CHAPTER 3 Implementation Plan

Chapter 3 Implementation Plan

3-1 Implementation Plan

3-1-1 Implementation Concept

The Project, backed by grant aid of the Government of Japan, entails the procurement, design, and implementation of five categories of equipment – equipment for exhibition, storage system, education, collection and preparation, and research – for the Geological Museum that belongs to Geological Research and Development Centre (GRDC) of Directorate General of Mineral Resources of the Ministry of Mines and Energy. GRDC, which is the Indonesian counterpart responsible for implementation of the Project, will conclude an agreement with a Japanese consulting company, from which GRDC will receive technical advice during preparation and distribution of detailed design and tender documents, examination of tenders, supervision of equipment fabrication and execution of installation work. In addition, GRDC will conclude (a) contract(s) with Japanese supplier(s) of the equipment decided by the above tender. The Japanese supplier(s) shall procure, fabricate, transport, and install the equipment and provide GRDC with guidance in operation and maintenance of the equipment. The equipment delivered to the site shall be unpacked and installed by local worker under supervision of the supplier's engineers. The subsequent wiring, fitting of small parts, test operation, and adjustment shall be performed by the engineers. Depending on certain types of equipment, local engineers, such as computer engineers, may be used. The implementation organization is shown in Figure 3.1.1. Throughout the implementation stage, GRDC shall solely assume the responsibility for the Project.

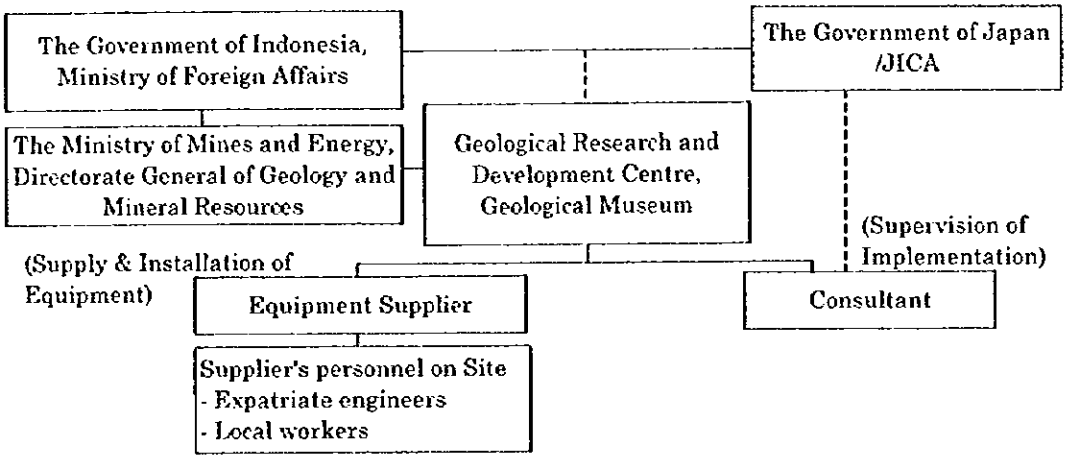

Figure 3.1.1 Organization for Project Implementation

3-1-2 Implementation Conditions

Even now, the Geological Museum carries on its activities, such as public showing of exhibits, specimen collection, and research. In addition, other facilities of GRDC are in operation in the neighborhood. Though the Geological Museum has to be temporarily closed during carry-in, installation, test operation, adjustment, etc. of the equipment, it is necessary for the Indonesian personnel concerned, Japanese consulting company, and equipment suppliers to make a prior consultation to formulate a work schedule and execute the above work in such a manner as to minimize the effect on the Geological Museum and neighboring facilities. In particular, during relocation of the objects on display and the specimens, etc. in storage, due care must be exercised not to cause them to be damaged or lost.

It should be noted that there are many Muslims in the locality and their work efficiency tends to drop during Ramadan. Just after the Ramadan, consecutive

7 to 10 days become holidays. In the term of fiscal year of 1998, Ramadan is scheduled to be about one month from around December, 20.

3-1-3 Scope of Works

Japanese side

① Fabrication/procurement of planned equipment and transportation of the equipment to and assembly and installation of the equipment at the Project site

② Secondary-side electrical wiring for planned equipment

③ Guidance in test operation/adjustment, regular operation, and maintenance of planned equipment

④ Consulting services during preparation of detailed design and tender documents, bidding, and supervision of work execution

⑤ Advice on display of specimens, etc. after installation of supplied equipment.

Indonesian side

① Renovation of building (includes reinforcement of storage room floors)

② Primary-side electrical wiring

③ Relocation of existing equipment, specimens, etc.

④ Display/storage of specimens, etc. after installation of supplied equipment

⑤ Preparation of graphic manuscripts for exhibition

⑥ Preparation of specimen name labels

The expenses to be borne by the Indonesian side are shown in Appendix-6.

3-1-4 Consultant Supervision

In line with the concept of grant aid of the Government of Japan and in accordance with the consulting agreement, the consulting company shall, in light of the basic design objectives, perform implementation design and implementation supervision, extend technical assistance to the Indonesian side, go through the necessary formalities for the grant aid in Japan, and supervise the progress of implementation operations, thereby helping to attain the objectives of the Project. To that end, the consulting company must form a standing team for project execution and complete the Project without delay. In concrete, in the implementation design stage, the consulting company shall work out detailed design of the planned equipment, prepare tender documents, and call for bids in the name of the Project owner, and in the implementation supervision stage, the consulting company shall provide the Indonesian side with technical advice during confirmation and meeting of the equipment suppliers at the site and at the time of approval of equipment working drawings. In addition, engineers of the consulting company shall attend the intermediate inspection during fabrication of the equipment and the inspection before shipment of the equipment to ensure that the equipment is fabricated and procured smoothly. During execution of the field works, the consulting company shall reside at the site and supervise the works from start-up till completion of installation and delivery of the equipment.

3-1-5 Procurement Plan

(1) Procurement procedure

Of the planned equipment, the audio-visual equipment, soft X-ray equipment, computers (for data processing, exhibition preparation, and research), light printing machine, and other electrical and electronic equipment shall be

procured from suppliers which can provide the necessary after-sale services through their local agencies, since the supply of spare parts and consumables and the repair and maintenance services are especially important to them. The types of equipment, the procurement of which from the third countries should be considered, and the reasons for that are shown in Table 3.1.1.

Table 3.1.1 Equipment which may be procured in the third countries

Equipment	Reason
1. Equipment for Exhibition	
Showcase	There is a possibility that manufacturers in Germany, Singapore etc. can produce the equipment which complies with requirements competitively.
Lighting Fixture	There is a possibility that manufacturers in Singapore etc. can produce the equipment which complies with requirements competitively.
Dinosaur Frame Replica	There is a possibility that manufacturers in USA, UK etc. can produce the equipment which complies with requirements competitively.
Polarization Microscope with Camera and Monitor	There is a possibility that manufacturers in Germany etc. can produce the equipment which complies with requirements competitively.
2. Equipment for Storage System	
Rack (for rock)	Manufacturing in Singapore and transportation from the place will be advantageous.
Rack (for fossil)	ditto
Moving Rack	ditto
Thin Section Cupboard	ditto
Mezzanine	ditto
3. Equipment for Education	
Computer System for Preparation of Exhibition and Education	Some parts of the equipment are not produced locally, and Japanese products do not comply with requirements.
Light Printing Machine	To keep fair competition among manufacturers
4. Equipent for Collection and Preparation	
Rock Cutter (large)	The equipment made in USA, Germany etc. is excellent and competitive.
Rock Cutter (small)	ditto
Micro-cutter	ditto
Resin Impregnator	ditto
Rock Polishing Machine (rough)	ditto
Rock Polishing Machine (finish)	ditto
Rock Polishing Machine (mirror	ditto
Ore Illuminated Microscope	There is a possibility that manufacturers in Germany etc. can produce the equipment which complies with requirements competitively.
Illuminated Binocular Microscope with Camera	ditto
Illuminated Binocular Microscope	ditto
Computer System for Data Processing	Some parts of the equipment are not produced locally, and Japanese products do not comply with requirements.
Altimeter	The equipment made in Switherland, USA etc. is excellent and competitive.
Electronic Distance Measurement Equipment	The equipment made in USA etc. is excellent and competitive.

Equipment	Reason
5. Equipment for Reserch	
Polarization Microscope with Camera and Standard Accessories	There is a possibility that manufacturers in Germany etc. can produce the equipment which complies with requirements competitively.
Ore Illuminated Microscope with	ditto
Binocular Microscope with Camera	ditto
Illuminated Binocular Microscope with Camera	ditto
Computer System for Research	Some parts of the equipment are not produced locally, and Japanese products do not comply with requirements.

(2) Transportation method

Freight from Japan or a third country shall be unloaded at Tanjun Priok port in Jakarta. From the viewpoint of curtailing the transportation period and protecting the goods, it is desirable to use containers for transportation. Marine transportation by a container vessel from Japan to Jakarta takes about two weeks because it always calls at Taiwan, Singapore, etc. There are some conventional freight vessels which go nonstop to Jakarta. In this case, the time required is 10 to 11 days. However, container vessels leave port every day, and even if only one shipping company is to be used, at least one of its container vessels sets sail in a week. Conventional freight vessels are operated rather irregularly and few of them are bound direct for Jakarta. Therefore, there is fear that the waiting time for a vessel should be long. In terms of the time required for loading and unloading at a port too, the container is advantageous. From the unloading port to the Geological Museum in Bandung, the goods are transported by land using a freight car, trailer, or truck.

Formerly, it was obligatory to submit the certificate of inspection issued at the place of loading by the third designated inspection company (SGS) during customs clearance in Indonesia. This rule was abolished this year. Nevertheless, a similar inspection may be done during customs clearance, and the time required for it should be taken into account.

3-1-6 Implementation Schedule

The implementation schedule for the Project is shown in Figure 3.1.2. The implementation period is 13 months from Exchange of Notes (E/N).

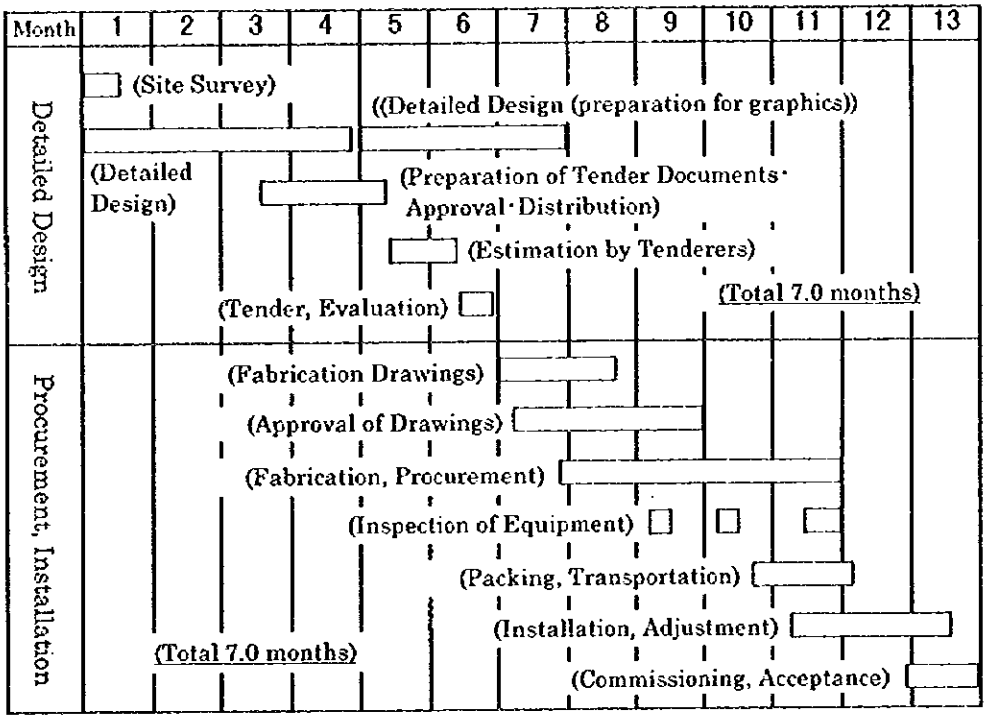

Figure 3.1.2 Implementation schedule

The types of equipment which require installation work, etc. at the site are shown in Table 3.1.2. The work to be performed at the site are classified as follows.

a. Equipment which requires to be assembled/installed at the site
b. Equipment which requires an engineer to provide general handling instructions to the user
c. Equipment which requires the user to learn how to use it under the guidance of an engineer.

Table 3.1.2 Site Work

Equipment	Site Work			Remarks
	a	b	c	
1. Equipment for Exhibition				
Audio Visual System	○	○	○	Training of multi-cube etc.
Display Panel	○			
Showcase	○	○		
Graphic Panel	○	○		
Display Stage	○			
Dinosaur Frame Replica	○	○		
Model	○	○		
Sign Panel	○	○		
Lighting Fixture	○	○		
Polarization Microscope with Monitor	○	○		
Hydraulic Ladder		○		
Video Monitor Set	○	○		
2. Equipment for Storage System				
Rack (for rock)	○	○		
Rack (for fossil)	○	○		
Moving Rack	○	○		
Thin Section Cupboard	○	○		
Fireproof Cabinet	○	○		
Plastic Containers	○			
Air/Dust Filter	○	○		
Humidity Control Machine	○	○		
Fire Proof Panel	○			
Security Door System	○			
Mezzanine	○			
3. Equipment for Education				
Computer System for Preparation of Exhibition and Education	○	○		
Editing System	○	○	○	Editing a film for AV system in entrance hall as training
Light Printing Machine	○	○		
Air-conditioner	○	○		
4. Equipment for Collection and Preparation				
Lift	○	○		
Forklift		○		
Push Cart (with fork)		○		
Rock Cutter (large)	○	○		
Rock Cutter (small)	○	○		
Micro-cutter	○	○		
Resin Impregnator		○		
Rock Polishing Machine (rough)	○	○		
Rock Polishing Machine (finish)	○	○		
Rock Polishing Machine (mirror surface)	○	○		
Vacuum Cleaner	○	○		
Air Blaster	○	○		
Ultrasonic Cleaning Machine		○		
Weighing Machine (large)		○		
Weighing Machine (medium)		○		
Weighing Machine (small)		○		
Oven		○		
Ore Illuminated Microscope		○		
Illuminated Binocular Microscope with Camera		○		

Equipment	Site Work			Remarks
	a	b	c	
Illuminated Binocular Microscope		○		
Ultraviolet Coating Films	○			
Digital Camera		○		
Camera with Stand (35mm)		○		
Camera with Stand (broni)		○		
Camera with Stand (35mm macro)		○		
Photo Processing Equipment	○	○		
Soft X-ray Machine	○	○		
Computer System for Data Processing	○	○		
Global Positioning System (GPS)		○		
Altimeter		○		
Electronic Distance Measurement Equipment		○		
Video Camera		○	○	Shooting films for AV system in entrance hall as training
5. Equipment for Reserch				
Polarization Microscope with Camera		○		
Ore Illuminated Microscope with Camera		○		
Binocular Microscope with Camera		○		
Illuminated Binocular Microscope with Camera		○		
Computer System for Research	○	○		

3-1-7 Obligations of Recipient Country

The following measures should be taken by the Indonesian side on condition that the Grant Aid by the Government of Japan is extended to the Project:

(1) To provide data and information necessary for the Project.

(2) To complete the relocation of the existing equipment, facilities and civil works required prior to the installation of the equipment and settings.

(3) To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental items required for the Project.

(4) To allocate appropriate budget and staff members for the proper and effective operation and maintenance of equipment and settings provided under the Grant Aid.

(5) To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission.

(6) To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid.

(7) To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Indonesia with respect to the supply of the products and services under the verified contracts.

(8) 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 Indonesia and stay therein for the performance of their work in accordance with the relevant laws and regulations of the Republic of Indonesia.

(9) To provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary.

(10) To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project on the responsibility of the Indonesian side.

(11) To bear all the expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.

3-2 Operation and Maintenance Plan

Based on a study conducted by the Study Team, the extra cost of operation and maintenance required when the planned equipment is introduced is estimated to be about 15 million rupiah a year (details are shown in Table 3.2.1) assuming higher costs of spare parts and consumables than reasonably expected. This amount corresponds to 9% of the 1997 total budget (166,878 thousand rupiah) of the Geological Museum and 46% of the 1997 budget for consumables.

Table 3.2.1 Major spare parts and consumables for the planned equipment

Equipment	Quantity	Spares, Consumables for 1 year
1. Equipment for Exhibition		
Audio Visual System	1 set	1 projection tube
Lighting Fixture	380 sets	38 bulbs
2. Equipment for Storage System		
Air/Dust Filter	6 rooms	filters
3. Equipment for Education		
Computer System for Preparation of Exhibition and Education	1 set	paper, printer toner
Light Printing Machine	1 set	paper, ink, drum
4. Equipment for Collection and Preparation		
Rock Cutter (large)	1 set	3 diamond blades, 20l coolant, etc.
Rock Cutter (small)	1 set	3 diamond blades, 20l coolant, etc.
Micro-cutter	1 set	3 diamond blades, 20l coolant, etc.
Resin Impregnator	1 set	resin
Rock Polishing Machine (rough)	1 set	5kg carborundum, etc.
Rock Polishing Machine (finish)	1 set	5kg carborundum, etc.
Rock Polishing Machine (mirror surface)	1 set	5kg carborundum, etc.
Finishing Plate	4 pcs	100g diamond paste
Illuminated Binocular Microscope with Camera	1 set	30 films
Camera	4 sets	films, 4 batteries
Photo Processing Equipment	1 set	chemicals
Soft X-ray Machine	1 set	films, 4 batteries
Video Camera	1 set	2 batteries
5. Equipment for Reserch		
Polarization Microscope with Camera	1 set	30 films
Ore Illuminated Microscope with Camera	1 set	30 films
Binocular Microscope with Camera	1 set	30 films
Illuminated Binocular Microscope with Camera	1 set	30 films

If the Project is implemented during fiscal year of 1997, the estimated revenue and expenditure for the fiscal 1999 in which the planned equipment is put into use becomes as shown in Table 3.2.2. In this estimate, the 1997 budget was used as the base for calculations. As the extra cost of operation and maintenance required by introduction of the planned equipment, the above 15 million rupiah was used as the base. It was assumed that the present 9.8% inflation (based on 1993 statistics) would continue and that the costs of personnel, operation, and maintenance would continue increasing at that rate. (With the above inflation rate,

the above extra cost of operation and maintenance is estimated to be 18,084 thousand rupiah in 1999.) In addition, it was assumed that the cost of renovation of the building would be completely covered by the 1998 budget.

Table 3.2.2 Revenue and expenditure of the Geological Museum
(effect of the Project on balance sheet)

(Unit: thousand rupiah)

	1997	1999
Budget	166,878	219,273
Personnel expenses	9,000	10,850
Cost of equipment	67,500	8,378
Cost of operation & maintenance (includes cost of consumables)	34,500	59,677
Other	55,878	67,367
Total expenditure	166,878	219,273

According to the estimate based on the above assumptions, it is necessary to secure a budget worth 219,273 thousand rupiah in 1999.

Table 3.2.3 compares the above estimate of the Study Team with the estimate made by the Geological Museum.

Table 3.2.3 Comparison of estimated revenue & expenditure of the Geological Museum (for 1999)

(Unit: thousand rupiah)

	Estimated by the Study Team (A)	Estimated by the Museum (B)	Difference (B) – (A)
Revenue			
Government budget	219,273	812,000	592,727
Expenditure			
Personnel expenses	10,850	12,000	1,150
Cost of equipment	81,378	250,000	168,622
Cost of operation & maintenance (includes cost of consumables)	59,677	250,000	190,323
Other	67,367	300,000	232,633
Total expenditure	219,273	812,000	592,727

As can be seen from the above table, all the items in the estimation of the Geological Museum exceed those in the estimation of the Study Team. With respect to the cost of operation and maintenance, the estimated figure of the Geological Museum is about four times larger than that of the Study Team. The reason for this is that the Geological Museum assumed that all the equipment the Indonesian side requested during the field survey for basic design would be supplied.

The Geological Museum includes 50,000 thousand rupiah for consumables and 200,000 thousand rupiah for maintenance in the budget for 1999 in which the planned equipment is to be put into use. From the above comparison of estimates, the way the Geological Museum thinks about the operation and maintenance of the equipment to be supplied is judged valid. Therefore, as long as the Indonesian side takes proper budgetary measures, the extra cost of operation and maintenance will not pose any budgetary problem.

As a concrete method for operation and maintenance of the planned

equipment, it is desirable that the consulting company prepare operation & maintenance manuals for the planned equipment and recommend them to the Indonesian side in the detailed design stage.

CHAPTER 4 Project Evaluation and Recommendation

Chapter 4 Project Evaluation and Recommendation

4-1 Project Effect

When the grant aid by the Government of Japan is extended to the Project, the following effects are expected, therefore, it is judged that execution of the Project is appropriate.

(1) Method of exhibition will be made remarkable progress with introducing new showcases, graphic panels for explanation of specimens, lighting fixtures etc., and schoolchildren, students and other general visitors will be able to understand geology of Indonesia, geological features different from other area, rich mineral resources due to the geological features, natural disasters, and evolution of life through the long history of geological time and characters of environment of life in the area where they are living. Through those experience of the knowledge, the Project will contribute to participation of Indonesian nationals in a social and economical development, improvement of environment, natural environmental protection and reduction in natural disasters.

(2) Improvement of the equipment for storage will increase the efficiency of keeping articles in storage, allowing all the existing specimens, including ones which now cannot be stored, to be kept in storage. In addition, since the atmosphere and control function of the storage will be improved, it will become possible to prevent prototype fossils and other specimens which are internationally important from deteriorating or getting lost.

(3) Improvement of the equipment for education will make it possible to provide schoolchildren and students with easy-to-understand explanations about geology, which explanations can hardly be made by the exhibition of specimens alone. Thus,

the combination of the improved equipment and exhibition will increase the educational effect.

(4) Technical level of the staff of the Geological Museum rose through the Japanese technical cooperation. Improvement of the equipment for collecting and processing specimens and the equipment for research will improve the technical level higher, and technical level of specimen storage, education, etc. will also rise higher.

The persons who directly benefit from the Project are the visitors to the museum. There are more than 100,000 visitors a year, and 80% to 90% of them are schoolchildren and junior and senior high school students from all over the country. Those schoolchildren and students benefit from the Project most as they are offered a good place to learn natural science. In Indonesia, there are 36,634,882 schoolchildren and junior and senior high school students (in the fiscal year of 1995). This means that the number of potential beneficiaries is great. In addition, the reinforcement of education in natural science and promotion of survey of mineral resources in Indonesia will contribute to the promotion of mining, manufacturing, and other sectors of industry. This in turn will benefit the whole nation. The specimens kept in the Geological Museum are assets which are valuable not only to the people of Indonesia but also to all humankind. Therefore, providing the Geological Museum with a good storage environment should benefit the whole world.

The number of persons who will visit the Geological Museum in the future is estimated below. First, the number of schoolchildren and students enrolled in 1995 is shown in Table 4.1.1.

Table 4.1.1 Number of schoolchildren and students in Indonesia (1995)

School	Classification	Schoolchildren, students /persons	Population/person
Elementary school	Public	24,282,194	
	Private	1,917,829	(age: 7-12)
	Total	26,200,023	26,926,461
Junior high school	Public	4,262,453	
	Private	2,129,964	(age: 13-15)
	Total	6,392,417	13,723,076
Senior high school	Public	1,849,928	
	Private	2,192,514	(age: 16-18)
	Total	4,042,442	12,370,224
University/academy	Public	766,129	
	Private	1,463,667	(age: 19-24)
	Total	2,229,796	21,948,200
Total		38,864,678	74,967,961

(Source: Ministry of Education and Culture)

At present, the Government of Indonesia strives to make elementary and junior high school education compulsory. It is expected, therefore, that the number of schoolchildren and students, especially junior and senior high school students, will significantly increase in the future. The percentage of school attendance forecast by the Government of Indonesia for each of the periods of the 6th to 10th Five-Year Development Plans is shown in Table 4.1.2.

Table 4.1.2 Forecast of percentage of school attendance

Unit: % (million for total population)

Five-Year Plans	6th	7th	8th	9th	10th
Elementary school	95.7	96.2	96.9	97.5	98.0
Junior high school	62.0	69.0	78.0	88.0	98.0
Senior high school	40.0	51.0	60.0	71.0	80.0
University/academy	12.0	15.0	18.0	21.0	25.0
Total	204.4	219.4	233.6	246.5	258.1

(Source: 2nd Long-Term Development Plan)

The numbers of schoolchildren and students in the future estimated from Tables 4.1.1 and 4.1.2 are as shown in Table 4.1.3.

Table 4.1.3 Forecast of numbers of schoolchildren and students in future

Unit: persons

	1998	2003	2008	2013	2018
Schoolchildren	27,122,073	29,264,543	31,385,328	33,323,575	35,070,676
Junior high school students	8,955,190	10,697,639	12,875,665	15,328,577	17,873,777
Senior high school students	5,207,979	7,127,466	8,927,964	11,148,171	13,152,440
University/academy students	2,772,119	3,719,440	4,752,203	5,850,405	7,292,521
Total	44,057,361	50,809,088	57,941,161	65,650,728	73,389,413

Assuming that paying a visit to the Geological Museum as part of school education is continued in the future, it is expected that the number of visitors to the museum will increase in proportion to the increase in number of schoolchildren and students. The improvement of the museum should increase the number of other visitors as well. Even if this is not the case, the number of visitors to the museum in the future is estimated as shown in Table 4.1.4.

Table 4.1.4 Forecast of visitors to the Geological Museum

Unit: persons

	1998	2003	2008	2013	2018
Schoolchildren	13,823	14,915	15,996	16,984	17,874
Junior high school students	82,620	98,695	118,790	141,420	164,902
Senior high school students	34,406	47,087	58,982	73,649	86,890
University/academy students	5,534	7,425	9,486	11,678	14,557
Others	7,789	7,789	7,789	7,789	7,789
Total	144,171	175,911	211,042	251,520	292,012

As shown in Table 4.1.4, it is expected that the number of visitors to the Geological Museum will increase markedly in the future. Since the museum is expected to benefit so many visitors, especially schoolchildren and students, in the form of

improved education in natural science, the Project is judged valid as a grant aid project.

4-2 Recommendation

Organization of Indonesian side with respect to the management and control of the Project has been prepared in accordance with the master plan, so there seems no problem in executing the Project. If the following points are improved or consolidated, however, the Project is executed more smoothly and effectively.

(1) Providing budget for renovation of the building

Based on the museum improvement plan of Indonesian side, the building of the museum is being renovated on budget of the Indonesian side. In order to carry out the renovation work as planned, it is indispensable for the Indonesian side to provide sufficient budget for the purpose in the years ahead. The budget for the next year has already been applied for and is scheduled to be announced unofficially in January of 1998. Considering that commodity prices have been hiking due to the marked decline in rupiah rate against dollar since July 1997 and that the cost of renovation work may increase, it is necessary for the Indonesian side to provide a budget sufficient to compensate for those cost increases.

(2) Continuing dispatch of experts

In order to carry out the museum improvement plan of Indonesian side successfully, it is important not only to renovate the building and introduce new equipment but also to improve the technical levels of the staff of the museum. So far, the instruction in operations of the Geological Museum, technology transfer, etc. have been implemented under long- and short-term guidance of experts dispatched to Indonesia by the Japanese technical cooperation. If the dispatch of experts is

continued in the future, it will contribute much to the attainment of the goal of the plan, together with the effect of the Project.

Appendices

Appendix-1 Member List of the Survey Team

1. Field Survey of Basic Design

Ms. Kae YANAGISAWA	Team Leader	Director of Training Division, Chugoku International Centre, JICA
Ms. Yukako MATSUURA	Project Coordinator	First Experts Assignment Division, Experts Assignment Department, JICA
Dr. Takayoshi NASU	Technical Advisor	Manager (Head Researcher), Department of Research, Osaka Museum of Natural History
Mr. Takashi KURODA	Chief Consultant	UNICO International Corporation
Mr. Hirofumi NAGAKANE	Facility and Equipment Planner	UNICO International Corporation
Mr. Katsuhiko HIGUCHI	Construction Planner and Quantity Surveyor	UNICO International Corporation

2. Consultation on Draft Report

Mr. Kazuhisa ITO	Team Leader	
Mr. Takashi KURODA	Chief Consultant	UNICO International Corporation
Mr. Hirofumi NAGAKANE	Facility and Equipment Planner	UNICO International Corporation
Mr. Katsuhiko HIGUCHI	Construction Planner and Quantity Surveyor	UNICO International Corporation

Appendix-2 Survey Schedule

1. Field Survey of Basic Design

No.	Date		Officials			Consultants		
			Yanagisawa	Matsuura	Nasu	Kuroda	Nagakane	Higuchi
1	2-Sep	Tue			Narita-Jakarta			
2	3-Sep	Wed			Courtecu Call on JICA Office, Embassy, UNESCO Jakarta-Bandung, Call on Geological Museum			
3	4-Sep	Thu			Courtecy Call on GRDC Discussion with Geological Museum (inception report)			
4	5-Sep	Fri			Survey of Geological Museum (present conditions and existing equipment)			Measurement of Museum Building
5	6-Sep	Sat			Meeting with Geological Museum (storage, education, research)			Measurement of Museum Building
6	7-Sep	Sun	Narita-Jakarta		Internal Meeting			
7	8-Sep	Mon	Embassy, JICA Jakarta-Bandung		Meeting with DGGMR and Director of GRDC Meeting with Geological Museum (exhibiton,, equipment)			
8	9-Sep	Tue	Meeting with Geological Museum (contents of equipment)					
9	10-Sep	Wed	Meeting with Geological Museum (contents of equipment)					
10	11-Sep	Thu	Meeting with Geological Museum (minutes) Bandung-Jakarta				Survey of Geological Museum	
11	12-Sep	Fri	Signing Minutes, BAPPENAS, Embassy, JICA Jakarta-				Survey of Geological Museum	
12	13-Sep	Sat	Narita	Survey	Jakarta-	UNESCO	Survey of Geological Museum	
13	14-Sep	Sun		Survey	Osaka	Jakarta-Bandung	Internal Meeting	
14	15-Sep	Mon		Survey		Discussion(exhibition)		
15	16-Sep	Tue		Survey Jakarta-		Discussion(education, research) Survey of Geological Museum		
16	17-Sep	Wed		Narita		Discussion(storage), Survey of Geological Museum		
17	18-Sep	Thu				Discussion (exhibition)		Vendor Survey
18	19-Sep	Fri				Discussion (exhibition)		Vendor Survey
19	20-Sep	Sat				Vendor Survey		
20	21-Sep	Sun				Internal Meeting		Bandung-Jakarta
21	22-Sep	Mon				Discussion (detail)		Vendor Survey
22	23-Sep	Tue				Discussion (detail)		Vendor Survey
23	24-Sep	Wed				Bandung-Jakarta Vendor Survey		Vendor Survey
24	25-Sep	Thu				Vendor Survey, Embassy, JICA, Jakarta-		
25	26-Sep	Fri				Narita		

2. Consultation on Draft Report

No.	Date		Itinerary
1	14-Dec	Sun	Narita 10:55 (JL725) - Jakarta 16:25
2	15-Dec	Mon	09:00- Meeting with JICA Office 10:30- Courtacy Call on Embassy of Japan 14:00- Courtacy Call on MOME (DGGMR) 15:00- to Bandung
3	16-Dec	Tue	Discussion with GRDC/Geological Museum (draft report)
4	17-Dec	Wed	Discussion with GRDC/Geological Museum (draft report)
5	18-Dec	Thu	09:00- Discussion with GRDC/Geological Museum (minutes) 15:00- Survey of ITB Bosscha astronomical observatory 16:00- to Jakarta
6	19-Dec	Fri	09:00- Conclusion of Minutes (DGGMR) 11:00- Meeting with BAPPENAS 14:00- Report to Embassy of Japan 15:00- Report to JICA Office
7	20-Dec	Sat	Internal Meeting, Market Survey Jakarta 23:45 (JL726)
8	21-Dec	Sun	Narita 8:35

Appendix-3 List of Party Concerned in the Recipient Country

1. Field Survey of Basic Design

The Ministry of Mines and Energy
Directorate General of Geology and Mineral Resources

Dr. Ir. Rozik B. Soetjipto	Director General

Geological Research and Development Centre (GRDC)

Dra. Purnamaningsih Siregar	Director
Ir. Untung Sudarsono	Director
Drs. Wawa Kartawa	Head of Administration Div.
Ir. Thamrin Cobrie Amin	Head of Publication and Information Div.
Ir. Prihardjo Sanyoto	Mapping Div.

Geological Museum

Ir. Dikdik Kosasih	Chief of Geological Museum Section
Ir. Tatty Suwarti	Adviser in Petrology
Ir. Syukur Syahli	Leader of Documentation
Dra. Julianty M.	Library
Ir. Sahat Tobing	Leader of Exhibition Group
Ir. Elina Sufiati	Researcher of Paleontology
Ir. S.R. Sinung Baskoro	Leader of Education Group
Ir. Adang Hendarsyah	Education and Lecture
Mr. Ken Takeuchi	JICA Expart

Bhumi Preanger Studio

Ir. H. Kamal A. Arif	First Director
Ir. Y. Basuki Dwisusanto	Diretor
Ir. Gunawan J.	
Ir. Gembong Firman	

UNESCO

Dr. Michio Hashizume	Programme Specialist

The Embassy of Japan

Mr. Koji Hachiyama	Second Secretary

JICA Indonesia Office

Mr. Hiroyo Sasaki	Deputy Representative
Mr. Takerou Kawabata	Assistant Resident Representative

2. Consultation on Draft Report

The Ministry of Mines and Energy
Directorate General of Geology and Mineral Resources

Dr. Ir. Rozik B. Soetjipto	Director General

Geological Research and Development Centre (GRDC)

Dra. Purnamaningsih Siregar	Director
Ir. Thamrin Cobrie Amin	Head of Publication and Information Div.

Geological Museum

Ir. Dikdik Kosasih	Chief of Geological Museum Section
Ir. Tatty Suwarti	Adviser in Petrology
Ir. Syukur Syahli	Leader of Documentation
Dra. Julianty M.	Library
Ir. Sahat Tobing	Leader of Exhibition Group
Ir. Elina Sufiati	Researcher of Paleontology
Ir. S.R. Sinung Baskoro	Leader of Education Group
Ir. Adang Hendarsyah	Education and Lecture
Mr. Ken Takeuchi	JICA Expart

BAPPENAS

Mr. Halim Ishak	Mining Sector Div.

ITB Bosscha Astronomical Observatory

Prof. Dr. Bambang Hidayat	Director

The Embassy of Japan

Mr. Koji Hachiyama	Second Secretary

JICA Indonesia Office

Mr. Ryo Suwa	Resident Representative
Mr. Hiroyo Sasaki	Deputy Representative
Mr. Takerou Kawabata	Assistant Resident Representative
Mr. Naoaki Omiya	Assistant Resident Representative

Appendix-4

Minutes of Discussions
on
the Basic Design Study on the Project of Equipment Assistance for Enlightenment of the Geological Information for School Children, Students and People
in
the Republic of Indonesia

In response to a request from the Government of the Republic of Indonesia, the Government of Japan has decided to conduct a Basic Design Study on the Project of Equipment Assistance for Enlightenment of the Geological Information for School Children, Students and People (hereinafter referred to as "the Project"), and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Indonesia the Basic Design Study Team headed by Ms.Kae Yanagisawa, Director of Training Division, Chugoku International Centre, JICA, and is scheduled to stay in the country from the 2nd September to the 25th September, 1997.

The Team held a series of discussions on the Project with the concerned officials of the Government of the Republic of Indonesia and conducted a field survey at the study area.

As a result of the discussions and field survey, both parties confirmed the main items described on the attached sheets.

The Team will proceed to further work and prepare the Basic Design Study Report.

Jakarta, the 12th September, 1997

Kae Yanagisawa
Leader
Basic Design Study Team
Japan International Cooperation Agency

Dr. Ir. Rozik B. Soetjipto
Director General
Directorate General of Geology and Mineral Resources
Ministry of Mines and Energy

ATTACHMENT

1. Objective of the Project

The objective of the Project is to strengthen the function of the geological education in the Geological Museum in Bandung by replacing and renewing the equipment and exhibition settings.

2. Responsible and Executing Organization

The responsible organization of the Project is the Ministry of Mines and Energy (MOME). Executing organization is Geological Research and Development Centre (GRDC).

3. Site of the Project

The project site is the Geological Museum in Bandung.

4. Contents of the Request by the MOME

a. After a series of discussions, the MOME requested the items attached as Annex-1.

b. Both sides have agreed on the criteria for the basic design of the Project as follows.

a) The exhibition-related equipment and space will be designed in accordance with the criteria attached as Annex-2.

b) The equipment will be selected in accordance with the criteria attached as Annex-3.

c. The final contents of the Project will be decided by the Japanese side at its discretion.

5. Japan's Grant Aid Programme

The MOME has understood the system and characteristics of Japan's Grant Aid Programme explained in Annex-4 by the Team.

6. Necessary Measures to be taken by the MOME

a. On condition that the Grant Aid Programme by the Government of Japan is extended to the Project, the MOME will take the necessary measures described in Annex-5 for the smooth implementation of the Project.

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The executing agency will secure the proper and effective operation and maintenance of the equipment procured under the Project.

b. Both sides confirmed the basic demarcation attached as Annex-6. Since the renovation of building and facilities is one of the most important measures to be taken by the Indonesian side for the Project, the MOME should submit the further detailed plan with the budget estimation and implementing schedule.

If there is any delay or modification of the renovation plan and/or schedule. the MOME will notice it to the Japanese side immediately.

c. Among renovation works described above, most essential and critical portions are as follows;

a) removal of the wall of the proposed Auditorium 1

b) removal of the wall of the proposed Exhibition 2

c) removal of a part of the wall between the proposed Exhibition 1 and 3

d) removal of the lift in the proposed Exhibition 1

e) reinforcement of the floor of storage for specimen, if necessary.

f) electric works

d. The MOME assigns officers of GRDC, who are in charge of the Project and responsible for the supervision of the improvement and maintenance of the museum, and accompany the study team surveying the Project.

7. Further Schedule of the Study

a. JICA will prepare draft report of the Study, and dispatch a mission in order to explain the contents to the Indonesian side around November,1997.

b. In case that the contents of the report are accepted in principle by the Indonesian side, JICA will complete the final report of the Study and will send it to the Indonesian side around December, 1997.

Annex-1 Items Requested by the MOME

Equipment	Quantity
I. Exhibition (in accordance with a zoning plan attached hereto)	
A. General Geology of Indonesia (Entrance Hall)	
Audio Visual System with a Screen	1 set
B. Origin of the Earth (Exhibition-4)	
Display Panel, Showcase, Graphic Panel, Display Stage, Sign Panel and Lighting Fixture	1 lot
C. Endogenetic and Exogenetic Process (Exhibition-4, 5 and 6)	
1. General Tectonic	
Display Panel, Display Stage, Showcase, Model, Graphic Panel, Sign Panel and Lighting Fixture	1 lot
2. Indonesia Archipelago	
Display Panel; Showcase, Graphic Panel, Model, Sign Panel and Lighting Fixture	1 lot
3. Sumatra Island	
Display Panel, Showcase, Graphic Panel, Model, Sign Panel and Lighting Fixture	1 lot
4. Kalimantan Island	
Display Panel, Showcase, Graphic Panel, Model, Sign Panel and Lighting Fixture	1 lot
5. Java Island	
Display Panel, Showcase, Graphic Panel, Model, Sign Panel and Lighting Fixture	1 lot
6. Volcano in Indonesia	
Display Panel, Showcase, Model, Display Stage, Model, Graphic Panel, Sign Panel and Lighting Fixture	1 lot
7. Sulawesi Island and Island Arc	
Display Panel, Showcase, Graphic Panel, Model, Display Stage, Sign Panel and Lighting Fixture	1 lot
8. Irian Island	
Display Panel, Showcase, Graphic Panel, Model, Sign Panel and Lighting Fixture	1 lot
D. Evolution of Life	
History of Life (Exhibition-1 and 3)	
1. Geologic Time Scale	
Display Panel and Lighting Fixture	1 lot
2. Pre-Cambrian Era	
Display Panel, Showcase, Graphic panel and Lighting Fixture	1 lot
3. Paleozoic Era	
Display Panel, Showcase, Graphic panel and Lighting Fixture.	1 lot
4. Mesozoic Era	
Display Panel, Showcase, Display Stage, Graphic Panel, Reconstructed Model of Dinosaurs, Sign Panel and Lighting Fixture	1 lot
5. Cenozoic (Tertiary)	
Display Panel, Showcase, Graphic Panel, Sign Panel and Lighting Fixture	1 lot
6. Cenozoic (Quaternary)	
Display Panel, Showcase, Display Stage, Graphic Panel, Sign Panel and Lighting Fixture	1 lot

Equipment	Quantity
Evolution of Life (Exhibition-2)	
1. Paleozoic	
Display Panel, Showcase, Graphic Panel and Lighting Fixture	1 lot
2. Mesozoic	
Display Panel, Showcase, Graphic Panel and Lighting Fixture	1 lot
3. Cenozoic	
Display Panel, Showcase, Graphic Panel, Lighting Fixture and Sign Panel	1 lot
E. Applied Geology	
Geology for human life (Exhibition-7 through 12)	
1. Non-Metalic Mineral	
Display Panel, Showcase, Graphic Panel, Lighting Fixture and Sign Panel	1 lot
2. Metalic Mineral	
Display Panel, Showcase, Graphic Panel, Lighting Fixture and Sign Panel	1 lot
3. Energy	
Display Panel, Showcase, Graphic Panel, Display Stage, Lighting Fixture and Sign Panel	1 lot
4. Gemstone	
Display Panel, Showcase, Graphic Panel, Lighting Fixture and Sign Panel	1 lot
5. Hydrology	
Display Panel, Showcase, Graphic Panel, Display Stage, Model, Lighting Fixture and Sign Panel	1 lot
6. Civil and Structure Engineering	
Display Panel, Showcase, Graphic Panel, Lighting Fixture and Sign Panel	1 lot
Geological Hazard (Exhibition-13)	
Display Panel, Showcase, Graphic Panel, Display Stage, Lighting Fixture and Sign Panel	1 lot
F. Other Equipment for Exhibition	
1. Polarized Microscopes with Camera and Monitor	1 set
2. Public Announcement System	1 set
3. Hydraulic Ladder	1 unit
4. Video Monitor Sets	2 sets
II. Equipment for Collection and Storage System	
1. Supporting & Handling Collection	
1) Truck Car with Hydraulic Lift	1 unit
2) Lift	1 unit
3) Forklift	1 unit
4) Push Carts	5 units
2. Rock and Fossil Specimen Preparation Equipment	1 set
3. Polarization, Ore Illuminated and Binocular Microscopes with Cameras and Necessary Accessories	2 units
4. Digital Cameras	2 sets
5. Camera with Stand	1 set
6. Dry Cabinets	8 units
7. Soft X-ray Machine	1 unit
8. Computer Systems for Data Processing	4 sets

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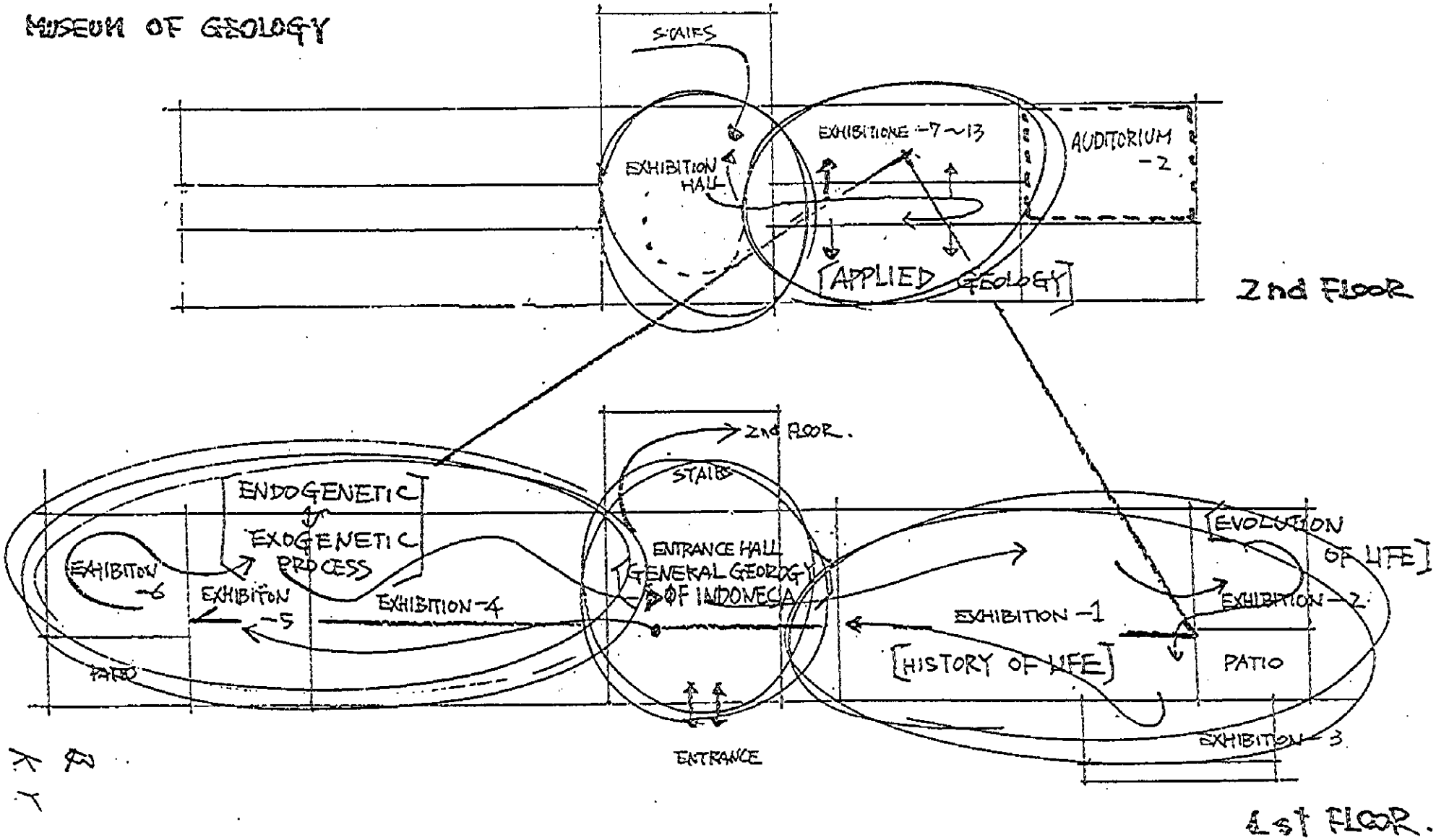
Equipment	Quantity
9. Storage Equipment	550,000 specimens
10. Thin Section Cupboards	1,000,000 thin sections
11. Fire Proof Filing Cabinets	12 units
12. Plastic Containers	5,000 units
13. Fire Proof Panels	8 units
14. Air/Dust Filters	30,000 m^3
15. Humidity Control Machines	30,000 m^3
16. Ultraviolet Coating Films	100 m^2
17. Security Door Systems	14 doors
18. Mezzanine	3 storages
III. Equipment for Education	
1. Computer Systems for Preparation of Exhibition	2 sets
2. Audio Visual System	1 set
3. Light Printing Machine	1 set
4. Equipment for Reference Services:	
1) Bookshelves	10 sets
2) Filing Cabinets	10 sets
3) Index Card Cabinets	3 sets
5. Chairs with Desks for Auditorium-1	200 sets
6. Dry Cabinets	4 sets
7. Air-conditioners for Auditorium-1	2 sets
IV. Equipment for Research	
1. Polarization Microscope with Camera and Standard Accessories	1 set
2. Ore Illuminated Microscope with Camera and Standard Accessories	1 set
3. Binocular Microscope with Camera and Standard Accessories	1 set
4. Illuminated Binocular Microscope with Camera and Standard Accessories	2 sets
5. Dry Cabinets	6 units
6. SEM Set with Air-conditioner	1 set
7. Computer Systems for Research	2 sets
8. Vernier Calipers	2 sets
9. Large Measurement Anthropology Set	1 set
10. Tyler Standard Sieves with Shaker	2 sets
11. Photo Processing Equipment	1 set
12. Field Cars (4WD)	2 units
13. Global Positioning Systems (GPS)	2 sets
14. Altimeters	2 sets
15. Electronic Distance Measurement Equipment	2 sets
16. Video Cameras	2 sets
17. Cameras	2 sets
18. Digital Cameras	2 sets
19. Mirror Stereoscopes	2 sets

K. Y.

EXHIBITION
ZONING & CIRCULATION DIAGRAM
MUSEUM OF GEOLOGY



A - 13

Annex-2 Criteria for the Design of Exhibition and Specimen Storage

1. The Settings for exhibition and storage should satisfy the minimal functions complied with the activities and operation of the Geological Museum at present and in the near future.
2. The each component of the exhibition should be designed based on the zoning plan attached as Annex-1 .
3. The specification of physical design shall follow the standards and code in Bandung and Indonesia, if necessary.
4. Exhibition and storage settings should secure the enough durability against the climate and predictable natural disasters.
5. The most portion of the settings should be fabricated cost effectively with materials procured in or imported to Indonesia.
6. Exhibition and storage settings should be fabricated with locally available technics in principle.
7. Exhibition and storage settings should be maintained locally under the responsibility of the MOME.
8. Should other criteria be recognized through the Basic Design Study, they should be applied to the design.

K.Y.

Annex-3 Criteria for the Equipment Selection

1. Priority should be given to the replacement of existing basic equipment which is used frequently.
2. Each equipment should satisfy the minimal requirements complied with the basic activities in the Geological Museum at present and in the near future.
3. Each equipment should have enough durability against the climate and under proper using conditions.
4. Equipment should be procured in Indonesia as much as possible.
5. The maintenance of equipment should be easy and inexpensive, .and consumable materials must be supplied continuously by MOME.
6. Should other criteria be recognized through the Basic Design Study, they should be applied to the selection.

K.Y.

Annex-4 Japan's Grant Aid Programme

1. Grant Aid Procedures

a. Japan's Grant Aid Program is executed through the following procedures.

- Application (A request made by the 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 the Governments of Japan and the recipient country)

b. Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) 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 Programme, based on the Basic Design Study Report prepared by JICA, and the results are then submitted to the Cabinet for an approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and recipient country.

Finally, for the implementation of the project, JICA will assists the recipient country in such matters as preparing tenders, contract and so on.

2. Basic Design Study

a. Contents of the study

The aim of the Basic Design Study (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows :

a) Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of agencies concerned of the recipient country

necessary for the Project's implementation.

b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.

d) Preparation of a basic design of the Project.

e) Estimation of costs 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 the Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whether measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

b. Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firm(s) based on proposals submitted by 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 consultant firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid undue delay in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

a. Grant Aid

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

b. Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

c. Period

"The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

d. Purchase of the Products and or Services

Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

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

However, the prime contractors, namely, consulting constructing 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.)

e. Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

f. Undertakings required of the Government of the Recipient Country

(As described in ANNEX 5,6)

g. Proper Use

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

h. Re-export

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

i. Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the 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.

K.Y.

Annex-5 Necessary Measures to be taken by the MOME

Following necessary measures should be taken by the MOME on condition that the Grant Aid by the Government of Japan is extended to the Project:

1. To provide data and information necessary for the Project.
2. To complete the relocation of the existing equipment, facilities and civil works required prior to the installation of the equipment and settings.
3. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental items required for the Project.
4. To allocate appropriate budget and staff members for the proper and effective operation and maintenance of equipment and settings provided under the Grant Aid.
5. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission.
6. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid.
7. To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Indonesia with respect to the supply of the products and services under the verified contracts.
8. 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 Indonesia and stay therein for the performance of their work in accordance with the relevant laws and regulations of the Republic of Indonesia.
9. To provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary.
10. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project in responsibility of the MOME.
11. To bear all the expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.

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Annex-6 Basic Demarcation between Japanese and Indonesian Portion

	Indonesian Portion	Japanese Portion
Building Structure, Roofing, Other Exterior	All Necessary Repair	NA
Interior Wall, Floor, Ceiling, etc	All Necessary Repair and Renovation Including Preparation of a Room for SEM	NA
Pluming	All Necessary Repair and Renovation	NA
Electricity	Distributor, Lines, Outlets, Lighting Fixture	Lighting Fixture for Exhibition Equipment (Show Case, etc) and Storage with Fire Proof Panels
Exhibition Settings	All Others Excluded from Japanese Portion	Fabrication and Installation of Showcases, Panels, Other Settings Necessary for Exhibition
Exhibits	All Others Excluded Japanese Portion	Special Model(s) Only

K.Y.

LIST OF ATTENDANCE

INDONESIAN SIDE

Dr. Ir. Rozik B. Soetjipto	Director General of Directorate General of Geology and Mineral Resources, Ministry of Mines and Energy (MOME)
Dra. Purnamaningsih	Director of Geological Research and Development Centre (GRDC)
Ir. Thamrin Cobrie	Head of Publication and Documentation Division, GRDC
Ir. Dikdik Kosasih	Head of the Geological Museum Section, GRDC
Ir. Adang Hendarsyah	Education Group of the Geological Museum Section, GRDC
Ir. Sinung Baskoro	Education Group of the Geological Museum Section, GRDC
Ir. Sahat Tobing M. Phil	Exhibition Group of the Geological Museum Section, GRDC
Ir. Tatty Suwarti	Petrologist in the Geological Museum Section, GRDC
Ir. Elina Sutiati	Paleontologist in the Geological Museum Section, GRDC
Ir. Syukur Sahli	Petrologist in the Geological Museum Section, GRDC
Ken TAKEUCHI	JICA Expert

JAPANESE SIDE

Kae YANAGISAWA	Team Leader, Director of Training Division, Chugoku International Centre, Japan International Cooperation Agency (JICA)
Yukako MATSUURA	Project Coordinator, First Experts Assignment Division, Experts Assignment Department, JICA
Takayoshi NASU	Technical Advisor, Manger of Department of Research, Osaka Museum of Natural History
Takashi KURODA	Chief Consultant, Unico International Corporation
Hirofumi NAGAKANE	Facility and Equipment Planner, Unico International Corporation
Katsuhiko HIGUCHI	Construction Planner and Quantity Surveyor, Unico International Corporation

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K.Y.

Appendix-5

Minutes of Discussions
on
the Basic Design Study on the Project of
Equipment Assistance for Enlightenment of the Geological
Information for School Children, Students and People
in
the Republic of Indonesia
(Consultation on Draft Report)

In September 1997, the Japan International Cooperation Agency (JICA) dispatched the Basic Design Study Team on the Project of Equipment Assistance for Enlightenment of the Geological Information for School Children, Students and People (hereinafter referred to as "the Project") to Indonesia, and through discussions, field survey, and technical examination of the results in Japan, has prepared the draft Basic Design report of the study.

In order to explain and consult the Ministry of Mines and Energy, the Government of the Republic of Indonesia, on the components of the draft report, JICA sent a study team, which is headed by Mr. Kazuhisa Ito, and is scheduled to stay in Indonesia from 14th to 20th December, 1997.

As a result of discussions, both parties confirmed the main items described on the attached sheets.

Jakarta, the 19th December, 1997

伊藤和久

Kazuhisa Ito
Leader
Basic Design Study Team
(Consultation on Draft Report)
Japan International Cooperation Agency

Dr. Ir. Rozik B. Soetjipto
Director General
Directorate General of Geology and
Mineral Resources
Ministry of Mines and Energy

ATTACHMENT

1. Components of the Draft Basic Design Report

   The Ministry of Mines and Energy (MOME) has agreed and accepted the components of the draft Basic Design report proposed by the Team.

2. Responsible and Executing Organization

   The responsible organization of the Project is the Ministry of Mines and Energy (MOME). Executing organization is Geological Research and Development Centre (GRDC).

3. Contents of the Items of the Project

   Both sides have confirmed the items which will be constructed or procured under the Japanese Grant Aid attached as Annex-1.

4. Japan's Grant Aid Programme

   The MOME has understood the system and characteristics of Japan's Grant Aid Programme explained in Annex-2 by the Team.

5. Necessary Measures to be taken by the MOME

   a. On condition that the Grant Aid Programme by the Government of Japan is extended to the Project, the MOME will take the necessary measures described in Annex-3 for the smooth implementation of the Project.

      The executing agency will secure the proper and effective operation and maintenance of the equipment procured under the Project.

   b. The MOME will complete all of the following renovation works as well as the relocation of existing equipment and facilities by the end of November, 1998.

      a) removal of the wall of the proposed Auditorium 1
      b) removal of the wall of the proposed Exhibition 2
      c) removal of a part of the wall between the proposed Exhibition 1 and 3
      d) removal of the lift in the proposed Exhibition 1
      e) reinforcement of the floor of storage for specimen
      f) electric works

      If there is any delay or modification of the renovation plan and/or schedule, the MOME will notice it to the Japanese side immediately.

c. The MOME assigns officers of GRDC, who are in charge of the Project and responsible for the implementation, as follows.

Director, GRDC
Head of Publication and Documentation Division, GRDC
Chief of the Geological Museum Section, Publication and Documentation Division, GRDC

6. Further Schedule of the Study

JICA will complete a final report of the Study in accordance with the confirmed items, and send it to the Indonesian side by March, 1998.

K.I

Annex-1 Items to Be Provided under the Japanese Grant Aid Project

Equipment	Quantity
1. Equipment for Exhibition	
A. General Geology of Indonesia	
Audio-visual System	1 set
Display Panel	1 set
Graphic Panel	1 set
Sign Panel	2 sets
Lighting Fixture	7 sets
B. Origin of the Earth	
Display Panel	4sets
Showcase	3 sets
Graphic Panel	7 sets
Display Stage	2 sets
Sign Panel	1 set
Lighting Fixture	10 sets
C. Geology of Indonesia	
Display Panel	49 sets
Showcase	34 sets
Graphic Panel	84 sets
Display Stage	10 sets
Model	3 sets
Sign Panel	11 sets
Lighting Fixture	128 sets
D. Evolution of Life	
Display Panel	43 sets
Showcase	70 sets
Graphic Panel	52 sets
Display Stage	7 sets
Dinosaur Frame Replica	1 set
Model	1 set
Sign Panel	12 sets
Lighting Fixture	163 sets
E. Applied Geology	
Display Panel	10 sets
Showcase	25 sets
Graphic Panel	39 sets
Display Stage	3 sets
Sign Panel	11 sets
Lighting Fixture	72 sets
F. Other Equipment for Exhibition	
1. Polarization Microscope with Monitor	1 set
2. Public Announcement System	1 set
3. Hydraulic Ladder	1 unit
4. Video Monitor Set	1 set
2. Equipment for Storage System	
1. Rack (for rock)	768 sets
2. Rack (for fossil)	366 sets
3. Moving Rack (single)	6 sets
4. Moving Rack (double)	24 sets
5. Thin Section Cupboard	1 set
6. Fireproof Cabinet	2 units
7. Plastic Container (for rock)	12,012 units
8. Plastic Container (for fossil)	6,222 units
9. Air/Dust Filter	6 rooms
10. Humidity Control Machine	3 rooms
11. Fireproof Panel	6 rooms

Equipment	Quantity
12. Security Door System	6 rooms
13. Mezzanine	2 rooms
3. Equipment for Education	
1. Computer System for Preparation of Exhibition and Education	1 set
2. Audio Visual System	1 set
3. Light Printing Machine	1 set
4. Chair with Desk	200 sets
5. Dry Cabinet	1 set
6. Air-conditioner	6 sets
4. Equipment for Collection and Preparation	
1. Lift	1 set
2. Forklift	1 unit
3. Push Cart	4 units
4. Push Cart (with fork)	1 unit
5. Rock Cutter (large)	1 unit
6. Rock Cutter (small)	1 unit
7. Micro-cutter	1 unit
8. Resin Impregnator	1 unit
9. Rock Polishing Machine (rough)	1 unit
10. Rock Polishing Machine (finish)	1 unit
11. Rock Polishing Machine (mirror surface)	1 unit
12. Finishing Plate	4 pcs
13. Vacuum Cleaner	1 unit
14 Air Blaster	1 set
15 Ultrasonic	1 set
16 Weighing Machine (large)	2 units
17 Weighing Machine (medium)	2 units
18. Weighing Machine (small)	1 unit
19. Polarization Microscope	1 set
20. Binocular Microscope with Camera	1 set
21. Binocular Microscope	1 set
22. Oven	1 unit
23. Ultraviolet Coating Films	100 m^2
24. Digital Camera	3 sets
25. Camera with Stand (35mm)	2 sets
26. Camera with Stand (brownie)	1 set
27. Camera with Stand (35mm macro)	1 set
28. Photo Processing Equipment	1 set
29. Dry Cabinet	4 units
30. Soft X-ray Machine	1 unit
31. Computer System for Data Processing	1 set
32. Tyler Standard Sieves with Shaker	2 sets
33. Field Car (4WD)	1 unit
34. Global Positioning System (GPS)	1 set
35. Altimeter	1 set
36. Electronic Distance Measurement Equipment	1 set
37. Video Camera	1 set
38. Mirror Stereoscope	1 set
5. Equipment for Research	
1. Polarization Microscope with Camera	1 set
2. Ore Illuminated Microscope with Camera	1 set
3. Binocular Microscope with Camera	1 set
4. Illuminated Binocular Microscope with Camera	1 set
5. Dry Cabinet	1 set
6. Computer System for Research	2 sets
7. Vernier Calipers	2 sets

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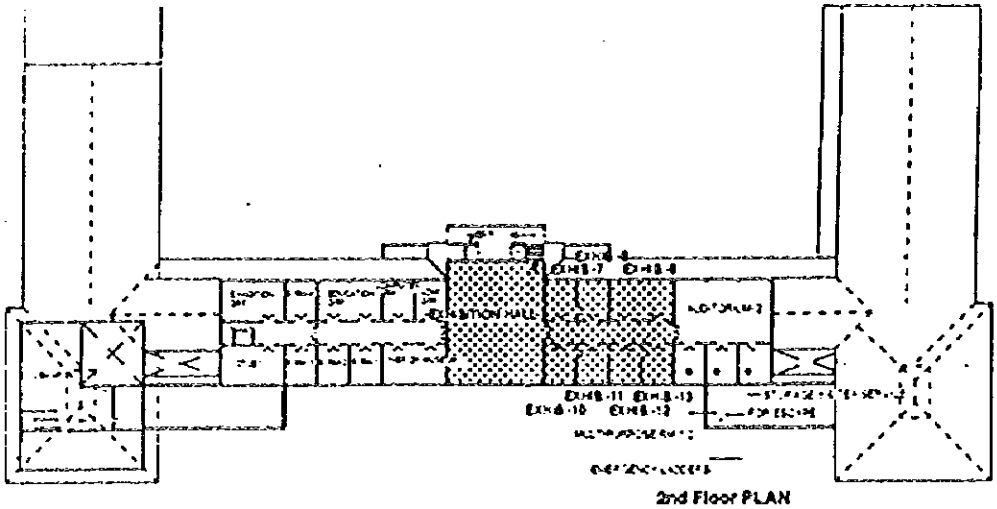
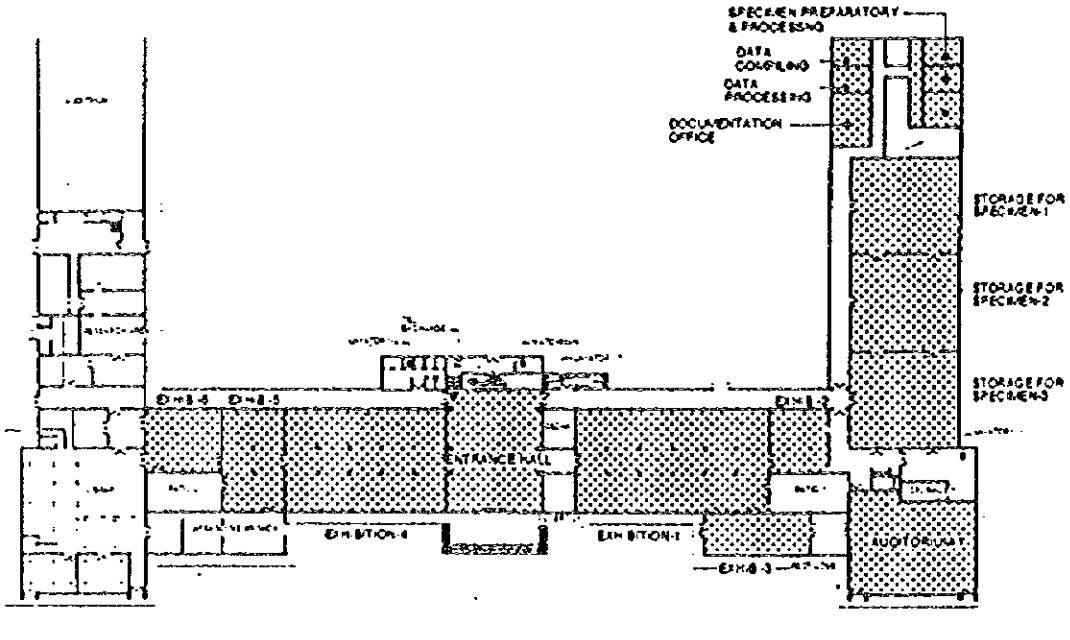
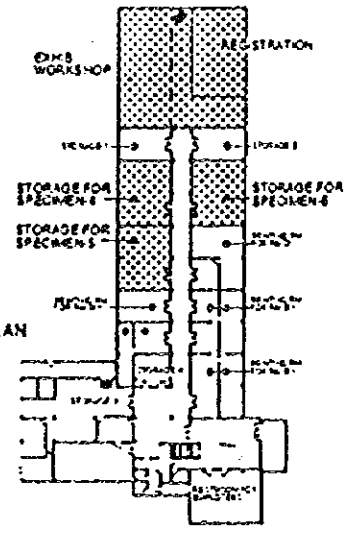


2nd Floor PLAN



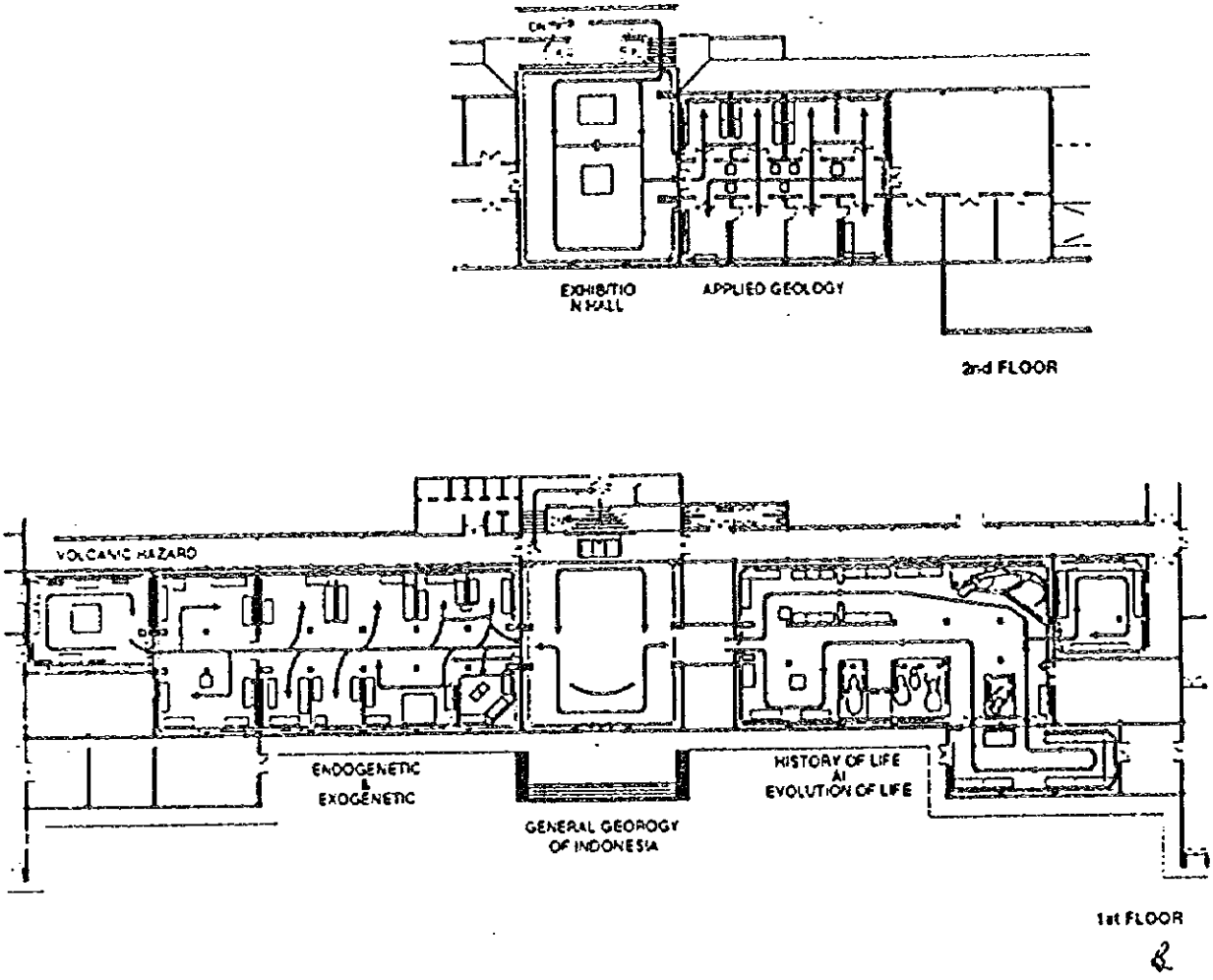
1st Floor PLAN

Equipment set up zone



Basement Floor PLAN

Floor Plan of Geological Museum



Exhibition Zoning and Circulation Diagram

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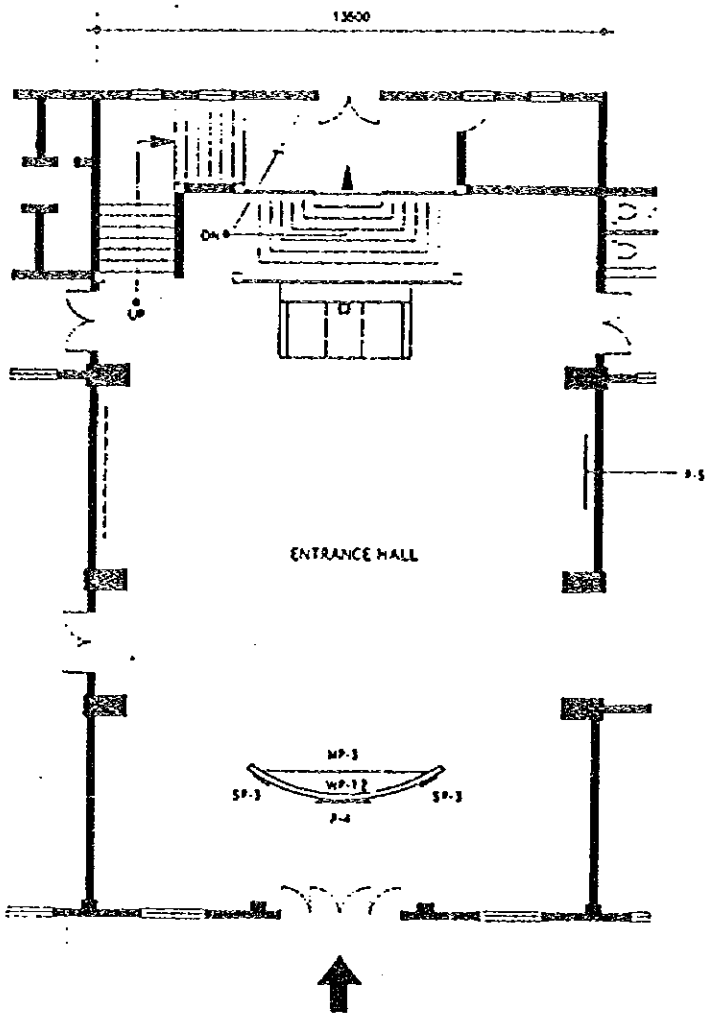

EQUIPMENT LIST

Graphic Panel	P-4	1
	P-5	1
Spot Panel	SP-3	2
Map Panel	MP-3	1
Display Panel	WP-12	1
Audio Visual Booth		

First Floor Entrance Hall (First Floor)

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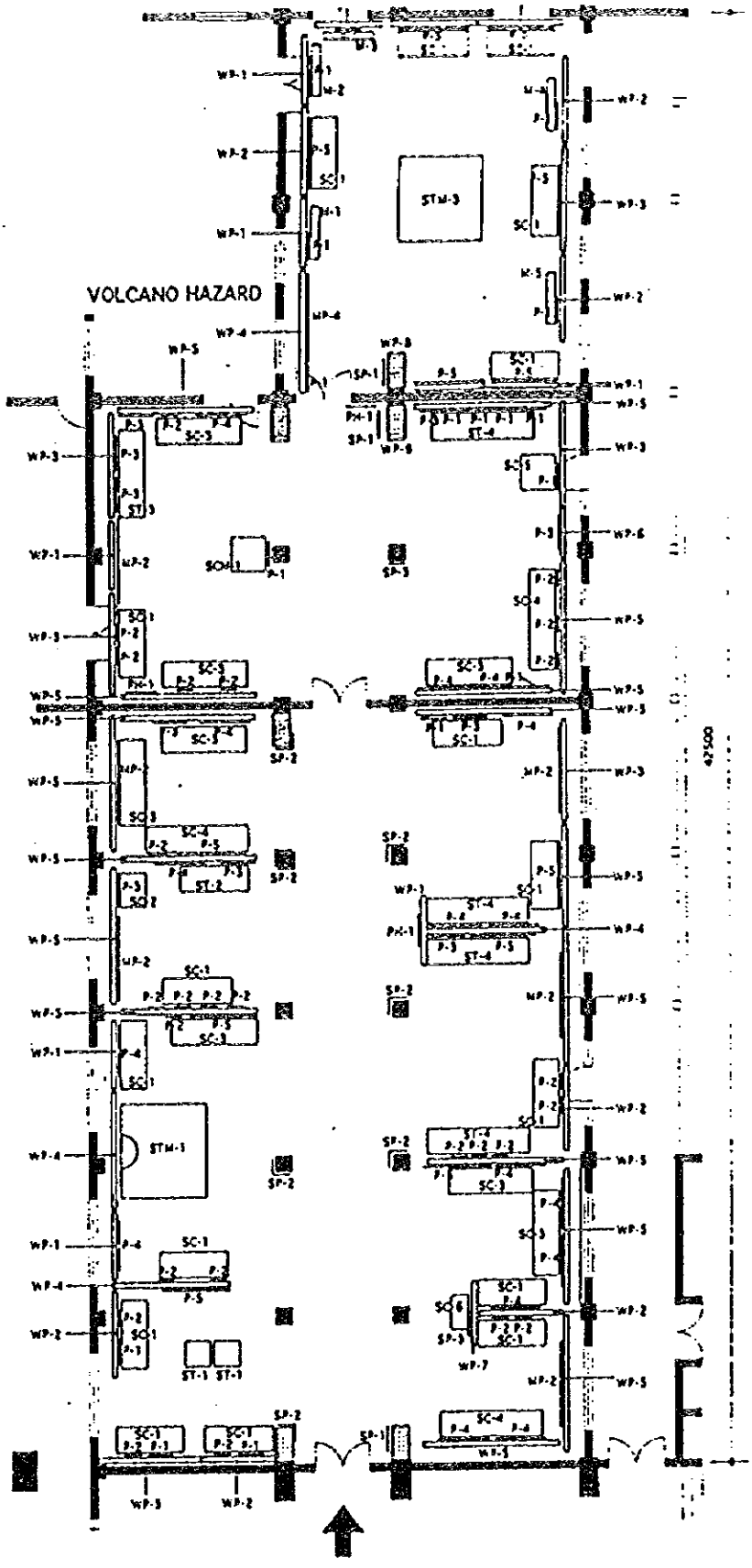
EQUIPMENT LIST

Show Case	SC-1	10
	SC-2	1
	SC-3	5
	SC-4	3
	SC-5	1
	SC-6	1
	SCM-1	1
Show Case for Map	M-1	1
	M-2	1
	M-3	1
	M-4	1
	M-5	1
Display Stage	ST-1	2
	ST-2	1
	ST-3	1
	ST-4	4
	STM-1	1
	STM-3	1
Graphic Panel	P-1	10
	P-2	27
	P-3	10
	P-4	18
	P-5	12
	MP-1	1
	MP-2	6
	MP-4	1
Sign Panel	SP-1	3
	SP-2	8
	SP-3	1
	PM-1	3
Display Panel	WP-1	9
	WP-2	9
	WP-3	7
	WP-4	4
	WP-5	16
	WP-6	1
	WP-7	1
	WP-8	8
Model	Plate tectonic model	1
	Structure of volcano model	1
	Volcano model	1



Exhibition – Geology of Indonesia (First Floor)

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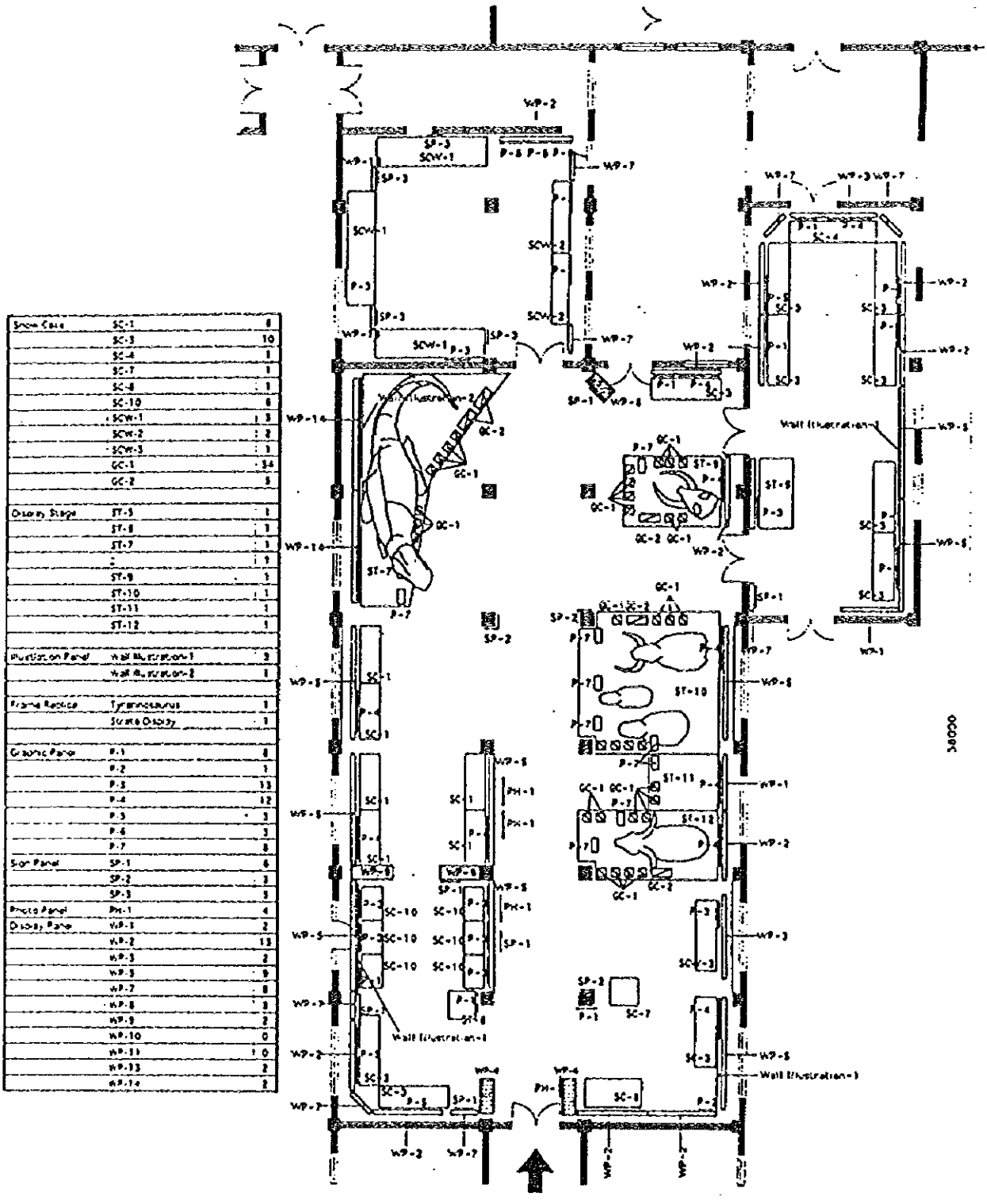
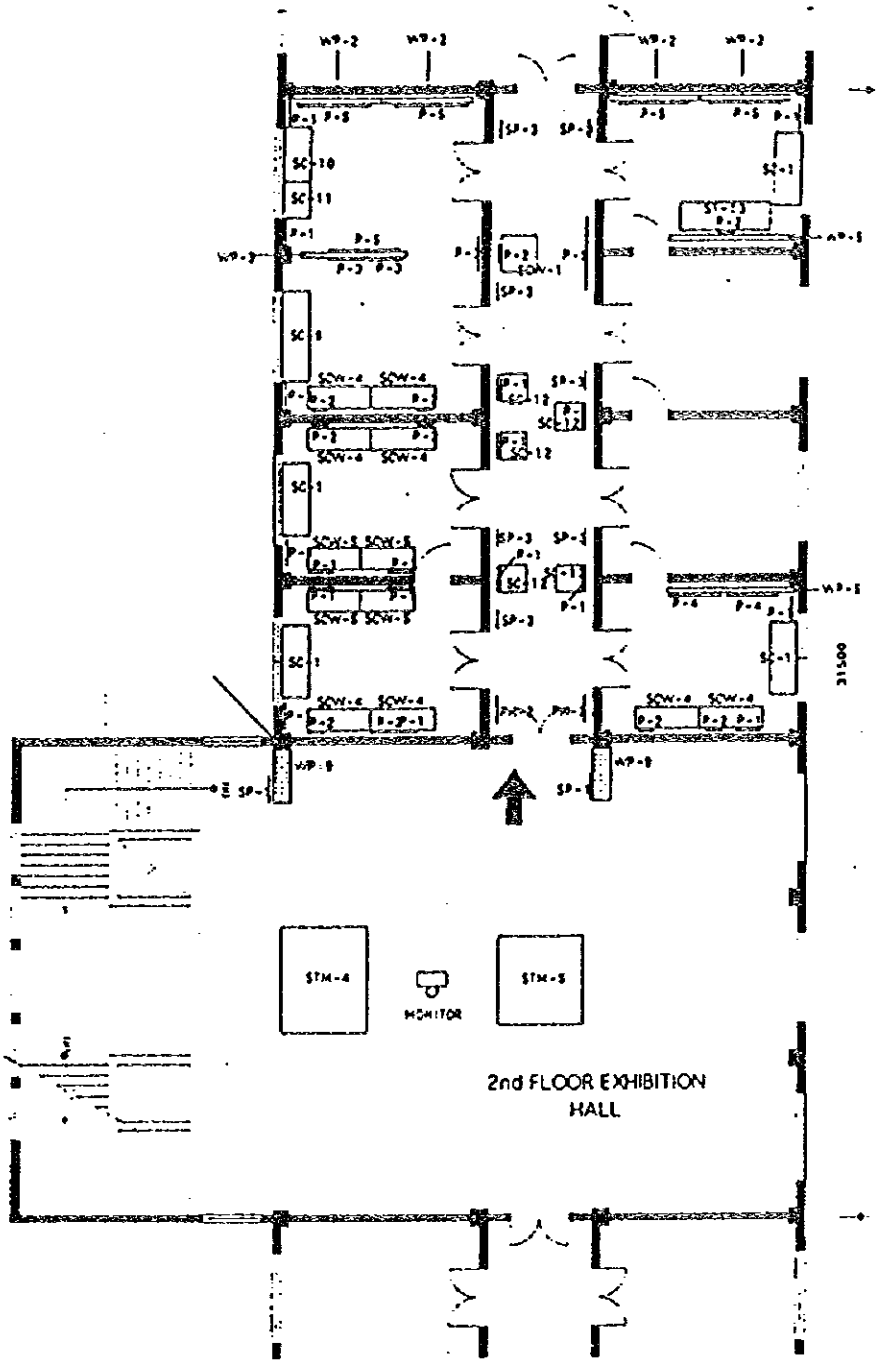


Show Case	SC-1	8
	SC-3	10
	SC-4	1
	SC-7	1
	SC-8	1
	SC-10	8
	SCW-1	3
	SCW-2	2
	SCW-3	1
	GC-1	34
	GC-2	3
Display Stage	ST-5	1
	ST-8	1
	ST-7	1
	-	1
	-	1
	ST-9	1
	ST-10	1
	ST-11	1
	ST-12	1
Illustration Panel	Wall Illustration-1	2
	Wall Illustration-2	1
Frame Replica	Tyrannosaurus	1
	Stone Display	1
Graphic Panel	P-1	8
	P-2	1
	P-3	13
	P-4	12
	P-5	3
	P-6	3
	P-7	8
Sign Panel	SP-1	6
	SP-2	3
	SP-3	3
Photo Panel	PH-1	4
Display Panel	WP-1	2
	WP-2	13
	WP-3	2
	WP-5	9
	WP-7	8
	WP-8	3
	WP-9	2
	WP-10	0
	WP-11	10
	WP-13	2
	WP-14	2

Exhibition -- Evolution of Life (First Floor)

EQUIPMENT LIST

Show Case	SC-1	4
	SC-3	1
	SC-10	1
	SC-11	1
	SC-12	3
	SCM-1	1
	SCW-4	8
	SCW-5	4
Display Stage	ST-13	1
	STM-4	2
	STM-5	2
Graphic Panel	P-1	18
	P-2	10
	P-3	9
	P-4	2
	P-5	6
	SP-1	4
	SP-3	7
	PH-2	2
Display Panel	WP-2	4
	WP-3	1
	WP-5	1
	WP-9	4



Exhibition – Applied Geology (Second Floor)

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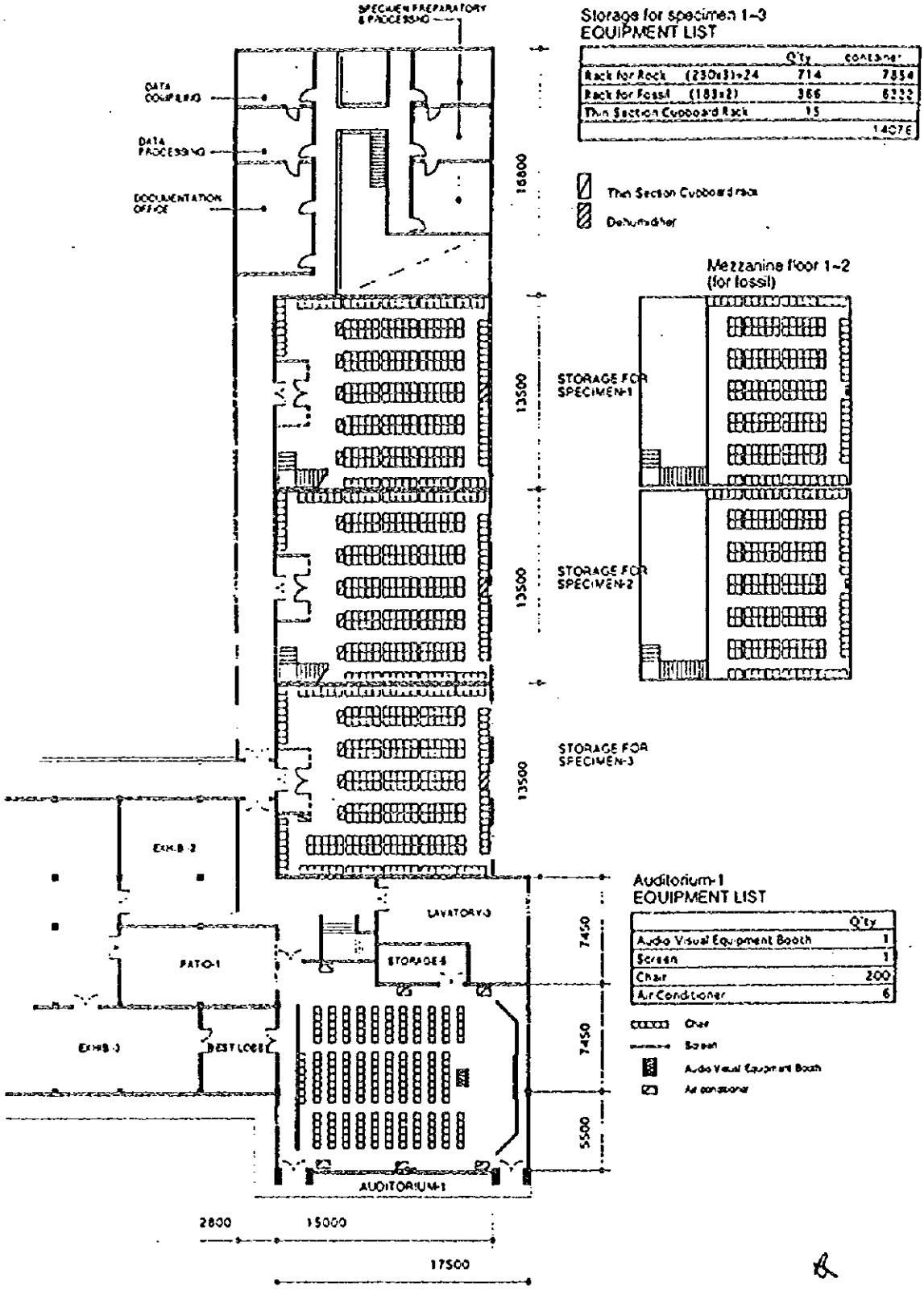

Storage for Specimen 1 - 3 and Auditorium-1 (First Floor)

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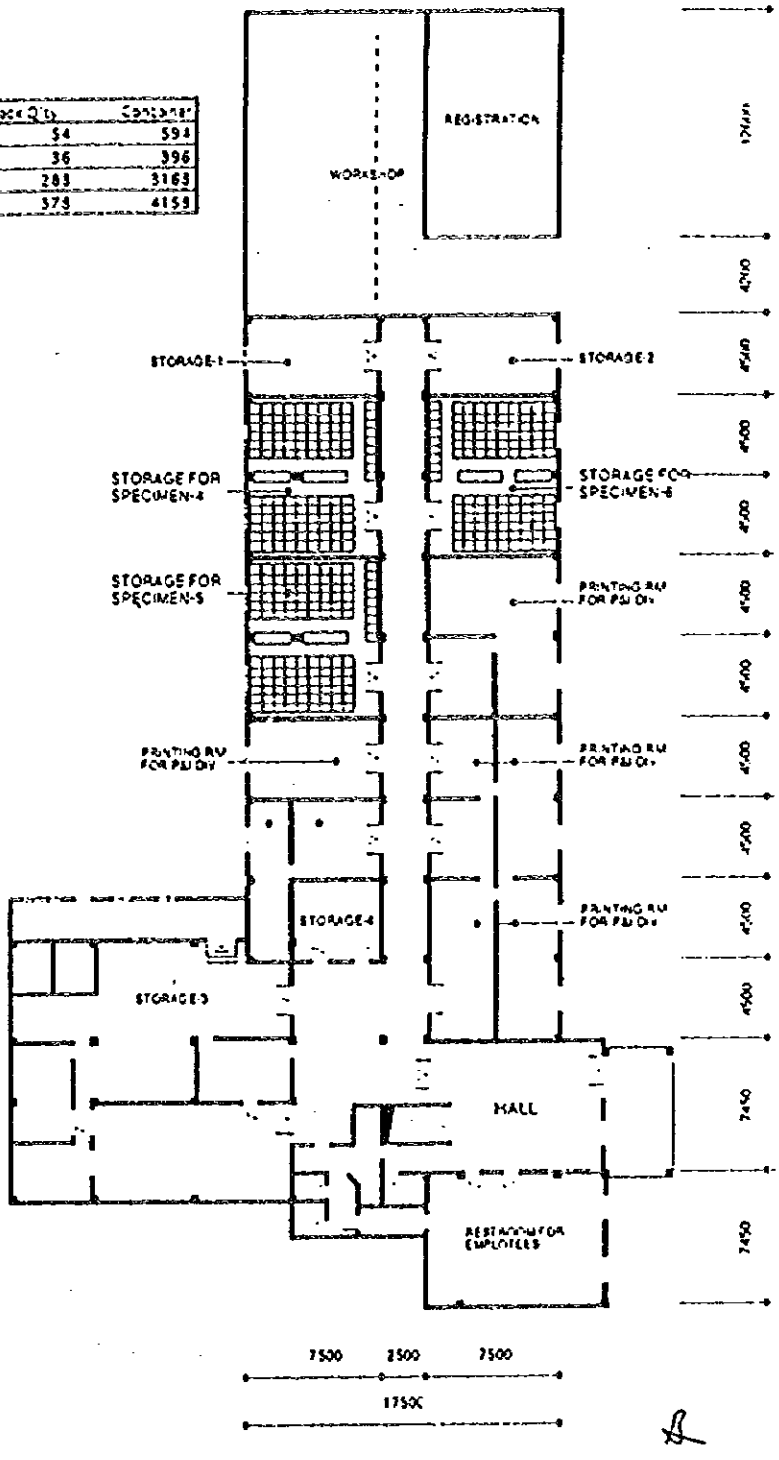
EQUIPMENT LIST

	Rack Qty	Container
Rack for Rack (13x3)	54	594
Rack for Rack Single (2x3x6)	36	396
Rack for Rack Double Move Rack (5x3x12)	283	3163
	379	4153



Storage for Specimen 4 - 6 (Basement Floor)

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Annex-2 Japan's Grant Aid Programme

1. Japan's Grant Aid Scheme

(1) Grant Aid Procudures

1) Japan's Grant Aid program is executed through 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)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

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

Fourthly, the project, once approved by the Cabinet, becomes official with Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the Implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

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2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation,

b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid scheme from a technical, social and economic point of view,

c) Confirmation of items agreed on by both parties concerning the basic concept of the Project,

d) Preparation of a basic design of the Project,

e) Estimation of costs 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.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the

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implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposal submitted by 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 the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency in implementation should the selection process be repeated.

3. Japan's Grant Aid Scheme

1) What is Grant Aid?

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

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

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

However in case of delay in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principal, Japanese products and services including transport or those of the recipient country are to be purchased.

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

However the prime contractors, namely, consulting, constructing 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 Verification

The Government of the recipient country or its designated authority will conclude contracts in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

(As described in Annex-3)

7) Proper Use

The recipient country is required to maintain and use the facilities

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constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

8) Re-export

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

9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the 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.

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Annex-3 Necessary Measures to be taken by the MOME

Following measures should be taken by the MOME on condition that the Grant Aid by the Government of Japan is extended to the Project:

1. To provide data and information necessary for the Project. The design schedule is described in Annex-4.
2. To complete the relocation of the existing equipment, facilities and civil works required prior to the installation of the equipment and settings. The work schedule is described in Annex-5.
3. To provide facilities for distribution of electricity, water supply, telephone, drainage, sewage and other incidental items required for the Project.
4. To allocate appropriate budget and staff members for the proper and effective operation and maintenance of equipment and settings provided under the Grant Aid. The allocation of staff members is tabled in Annex-6.
5. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay" and payment commission.
6. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid.
7. To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Indonesia with respect to the supply of the products and services under the verified contracts.
8. 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 Indonesia and stay therein for the performance of their work in accordance with the relevant laws and regulations of the Republic of Indonesia.
9. To provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary.
10. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Project on the responsibility of the MOME.
11. To bear all the expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.

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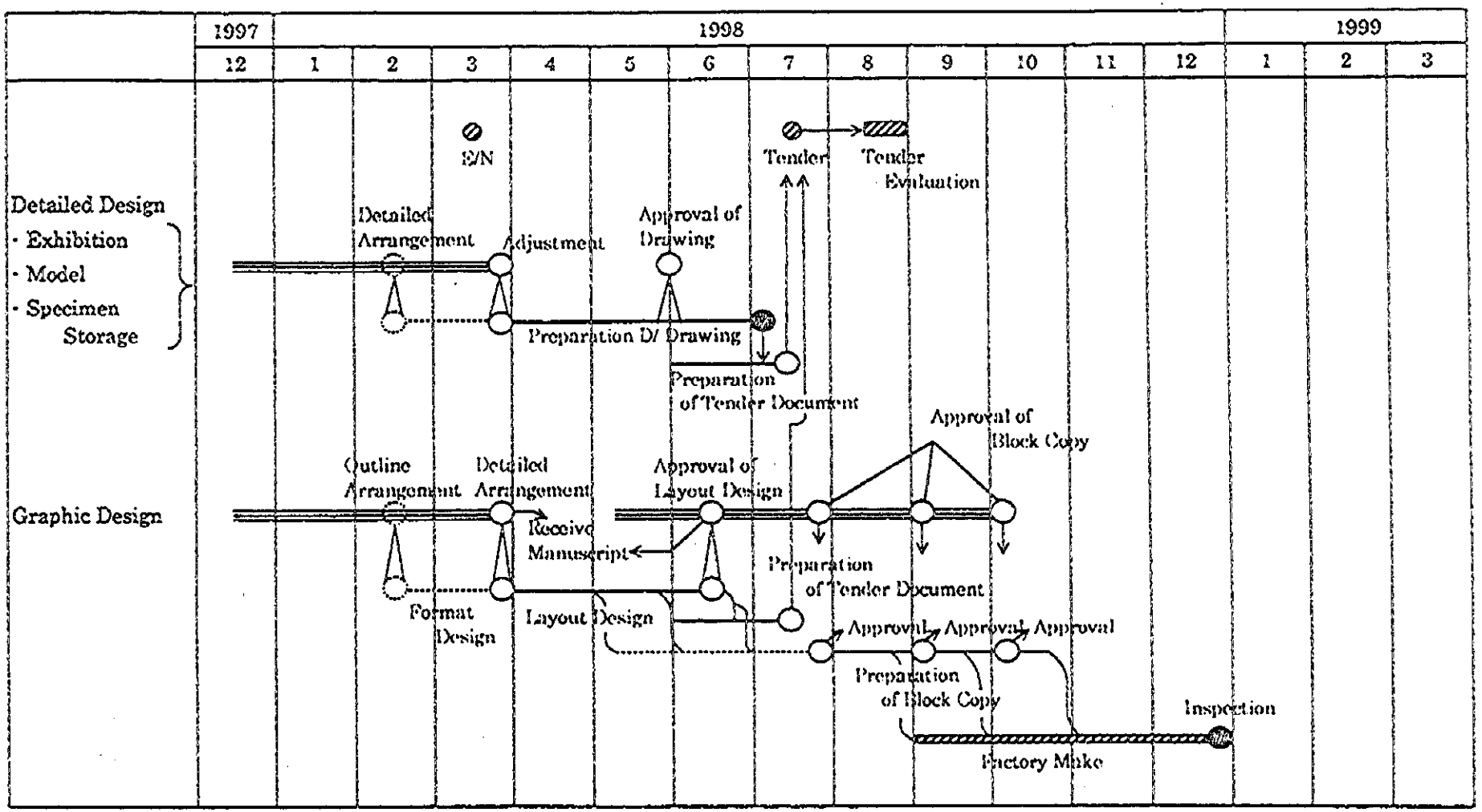
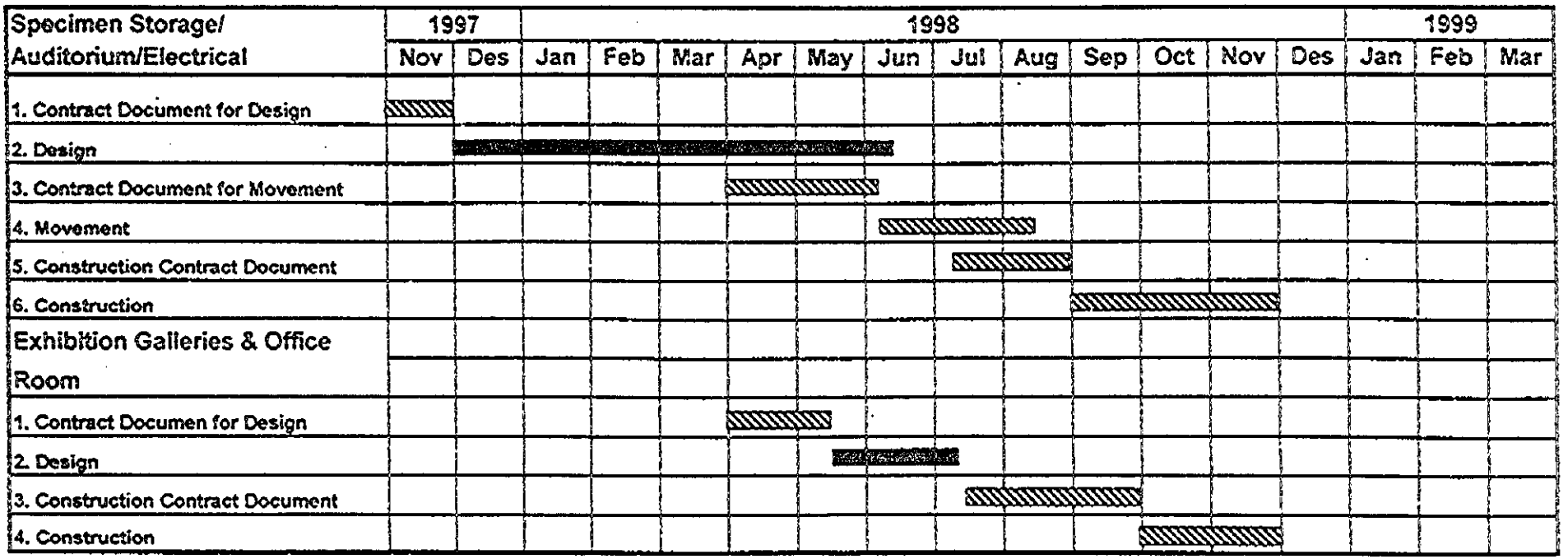
Annex-4 Design Schedule



Annex - 5

TENTATIVE SCHEDULE OF GEOLOGICAL MUSEUM BUILDING RENOVATION



Indonesian Architecture Consultant Jobs

Movement : Movement of existing exhibits

Annex-6-a

K-2

HUMAN RESOURCES OF GEOLOGICAL MUSEUM BANDUNG

Group : Research Leader : Sahat	Curator
Subject	
Petrology	
Igneous Rocks	Syukur + *A*
Sedimentary Rocks	*A*
Metamorphic Rocks	Tatty + *A*
Meteorites & Tektites	*C*
Mineralogy	*C*
Gemstones	*A*
Paleontology	
Paleozoology	
Invertebrates Paleo-Mesoz	Adang + *A*
Invertebrates Cenozoic	Elina + *A*
Vertebrates	Sinung + *A*
Paleobotany	*C*
Paleoanthropology	Julianty + *A*
Historical Geology	
Stratigraphy	*C*
Sedimentology	*C*
Geodynamic	
Structural Geology / Tectonic	Sahat + *A*
Seismotectonic	*C*
Geophysic	*C*
Paleomagnetism	*C*
Volcanology	*B*
Geochronology	*C*
Quaternary Environmental Geology	*A*

Working Group
Documentation Leader
Syukur
Exhibition Leader
Sinung
Education Leader
Adang
Administration Leader
Dwi Agoes
Technician Leader
A *

Note : All of curators have also responsibility to the activity of Documentation, Exhibition and Education Groups

Remark : *Italic font* = new staff required
(number) = required number of person
A,B or C = priority

A * = Until the post is filled the chief of the Geological Museum supervised technicians

A = First priority
B = Second priority
C = Third priority

K-1

Annex-6-b

HUMAN RESOURCES OF GEOLOGICAL MUSEUM BANDUNG

Group	Documentation	Exhibition	Education	Administration	Technician	Position/Education Level
Expert		Designer (2) A	*Guide (4) A* *Librarian (1) A*		*Electrician (1) A*	*IKIP (D3) & Tourism School (D1* *IKIP (S1)* *Polytechnic (D3)* *Art School (D3)*
Technician	**Tatang S.** *Registrar (4) A*	**Ngaliman** **Asikin** *Exhibition ass. (2) A*	*Education ass.(2) A*	**M. Arifin** **Mamat H.** **Tuty** *Receptionist (1) A*	**Dedi B.** **A. Dachna** **Ma'mur** *Computer operator (2) A* *Draftsman (1) A*	Documentation assistant *STM Geologi* Exhib. assistant Exhib.assistant for maintenance *STM Geologi* *STM Geologi* Computer operator Guard Souvenir-server *Tourism School (D1)* Electrician assistant Carpenter Computer operator *Computer School (D1)* *STM Bangunan*
Remark :	*Italic font* = new staff required *(number)* = Required number of person *A, B or C* = priority		A = First priority B = Second priority C = Third priority			

Appendix-6 Cost Estimation Borne by the Recipient Country

Costs to be borne by the Indonesian side in relation to the Project is estimated as follows:

1) Renovation of the building of the Geological Museum (roof replacement, wall repair and painting, ceiling repair and painting, walls demolition, new concrete construction, new wall construction)	Rp. 3,000,000,000
2) Mechanical and electrical works (new electrical wiring, replacement of armatures, drainage system and fixtures)	Rp. 675,000,000
Total :	Rp. 3,675,000,000

In addition, some amounts of banking charge in relation to Authorizations to Pay, i.e. advising commission and payment commission, will be necessary in accordance with a Banking Arrangement to be concluded between an executing agency of the Indonesian side and Japanese foreign exchange bank.

Also, the Indonesian side shall make a laser disk for the audio-visual system in the entrance hall using a master video tape edited in cooperation with an engineer dispatched under the Project.

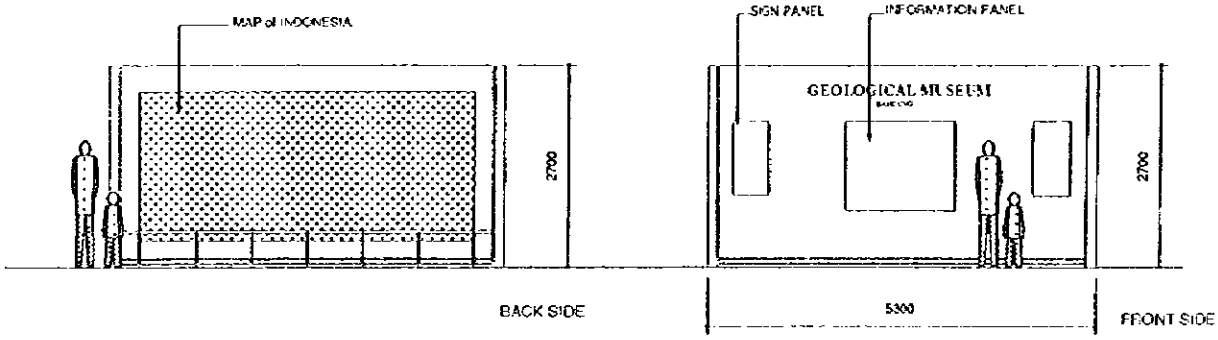
Furthermore, if any temporary storage area is not available in GRDC to safely keep existing equipment, specimens etc. during installation of planned

equipment in the Geological Museum, charges for a commercial storage will be necessary.

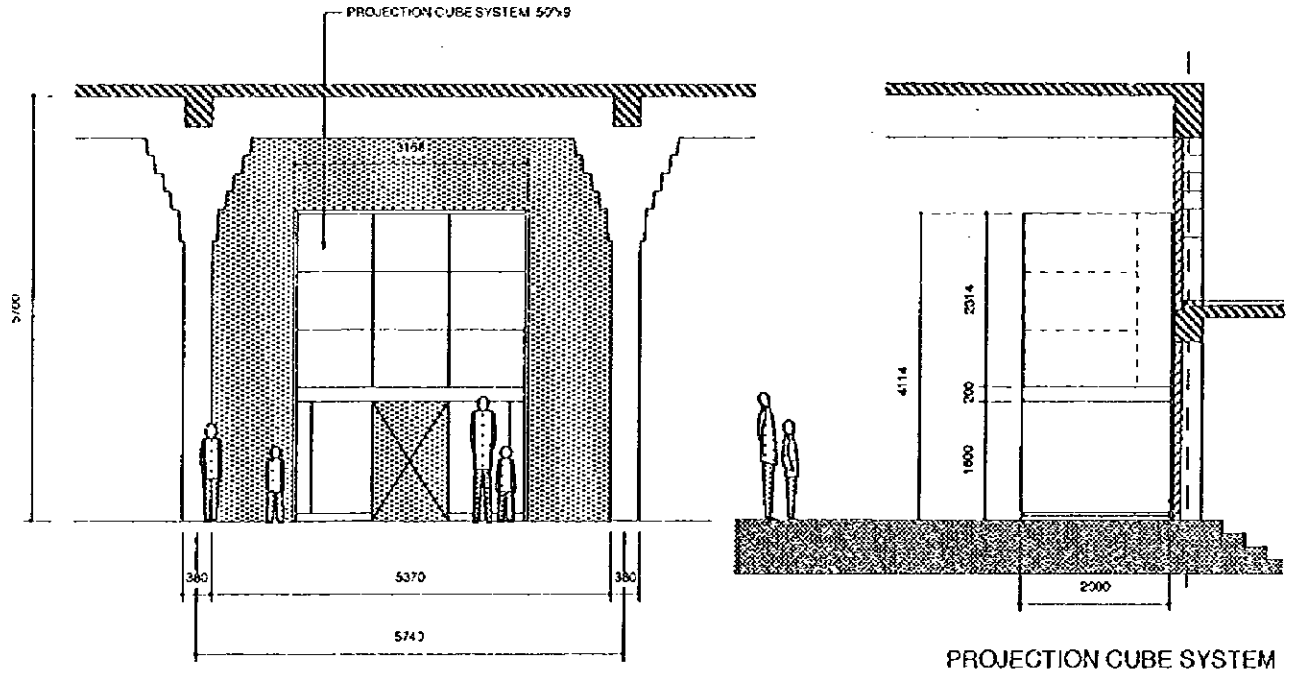
Appendix-7 References

No.	Title	Issue
1.	Museum Geologi - The Geological Museum	The Geological Museum
2.	Geological Research and Development Centre	GRDC
3.	Konservasi Geologi Daerah Harau Kabupaten Lima Puluh Kota Sumatera Barat	GRDC
4.	Daftar Publikasi - List of Publication 1996	GRDC
5.	Kegiatan Pemetaan dan Penelitian	GRDC
6.	"Data Base" Geologi Kuarter	GRDC
7.	Global Environmental Changes with Special Reference to the Quaternary and Recent Time	GRDC
8.	Geology of Quaternary Environment of the Solo - Madiun Area, Central - East Jawa	GRDC
9.	Rekaman Kegiatan Pemetaan, Penelitian, Penyelidikan dan Penerbitan	GRDC
10.	6th Five-Year Development Plan 1994-1998 REPELITA VI	BAPPENAS
11.	Bandung	C.V. Pradika

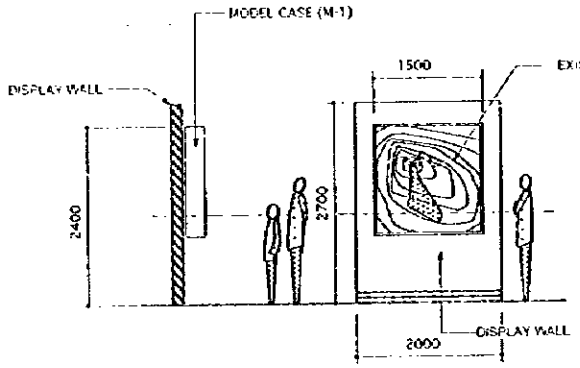
Appendix-8 Detailed Drawings



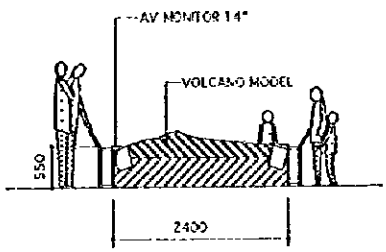
ENTRANCE HALL DISPLAY WALL
1/100



PROJECTION CUBE SYSTEM
1/100



VOLCANO MAP MODEL CASE
1/100



VOLCANO MODEL
1/100

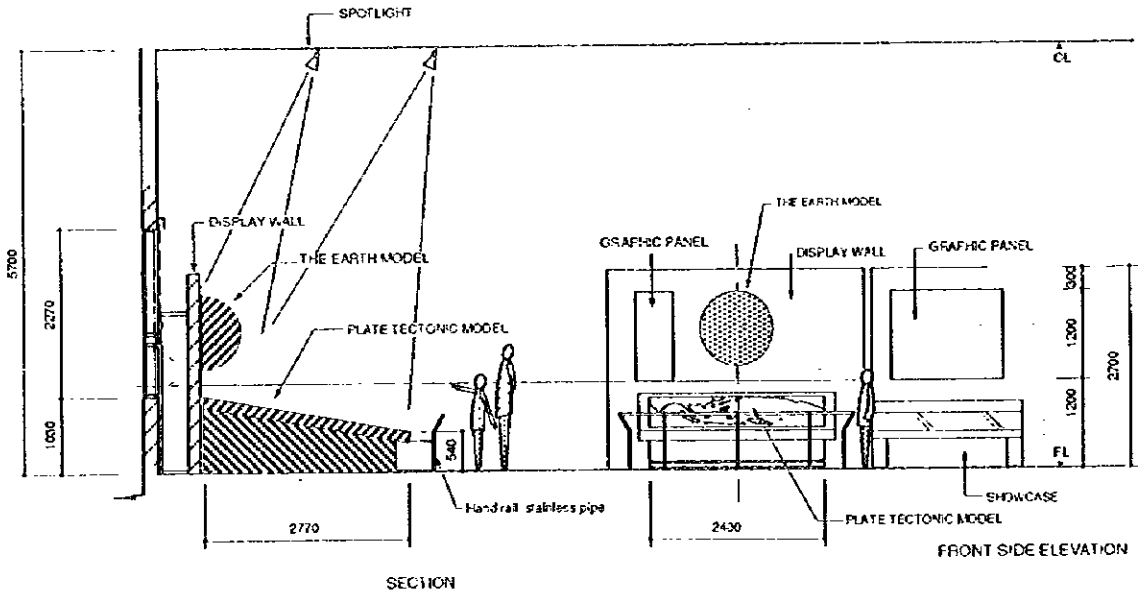
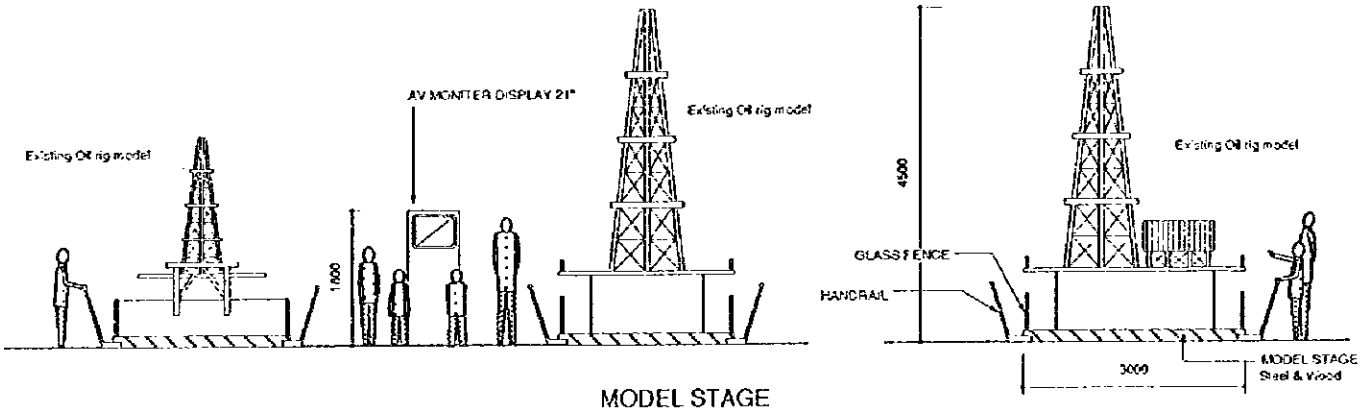
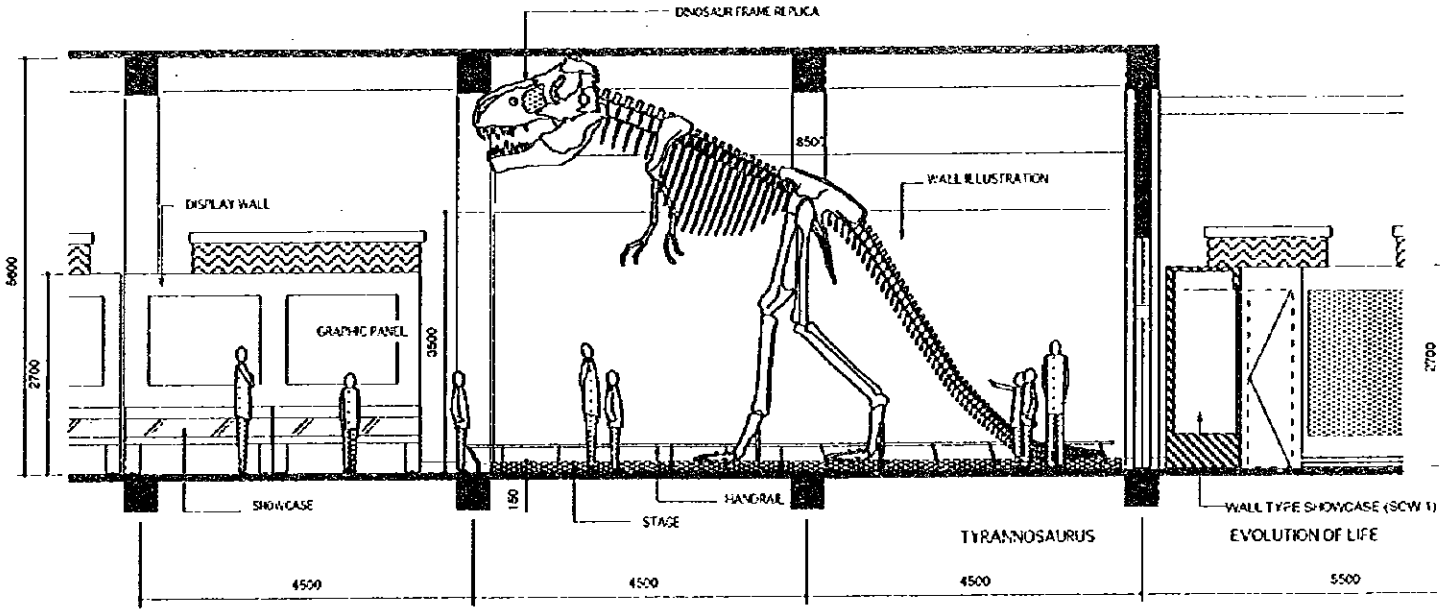


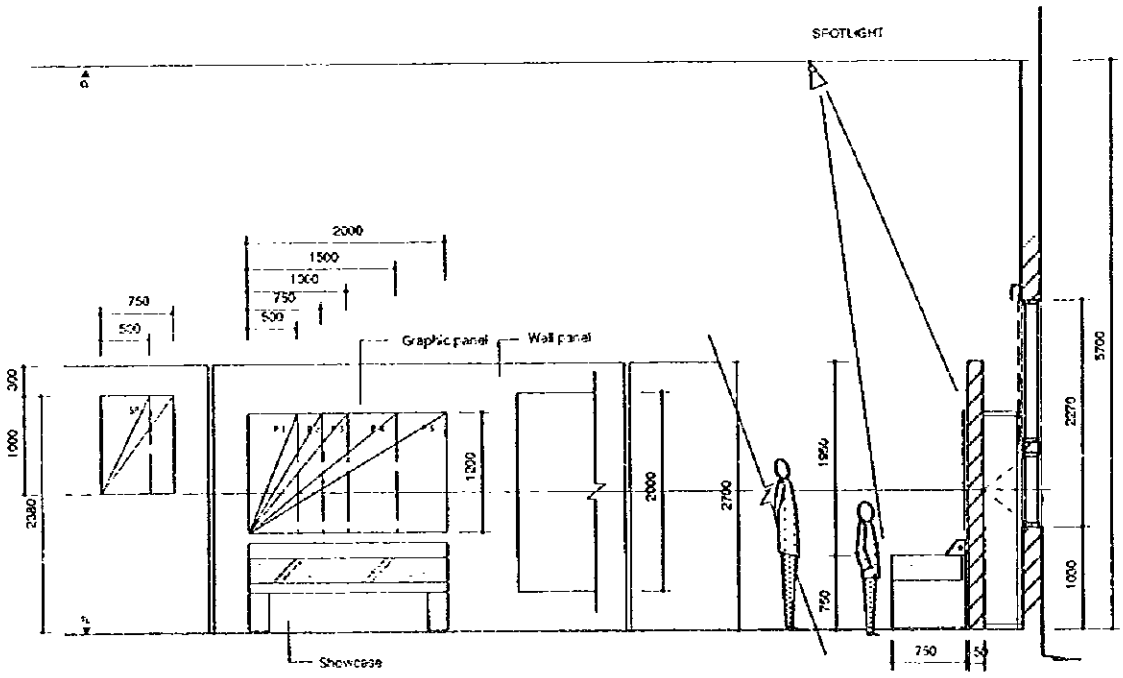
PLATE TECTONIC MODEL
1/100



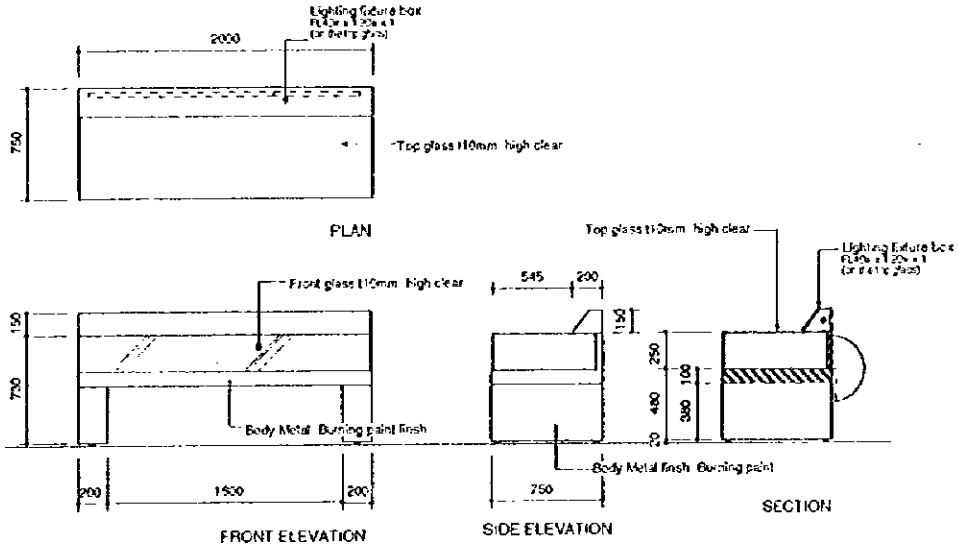
MODEL STAGE
1/100



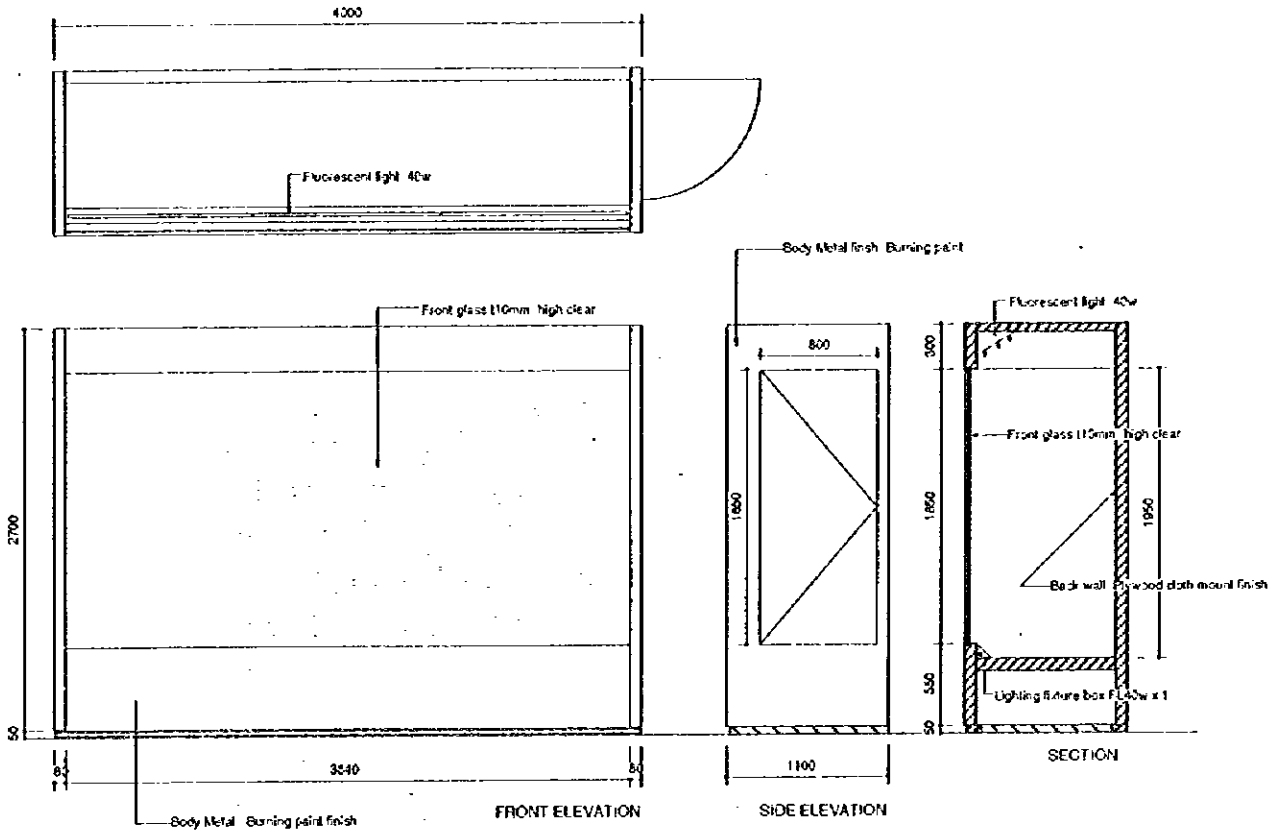
DINOSAUR FRAME REPLICA
1/100



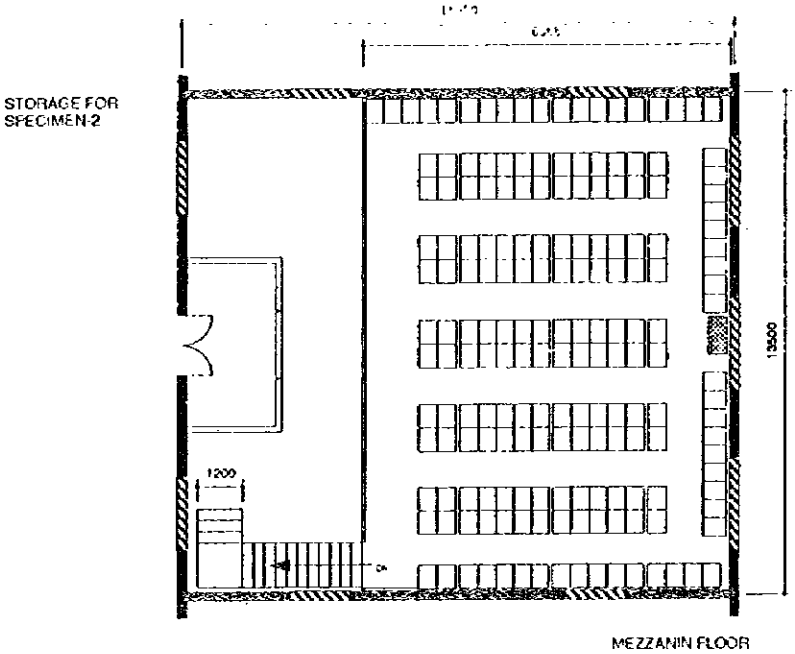
GRAPHIC PANEL MODULE
1/75

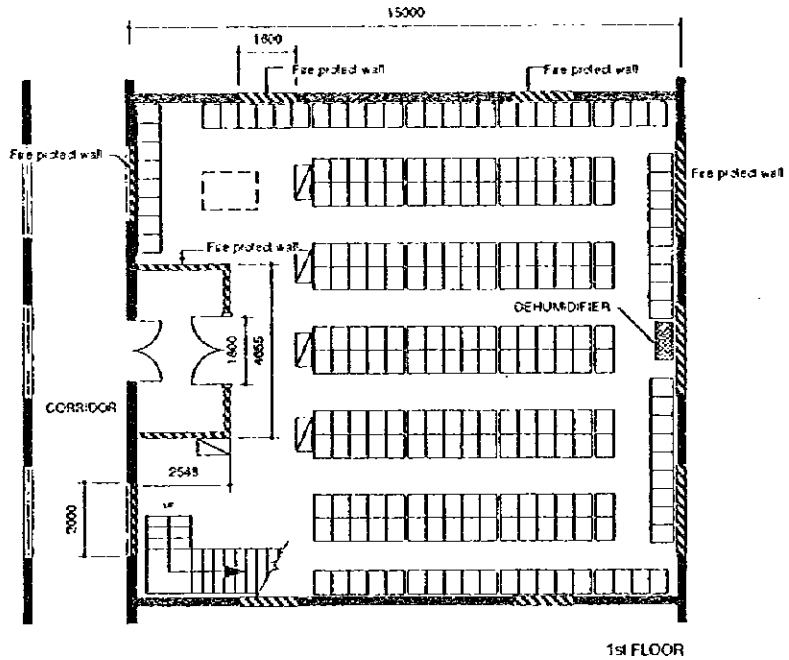


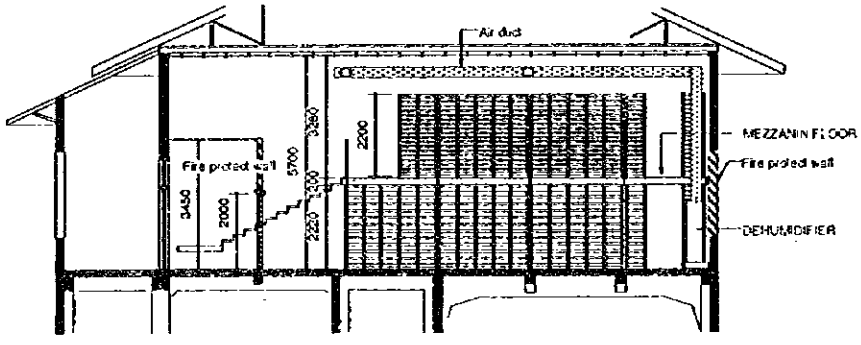
SHOWCASE Low Type (SC1-12)
1/50



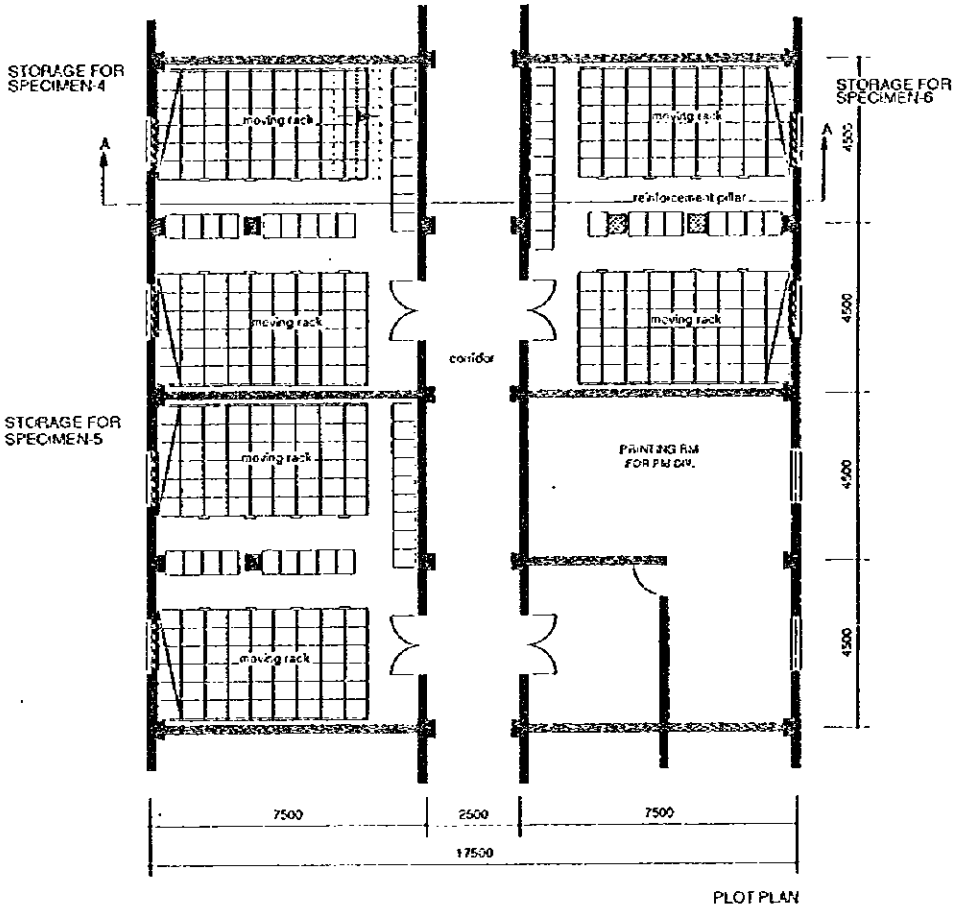
SHOWCASE Wall Type (SCW-1)
1/50



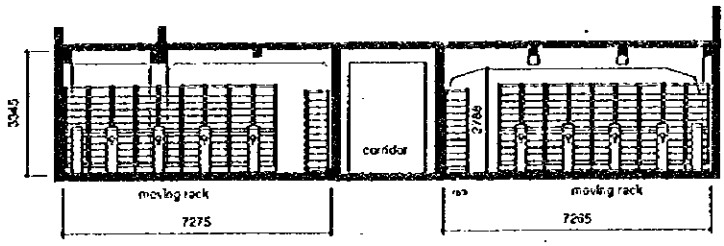




SPECIMEN STORAGE PLAN
1/100

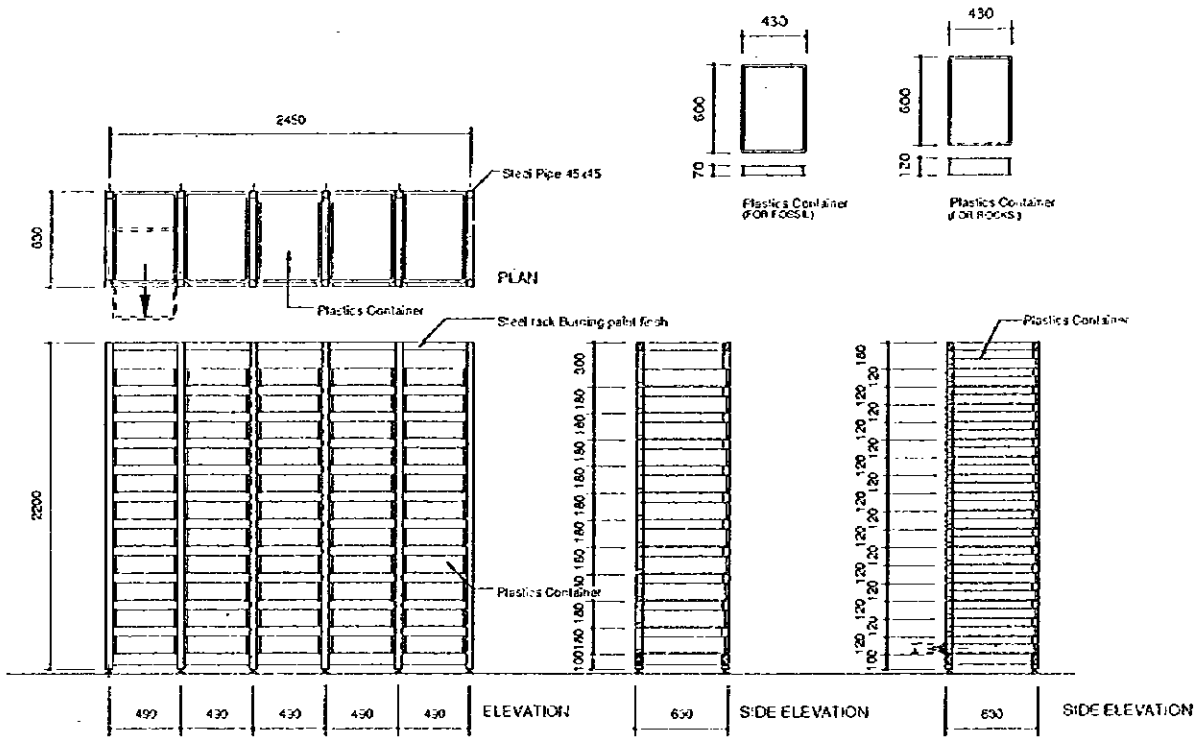


PLOT PLAN



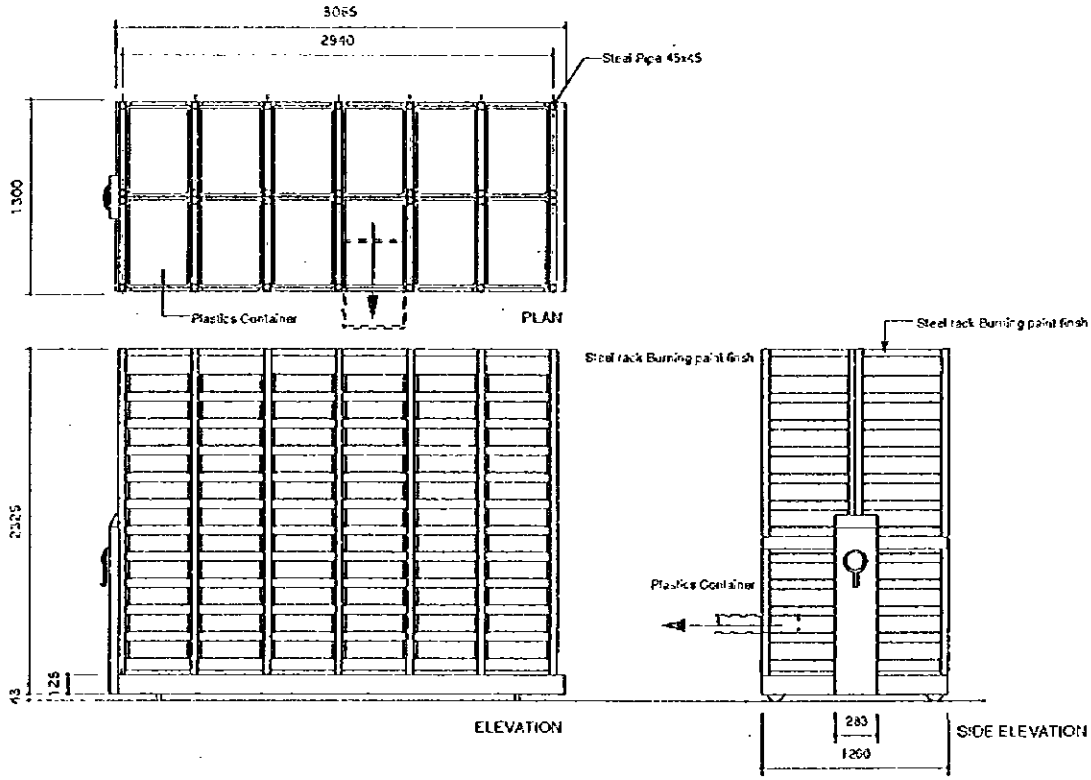
A-A SECTION

BASEMENT FLOOR
SPECIMEN STORAGE PLAN
1/200

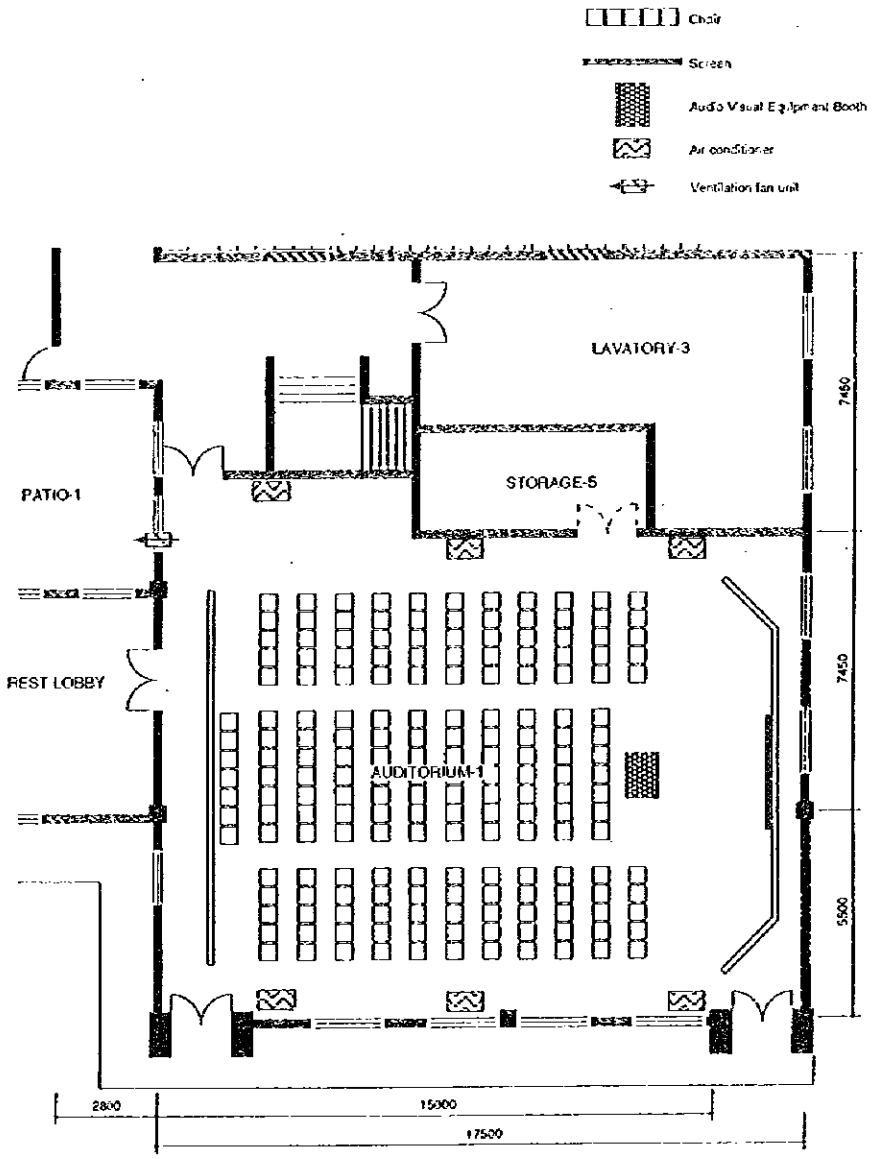


SPECIMEN STORAGE RACK
(FOR ROCKS) 1/50

SPECIMEN STORAGE RACK
(FOR FOSSIL) 1/50



MOVING RACK
1/50



AUDITORIUM-1
1/200