

2.3 History and Cultural Heritage of Ayutthaya

2.3.1 History of Ayutthaya

It was in the first half of the 13th century that the Siam (the Thai race in a narrow sense), the main constituent of the Thai people today, emerged in history as an independent nation. In those days, many branched tribes of the Thai race, including Ahom, Shan, Siam and Lao, started to form their nations in succession, probably synchronizing with the movement of the Mongolians in China. The Thai, who were rice-growing people, had roved slowly over a long period of time, looking for suitable land for growing rice. It may well be said that the Siam who ruled the Chaophraya Plain owed their development into the strongest nation among the Thai tribes to the favorable natural conditions of the region they settled in.

According to the written records available the Mon tribe was the first group to settle in the Chaophraya plain. Dvaravati, one of the strongest nations founded by the Mon tribe, was overpowered by the Khmer after the 9th century. A record engraved on a stone in the 10th century which was discovered in Ayutthaya, indicates that the culture of Ayutthaya was influenced by the Khmer in those days.

Early in the 12th century, many Siam tribes had already formed tribal kingdoms of their own in the middle region area of the Chaophraya River under the subjugation of Angkor, a Khmer empire. At the beginning of the 13th century, one of the local Siamese kingdoms expelled the Khmer viceroy from Sukhothai. The territory of this Sukhothai Dynasty was sharply expanded under the reign of its third monarch, King Ramkhamhaeng. This kingdom, which prospered from the end of the 13th century to the beginning of the 14th century, was annexed in 1483 to Ayutthaya, a new Siamese kingdom which had made a sudden rise in the south.

Ayutthaya was set up around the middle of the 14th century, in the ancient capital of Ayodaya. Ayodaya is considered to have been built by the Khmer in the 11th century. The kingdom is thought to have possessed a fairly high level of culture and to have been at a

stage of economic development sufficiently powerful to support its culture. According to the "Luang Prasut Book Chronicle", the great image of the Buddha at Phanan Choeng was built a quarter century earlier than the construction of Ayutthaya. The existence of this great image of the Buddha suggests its commercial prosperity, which is further evidenced by the presence of a China town.

G. Coedés, a French historian, divided the history of the Ayutthaya kingdom (which spanned more than 400 years) into four periods. In the first period (middle of the 14th century - middle of the 16th century) which lasted for about 200 years, Ayutthaya developed into one of the major nations in Southeast Asia by expansion of its territory through military power and reinforcement of its administrative systems. In terms of dynastic transitions, the UThon Dynasty initiated by Ramathibodi was replaced by the Suwannaphum Dynasty of Suphanburi, and subsequently by the Second UThon Dynasty, then by the Second Suwannaphum Dynasty and so on. Conflicts among dynasties lasted for half a century at the beginning of the period.

Since the earlier stages of the Ayutthaya Dynasty, Ayutthaya, as the capital of the State, was characterized as an international port city. Arabic and Chinese characters are engraved on the relics of Wat Ratchaburana and tributes were sent to China fairly frequently.

Coedés designated the latter half of the 16th century as the second period of the Ayutthaya Dynasty. Wars against Burma took place repeatedly during this period. Burma was unified by Burmese King Tabinshwehti in the middle of the 16th century. The main cause of conflicts between Burma and Ayutthaya in those days was their struggles for trading rights in many port cities along the Bay of Bengal which were the outer ports of Ayutthaya. The capital city, Ayutthaya, was seized by the Burmese army in August 1569, and the Suwannaphum Dynasty perished. The Burmese King Bayinnaung nominated Thammara, the viceroy of Phitsanulok who had blood relationship with the Sukhothai Dynasty, as the king of Ayutthaya. His heir, King Naresuan the Great, repelled the Burmese army and

also succeeded in recovering the above-mentioned trading rights of Ayutthaya along the Bay of Bengal.

The 17th century, which started with the reign of Ekathotsarot, a younger brother of King Naresuen, can be regarded as a period when the relations with foreign countries were diversified by the advent of the Europeans. Coedés considered this period as the third period of the Ayutthaya history. In the 16th century, Ayutthaya concluded treaties with Portugal and Spain and, in the 17th century, trading activities were commenced by the Dutch and the English, joined by the French who aimed at the propagation of Catholicism. Early in the 17th century, the Dutch and the English opened their trade offices in Ayutthaya. Many Japanese trading ships authorized by the shogunate also made their way to Ayutthaya. A "Japanese Village" accommodating as many as 1,500 Japanese residents was reportedly formed outside the Ayutthaya castle.

The fourth and last period of the history of Ayutthaya consists of 80 years under the reign of the Ban Phluluang Dynasty. This dynasty prospered from the first half to the middle of the 18th century under the reign of King Borommakot. This was a golden age for fine art and literature, and Buddhism also gained wide support. However, when Alaunghpaya conquered the Mon tribe and unified the whole of Burma in 1752, Ayutthaya was once again threatened by the western power. The Ayutthaya kingdom was destroyed by the Burmese army in 1767.

2.3.2 Current circumstances of preservation of the cultural heritage of Ayutthaya

The Fine Arts Department of the Ministry of Education is currently conducting excavating surveys on historical remains in many locations around the country and is also encouraging construction of museums. The aim is to disseminate among the Thai people the knowledge of the historical and cultural background of their own country, thus cultivating their sense of pride as Thai nationals. The studies on Ayutthaya have been conducted in line with the policy mentioned above. In particular, substantial progress has been made in the restoration of Wat Yai Chai Mongkhon, which is a landmark for Ayutthaya culture. Excavating surveys are also under way at the Royal Palace (some of the valuable objects of fine art recovered by the survey are being preserved at the National Museum in Bangkok). Many exquisite images of the Buddha, small images, and the jewelry and treasures that manifest the splendour of the Ayutthaya culture, are exhibited at the Chaosamphraya and Chantharakasem Museums.

CHAPTER 3 CONTENTS OF THE PROJECT

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3.1 Objectives of the Project

Ayutthaya, the capital of the Ayutthaya Dynasty which ruled Thailand for 417 years (33 generations) from 1350 to 1767, enjoyed great prosperity from the 14th to the 18th century through active trading with European countries as well as Asian countries including China and Japan. In addition to being an international port city, Ayutthaya was the first centralized administrative state to emerge in Thailand. However, Thailand currently does not have sufficient facilities where people can study the comprehensive history of Ayutthaya. Neither are satisfactory efforts being made for collection, preservation and compilation of materials. The Project for Constructing the Ayutthaya Historical Study Centre, therefore, aims to achieve the following goals: (1) to provide a place for social education on the history of Ayutthaya to the people of Thailand and foreigners visiting Ayutthaya, through its exhibitions based on historical facts known through deliberate research, (2) to play the role of a reference centre on the history of Ayutthaya through its efforts in collecting data and conducting research, (3) to promote studies on Ayutthaya history in collaboration with educational and research institutes in Thailand and abroad.

3.2 Functions and Activities

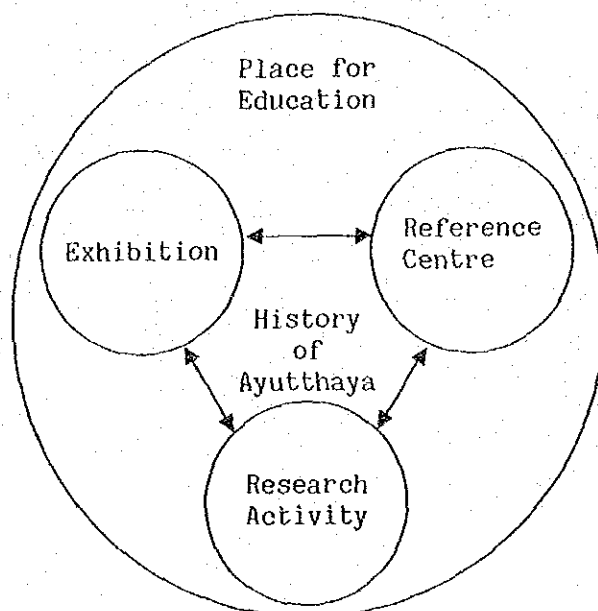
The following are the three major functions and activities of Ayutthaya Historical Study Centre.

- 1) The most important function is to offer a place for social education on the Ayutthaya history through exhibitions.
- 2) This Historical Study Centre should be able to provide visitors with sufficient information on the history of Ayutthaya, at least on the main subjects. Various data and materials compiled during the preparation period for the exhibition, and also in the course of continuous studies after its opening, will be made public. The

Historical Study Centre should play a unique role in Thailand by functioning as a reference centre on the history of Ayutthaya.

- 3) Through collaboration with educational and research institutes both in and outside Thailand, the Historical Study Centre will promote and organize in the future extensive researches on Ayutthaya history. Cooperation with universities and other museums will be indispensable for organizing such research activities. Once these cooperative systems are established, the activities of the Historical Study Centre will be further reinforced.

Concept of the Functions of the Historical Study Centre



3.3 Exhibition Themes

The themes and sub-themes for the exhibition were reviewed in the course of the discussions with the Thai Academic Committee during the stay of the First and Second Preliminary Study Teams and the First and Second Basic Design Study Teams in Thailand. The specific themes and sub-themes for the exhibition gradually took a concrete form through these discussions and both sides agreed to carry out the basic design for the exhibition as outlined below. The entire exhibition plan was elaborated based on these themes and sub-themes.

Theme I : Ayutthaya as a Capital

Sub-Themes:

- i. Ayutthaya
- ii. Royal Palace
- iii. Wat Yai Chai Watthanaram
- iv. Wat Na Phra Men
- v. Elephant Kral
- vi. Wat Maha That
- vii. Wat Yai Chai Mongkhon

Theme II : Ayutthaya as a Port City

Sub-Themes:

- i. Ayutthaya as an international port
- ii. The portrait of Ayutthaya port
- iii. Trade through Ayutthaya
- iv. The relation with foreigners
 - * Trade relation
 - * Military
 - * Diplomats
 - * Conflict
 - * Western technology

Theme III : Ayutthaya as a Centralized State

Sub-Themes:

- i. Indraphisek
- ii. Pre-Ayutthaya states
- iii. Kingship and bureaucracy
 - * Symbol of kingship and provincial control of the kingdom
 - * Oath taking ritual
 - * Procession of royal barge
 - * Conflict and resistance towards king's power
 - * Administration of phrai
- iv. State and Society: Social integration
 - * Idea of Traiphum among the townspeople
 - * Ten Incarnations of Buddha
 - * Procession of the King to Phraputthabat at Saraburi

Theme IV : Village Life of Ayutthaya

Sub-Themes:

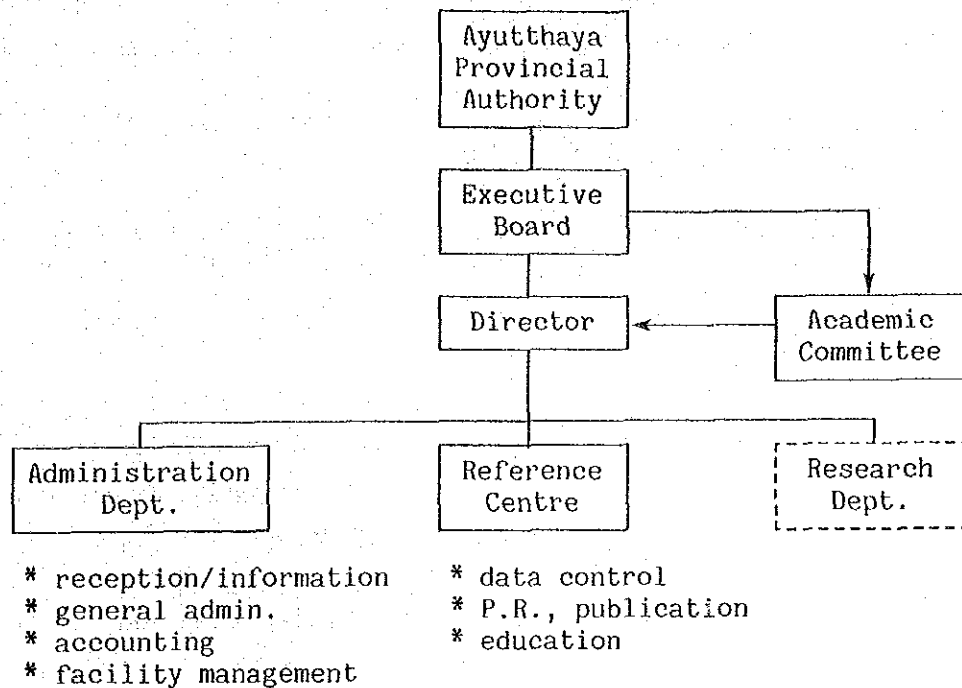
- i. Peasant Community Life
- ii. Life Cycle: 1
 - * Childhood
 - * Coming of age
 - * Marriage
- iii. Inside the House
- iv. Cultivation
- v. Calamities
- vi. Life Cycle: 2
 - * Tetmahachat
 - * Entertainment
 - * Healing
 - * Death and after death

3.4 Organization and Personnel Assignment Plan

3.4.1 Organization

The executing agency of the Historical Study Centre is the Ayutthaya Provincial Authority. The Ayutthaya Provincial Governor will take the responsibility for the operation of the Project. An Executive Board consisting of members of the Ministry of Interior, the Ministry of Education, and members of the Academic Committee, as well as members of the Thai-Japanese Association, will be formed to assist the Governor and to promote smooth operation of the Historical Study Centre. Furthermore, the Academic Committee will be formed to give instructions and advice to the Director of the Centre for planning and running of the Historical Study Centre under the Executive Board so that the Centre will be able to carry out to a full extent its functions in accordance with the objectives of the Project.

The operation system and organization of the Historical Study Centre are shown as below:



1) Administration Department

This department takes charge of maintenance and management of facilities and equipment in the Historical Study Centre. It also deals with general administration work, accounting, reception and information services.

2) Reference Centre

This department takes charge of collection, compilation and storage of materials and data as well as work related to providing information to users such as public relations, publication services and education.

3) Research Department

This department will collaborate in the future with other educational and research institutes both in Thailand and abroad to promote and organize research activities on Ayutthaya history.

The Historical Study Centre is a cultural facility which requires highly specialized knowledge and creativity. It is, therefore,

crucial for its smooth operation to select qualified personnel from a wide range of backgrounds and expertises, train them well and constantly improve the quality of the Centre's activities.

3.4.2 Personnel assignment plan

The following is the personnel assignment plan at the time of the opening of the Centre.

Director	:	1
Administration Dept.	:	reception/reference : 2
	:	accounting/administration : 2
	:	facilities : 1
Reference Centre	:	data collection and P.R. : 1-2
Total	:	7-8

In addition to the above, staffers will be required for cleaning and guarding the facilities. The Research Department is expected to be set up in the future. The number of staffers for this department is not included in the personnel assignment plan at the time of the opening of the Centre. Part-time employees and volunteer workers may be considered for reception/reference services as well as planning and exhibition work. The number of these people will depend on the number of visitors to the Centre.

3.5 Required Facilities and Equipment

3.5.1 Contents of required facilities

The following is an outline of the facilities required for this Project, taking into account the specific exhibits and activities of the Centre and the personnel assignment plan.

* In view of the contents of the exhibition, the Exhibition Room for the symbols related to Theme I, which will also be used as

an Entrance Hall, will have a floor area of approximately 330m² while the floor area for each of the three Exhibition Rooms for Thèmes II, III and IV will be 220m². As a result, a total exhibition space of approximately 990m² will be required.

- * Approximately one-third of the total floor area of the facilities, or 600m², will be required for storage space. For the time being, however, one-half of the necessary space (300m²) will be allocated for storage with due consideration given on the possible future expansion of the space.
- * In order to promote effective utilization of the facilities, a Multi-Purpose Hall will be provided. The Hall will have a floor area of 150m², large enough to accommodate 120 to 150 seats and will be used for special, non-permanent exhibitions or as a lecture room for educational purposes.
- * Approximately 12-15% of the total floor area of the Centre, or about 260m², will be allocated for the Administration Offices, Reference Centre and Library.

The details of the required facilities are shown as below:

* Exhibition Space	990 m ²
* Storage Rooms	300 m ²
* Multi-Purpose Hall	150 m ²
* Administration Rooms	260 m ²
* Corridor, Staircase, Lavatories, etc.	230 m ²
* Machine Room	70 m ²
Total	2,000 m ²

3.5.2 Contents of the Equipment

The following equipment is necessary for operating the Historical Study Centre which is expected to function as an exhibition and a reference centre.

- * Video System Video camera, battery pack, color monitor TV, video cassette recorder, self-editing control unit
- * Overhead Projector Installed type, net area of utilization: 250 x 250 mm
- * Copy Machine Dry electrophotography method, accommodates manuscripts up to size A3
- * Camera and Dark Room Equipment Camera, enlarger, developing/printing devices
- * 3 Typewriters Electronic typewriters (for Thai and English)
- * Bookbinding Equipment For binding books up to 445 mm long and 75 mm thick
- * Automobile To be used for collecting materials for exhibition

CHAPTER 4 BASIC DESIGN

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4.1 Basic Exhibition Plan

4.1.1 Basic policies

As outlined in 3.1: Objectives of the Project, the Historical Study Centre aims at providing, to the people of Thailand and foreigners, opportunities for learning the general history of Ayutthaya as well as the history of the Kingdom of Thailand. In particular, the Study Centre is positioned as a place for social education for systematically introducing Ayutthaya history to the people of Ayutthaya. A basic design conforming to local circumstances is therefore anticipated.

The following are the policies for the basic design of the exhibition that would be most effective in achieving the above objectives.

- 1) To coordinate the exhibition space and the architectural space so that visitors will be able to find the exhibits and understand them very easily.
- 2) To adopt a circulation line which will allow visitors to select the themes of the exhibitions they wish to see.
- 3) To adopt diversified techniques and methods of exhibition so as to provide options to the various types of visitors and satisfy their different needs.
- 4) To display models, reproductions and replicas in a manner as close as possible to "open" exhibits, allowing visitors to directly view them, so as to enhance the academic impact of those exhibits.
- 5) To give sufficient considerations for preserving the conditions of the actual objects on display.

- 6) To design the overall exhibition space in an integrated manner (floor, wall, ceiling, temperature, lighting, noise, etc.)
- 7) To set up sufficient systems to ensure the security of the exhibit items.
- 8) To pay attention to local construction techniques, materials and methods so as to provide facilities and equipment that can be maintained economically.

4.1.2 Outline of exhibition themes

The following is an outline of the Exhibition Themes:

(1) Concept of exhibition

Theme I Introduction: Ayutthaya as a Capital

Basic information on Ayutthaya will be provided under Theme I as an introduction to the exhibition as a whole.

A large map of Ayutthaya will be placed in the centre of the room, surrounded by models and graphic panels showing various facilities that played an important part in the history of Ayutthaya in terms of politics, military, religion and fine art. It will give a total picture of Ayutthaya as a capital. The perspective for each thematic zone will be maintained in such a way that the symbolic exhibitions of Themes II, III and IV appear to be coming out to the large space with its high ceilings of Theme I. Efforts should be made to achieve an impressive presentation appropriate for an information space.

Theme II Ayutthaya as a Port City

Ayutthaya, an island surrounded by rivers, has been positioned as an important port for domestic and Southeast Asian trading since the early days of its history. Here, the focus is placed on its aspect as a prosperous port city with ideal geographical conditions.

A summary of the exhibitions is as follows:

* Ayutthaya as an International Port

The role of Ayutthaya in Southeast Asian trading in the 17th century and trading ships of various countries which frequented the port are introduced.

* The Portrait of Ayutthaya Port

Location of economic and industrial districts of Ayutthaya Island and the places of foreign settlements are introduced. The "Pom Patch district", the center of trading, is selected for exhibition and the scenery of the district in those days is reproduced.

* Trade through Ayutthaya

Details of domestic and foreign trades are explained through trade routes and traded goods.

* The Relations with Foreigners

Topics related to foreigners appearing in the history of Ayutthaya are introduced. An interesting presentation is made on the typical relationship between Ayutthaya and other countries in terms of trade relation, the military, diplomatics, conflict and western technology.

In this thematic zone, a model of a Thai junk ship (at about 1/10 scale) will be displayed as a symbol.

Theme III Ayutthaya as a Centralized State

Ayutthaya was the first centralized state to appear in Thailand. The mechanism and actual systems of the centralized government adopted in Ayutthaya are introduced here.

A summary of the exhibitions is as follows:

* Pre-Ayutthaya States

The city states preceding the formation of Ayutthaya and city states that submitted to the Ayutthaya reign are introduced. Various aspects of Ayutthaya before it became a capital are also displayed.

* Kingship and Bureaucracy

Specific evidence of the centralized government system of Ayutthaya are exhibited, including those related to the reign of fiefdoms, rituals symbolizing the kingship and the life of the common people.

* State and Society

Focus is placed on Buddhism, which functioned as the basic theory of the social constitution of Ayutthaya, and how it contributed to social integration is explained.

In this thematic zone, Indraphisek is used as a symbol, and a symbolic chart of cosmology of the Triphum will be displayed on the ceiling.

Theme IV Village Life of Ayutthaya

Ethnological exhibitions will be provided by introducing the traditional village life of Ayutthaya. A story of the life of a resident in a peasant village, from birth to death, will be shown, together with notable topics related to life in the village. A summary of the exhibition is as follows:

* Peasant Community Life

An outline of the general life in a peasant village will be given. Mural paintings in a temple and models of a peasant village will be displayed in this corner, which will be the nucleus of this thematic zone.

* Life Cycle 1.

The life cycle from childhood, coming of age, marriage and social maturity is introduced.

* Inside the House

Some important details of a peasant's house, related to the daily life of peasants, are reconstructed in actual size.

* Cultivation

Cultivation exhibits related to farming, the basis of peasant life in Ayutthaya, are shown.

* Calamities

Calamities over the village which is made under the influences from the outside of the village are introduced.

* Life Cycle 2.

The latter half of the life cycle, including religious life, entertainment, healing, death and after death, is shown.

In this thematic zone, a temple wall with mural paintings showing peasant community life is reconstructed in full scale as a symbol.

(2) Lists of exhibition items

Contents of exhibition are as follows:

I Introduction: Ayutthaya as a capital

Sub-Theme	Item	Original Source	Exhibition Form	Note
Ayutthaya	Present Ayutthaya and its area	Reports of academic survey	Large map	
	Ayutthaya in Rama V period	Real thing (photo)	Slide	Photo showing bridges and the change of road and temples.
	Ayutthaya painted by foreigners (bird' eye view)	Real thing (painting)	Slide	
	Ayutthaya drawn by foreigners (road map)	Real thing (map)	Slide	
	Ayutthaya drawn by foreigners (water route)	Real thing (map)	Slide	
Royal Palace	Royal Palace	Reports of academic survey	Model	
Wat Chai Watthanaram	Wat Chai Wat thanaram	Reports of academic survey	Model	
Wat Na Phra Men	Crowned Buddha	Real thing	Photo	It should be related to Wat Chai Watthanaram

Sub-Theme	Item	Original Source	Exhibition Form	Note
Elephant Kraal	Elephant Kraal	Reports of academic survey	Model	
	Elephant procession	Reports of academic survey	Graphic	
	Transportation and trade with elephants	Reports of academic survey	Graphic	
	Elephant battling	Reports of academic survey	Graphic	cf. Painting at Wat Suwan showing the elephant fighting between King Naresuan and prince of Burma
	White elephant	Reports of academic survey		
Wat Maha That	Wat Maha That	Reports of academic survey	Graphic (Big painting)	With Royal Palace and Bueng Phraram for background
	Inner structure of stupa	Reports of academic survey	Graphic	
	Relic of Buddha	Real thing	Photo	
Wat Yai Chai Mongkhon	Wat Yai Chai Mongkhon	Reports of academic survey	Graphic (Big painting)	Present landscape should be shown. Being located in the entrance hall.

II Ayutthaya as a port city

Sub-Thems	Item	Original Source	Exhibition Form	Note
Ayutthaya as an international port	Locations and important port cities of Southeast Asia in 17th century	Reports of academic survey	Map	
	Merchant ships • China • Japan • Java • Holland	Reports of academic survey	Model	1/50 or 1/100
	Thai merchant ship	Reports of academic survey	Model	1/10
The portrait of Ayutthaya port	Distribution of economical area in Ayutthaya	Reports of academic survey	Mechanical map	<ul style="list-style-type: none"> • Foreign communities • Industrial area • Merchantship area • Khanon (Tax collector port) • Royal warehouse
	Port area (Pom Petch)	Reports of academic survey	Diorama	<ul style="list-style-type: none"> • Thai junk (1/50) • Local merchant boat selling food, fruits • Merchandise unloading ship • Wat Phanan Choeng • Pom Petch Fort • Houses • Shops • People <p style="text-align: right;">etc.</p>

Sub-Theme	Item	Original Source	Exhibition Form	Note
Trade through Ayutthaya	Domestic trade route (inland and waterway)	Reports of academic survey	Mechanical Map	
	Domestic merchandise	Real thing	Real thing or replica	
	External trade route	Reports of academic survey	Mechanical map	
	Incoming merchandise coming from <ul style="list-style-type: none"> • China • Japan • India • Persia • Java • Malaysia • Europe 	Real thing	Real thing or replica	ex. Chinese pottery
	Wrecked ship in Siam gulf	Photograph	Photograph	

Sub-Theme	Item	Original Source	Exhibition Form	Note
The relation with foreigners • Trade relation	Thai junk with Chinese sailors	Real thing (Documents)	Replica	
		Real thing (Mural painting)	Graphic panel	
• The military	VOC Building	Real thing (Picture of VOC Building in 17th Cent)	Graphic panel	
	Procession of volunteer army from several countries	Real thing (Khoi manuscript)	Replica	
Graphic panel				
Diplomatics ① Ambassador	From France to Ayutthaya	Reports of academic survey	Graphic panel	
② Official letters	From Ayutthaya to Japan	Real thing	Replica	
		Reports of academic survey		
	From Japan to Ayutthaya	Real thing	Replica	
		Reports of academic survey		

Sub-Theme	Item	Original Source	Exhibition Form	Note
The relation with foreigners • Conflict	Macassar	Reports of academic survey	Graphic panel	
	Western fort plan at Bangkok city	Real thing	Replica	
	Architecture	Real thing	Photograph	
	Ancient map	Real thing	Replica	
• Western technology	Scientific equipments	Real thing	Replica	King Narai is watching stars.
		Real thing (Illustration for a book)	Graphic panel	

III Ayutthaya as a centralized state

Sub-Theme	Item	Original Source	Exhibition Form	Note
Indraphisek	Indraphisek	Real thing (The gate of a temple)	Replica	
		Reports of academic survey	Graphic panel	<ul style="list-style-type: none"> • Khao Phra Sumeru • Naga (Kan Chak Naga) • King presides the ritual joined with inner and outer bureaucracies and provinces.

Sub-Theme	Item	Original Source	Exhibition Form	Note
Pre-Ayutthaya States	Main cities to the gulf of Siam before the Ayutthaya period <ul style="list-style-type: none"> • Utong • Nakhon Pathom • Srimahosot • Lawoo (Lopburi) • Hariphunchai • Phimai 	Reports of academic survey	Map of Thailand and aerial photo of each city in the present time	
	Symbol of each city <ul style="list-style-type: none"> • The base of the stupa and the wheel of the law (Utong) • Phra Pathom Chedi (Nakhon Pathom) • Buddha's footprints at Sra Morakot (Srimahosot) • Phra Prang Samyot (Lawoo) • Chedi Wat Kukut (Hariphunchai) • Prasat Hin Phimai (Phimai) 	Reports of academic survey	Small model	
	Main cities in and after the Skhothai period <ul style="list-style-type: none"> • Sukhothai • Nakhon Si Thammarat • Chaing Mai • Suphanaphum • Petchaburi • Ayotthaya 	Reports of academic survey	Map of Thailand and aerial photo of each city in the present time	

Sub-Theme	Item	Original Source	Exhibition Form	Note
Pre-Ayutthaya States	Symbol of each city • Chedi in the form of lotas or Chedi Songphumkhaobin (Sukhothai) • Phra Barommathat (Nakhon Si Thammarat) • Wat Chedi Luang (Chaing Mai) • The presiding Buddha image of Wat Pah Laylai (Suphanaphum) • Wat Khamphaeng-laeng (Petchaburi) • Wat Phanang Choeng (Ayotthaya)	Reports of academic survey	Small model	
	Main ancient remains in the Ayotthaya period • Head of the Buddha image of Wat Thammikaraj • Stucco Buddha image at the main prang of Wat Phraram • Phanang Choen Buddha • Boundary stone of Wat Phutthaisawan • Chedi Wat Khun Muang Chai	Real thing	Graphic	
	Distribution of main ancient remains in the Ayotthaya period	Reports of academic survey	Graphic (map)	
	Water route in the Ayutthaya period	Literature	Graphic (map)	Kumsuansamut

Sub-Theme	Item	Original Source	Exhibition Form	Note
Kingship and bureaucracy • Symbol of kingship and provincial control of the kingdom • Oath taking ritual	Trade routes	Reports of academic survey	Map	Including provincial control
	Military routes	Real thing (Old map)	Map	
	Benja (dais)	Real thing	Replica	
	Royal regalia of Wat Ratchaburana • Royal crown • Royal sword • Royal pitcher	Real thing	Replica	Originals are in Chao Sam Phraya National Museum
	Oath taking ritual	Reports of academic survey	Graphic panel	In the Wihan of Wat Phra Si Sanphet
	Musical instruments • Cone shell • Drum • Gong	Real thing	Replica	
	Sound of each musical instrument	Reports of academic survey	Tape	
Instruments for oath taking ritual • Basin • Sword • Archery	Real thing	Replica		

Sub-Theme	Item	Original Source	Exhibition Form	Note
• Procession of royal barge	Royal barge	Reports of academic survey	Magic vision	A phrai's wife is peeping the procession through a window.
• Conflict and resistance towards king's power	Conflict and resistance towards king's power	Reports of academic survey	Painting (four panels)	
• Administration of phrai	Administration of phrai (Phrai as a labor)	Reports of academic survey	Magic vision	Puppets of phrai are digging Klong Mahanak to prepare for a fight with Burma

Sub-Theme	Item	Original Source	Exhibition Form	Note
State and Society: Social integration • Idea of Triphum among the towns-people	Triphum	Real thing (mural painting or Khol manuscript)	Slides	
	Symbolic chart of cosmology	Real thing	Ceiling painting	
• Ten Incarnations of Buddha	Ten Incarnations of Buddha	Real thing	Slides	
• Procession of the King to Phraputtabat at Saraburi	Procession of the king to Phraputtabat	Reports of academic survey	Graphic panel	
	Phraputtabat at Saraburi	Reports of academic survey	Graphic panel	
	Ceremony by the king for Phraputtabat	Reports of academic survey	Graphic panel	

IV Village life of Ayutthaya

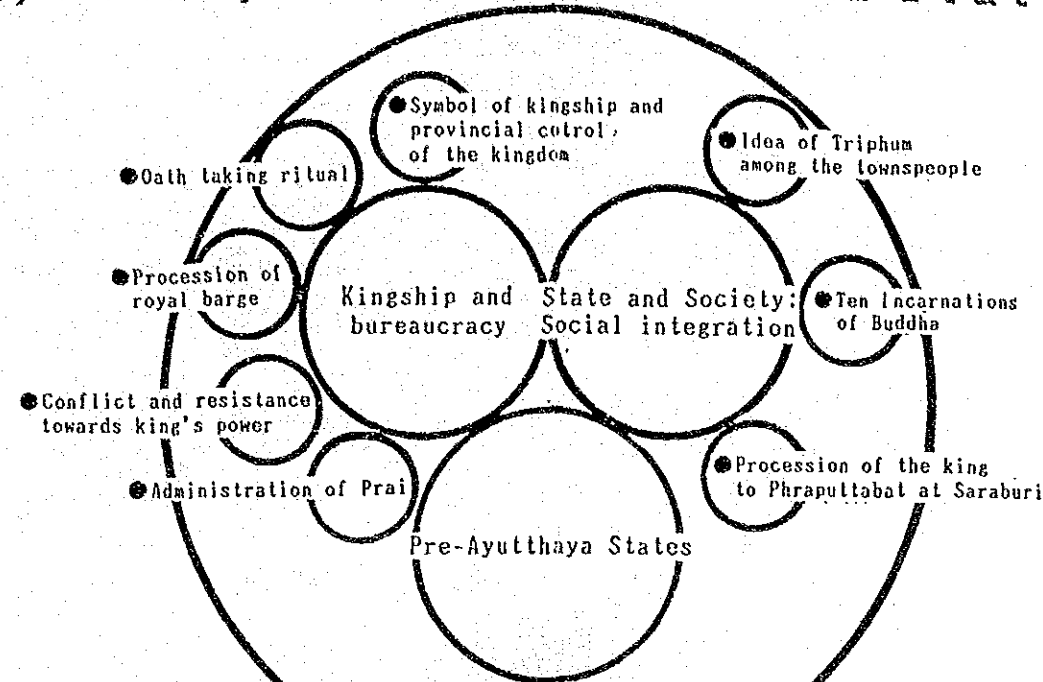
Sub-Theme	Item	Original Source	Exhibition Form	Note
Peasant community life	Temple wall with mural painting	Real thing	Replica	
	Village in the flood season	Reports of academic survey	Model	1/50 or 1/80
	The nature in the village · Many kinds of fishes	Reports of academic survey	Floor tile	
	· Many kinds of birds	Reports of academic survey	Ceiling painting	

Sub-Theme	Item	Original Source	Exhibition Form	Note
Life cycle 1 • Childhood	Ron Kra Dong (baby feeding on a basket)	Reports of academic survey	Graphic	
	Tam Khuan Deuan			
	Shaving the topknot	Reports of academic survey	Miniature diorama	
			Graphic	
	Children's games	Reports of academic survey	Miniature diorama	
		Real thing (toy)	Real thing	
Study at the temple	Reports of academic survey	Miniature diorama		
• Coming of age	Ordination procession	Real thing (Mural painting)	Replica	
	Ordination Tam Khuan			
• Marriage	Thai wedding ceremony	Reports of academic survey	Miniature diorama	
		Real thing	Real thing	
		Real thing (Documents)	Graphic	

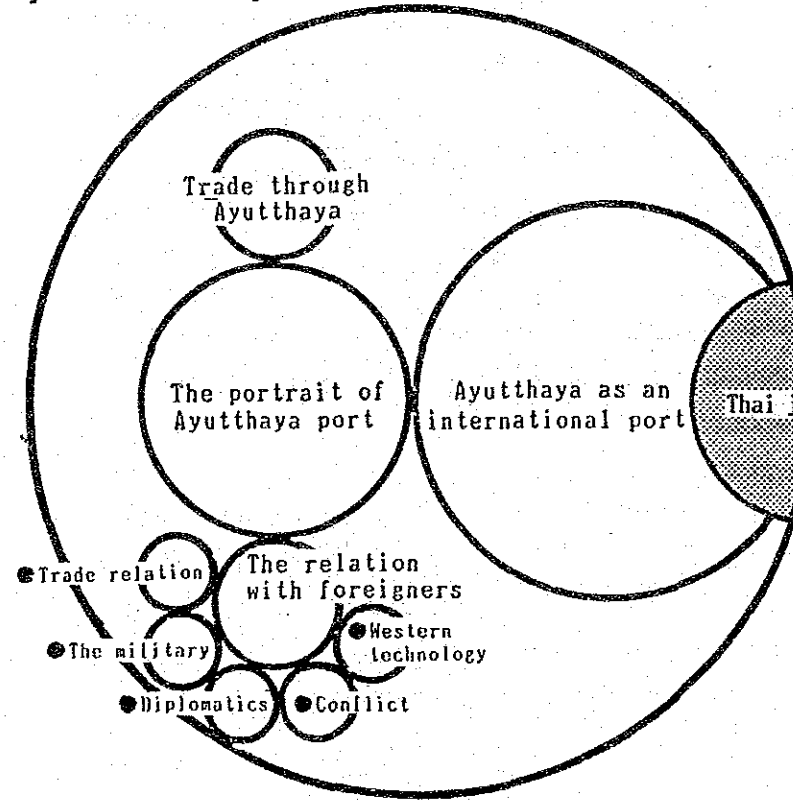
Sub-Theme	Item	Original Source	Exhibition Form	Note
Inside the house	Under the floor	Reports of academic survey	Re-construction model	
		Real thing (farm implements)	Real thing	
	Bed room	Reports of academic survey	Re-construction model	
		Real thing (furniture)	Real thing	
	Kitchen	Reports of academic survey	Re-construction model	
		Real thing (cooking implements)	Real thing	
Cultivation	Rice planting	Reports of academic survey	Graphic panel	
Calamities	Warfare and natural disaster	Reports of academic survey	Graphic panel	

Sub-Themes	Item	Original Source	Exhibition Form	Note	
Life cycle 2 • Tetmaha- chat	Tanmat	Real thing	Real thing	With a doll (abstract) on it.	
	Preach by a monk	Reports of academic survey	Sound		
• Enter- tainment	Jataka	Real thing	Graphic		
	Shadow play Puppets	Real thing	Real thing		
	Shadow play Puppets Thai classical dance (Khon) Drama Facing contest with swords, clubs or other weapon (Krabi Kraabaung) Wrestling Thai boxing Cock fight	Real thing (Mural painting)	Replica		
	Boat song performance	Reports of academic survey	Painting		
			Sound		
	Music instruments	Real thing	Real thing	DE LA LOUBERE	
		Real thing (Illustra- tion for a book)	Graphic		
	• Healing	Black art	Reports of academic survey	Miniature diorama	
		Medicine	Real thing	Real thing	
		Massage	Real thing	Graphic	Text
Cremation		Reports of academic survey	Miniature diorama		
• Death and after death	Phra Malai	Real thing	Graphic panel		

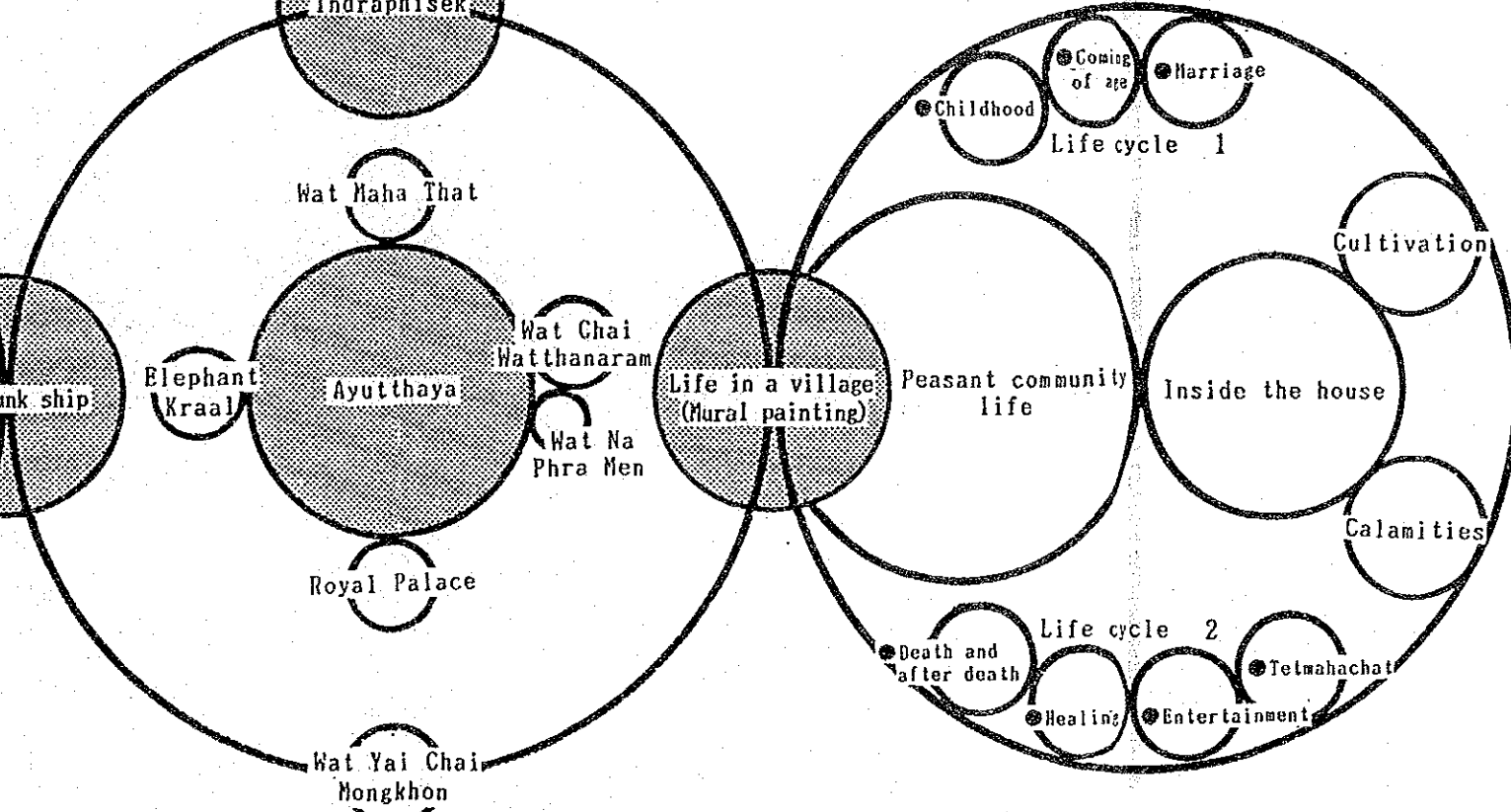
Theme III Ayutthaya as a centralized state



Theme II Ayutthaya as a port city

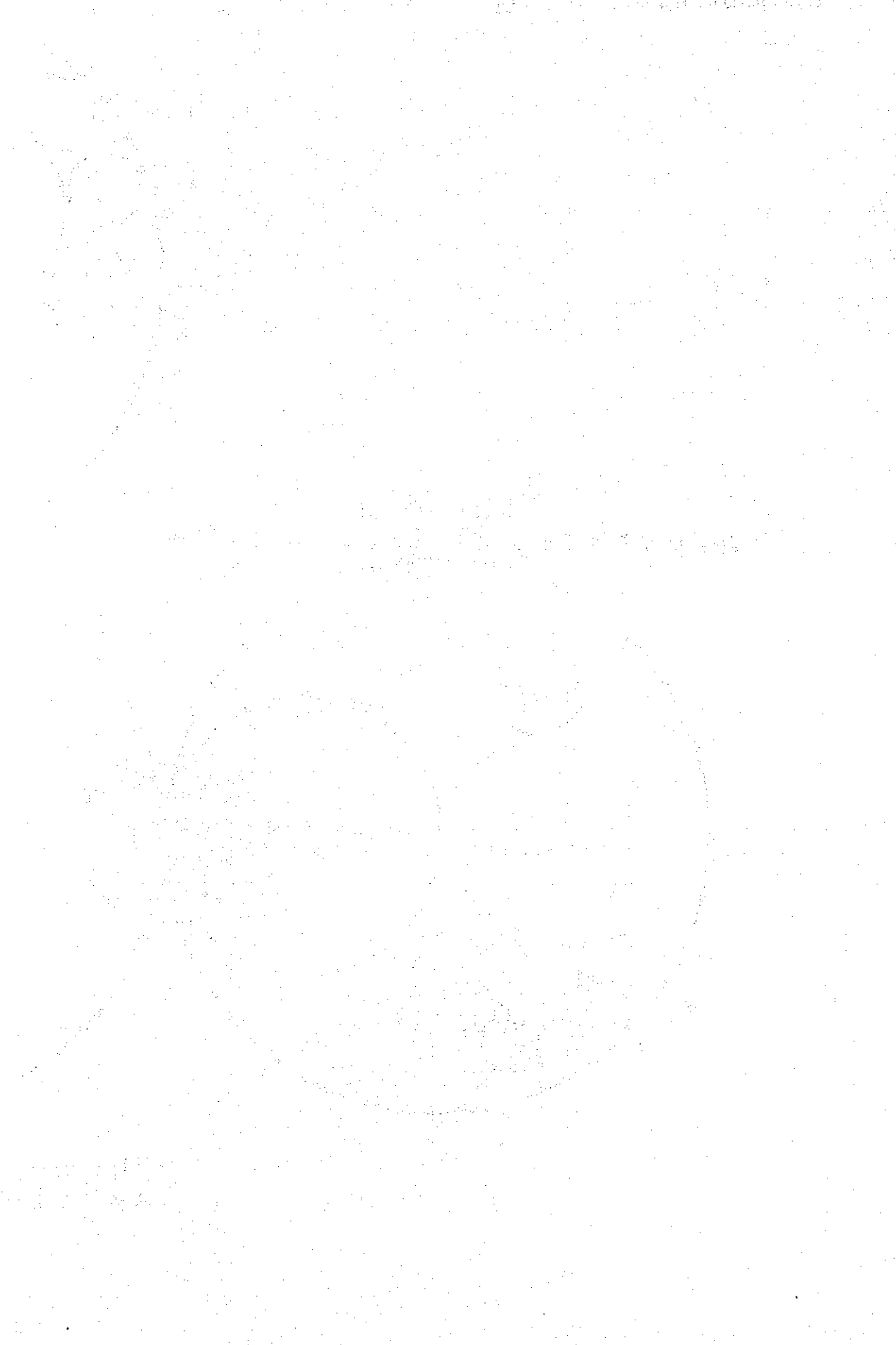


Theme IV Village life of Ayutthaya



Theme I Introduction: Ayutthaya as a capital





4.1.4 Exhibition Technique Plan

(1) Explanation boards and signs

In the Exhibition Rooms, displays by explanation boards and signs will be required for showing visitors the regular routes to follow, for supplying graphic information which constitutes a part of the exhibition, and for furnishing explanations on the exhibit articles.

Various information to be conveyed by explanation boards and signs are arranged according to their types and levels and are indicated on panels of different modules. As a result, visitors will have easy access to information of any type or level and will be able to understand them clearly. The following types and modules are established for explanation boards and signs:

a) Thematic signs

In each Exhibition Room for Themes I to IV, exhibition themes are displayed to help visitors understand the broad story of the exhibitions as a whole as well as the position of each Exhibition Room on the regular routes.

b) Corner panels

These are set up at several exhibition corners prepared in the Exhibition Rooms to provide summaries of the exhibition.

c) Graphic panels

Graphic panels are used in the Exhibition Rooms to offer complementary information on the exhibition through letters, photographs and illustrations etc. They are expected to enhance the atmosphere of the rooms with large pictures and photographs.

d) Caption plates

Several of these are set up in the exhibition corners. Letters and illustrations are used to introduce small topics related to the contents of the corner exhibition

and to provide explanations on the exhibit articles which consist of real objects, replicas and models.

e) Nameplates

One nameplate is set up for each exhibit article to show its name etc. Two types of nameplates, large and small, are prepared because some brief comments may be required in some cases.

Notes for displays are written in both Thai and English for the convenience of foreign visitors.

(2) Display of modeled objects

In addition to actual objects, modeled articles such as replicas, models and dioramas are often displayed. Inclusion of modeled articles in the exhibition has the following significance:

- a) When the originals (actual objects) are scientifically and artistically valuable and cannot be put on display, accurate replicas are created and exhibited.
- b) When exhibition of the originals is impossible in terms of the scale of the buildings and environment, but a panoramic view of the exhibits as a whole is nevertheless desired, information can be offered with models and dioramas of reduced scale.
- c) Specific parts of a building or environment can be selected according to the purposes of the exhibition and replicated either at full scale or reduced scale.

The following modeled articles are planned for this exhibition:

THEME I

Model of Royal Palace

Model of Wat Chai Watthanaram

Model of Elephant Kraal

THEME II

Model of Thai merchant ship (Junk ship) (1/10)
Models of merchant ships of various countries (1/50, 4 vessels)
Diorama of Port (Pom Petch)
Replicas of domestic merchandise
Replicas of incoming merchandise from foreign countries
Replicas of documents related to Thai Junk ships and Chinese crew
Replicas of Khoi manuscripts showing the procession of volunteer army from several countries
Replicas of official documents sent from Ayutthaya to Japan
Replicas of official documents sent from Japan to Ayutthaya
Replicas of plan of a western fort in Bangkok
Replicas of ancient maps
Replicas of scientific equipments

THEME III

Models of Indraphisek
Small-scale models (12) of symbolic structures of each pre-Ayutthaya city state
Reduced model of Benja
Reduced models of royal regalia (Royal crown, sword and pitcher)
Replica of musical instruments used in oath-taking rituals (cone shells, drums and gongs)
Replica of weapons used in oath-taking rituals (basin, sword and archery)
Magicvisions of Procession of Royal barge
Magicvisions of "Administration of Phrai"

THEME IV

Replicas of temple wall with mural paintings
Model of a village in the flood season
Miniature diorama of shaving a topknot
Miniature diorama of children's games
Miniature diorama of "Study at a temple"
Replicas of walls with mural paintings describing the Buddhist ordination rites
Miniature diorama of the Thai wedding ceremony

Model of peasant's house (showing the space under the floor)
Model of peasant's house (showing the bedroom)
Model of peasant's house (showing the kitchen)
Replica of wall with mural paintings describing various entertainments
Miniature diorama of Black art
Miniature diorama of cremation

(3) Audiovisual Plan

Audiovisual exhibitions have the following effects:

- a) They make it possible to convey intensive information within a limited space.
- b) They encourage visitors to participate and help them learn while enjoying themselves.
- c) They change the atmosphere of the exhibition spaces and play a vital role in environmental presentation.

The following audiovisual exhibitions are planned in this Project.

THEME I

* Ayutthaya (slide presentation without narration)

The following slides are projected on a screen set up above a large-scale map.

Ayutthaya in Rama V period

Ayutthaya as shown in the drawings by foreigners

One projector is equipped. About ten scenes are projected while the projector repeats "fade in" and "fade out" every 30 seconds or so.

THEME III

* Musical instruments used in oath-taking rituals (sound)

Realistic music performed by cone shells, drums and gongs at oath-taking rituals is provided along with a large-scale graphic panel showing the oath-taking ritual. High-

directivity loudspeakers are to be used so as not to disturb the other exhibition corners.

* Procession of Royal Barge (Magicvision with narration)

The scenery of Ayutthaya island on one side of the river and settlement of the common people on the other are shown in three-dimensional presentation. Gorgeous parades of royal ships emerge amid the above scene and move slowly onward. (running time: about 2 - 3 minutes)

* Administration of Phrai (Magicvision with narration)

A three-dimensional view of the Royal palace and Wat Phra Si Sanphet is shown in the background. Many "Phrai" (common people) and their supervisors emerge on screen. Under the directions of their supervisors, the Phrai are building a canal to prepare for a battle with the Burmese army. (running time is about 2 - 3 minutes)

* Buddhist scriptures of Triphum and the Ten Incarnations of Buddha (slide projector)

The narration describes Buddhist scriptures of Triphum and the Ten Incarnations of the Buddha. Necessary information other than images, if any, is supplied by occasional superimposing of dialogue. (running time is about 10 minutes)

THEME IV

* Preaching of monks in Tetmahachat (sound)

In the exhibition corner for Tetmahachat, the actual pulpit (with a doll of a monk mounted on it) is displayed, accompanied by the sound of the voice of sutra-chanting monks. High-directivity loudspeakers are to be used so as not to disturb the other exhibition corners.

* Boat song performance

When passing through the gate-shaped display, visitors can listen to the boat song performance from loudspeakers installed in the columns on both sides.

(4) Space representation plan

The exhibition for the Project is created by the integration of various factors such as exhibit items including originals, replicas, models, dioramas, graphics, images and sounds, cases and stages for installation of the exhibits, and environmental representation consisting of illumination of the exhibition space and surrounding areas, color schemes and sound effects. In order to obtain a desirable exhibition space, it is essential to take the above factors into consideration and set up plans based on integrated environmental compositions.

The following is the basic policy for space representation plan adopted for the Project to determine the appearance and atmosphere of the exhibition.

- a) The rooms are to be so constructed that the Exhibition Room for Theme I, which displays the pivotal exhibits in terms of the project concept, will command a panoramic view of the other three Exhibition Rooms for Themes II, III and IV. Symbolic exhibitions of the Themes II, III and IV are located in these Exhibition Rooms as if to reach out to the Exhibition Room for Theme I.
- b) Although intentional illumination effects using artificial lighting are mainly adopted, natural lighting may also be introduced as long as it does not hamper the preservation of exhibit materials.
- c) As to floors, walls, ceilings and exhibition facilities (display cases, display stages and panels, etc.) within the exhibition space, the same materials and modules are basically used to maintain a unified design concept. However, special representation effects may be adopted for details to highlight on the uniqueness of each exhibition room.
- d) As to color scheme, the color tones and tints inherent in materials like stones, wood and metals are preferred. So-

called "showy and gaudy" colors should be avoided unless for a special intension.

(5) Printed materials plan

Several kinds of printed materials will be made available to students after the opening of the Historical Study Centre.

1) Material on Ayutthaya history

To supplement the learning of Ayutthaya history through exhibitions, booklets explaining Ayutthaya history will be given out. This booklet can be used as a guidebook for the exhibition, and will also prove useful for reference at a later date. Its contents are as follows:

a) Explanation of Ayutthaya history in line with the exhibition components

The booklet will consist of four chapters corresponding to exhibition themes I - IV. Explanations in each chapter develop the topics related to the exhibit articles.

b) Summary of the facilities of the Historical Study Centre

This section explains what kind of facilities the Study Centre consists of, what function each facility has and how they can be utilized.

The above contents are compiled into a booklet with around 200 pages. English and Japanese versions besides the Thai version will be published.

In view of the functions of this Study Centre as a research and education institute, the above materials outlining Ayutthaya history are essential and must be prepared as a part of the Project.

2) Brochures and leaflets

Brochures (containing a general guide map of the facilities, explanation of exhibition components and guide for facility utilization, etc.) are to be given out to all visitors at the time of ticket sales. Leaflets (containing more detailed descriptions and data as complementary information for the exhibition) are to be placed in several locations in the Exhibition Rooms for free distribution to visitors. These materials will become a valuable guide for visitors observing the exhibitions.

4.2 Basic Design of Facilities

4.2.1 Outline of proposed site

1) Location

The proposed site for the Ayutthaya Historical Study Centre is situated within the old Japanese Village of Koh Riang, Ayutthaya. The site is located approximately 2km from the city of Ayutthaya and about an hour and twenty minutes' drive to the north from the center of Bangkok. The western part of the site faces the Chao Praya River, and the site can be approached from the front road (approximately 6m wide) on the eastern side. Located to the north of the site is a rice mill plant which extends to the boundary. The site of the old Japanese Village is owned by the Thai-Japanese Association, but Ayutthaya Province has already obtained from the Association the approval to use the land for the Project.

2) Current circumstances of the site

The trapezoid-shaped site of the old Japanese Village extends approximately 120 m from east to west and 90m from south to north. The total area is 11,200m². A sidewalk extends straight in the east-west direction, roughly at the centre of the site, as if to connect the Chao Praya River to the west of the site with the access road on the eastern side. The ground level on both sides of this concrete-paved sidewalk is low and has flooded in the past when the water level of the Chao Praya River rose. The current site accommodates monuments of the old Japanese Village, garden lanterns, monuments explaining about the old Japanese Village, rest house, lavatory and manager's cottage etc.

During discussions with the Ministry of Education and the Department of Fine Arts, it was confirmed from archaeological considerations that the area covering the western one-third of the site (an area 8m wide stretching in the east-west direction, which includes the central sidewalk) should be preserved as a historic site and no construction of permanent facilities should be allowed in the area. As to the eastern two thirds of the site across the central sidewalk as well as the northern and southern

regions, the Dept. of Fine Arts has confirmed that there are no problems in using them as the site for building the Historical Study Centre etc. The Thai-Japanese Association has acquired from the Department of Fine Arts the permission to use the area and Ayutthaya Provincial Authority, in turn, has obtained the formal approval of the Thai-Japanese Association to use this particular part of the site for constructing the Historical Study Centre.



3) Preparation of the site

To guard against possible flooding in case of heavy rainfall, the Thai side will level and fill the entire site of the old Japanese Village to the same level as that of the central sidewalk of the site. The Thai-Japanese Association will temporarily transfer and store at some other location the existing monuments of the old Japanese Village, garden lanterns, and monuments explaining about the old Japanese Village until the preparation of the site is completed.

These memorials will be installed in appropriate locations at an appropriate time, after the general site plan has been drawn up.

4) Results of boring tests

Boring tests were conducted in three spots within the site at the time of the Second Preliminary Study. The results showed that pile tips shall be placed at a depth of 20.0 meters from the existing ground. (Refer to Appendix V).

5) Access Road

The road is paved from the city of Ayutthaya to halfway up to the site of the old Japanese Village. The remaining 2km are still unpaved. It was, therefore, confirmed that Ayutthaya Province will carry out the necessary work for repairing and paving the Access Road prior to the commencement of construction work for the Historical Study Centre.

6) Current status of infrastructure around the site

a) Electricity

There are no service wires on the front road at present. Therefore electric power should be supplied to the facilities by installing distribution lines (22KV) on the front road and a transformer (160KVA standard) within the site. The regular voltage of the transformer would be 22KV/400-230V. Tentative supply of power during construction work can be secured by

extending the low-voltage 400V-230V line currently used at the adjacent rice polishing mill.

b) Potable (miscellaneous use) Water

There is currently no embedded plumbing for waterworks in the front road. Neither is there a plan to provide any in future. The required water will be supplied by boring deep wells within the site and treating the water with a purification device. There are three examples of deep wells in adjacent areas which supply 80m³ of water every day. Since the amount of water required daily for this Project is 20m³, the deep well is expected to provide sufficient water.

c) Drainage

There are no public drainage systems around the site. Therefore the waste water would be treated within the site and released into the Chao Praya River. The standard of the ONEB (Office of National Environmental Board) should be applied to the quality standard of the waste water.

d) Telephone

There are currently no telephone lines on the front road of the site. Telephone poles should be set up by TAT (Telephone Authority of Thailand) so that the telephone lines can be extended.

e) Gas

Supply by gas cylinder is possible from an LPG gas station near the site. The LPG gas station also serves as a gas station for automobiles so there are no problems in securing LPG in future.

4.2.2 Design policy

1) General conditions

The design of the building and facilities should be most appropriate for exhibitions on the history and culture of Thailand.

- * The design should take sufficient account of the natural and surrounding environment. A design adapted to the local climate, natural features, site conditions and customs should be drawn up.
- * The design should conform to local circumstances and the building and facilities should be easy to manage and maintain, requiring minimum maintenance cost. Natural air flow, ventilation and lighting should be used, wherever possible, minimizing dependency on machines and equipment.
- * Local construction techniques, materials and methods should be taken into account in order to keep down the construction cost and also facilitate the construction work itself.

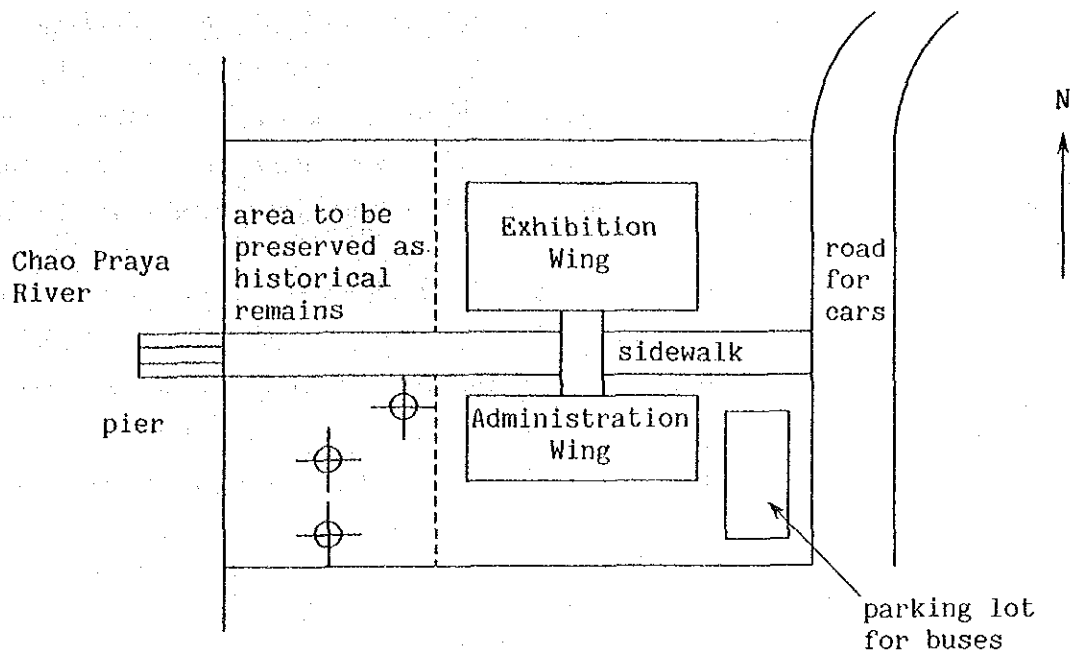
2) Special conditions

- * A design should be adopted which clearly distinguishes the circulation plan for visitors from that for delivering materials for exhibition, so that the Historical Study Centre will have a functional, well-defined structure.
- * The exhibition space should have the flexibility to facilitate re-arrangement of exhibits or make room for special (non-permanent) exhibitions. The layout of the exhibition space is also an important factor.
- * Once the Historical Study Centre starts functioning on a full scale, it is highly probable that additional facilities will be necessary, particularly for storage space. Sufficient reserve space should be secured for this purpose.

- * Natural conditions (ventilation and lighting) should be optimized so as to minimize the cost for maintenance. However, appropriate air-conditioning systems should be adopted with consideration for the preservation of exhibition materials (guarding them from direct sunlight, powdered latellite, dust from the rice polishing mill, etc.) as well as for storing materials borrowed from other museums.
- * Designs of facilities and exhibition spaces should be carried out in parallel. In other words, understanding of the structure and contents of the exhibits will help promote harmony between the architectural space and exhibition space.
- * The museum building is an exhibition by itself. It requires careful consideration, particularly in its appearance. The design should be free from formality but should conform to the function of the Historical Study Centre, history and cultures of Ayutthaya, and the local climate and natural features of the surroundings.

4.2.3 Basic design

(1) Site utilization design



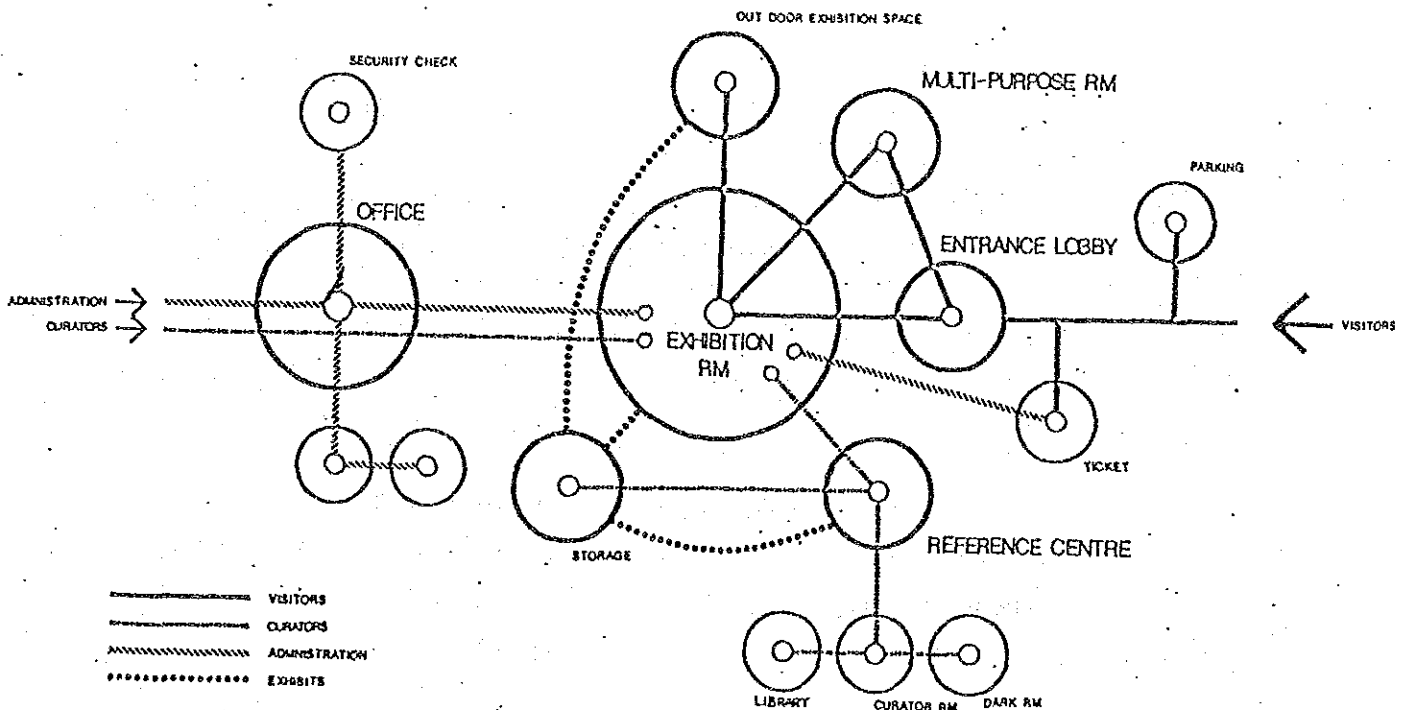
- 1) The site utilization design shall be drawn up from the viewpoint of maintaining harmony with the contents and appearance of the Historical Study Centre and preserving the area designated as historical remains.
- 2) No structures such as buildings shall be constructed on the historic site preservation area in the western part of the site or along the sidewalk extending east-west.
- 3) The sidewalk stretching in the east-west direction in the site shall be paved and trees will be planted along the road which will provide a comfortable open space for visitors arriving by bus, automobile or boat.
- 4) The construction area is divided into the southern and northern part by the sidewalk. In order to utilize this area effectively, the central facilities including Exhibition Rooms and Multi-Purpose Hall will be located on the north side and the administrative wing on the south side. By adopting this layout, the spacious yard in the

eastern part of the site and a reasonably large service yard in the northeast part can be secured.

- 5) In order to harmonize the buildings with the surrounding environment, a landscape featuring trees will be adopted for the approach on the eastern part of the site and the historical site preservation area in the western part while a landscape featuring of trees or water shall be used for the southern side where the administration wing is located.
- 6) A parking lot for buses shall be provided in the south east of the site. Until a major parking space can be secured nearby (the work for which will be done by the Thai side), the area under the pilotis on the first floor of the exhibition area shall tentatively serve as a parking space.

(2) Architectural design

1) Floor plan



a) Functional floor plan

* A clearly defined and functional floor plan shall be adopted by incorporating the Entrance, Lobby,

Exhibition Rooms and Multi-Purpose Hall in one block and the Director's Room, Administration Offices and Meeting Room into another (administration block).

* Although the two wings are separated by the sidewalk extending in the east-west direction, a courtyard shall be provided between the two wings, supplemented by a bridge and trees, so that the area will have a unified appearance as a whole.

b) Well-defined circulation plan

* A circulation plan shall be adopted which will guide visitors from the courtyard, via the stairway (semi-open space) or the slope, through the administration wing and finally into the exhibition area.

* The circulation for delivery of materials shall be separated from that for visitors and shall extend directly from the service yard in the northeastern part of the site to the storage.

* As to the transfer of materials from the storage to exhibition areas, the small items shall be delivered via a suitable located stairway while large-scale materials shall be directly conveyed to the 2nd floor by a lifter installed in the service yard or by a hook.

c) Eye-catching layout of the exhibition room

* The Exhibition Rooms shall be located so that visitors coming in from the Entrance Lobby will be able to command a comprehensive panoramic view of Exhibition Rooms II, III and IV and will understand at a glance that Exhibition Room I serves as an introduction to all the themes of the exhibition.

d) Considerations for the physically handicapped people

* Gentle slopes shall be provided not only between Exhibition Rooms that have differences in level but

also for the circulation leading to the Exhibition Rooms on the 2nd floor.

* Lavatories for the exclusive use of the handicapped people and various sign-posts shall be provided within the site for the comfort and convenience of handicapped people of Thailand and from abroad visiting the Historical Study Centre.

2) Sectional design

The standard ground level will be raised 50 - 60 cm from the highest level of the current sidewalk. The main floor shall be constructed on the 2nd floor level of the building to guard against cases when the Chao Praya River may become flooded. The first floor shall be used as a pilotis space to provide space for the future expansion for additional storages and a room for curators while the storage shall be located on the 2nd floor.

A difference of about 1m shall be established between the level of Exhibition Room I and that of Exhibition Rooms II, III and IV. This will result in a dynamic layout. In this way, Exhibition Room I will be easily observed from the other Exhibition Rooms.

3) Exterior plan that harmonize with the surrounding environment

The following points were taken into account for designing the roof of the Historical Study Centre; the climate in Thailand, conditions surrounding the site, function of the building as a museum and impression from the approach. Four different types of roof plan (refer to Appendix VI) were presented to decide the optimum exterior plan of the Center. These area; (A) Thai-style roof, (B) gable roof, (C) vault roof and (D) combination of flat roof and Thai-style roof. Based on the Thai architect's advice on the above plans, the comparative study concluded that the plan (D) combination of flat roof and Thai-style roof is most appropriate for the historical Study Centre from the above

points of view. In particular, the Thai-style roof adopted on the front part of the building is expected to contribute substantially to enhancing the general impression of the building.

4) Finishing plan

Functions of the building, the local construction situation, site conditions of the building and facilities, the surrounding environment, the usage of each room and the method, techniques and materials for construction should be considered for selecting the interior and exterior finishing materials. In particular, the following points should be taken into account for the Historical Study Centre:

- * To adopt a durable and safe design since the Centre will have a large number of visitors.
- * To adopt an attractive, serene and elegant design appropriate for a cultural facility.
- * To adopt a design that satisfies the required functions and capacity for exhibition and storage of materials.
- * To adopt a design that is easy to maintain.

a) Exterior plan

Roof	: insulated copper board
Exterior wall	: fabricated brick, partly covered with marble
Terrace floor	: tile
Exterior fixtures	: aluminum sash (clear anodised coloring) stainless steel fixtures (natural coloring)

b) Interior finish

Name of Room	Floor	Skirting	Wall	Ceiling
Entrance Lobby	granite	granite	granite	acoustic board, painted
Exhibition Rooms I-IV	non-slip rubber tile	wood, painted	rigid PVC film	wood and plywood w/ truss
multi-Purpose Hall	non-slip rubber tile	wood, painted	rigid PVC film	wood and plywood w/ truss
Administration Offices	vinyl floor carpet	vinyl	mortar paint	acoustic asbestos
Director's Room	carpet	wood, painted	wall cloth	acoustic asbestos, painted
Meeting Room	carpet	wood, painted	wall cloth board	acoustic asbestos, painted
Reference Centre	vinyl floor tile	vinyl	acoustic particle board	acoustic asbestos, painted
Curators' Room	vinyl floor tile	vinyl	mortar paint	acoustic asbestos, painted
Dark Room	vinyl	vinyl	mortar paint	acoustic asbestos, painted
Storages	wooden flooring(double floor)	wood, painted	board (double wall)	acoustic asbestos
Workshop	dust-proof coating	vinyl	mortar paint	acoustic asbestos
Air-conditioning Machine Room	dust-proof coating	mortar	glasswool board	glasswool board
Lavatories	tile	tile	tile	asbestos, painted

(3) Structural design

1) Policies for design

- a) To adopt a structural design most appropriate for the customs and climate of Thailand as well as for the scale, form and objectives of the building.
- b) To adopt a structural design which sufficiently takes into consideration the local circumstances regarding procurement of materials, quality of materials and construction techniques. Local materials and construction methods shall be used as much as possible.
- c) To adopt a structural design which is both economical and durable.

2) Structural design

- a) A reinforced concrete frame structure which is commonly used in Thailand shall be adopted. The walls shall consist of bricks and blocks incorporated into the framework.
- b) Foundation
The results of the boring test indicate that the ground conditions of the site are poor. As a result, a pile foundation should be adopted. The length and proof stress of the piles shall be determined after the weight of the facilities are established in the course of the detailed design.
- c) Structural calculation shall be carried out according to the design standard of the Japan Architects Association, adopting the operating stress method. The allowable stress of structural materials shall be determined with reference to relevant standards of Thailand and Japan, and also taking into account the local construction techniques and foreseeable inconsistencies in quality.

3) Design loads

Design loads including external force and loads imposed on buildings shall conform to "Bylaws of the Bangkok Metropolis, Re: Control of the Construction of Buildings, 1979, NG, 1979"

a) Dead loads

- * reinforced concrete 2.4t/m³
- * structural steel 7.85t/m³
- * bricks and blocks 1.9t/m³
- * the weight of other finishing materials shall be established at the time of the detailed design.

b) Live loads

- * roof (general) 50kg/m³
- * roof (concrete canopy) 100kg/m³
- * lavatories 150kg/m³
- * Administration Offices, Meeting Room, corridors and stairways 300kg/m³
- * Exhibition Rooms 500 - 800kg/m³
- * Library, Storage, Machine Room Workshop 500kg/m³
- * A detailed study shall be made for the areas on which large loads are imposed due to special exhibitions, etc.

c) Wind loads

The standard stipulated by the Bylaws of the Bangkok Metropolis shall be adopted.

Height	Wind Pressure
10 m or less	50 kg/m ²
10 - 20 m	80 kg/m ²
20 - 40 m	120 kg/m ²

Note) Since the wind load in Thailand is approximately 1/3 compared to that in Japan, it can be disregarded

in the structural design for a building like the Historical Study Centre which has only 2 stories.

d) Seismic load

Because of the absence of major earthquakes in this area of Thailand in the past, seismic load is not taken into consideration in the structural design of the Historical Study Centre.

4) Structural materials

The main structural materials shall be designated as follows:

- a) Reinforcing bars Deformed bar SD30(TIS standard)
- b) Concrete $F_c=210\text{kg/cm}^2$
 (cylinder test for 4-week strength)
- c) Cement Regular Portland cement
 (ASTM standard)
- d) Structural Steel SS41 (JIS) or equivalent
- e) Pile Precast concrete product

(4) Utility design

1) Policies for design

a) To prepare a utility design appropriate for the Historical Study Centre

* A secure and comfortable environment shall be provided in which visitors will be able to enjoy the exhibition.

* An environment which will not damage the exhibit materials (by heat, humidity, dust, mold, insects, etc.) shall be maintained.

* A utility design that can flexibly cope with re-arrangement of exhibits shall be adopted.

b) To prepare a utility design that conforms to the circumstances and site conditions of Thailand

* The related laws of Thailand shall be considered. In case there are no applicable laws in Thailand, reference shall be made to regulations in Japan.

* The utility design should also conform to local climatic conditions and customs.

c) To prepare a utility design with consideration to maintenance and management

* A utility design that is economical in terms of construction and operation costs shall be adopted.

* A utility design which requires the most simple procedures for operation, maintenance and management shall be adopted.

d) To make careful selection of equipment and materials

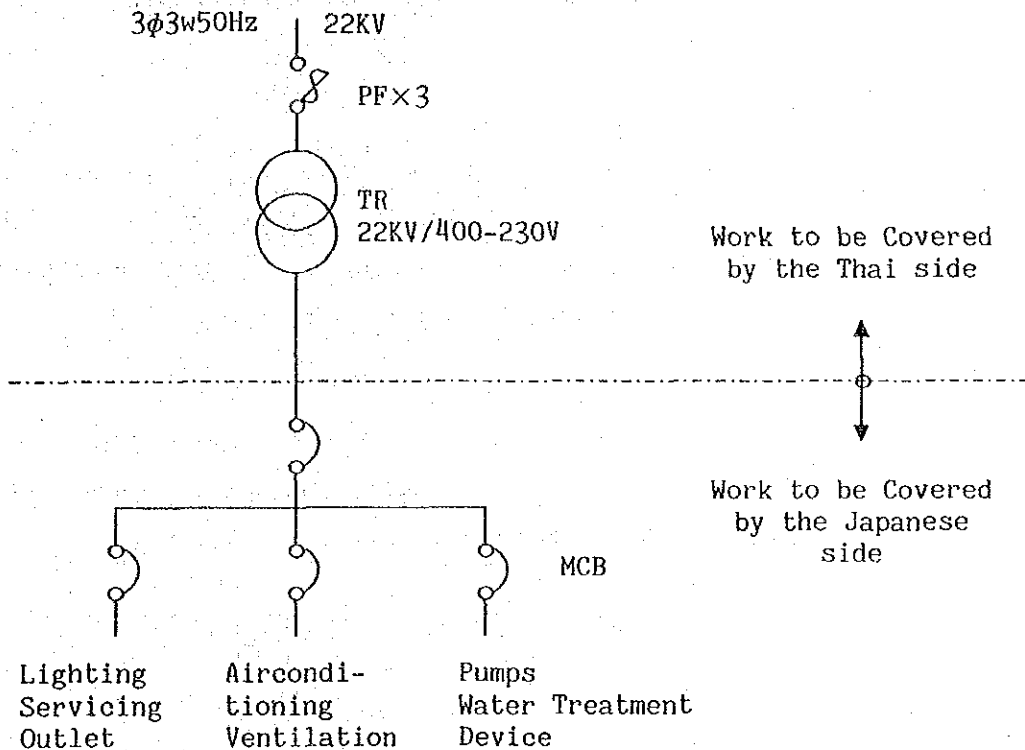
* Standardized items shall be used for equipment and materials so as to facilitate repair work and exchange of parts.

* The equipment and materials shall conform to TIS, while those procured from Japan shall conform to JIS.

2) Electrical system

a) Power supply system and design loads

The work for extending the power line from the 22kV high-voltage line on the trunk road in front of the site to the transformer shall be covered by the Thai side. From the transformer to the Electricity Room in the building, the power line shall be extended from an underground low-voltage cable.



The estimated system design loads are as follows, totalling 160KVA. The electric power demand is estimated to be around 80KW.

- | | |
|---------------------------------|--------|
| 1. lighting/service outlets | 20KVA |
| 2. air-conditioning/ventilation | 100KVA |
| 3. plumbing system pumps, etc. | 40KVA |

b) Panelboards and transformers

Transformers having a capacity of 160KVA shall be installed outdoors. A low-voltage panelboard will also be provided indoors in the Electricity Room, from which power will be supplied to different facilities of the building. The secondary voltage of the transformer shall be 3-phase 4-line 400/230V, and power shall be supplied at 3-phase 400V to airconditioning units and at single-phase 230V to lighting and servicing outlets. The transformer shall have sufficient capacity for air-conditioning (cooling) the facilities.

c) Low-voltage power line

A power line shall be provided from the low-voltage panelboard in the Electricity Room to the panelboards for lighting and motors. Wiring or bridged polyethylene cable shall be used for this purpose.

d) Lighting/servicing outlet

As a rule, fluorescent lighting devices shall be used for illumination. The following shows the average illumination levels for the main rooms.

Exhibition Rooms	300lux
Administration Offices	300lux

e) Wiring and conduits to motors

Wiring and conduits from power control panels shall be provided to supply power to air-conditioning units and pumps. Irregularities such as breakdown of units and decrease of water in tanks shall be indicated.

f) Automatic fire alarm system

* A fire detector (smoke or heat detector) shall be installed in each room to help early detection of fire.

* The indication panel for fire alarm signals shall be placed in the Administration Office.

g) Public address system

* A loudspeaker shall be installed in each room for public address.

* An amplifier set with a microphone shall be placed in the Administration Office.

h) Audio/visual system

The Multi-Purpose Hall shall be furnished with the following audio/visual equipment:

- Overhead projector
- 35mm slide projector

i) Telephone system

* Telephone lines shall be extended from the road in front of the site.

* Distribution/relay exchange device shall be provided (3 direct lines and 10 extension lines)

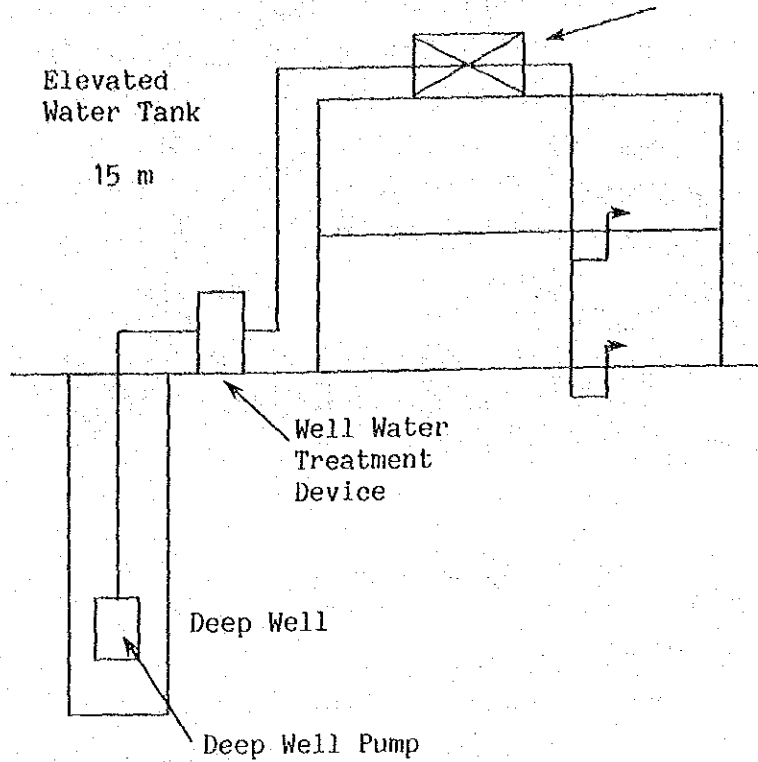
j) Lightning Rod

A lightning rod shall be provided on the rooftop to prevent disasters from a lightning strike.

3) Plumbing system

a) Water supply

Water is supplied by boring a well, drawing water, filtrating the water and pumping it up to the elevated water tank. From the elevated water tank, water is supplied to necessary locations. The estimated amount of water required for the Centre is 15m³/day. A conventional water cooler with bottle shall be prepared for drinking water.



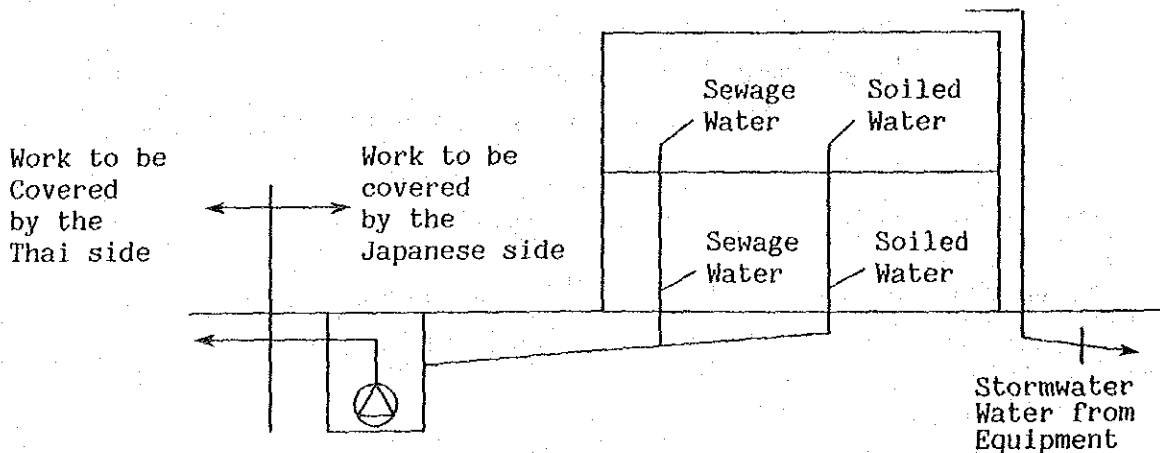
b) Hot water supply

An electric hot plate is provided for hot water to drink. Water is boiled in a kettle.

c) Drainage

Gravity method shall be adopted for draining soil water and sewage water together. Storm water and water from equipment will be drained separately.

An FRP septic tank shall be installed outdoors. The maximum drainage per day shall be 15m^3 , and the BOD standard of 60ppm or below shall be observed.



d) Plumbing fixtures

Sinks, mirrors, service sinks, water closets and urinals shall be provided in the lavatories. Installation of a Thai-style water closet using flush valves will also be considered.

e) Fire fighting system

An indoor hydrant system shall be installed as per instructions by the Thai side. Small fire extinguishers will also be prepared.

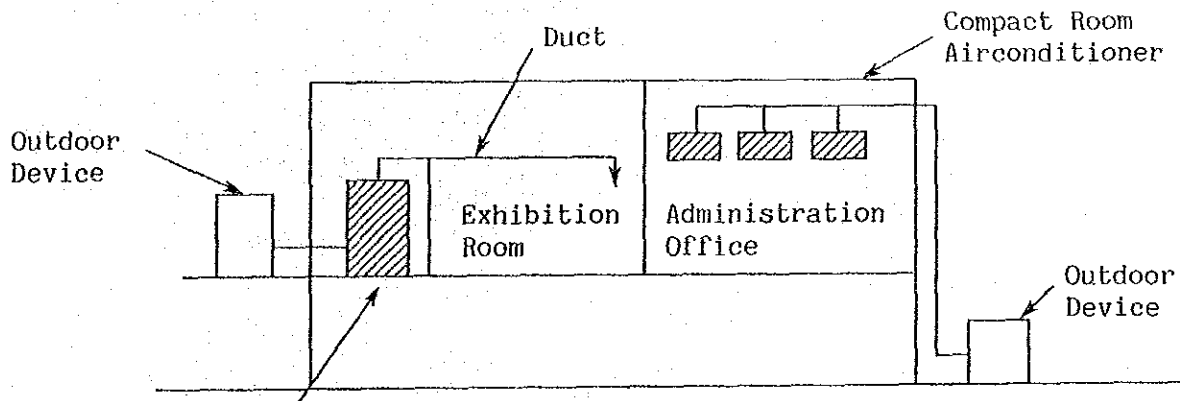
4) Air-conditioning/ventilation system

a) Air-conditioning System

The building interior shall be divided into the two zones shown below and furnished with air-type packaged air-conditioners.

Designed installation conditions (heat, humidity):

- | | | |
|----------------------------|------|-----|
| a. Exhibition Rooms: | 27°C | 50% |
| b. Administration Offices: | 26°C | 50% |



Floor-type Package Airconditioner

b) Ventilation system

The storage for exhibition materials shall be furnished with a dehumidifier in addition to the water supply/drainage systems to prevent high humidity.

Only the ventilation system shall be installed in the lavatories.

The following shows the standard frequency of ventilation required for the facilities:

- | | |
|-------------------------------|--------------|
| Storage for exhibit materials | 10 times/hr. |
| Lavatories | 10 times/hr. |