, Canh Tien, Duong Long, etc in Binh Dinh province; Nhan Tower in Phu Yen province, Ponarga tower in

Khanh Hoa province, Po.Kloonggrai, Porome and Hoa Lai in Ninh Thuan province; Poshanu , P Dam., etc in Binh Thuan province., etc.

II.2.4 Organize services for tourists and visitors.

Catering services – accommodation

Sale of souvenir, local handicraft and fine art products, local specialties.

II.2.5. Organize culture activities

Display and promulgate material and information about history, culture, architecture and art of My Son Heritage in particularly and Champa ‘s culture in generally.

Organize some culture activities to perform Champa’s national arts and festivals.

Organize relaxed, resting and camping activities.

II.3. Solutions of planning and rehabilitation of management and exploitation organization

II.3.1. Construct management items to serve for heritage in the land lot LIIA, LIIA2, LIIA3.

In the first step, to provide minimum services to visitors in Management Building area and reception station.

- + Items served for activities of Management Unit
- + Items providing services for tourists.
- + Reception station.
- + Museum for My Son heritage.
- + Building for expert’s working and accommodation.
- + Shop providing services of meals and beverages.
- + Small services: hair-cut, repair
- + Souvenir shop
- + Public toilet
- + Emergency station
- + Car parking and boat terminal
- + Rest huts and motels for visitors staying overnight.
- + Arrange in the Management Unit one lab with modern equipment serving for research on My Son and attracting contribution from scientists on conservation and value promotion of My Son.

II.3.2. Yard and vacant ground for organization of festivals and camping activities would be arranged in reception station area (Lot LIIA4), in combination with orchard.

II.3.3. Make planning on system of road sign and heritage introduction board

Road-sign and heritage introduction boards should be in suitable dimension with heritage and made by natural material (best choice is by sandstone) for harmonization with landscape and not concealing the heritage.

II.3.4. Catering and accommodation services for tourists should maximize indigenous forms and specific nationality in order to create unique characteristics and to control these activities and restrict its over-development in heritage’s border.

II.3.5. It is necessary to apply modern technology in tourism guiding and introduction activities.

- Computer technology to imitate vestiges in the heritage by 3-side images for introduction to tourists.
- Update latest information and discovery about heritage for introduction to visitors.
- Collect and re-perform some ancient ceremonies or ancient religion activities for introduction to visitors.

II.3.6. Vehicles for transporting visitors like horse carts and boats should be studied for shape design or imitation to special characters of Cham's people, in order to increase attraction to visitors.

- + Number of horse carts: from 5 to 10 carts
- + Automobile capable for carrying of 5 to 10 people.

II.3.7. Detailed design solutions for Management Unit's area, parking area, and reception station.

Definition of the scale:

Applied design standard of TCVN 4454: 1987; TCVN 44848:1987 issued by Ministry of Construction.

Scale definition for newly constructed areas:

- Management building: improve office bases for district's authorities: scale: 500 m²/ office, number of staff: 30-50 people.
- Museum area: shall follow display demand and display's intention: it is planned to display of around 1000 artifacts and scale introduction: 1,500 m².
- Parking area for automobile: at the highest time, number of automobile is as follows: 5 big touring cars, 10 small touring cars: standard is 35m²/big car and 25m²/small car; total area is 1000 m² including entrance way.
- Office and living house for experts: 12m²/person
- Living house for 4-6 experts: 50-60 m².
- Office for 4-10 experts: 6m²/person: total is 30-60 m².
- Small repair station (following district standard): 15-20m²/ platform, for 2 platforms; total is 30-40 m².
- Small service shop (hair-cut, repair) (following district standard): 12 – 20 m²/ seat, for 2 seats, total is 30-40m².
- Catering and beverage supply shop: in two locations: 1 in parking area in Lot LIIA3, 1 in the reception station in Lot LIIA4. Scale of 500 m²/ location.
- Performance house and out-door stage: 0.6 – 0.8 ha.
- Guest house area: 20-30 beds (motel area): 0.5-0.8 ha
- Electricity station: 100 m² (including guard's house)
- Water treatment station: 100 m², capacity of 50m³/ day & night.

Explanation about Master Plan for My Son Sanctuary

ID	Facilities	Marked	Area	Rate	Remarks
I	Management unit building area	LIIA1	1500	100	
1	Management Unit building		500	30	
2	Internal roads		225	15	
3	Trees		775	55	
II	Museum area	LIIA2	4,865		
1	Museum		1450	30	
2	Internal yard and roads		730	15	
3	Trees		2685	55	
III	Parking + Service area	LIIA3	5491	100	
1	Guard entrance		50		
2	Guest house (motels area on the hill)		200		
3	Catering and beverage shop		200		
4	Electricity station		100		
5	Water treatment station		100		
6	Small repair shop		50		
7	Small service shop		50		
8	Emergency and health care station		100		
9	Living house and office for experts		200		
10	Souvenir shop		100		
11	Police station		30		
	Total		1280	23.3	
12	Roads + Parking area		1050	19.1	
13	Rubbish gathering area		400	7.3	
14	Trees		2752		
VI	Reception area	LIIA4	19028	100	
1	Reception hall		50		
2	Service reception room		200		
3	Performance house		300		
4	First aids station		50		
6	Public W.C		50		
7	Car waiting terminal		20		
8	Office and rooms for staff of management unit		50		
9	Stable		100		
10	Water treatment station		100		
11	Huts (4 huts, 20 m2/one)		80		
	Total		1000	5.3	
13	Festival yard + internal walkways		2283	12	
14	Rubbish gathering area		200	1	
15	Tree + camping area		15,547	81.7	

IV. Architectural orientation:

- New constructions executed in this area should be attached to the monuments and harmonious with the natural landscape.
- The construction project must be scattered near the nature and scenery.
- Appearance decoration: do not use modern materials such as ceramic tiles, glass, zinc ...
- Roof: tile slope roofs are encouraged.
- Install unexposed equipment at the construction side on the road.
- Advertisement sign: do not install trading advertisement signs.
- Signposts should be made by natural materials with shape in conformity with general scenery and architecture, having Cham architecture characteristic.
- Materials originated from nature shall be encouraged.
- The height of constructed items calculated for the angle of 23° cutting item's pre-face and for items to be constructed on the roadside with cross-section of 5.5m is not allowed to be over 7.5m and should be at a distance of 15 m from the road's center-line.
- Due to the requirements for un-violating landscape and harmonizing with nature, angle of 23° shall ensure items to be in harmonization with nature and to be observed.
- For construction items on the roadside with cross section from 2m – 2.5m, angle cutting item's preface is 40° to 50° , angle cutting dimension 3x3. Construction items should be at a minimum distance of 3m from the road's center line.

. SOLUTIONS IN MASTER PLAN FOR INFRASTRUCTURE NETWORK

IV. 1. Transportation road:

IV.1.1 Main road: Cross -section is 5.5 m, scale is 9000m^2

Road for motor vehicle and horses from Khe The bridge to reception station

- Split stone structure
- Solution for the road without sidewalk

IV.1.2. Auxiliary road: Walkway cross section is 2m, scale is 7000m^2

- Concrete and coarse sand structure, decorated like natural soil
- Solution: Road without sidewalk with tree plantation strip in the middle, and leaning on the natural terrain, should not do ground leveling, slope is $\leq 12\%$.
- Bridge crossing spring: Reinforced concrete casted like artificial tree-trunk shape. Section is $\leq 2\text{m}$. Number: 9 bridges
- Dam: Reinforced concrete, number: 1 dam

IV.2. Electric supply:

IV.2.1. Additional electricity calculation:

- Electricity for living activities: 200KWh/ person/ year
- Additional electricity calculation per head: 100KWh/ 1000 peoples/ year

- Electricity for road lighting: according to lighting degree is 0.5 LUX
- Number of maximum usage capacity hours: $T_{max} = 2000h/ \text{year}$
- Select K: 0.7
- People number on the peak time: 1500 peoples

IV.2.2 Transformer station: 35 KVA

Construct 1 new transformer station with capacity of 35 KVA in the management office area.

IV.2.3. Grid 0.4KV

- Underground 0.4KVA grid provides electric to the construction groups.
- Zinc cables AC – 70 for main line and AC – 50 for subline

IV.2.4. Lighting

- Install lights along the main transportation ways, with capacity of 250W – 220V.
- The lighting system in the walkway is installed lower, 0.6m high in comparison with the ground level, capacity of 100 – 220 W.
- Lighting forms should be designed for harmonization with landscape and in natural forms. The best choice is to hide lighting source

IV.2.5. Work quantity:

- Open-air hanging type transformer:
- + 6 (22) 0.4 KW – 35 KVA: 01 station.
- + Line 4 (22) KVA, underground: 1500m
- + Underground lighting lines
- + Illumination of the main road: 150 sets
- + Illumination of the walkway: 200 sets

VI.2.6. Electricity source:

Duy Son II hydropower Plant project will supply electricity for tourism area of My Son and Thach Ban.

IV.3. Water supply:

IV.3.1. Water supply standard:

- Water supply for visitors: 80l/ person/ day and night
- Public water : 40l/ person/ day and nigh
- Tree watering: 2l/ m²
- Besides water supply system for constructed items, system of public water taps should be designed in a natural forms, like water tapping from block of marble or from tree's foot.

IV.3.2. Water supply solution:

- Stage from 2004 to 2010:

For instant, using 2 wells: one in the management office, another one in the reception area to pump into the water treatment system for supplying water to the projects.

- After 2010, water shall be supplied from water source in the water plant in Thach Ban and My Son tourism town, from water pipe of 100 ϕ to Management unit area, and from here, to install sub-pipe of 32 to 50 ϕ to connect to other items and water trees.

IV.4. Water drainage:

IV.4.1. Main technical standards:

- Cycle of an intensity calculation process: $P = 2$ years
- Average flow focus coefficient: average $\phi = 0.5$
- Waste water standard is in accordance with water supply standard.

IV.4.2. Formula for calculating raining water discharge:

$$Q = \phi \cdot Q \cdot F$$

ϕ : Flow focus coefficient

W: Raining water volume

F: Valley area

IV.4.3. Design solution:

- Drainage system is arranged along the main road line, trapezium shape with bottom area: 0.3 x 0.4m, on the mountain side, water flows into the catch basins, then discharge into Khe The spring.
- Dredge spring and some streams, construct dam to prevent flooding in the rain season.
- Water from the management office area, reception station area is drained to the underground ditches, then discharged into Khe The spring.
- Waste water from living activities is treated by three steps auto-treatment basin to ensure the hygiene standards in accordance with the regulation, then discharge into Khe The spring.

-

IV.5.Environmental hygiene:

-It is required to give notice to the visitor about hygiene and environment protection.

- Place dustbins along the walkways. Collect the waste by trolleys to rubbish dump at two places: in the management office area and reception station, then rubbish is picked up daily by truck.
- Number of small dustbin: 200 nos
- Number of big dustbin: 4 nos

IV.6. Fire prevention:

- Place regulations about fire prevention and extinguishing at the management office area and reception station area.
- In the management office area and reception station area, to place fire extinguishers and water-tap for fire extinguishing as per regulations.

- Place fire precaution and forest fire precaution station for visitor in critical points in the heritage, give warning to visitors and local inhabitants for prevention of forest fire.
- Near tower groups, to arrange water-tap for fire extinguishing with flow of 10-15l/current.
- Place carbonic gas extinguisher near tower groups which not affects good-looking of heritage.

IV.7. Delineate the area for security guard of the monuments:

To place landmarks around protection area .

V. PLANNING SOLUTIONS FOR PROTECTION AND IMPROVEMENT OF LANDSCAPE

V.1. Green trees inside relic protection area:

According to the features and actuality of the relic site, 2 major groups are proposed as follows:

- Trees to cover vacant land and hills: reforestation on North – East mountain sides of the relic site. Gradually replace sandal-wood trees along stream and extensively plant local trees at this area.
- Natural trees to protect landscape: except trees to cover remaining area in My Son sanctuary, there require necessary measures against destruction of trees to get wood, protection and planting of new local trees for major purpose of landscape preservation but not economic exploitation.
- Fruit trees for tourism purpose: at service area (management unit and reception house), combine to plant local fruit trees so that tourists can have the chance to enjoy local products.

V.2. Trees planted at the relic site

- Trees to cover: pine trees, others
- Trees with flower: flamboyant
- Trees with big shadow along road to the relic site
- Trees to cover ground on both sides of road
- Fruit trees such as mango, grapefruit etc. at density 20 trees/100m². Especially there need to plant Dai Buong grapefruit and Thon Bon – special fruit in Duy Xuyen, at Lots LIIA2 and LIIA4

PART VIII

INVESTMENT PLAN

I. PROJECT COMPONENTS

1.1. Project for mine clearance

1.2. Project for formation of document and scientific record system at My Son relics

in which there are sub-projects:

- Project for investigation and basic study at My Son relic site
- Project for archeological survey at My Son relic site
- Project for formation of document and scientific record system at My Son relic site

1.3. Project for conservation and restoration of My Son relic site

Project items of works:

- Archeological clearance, urgent reinforcement of relics
- Urgent conservation of relics
- Restoration of relics
- Conservation of the whole site

Project for conservation and restoration of My Son sanctuary is divided into sub-projects:

- 1.3.1. Project for conservation and restoration of groups B, C, D at My Son sanctuary (stage 1 was implemented in 1980s. Continue stage 2).
- 1.3.2. Project for conservation and restoration of group A at My Son sanctuary (Indian Government proposed to sponsor. Project was made up - project value VND 23,889,150,000).
- 1.3.3. Project for conservation and restoration of group A' at My Son sanctuary.
- 1.3.4. Project for conservation and restoration of group G at My Son sanctuary (Italian Government proposed to sponsor. Project was made up – project value USD 810).
- 1.3.5. Project for conservation and restoration of group E at My Son sanctuary.
- 1.3.6. Project for conservation and restoration of group F at My Son sanctuary (archeological clearance was carried out).
- 1.3.7. Project for conservation and restoration of group H at My Son sanctuary (Indian Government proposed to sponsor. Project was made up – project value VND 9,404,802,000).
- 1.3.8. Project for conservation and restoration of group K at My Son sanctuary.
- 1.3.9. Project for conservation and restoration of group L at My Son sanctuary.
- 1.3.10. Project for conservation and restoration of group N at My Son sanctuary.
- 1.3.11. Project for conservation and restoration of group M at My Son sanctuary.
- 1.3.12. Project for conservation and restoration of group O at My Son sanctuary.

1.4. Project for improvement and construction of infrastructure system at My Son sanctuary

Sub-projects:

- 1.4.1. Project for improvement and construction of transport road at My Son sanctuary (partly implemented)

- 1.4.2. Project for construction of power supply system for My Son sanctuary
- 1.4.3. Project for construction of lighting system for My Son sanctuary
- 1.4.4. Project for construction of water supply system for My Son sanctuary
- 1.4.5. Project for construction of drainage system at My Son sanctuary
- 1.4.6. Project for flood drainage, dredging, embankment reinforcement, diversion of The stream

1.5. Project for construction of service management system

- 1.5.1. Project for construction of office for My Son Management Unit
- 1.5.2. Project for construction of museum at My Son sanctuary (fund is proposed to be granted by JICA Japan – amount USD 2 million)
- 1.5.3. Project for construction of car parking area at My Son sanctuary
- 1.5.4. Project for construction of service area and houses for experts at My Son sanctuary
- 1.5.5. Project for construction of reception house at My Son sanctuary

1.6. Project for forest protection, afforestation, reforestation

There are two projects:

- Project for afforestation, reforestation
- Project for forest protection, fire prevention

1.7. Project for study on restoration of intangible cultural values

1.8. Project for management staff training

II. INVESTMENT PERIODS

2.1. Phases

General master plan for conservation and promotion of My Son relic's value is proposed to be implemented in the period from 2004 – 2015 which is divided into 2 phases:

- Phase I: from 2004 to 2010
- Phase II: from 2010 to 2015

2.2. Priority orders

Priority I: Projects in the group of projects for mine clearance, basic study and projects for conservation and restoration of ruins

Priority II: Projects for construction, improvement of technical infrastructure and management

Priority III: Projects for restoration and promotion of relic values

2.3. Phase I (from 2004 to 2010)

- Project for mine clearance
- Project for formation of scientific document and record system in My Son sanctuary
- Project for conservation and restoration of My Son relic site with ruin groups in priority: F, G, E, A, A', H, K, L, M, N, O.
- Sub-project for flood drainage, embankment reinforcement and dredging, flow diversion of The stream
- Project for management staff training

2.4. Phase II

- Projects for promotion of relic values
- Projects for improvement and construction of technical infrastructure system
- Project for construction of management and service works
- Project for forest protection, afforestation, reforestation
- Project for study, collection and restoration of intangible values
- Continue the project for management staff training

2.5. Next phase

Protection of relic site, promotion of relic values in socio-economic life in Duy Xuyen district, Quang Nam province and nation-wide.

PART IX

IMPLEMENTING ORGANIZATION

1. RELATION BETWEEN THE MINISTRIES AND DEPARTMENTS.

- Master plan of for restoration and development of My Son monuments area shall need to be officially approved by the Government.
- Ministry of Culture and Information is governmental organ for the monuments management responsible for giving the orientation of restoration plans and the solutions for restoration plans.
- Relevant ministries and departments shall coordinate with Ministry of Culture and Information to officialize related specializing issues in the master plan such as:
 - + Boundary area of the monuments
 - + Finance plan
 - + Construction and embellishment of infrastructure
 - + Cleaning, environment protection, flood prevention
 - + Forestation and forest protection.

Relevant ministries:

- + Ministry of Construction
- + Ministry of Investment & Planning
- + Ministry of Finance
- + Ministry of Agriculture & Rural Development
- + Ministry of Technology & Environment
- + Ministry of Energy
- Ministry of Culture & Information, Quang Nam People Committee, Quang Nam Dept. of Culture & Information are governmental and specialized organs responsible for following, guiding conservation, restoration, embellishment activities in My Son monuments area.
- Local authorities are responsible for following, supervising related activities:
 - + Provincial Dept. of Construction
 - + Provincial Dept. of Investment & Planning
 - + Provincial Dept. of Agriculture & Rural Development
 - + Provincial Forestry Branch Office

2. PROPOSAL FOR IMPLEMENTING ORGANIZATION

- The Government soon issues the decision on implementing the master plan for restoration and development of My Son Monuments area.
- Ministry of Culture & Information coordinates with the relevant ministries to work out the agreement on plan and restoration of My Son Monuments.
- Ministry of Culture & Information assigns Quang Nam People's Committee to be responsible agency for managing the implementation of the projects in planned areas.
- The Center for Conservation of Heritages & Monuments of Quang Nam prov., People's Committee of Duy Xuyen district are managing agencies of the projects in planned areas.
- Quang Nam Dept. of Culture & Information issues the regulation on management of My Son monument restoration & development plan, after the agreement is issued by Ministry of Culture and Information and relevant departments, and organizes the plan implementation.
- Survey, embellishment, construction activities must be in approved projects, complied with the regulations on management of My Son monument restoration & development plan.
- Decide to establish official managing unit for My Son Monument area, issue the regulations on tourism organization approved by provincial People's Committee and related departments and organize to implement these regulations.
- Establish specializing forest management unit with area of 1062h including Hon Den – My Son with function of guarding, managing this forest area.

- Assign specializing monument restoration units, who have experience in Cham monuments embellishment to implement the projects on conservation and restoration of My Son monuments.

PART X

ANALYSIS ON INVESTMENT EFFECTS OF MASTER PLAN FOR CONSERVATION AND VALUE PROMOTION OF MY SON HERITAGE.

- With huge values on arts, architecture, sculpture, history and culture, long –term conservation of this heritage area shall particularly become a tremendous success, bringing about spiritual and scientific values which can not being calculated by physical calculation. This demonstrates passionate attention paid by sectors and international friends.
- Therefore, Master plan for conservation and value promotion of My Son Heritage shall not pay attention in economic effects and shall not target to economic effects as the main purpose. However, implementation of conservation and value promotion of My Son Heritage shall be a focal point for economic development as well as economic structure transition of Duy Xuyen district and Quang Nam province.
 - + To construct tourism and service sector of this district to become spearheaded economic field.
 - + To contribute to improvement of socio-economic and spiritual lives of people in Duy Xuyen district through income earned from tourism.
 - + To contribute to push up small and traditional handicrafts through production of products serving for tourism.

It is forecasted about labor structure changes as follows:

Year	2000	2010
Ago-forestry	39%	25%
Handicrafts	28%	34%
Services and tourism	27%	35%
Aquaculture	28%	34%

District's economic transition following GDP

Year	2000	2010
Ago-forestry	35.6%	14.2%
Handicrafts	26.7%	33.8%
Services and tourism	32.4%	46%
Aquaculture	5.3%	6%

PART XI

OUTSTANDING MATTERS AND PROPOSALS

1. OUTSTANDING MATTERS

- My Son heritage is an especially important cultural heritage which has existed during 9 centuries, experienced the war and time and become a vestige, increasingly got serious degradation but not yet received equivalent attention.
- Restoration and conservation works have not been carried out synchronously and unitedly, without clear plan and guidance as well as order, thus causing scattered, spontaneous implementation which sometimes caused impacts to the vestige's status.
- Management has been decentralized, disunited, and remained being overlapped in function (Quang Nam's heritage & monument conservation center, My Son world heritage management)
- There's no available legal mechanism and system for conservation and value promotion of My Son Heritage.

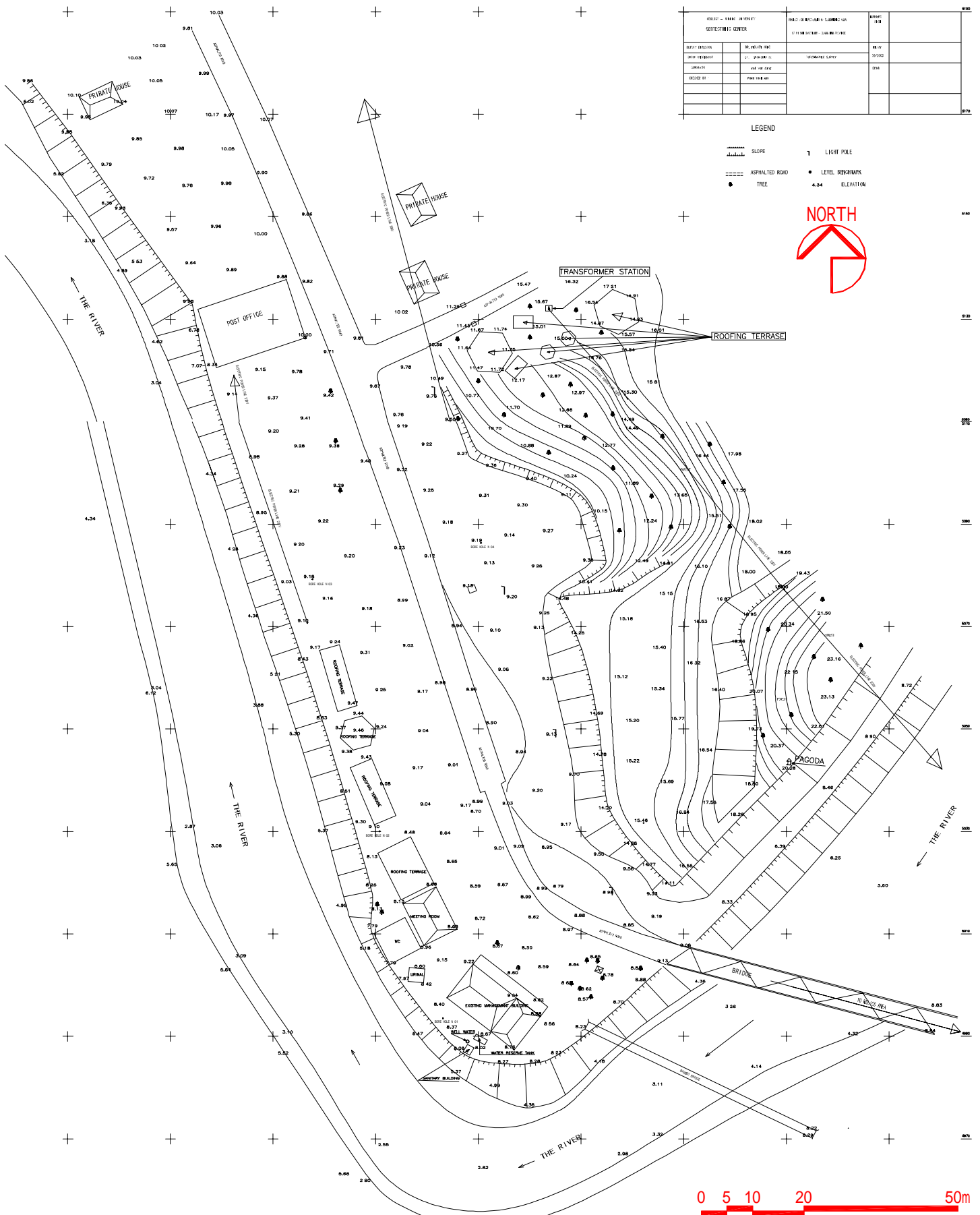
2. PROPOSAL

In order to have a long – term plan and program (to the year 2015), it is submitted to the Government, Quang Nam People's Committee, Ministry of Culture & Informatin and other related authorities for approval on main guidelines, necessary content, obliged principles, main solutions, implementation order for establishment and implementation of conservation and restoration projects, and organization of exploitation for comprehensive promotion of My Son heritage in the Master Plan for Conservation & Value Promotion of My Son Heritage.

It is necessary to increasingly attract attention from international community in study and conservation of the heritage and develop international tradition in conservation work.

Plan and strategy for conservation of My Son heritage should be in close co-operation with long –term conservation program for other Cham vestige in Vietnam.

6-3 Survey Map



PROJECT - NAME OF PROJECT		PROJECT LOCATION & SCALE/DATE		DATE
DRAFT NUMBER		CITY OF DISTRICT - SUBDIVISION		SCALE

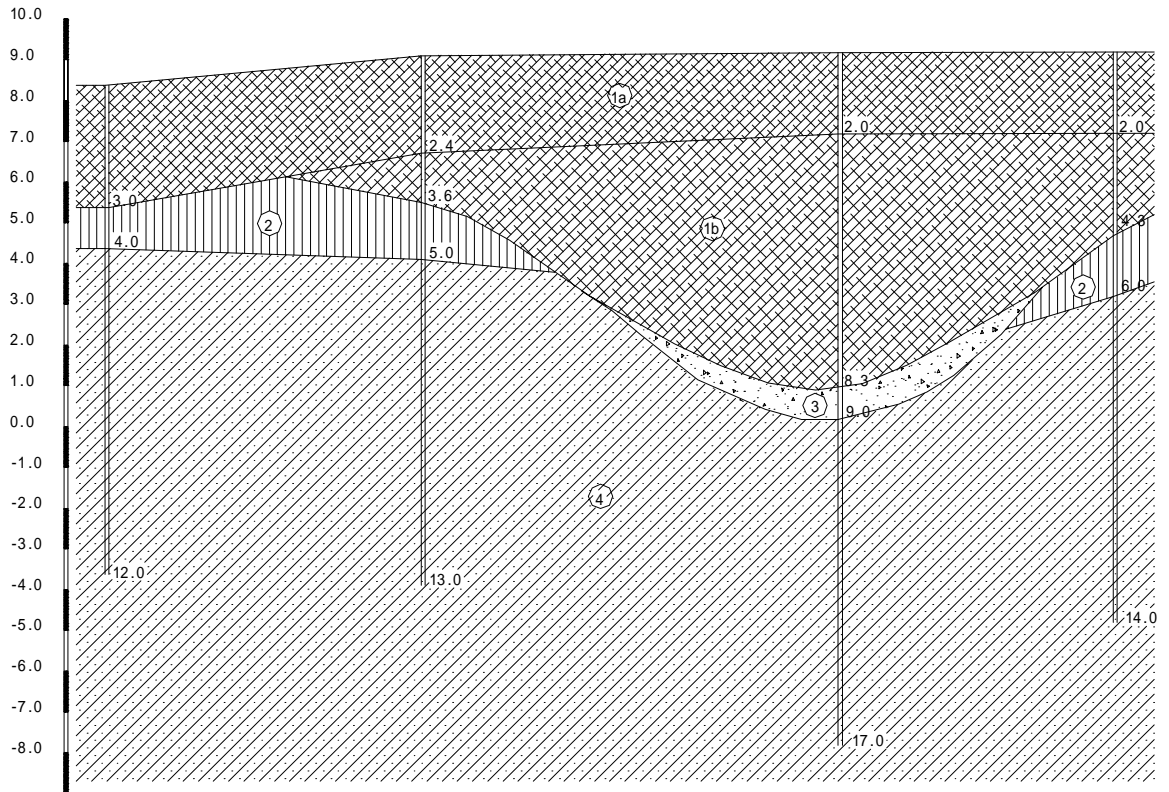
- LEGEND**
- SLOPE
 - ASPHALTED ROAD
 - TREE
 - LIGHT POLE
 - LEVEL BENCHMARK
 - ELEVATION



6-4 Geotechnical Profile






MY SON SANCTUARY GEOTECHNICAL PROFILE

scale: vertical 1:100
horizontal 1:500



He khoan	BH1	BH 2	BH3	BH4
Cao Re mi Ong he	8.37	9.10	9.18	9.19
Se scu, m		38.5	50.8	33.5
Kho ng c, ch, m	12.0	13.0	17.0	14.0

LEGENDA

-  1a Filling firm soil
-  1b Filling soft soil
-  2 Fat clay (CH)
-  3 Well-graded gravels with sand (GW)
-  4 Strongly weathered sanstone and claystone

BOREHOLE LOG - BH1

Project: My Son Sanctuary
 Location: Duy Xuyen, Quang Nam
 Date commenced: 02/6/2003
 Date completed: 02/6/2003
 Logged by: Ph.D. Pham Huu Sy

Elevation: 8.37
 Depth: 12.0m
 Und.water level: 6.0
 Boring equipment: XJ-100
 Page: 1/1

Depth	Scale	Log	Soil description		Sample	
	0		Filling soil, composition is sandy clay, clayey sand mixtured with angular cobbles and gravels from excavation in side		1.0-1.2	
	1				2.0-2.2	
	2					
3.0	3		Fat clay weatherering origin, multi-colored			
4.0	4					
	5		Sandstone, claystone alternated, strongly weathered, cracked and soft, can be break by hand especialy claystone.			
	6					
	7					
8.0	8		Sandstone, claystone alternated as upper layer but less weathered, can not break by hand but by hammer			
	9					
	10					
	11					
12.0	12					

BOREHOLE LOG - BH2

Project: My Son Sanctuary
 Location: Duy Xuyen, Quang Nam
 Date commenced: 03/6/2003
 Date completed: 04/6/2003
 Logged by: Ph.D. Pham Huu Sy

Elevation: 9.10
 Depth: 13.0m
 Und. water level: 5.0
 Boring equipment: XJ-100
 Page: 1/1

Depth	Scale	Log	Soil description		Sample
	0			0 20 40 60 80	
	1			0	
	2		Sandy clay, clayey sand mixture with angular cobbles from side by leveling, loose, porous	1	
2.6	3		Filling soil as upper but soft due to high moisture	2	1.4-1.6
3.6	4		Fat clay weathering origin, multi-colored, hard	3	2.4-2.6
	5		Sandstone, claystone, strongly weathered, cracked and soft, can be break by hand, claystone is black as lignite	4	3.4-3.6
5.0	6			5	
	7			6	
8.0	8			7	
	9		Sandstone, claystone alternated as upper layer but less weathered, difficulty break by hand	8	
	10			9	
	11			10	
	12			11	
13.0	13			12	
				13	

BOREHOLE LOG - BH3

Project: My Son Sanctuary
 Location: Duy Xuyen, Quang Nam
 Date commenced: 05/6/2003
 Date completed: 06/6/2003
 Logged by: Ph.D. Pham Huu Sy

Elevation: 9.18
 Depth: 17.0m
 Und. water level: 6.0
 Boring equipment: XJ-100
 Page: 1/1

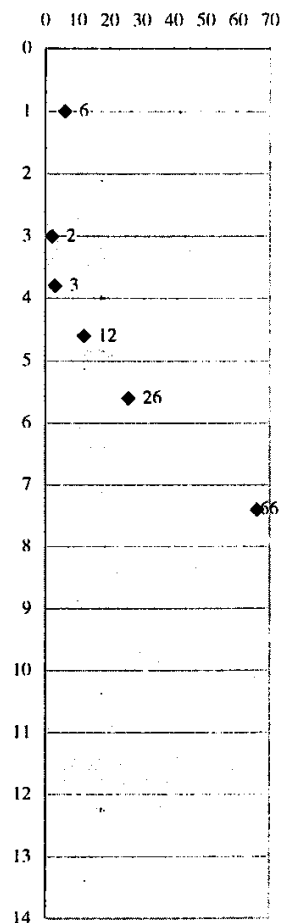
Depth	Scale	Log	Soil description	SPT	Sample
	0			0 20 40 60 80 100 120	
2.0	1.5		Filling soil-clayey sand, firm, multi-colored	1 ◆ 10	
	3.0		Filling gray soil, soft, mixed plant vestige	2 ◆ 3	2.0-2.2
	4.5			3	3.0-3.2
4.6	4.5		Fine poorly graded sand	4 ◆ 9	
5.5	6.0			5 ◆ 5	5.0-5.2
	7.5		Filling gray soil, soft mixed plant vestige	6 ◆ 3	6.0-6.2
8.3	9.0		Sand, gravel mixture	7	
9.0	10.5		Weakly weathered sandstone and claystone, can break by hand	8 ◆ 2	
	12.0			9	
12.4	13.5		Sandstone and claystone gray color, hard, less crack	10 ◆ 102	
	15.0			11	
	18.5			12	
				13	
				14	
				15	
				16	
				17	

BOREHOLE LOG - BH4

Project: My Son Sanctuary
 Location: Duy Xuyen, Quang Nam
 Date commenced: 07/6/2003
 Date completed: 08/6/2003
 Logged by: Ph.D. Pham Huu Sy

Elevation: 9.19
 Depth: 14.0m
 Und. water level: 5.0
 Boring equipment: XJ-100
 Page: 1/1

Depth	Scale	Log	Soil description	SPT	Sample
	0				
	1				
2.0	2		Filling soil-sandy clay, clayey sand, with cobbles, multi-colored, firm		
	3				
4.3	4		Clayey sand- filling origin too but more soft due to high moisture,		2.8-3.0
	5				
6.0	6		Fat clay residual weathering origin, hard		4.3-4.5
	7				
	8				
	9				
	10				
	11				
	12				
	13				
14.0	14		Strongly weathered sandstone and claystone. Weathering level not equal. Claystone was more weathered while sandstone is less so weathering boundary is not stable. While drilling in sandstone, speed is low, however, in deeper claystone, drilling was quickly		5.3-5.5



Appendix-7. References

NO	Title	Source	Year
1	Vietnam Today	Ministry of Culture & Information	
2	Vietnam A Long History	Ministry of Culture & Information / Nguyen Khac Vien	
3	Decree No.92/2002/ND-CP of November 11, 2002 Detailing The Implementation of a Number of Articles of the Cultural Heritage Law	Quang Nam Center of Monuments and Heritage Conservation (CMHC)	2002/11
4	Regulation on Conservation and Restoration of the Historical & Cultural Heritage	CMHC	2003/2
5	Law on Cultural Heritage “National Assembly of the Socialist Republic of Vietnam 10th term, 9th session (May 22-June 28, 2001)	CMHC	2001/5
6	Application of Laws and Regulations on Cultural Heritage in Vietnam to the Management, Protection and Development of MY SON World Cultural Heritage	CMHC	
7	Science Reports- The Workshop on Conservation of MY SON World Cultural Heritage (March 2003)	CMHC	2003/3
8	Conservation of MY SON Archaeological site by the International Standards	CMHC/ Prof. Hoang Dao Kinh, Dr.Arch	
9	Conservation of MY SON-A World Heritage-	CMHC/ Dr. Dang Van Bai	
10	Explanation about Master Plan for Conservation and Restoration of MY SON Sanctuary	CMHC	2003/2
11	Management Regulation on Conservation and Restoration Planning of MY SON Sanctuary	CMHC	2003/2
12	Cham Art Treasures from the Danang Museum, Vietnam	Danang Museum / Emmanuel Guillon	
13	Location Map of Monument Groups in My Son Sanctuary	CMHC	
14	Map of My Son- Thack Ban Area Tourism Development Plan	Peoples’ Committee of Duy Xuyen District	
15	Drawings for Extension of Danag- Museum of Cham Sculpture	CMHC	
16	Building Code of Vietnam Volume 1,2,3	Construction Publishing House	2001/6
17	Outline of the Exhibition in My Son Museum	CMHC	2003/9
18	Objects to be Exhibited in My Son Museum	CMHC	2003/9
19	Photo CD of the Objects to be Exhibited in My Son	CMHC	2003/9
20	Explanation about Master Plan for Conservation and Value Promotion of My Son Sanctuary in Quang Nam Province	CMHC	2003/9
21	Drawings of the Experts’ Accommodation in My Son Sanctuary	CMHC	2003/3
22	My Son - Vietnam Archaeological Area (Map)	CMHC	-