Table 3-2-3(9) Ministry of Health and Welfare's Budget for Health and Hygienic Information Dissemination Programme (Unit in Rufiyaa)
Source: Ministry of Health and Welfare

	ACTUALLY SPENT BUDGET					PLANNED BUDGET				
YEAR	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
AMOUNT	225,000	255,000	290,000	330,000	374,000	422,000	475,000	555,000	550,000	715,000

Note: The budget amount includes costs for holding various meetings, workshops, seminars, and officers' training.

3-2-4 Examination of the Contents of the Maldives' Request

As a result of evaluations given in the previous section and the summary of the courses to be conducted, the following facilities are believed to be necessary for the Project:

(1) Hall: Maximum seating capacity of 1,200; with a stage.

(2) Gymnasium: two volleyball courts (or one basketball court).

(1) and (2) above should be combined into a miulti-purpose hall. The multi-purpose hall should be able to accommodate physical education, the various seminars sponsored by the Ministry of Health and Welfare and UNICEF, youth sports club activities, boy scout and brownie activities, the administering of various examinations, and the holding of national events. The multi-purpose hall size is not determined by the seating capacity but by the necessary gymnastics facilities which is evaluated as the primary activities to be held in the hall.

A waiting room, locker room, and shower room for physical education teachers, and waiting rooms for instructors should all be provided in the multi-purpose hall.

In view of the climate in Maldives, air conditioning system will

be needed when the multi-purpose hall is for formal events that will be attended by many people. However, as such occasions will be limited, the building should be designed by taking into account the possibility to install an air conditioning system at some future date.

For the building design, consideration should be given to ventilation and lighting system having multi-purpose uses.

Toilets, a movie projector room, and storage space will be required for the multi-purpose hall.

A movable stage is difficult to operate and maintain; therefore, a fixed stage should be provided. A thick curtain for the stage and black curtains for hall windows will be needed.

The following furniture is necessary for the multi-purpose hall:

1) A Total of 1,200 Chairs (1,000 except 200 spectator seats)

Chairs should be folding types. Whenever the hall is used as a gymnasium the chairs should be kept in the storage room. For this reason, storage racks should be provided for the chairs.

By taking into consideration the number of people who are anticipated to attend a residents' meeting, or the number of candidates participating in a JSC examination, the hall will need about 1,000 chairs. These chairs should be corrosion resistant.

The number of seating capacity including the chairs that might be brought in from other rooms.

2) 320 GCE Use Desks

GCE rules specify the sizes of desks and chairs and the distance between each seat. Thus, the desks and chairs to be provided for the hall must meet GCE specifications.

Based on the number of GCE candidates in Male', about 300 desk/

chairs will be required once the Project hall is completed. However, the future increase of GCE candidates, should be taking into consideration.

The desks should be of a type that is easy to store. Chair for GCE use should be those described in a) above.

(3) Seminar Room: 100 seat capacity

The room will be used for holding government officers' seminars and other seminars sponsored by the Ministry of Health and Welfare, and UNDP. Only small seminars can be held in the room.

The room should be arranged by giving careful consideration to the use of natural ventilation. When black curtains are used, the room temperature will becomes very high. The installation of an air conditioning system will be necessary.

The following furniture will be needed for the seminar room:

1) Meeting desks: 50 each

2) Chairs: 100 each

(4) Workshop 1 (Language Laboratory): 30 seat capacity

For the operation of language laboratory equipment, high temperature and high humidity must be avoided. For this reason, a package type air conditioning unit should be installed in the room.

(5) Workshop 2 (Typing and Microcomputer): 40 seat capacity

For typewriter and microcomputer operations, high temperature and high humidity must be avoided. For this reason, a package type air conditioning system should be installed in the room.

A desk large enough to handle the equipment should be installed in the room for each trainee.

(6) Three Classrooms: 30 seat capacity per room

One of the classrooms should be a type where a photograph studio course can be held.

The classrooms should be designed by taking natural ventilation into account. Desks and chairs for thirty students should be provided in each classroom. Furthermore, the classrooms should be designed so that they can be used by handicapped persons.

(7) Darkroom

For the darkroom, a sink, ventilation fan, and hot water maker will be needed. As the temperature affects the photograph development process, a package type air conditioning unit should be installed. The air conditioning unit should be for common use by the darkroom and the classroom to be used as a photograph studio.

Shelves, workbenches, and a refrigerator for chemical storage will be needed. Special darkroom lighting fixtures should be installed. The room should be designed so that it can be used by handicapped person using wheelchairs.

(8) Administration Office

The office should be large enough to accommodate the required number of administrative personnel.

A kitchen should be provided.

(9) First Aid Station

As the Project facilities will be used for physical education, a room to be used as a First Aid Station will be built.

As a general hospital is being constructed near the Project site, this First Aid Station will only be provided with a first-aid kit and a simple bed.

3-3 Basic Plan

3-3-1 Establishment of Project Facility Use Plan

As a result of the examination of the contents of the Maldives' request (described in Section 3-2-4) the Project facility use plan for each curriculum was made.

The Maldives' request was for the construction of a building having ten classrooms and one hall that would be adjustable to make room sizes appropriate for use purpose.

If the physical education course and regular courses were held at the same time in the hall and classrooms, the noise and vibrations from the hall would bother the individuals using the classrooms. For this reason, the hall and classrooms were put into two separate buildings.

(1) Determination of Project Facility Sizes

Courses to be held at Project facilities are listed in Table 3-3-1(1). Project facility sizes for the use plan were determined after evaluating these courses.

(2) Project Facility Use Plan

Based on the course list given in Table 3-3-1(1), the annual Project facility use plan was made as shown in Chart 3-3-1(2). Chart 3-3-1(3) gives an example of the facility use plan during the month of February.

The facility use plan was prepared only for the purpose of determining Project Facility sizes; thus, the details of the plan may deviate from actual facility use, but will not be too far off.

By assuming the facility usable period as being from 8:00 AM to 10:00 PM, the use rate will be approximately 93% for the Project multi-purpose hall and about 79 to 86% for other Project rooms.

Table 3-3-1(1) Facilities Employment Program (1 of 2)

Room Type and Capacity	Course/Ministry in Charge	Number of Participant	Times	Period per Year	Remarks
Multipurpose Hall	School physical education/ Ministry of Education	(Apprx. 3,000 Gr6-8)40/hour	4hr/day	10 months	Include tournaments for Male' only
	Physical instructor training	10	2hr/day	1 month	
	Volleyball/Youth Centre		2hr/day	10 months	
	General seminar/Ministry of Health & Welfare and UN Organizations	500	5hr/day	24 times	
	GCE test/other	320	8hr/day	30 to 45 days from a day in Jan. and 30 days in Jun.	
	JSC test/other	640	8hr/day	14 days in May	
	Appointment test/other	200	5hr/day	10 days each in Apr.& Sept.	
	School handicraft shows, meetings, scout events, youth club activities, sports, etc./other	1,200	As required	As required	
Seminar Room/ 100 persons	Induction training course /President's Office	100	10hr/day (5hr x 2)	14 days	
	Secretarial training course /President's Office	60	10hr/day (5hr x 2)	3 months	
	Clerical training course /President's Office	75	10hr/day (5hr x 2)	4 months (2 months x 2)	
	Training course for judges /Ministry of Justice	60	3hr/day	2 months	
	GCE test/Ministry of Education	50	8hr/day	30 to 45 days from a day in Jan. and 30 days in Jun.	
	Seminars (including those practiced in school auditorium at present)/each Ministry				
Workshop 1/ LL Room/ 30 persons	Language - Japanese/Ministry of Tourism	25	3hr/week	10 months	JOCV instructor
	- English/Ministry of Tourism	25	3hr/week	10 months	Instructor from EC
	- German/Ministry of Tourism	25	3hr/week	10 months	Instructor from EC
	- Italian/Ministry of Tourism	25	3hr/week	10 months	Instructor from EC
	- French/Ministry of Tourism	25	3hr/week	10 months	Instructor from EC
	Government official English-II /Ministry of Education	20	1hr/week	6 months	
	Training course for atoll & island office staff /Ministry of Education	15	1hr/day (0.5hr x 2)	12 months (3 months x 4)	(English and Thaana repeated alternatively)
	Intensive English for island chiefs/Ministry of Education & Ministry of Atolls Administration	20	1hr/day	1 month	
	FCE, CPE, etc. and self-teaching/others	As required	As required	As required	
Workshop 2/ Typewriter & Microcomputer Room 20 persons for typewriter + 20 persons for microcomputer	Intensive English for island chiefs/Ministry of Education & Ministry of Atolls Administration	20	1hr/day	1 month	
	Training course for atoll & island office staff/Ministry of Education & Ministry of Atolls Administration	15	1hr/day (0.5hr x 2)	12 months	(English and Thaana repeated alternatively)
	English typing level 1/ Ministry of Education	20	2hr/day (1hr x 2)	10 months	
	English typing level 2/ Ministry of Education	20	2hr/days (1hr x 2)	10 months	
	Thaana typing/Ministry of Education	20	1hr/day	12 months (3 months x 4)	
	Microcomputer training/ Ministry of Planning & Environment	20	3hr/day (1.5hr x 2)	4 months	At the same time as with the Classroom 2
	Other course, self-teaching	As required	As required	As required	

Note: Bold characters represent new courses starting after the completion of construction of the Project facility.

Table 3-3-1(1) Facilities Employment Program (2 of 2)

Room Type and Capacity	Course/Ministry in Charge	Number of Participant	Times	Period per Year	Remarks
Dark Room	Photograph/Youth Centre	5	6hr/day (2hr x 2)	12 months	
General Classroom 1/ 30 persons	Training course for atoll & island office staff/Ministry of Education & Ministry of Atolls Administration	30	6hr/day	12 months (3 months x 4)	
	IELTS, TESOL/Ministry of Education	20	3hr/day	6 months	
	Photograph/youth centre	10	2hr/day	12 months	Photo Studio
General classroom 2/ 30 persons	Intensive English for island chiefs/Ministry of Education & Ministry of Atolls Administration	20	3hr/day	1 month	
	Teaching English/Ministry of Education	20	7hr/day	3 months	
	Project planning/Ministry of Planning & Environment	30	5hr/day	2 weeks	
	Project monitoring & evaluation/ Ministry of Planning & Environment	30	5hr/day	2 weeks	
	Training course on microcomputer/Ministry of Planninig & Environment	20	6hr/day	1 month	
	Introductory course on selected package software/Ministry of Planning & Environment	25	6hr/day	1 month	
	Statistics courses/Ministry of Planning & Environment	25	6hr/day	1 month	
	Readymade garment & dress making/Youth Centre	20	1.5hr/day	2 weeks	
	Readymade garment & dress making(Diploma)/Youth Centre	20	3hr/day	2 weeks	
	Embroidery & sewing/ Youth Centre	20	3hr/day (1.5hr x 2)	2 weeks	
	Embroidery & sewing (Diploma)/ Youth Centre	20 15	6hr/day(3hrx2) 2hr/day	2 weeks 8 months	
	Dissemination for specific groups/Ministry of Health & Welfare	30	5hr/day	96 times	
	GCE test/Ministry of Education	15	8hr/day	30-45 days in Jan. & 30 days in Jun.	
General Classroom 3/ 30 persons	Preparation for English test FCE/Ministry of Education	20	1hr/day	10 months	
	Preparation for English test CPE/Ministry of Education	20	1hr/day	10 months	
	Preparation for GCE test "O" level/Ministry of Education	20	1hr/day	10 months	
	Shorthand level 1/Ministry of Education	20	2hr/day(1hrx2)	10 months	
	Shorthand level 2/Ministry of Education	20	2hr/day(1hrx2)	10 months	
	Thaana Arabic calligraphy /Ministry of Education	20	2hr/day(1hrx2)	9 months	
	LCC-I/Ministry of Education	30	1hr/day	1 year	
	LCC-II/Ministry of Education	30	1hr/day	1 year	
	Government official English course I/Ministry of Education	20	1hr/day	6 months	
	Government official English course II/Ministry of Education	20	1hr/day	6 months	
	GCE test/Ministry of Education	15	8hr/day	30-45 days in Jan. & 30 days in Jun.	

Note: Bold characters represent new courses starting after the completion of construction of the Project facility.

The following points were considered for the Project facility use plan:

1) Annual Facility Use Plan

a. Mutli-purpose Hall:

During the GCE period the entire hall is to be used only for the examination. At other times the hall is to be used simultaneously for physical education, health and hygiene seminars, and other activities.

b. Seminar Room:

The President's Office's officer training, judge training, and various other seminars are to be held in the room.

c. Language Laboratory, Typing and Microcomputer Room, and Darkroom:

These rooms will be used for specific training courses as well as for school education.

d. Classrooms:

One of the three classrooms will be used also as a photograph studio. The other classrooms should be separated by a movable partition in order that they may be used as a single large room for GCE.

The Maldives' school year is from January through December. The facility use plan was planned with this in mind.

2) Weekly Facility Use Plan

a. It would be difficult to use the typing and microcomputer room for English typing, Thaana typing, and computer courses simultaneously. Thus, the room use plan was made to hold the courses on different hours.

A special room use schedule should be prepared to allow individual students to use the room either for practicing on the equipment or for doing their homework.

b. Physical education that is part of the school curriculum will be given to fifth through eighth grade Male' school children. Based on a 1985 census, there are approximately 3,000 children in this category.

Each class will be composed of 40 students. The students in each class will be given physical education at the Project hall once a month. Therefore, hall use for the physical education course will be 75 hours a month -- 4 hours a day five days a week.

Normally, the Project hall will not be used on Fridays because Fridays are religious holidays. However, there may be certain times when the hall will be used for some special event or exhibition.

On Thursdays, physical education courses will be held in the classrooms.

Chart 3 - 3 - 1 (2) Project Facilities's Annual Use Plan (1 of 2)

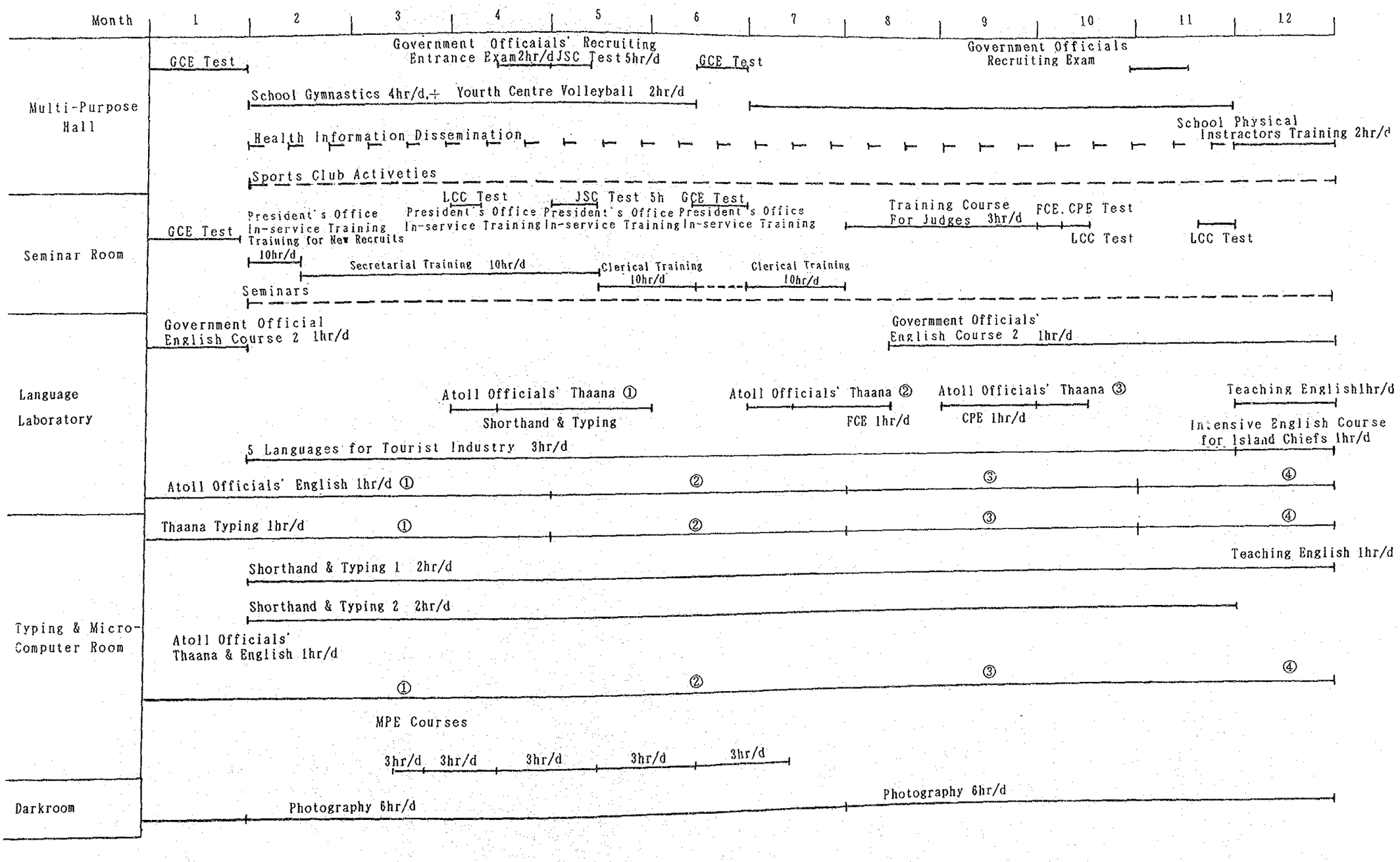


Chart 3 - 3 - 1 (2) Project Facilities's Annual Use Plan (2 of 2)

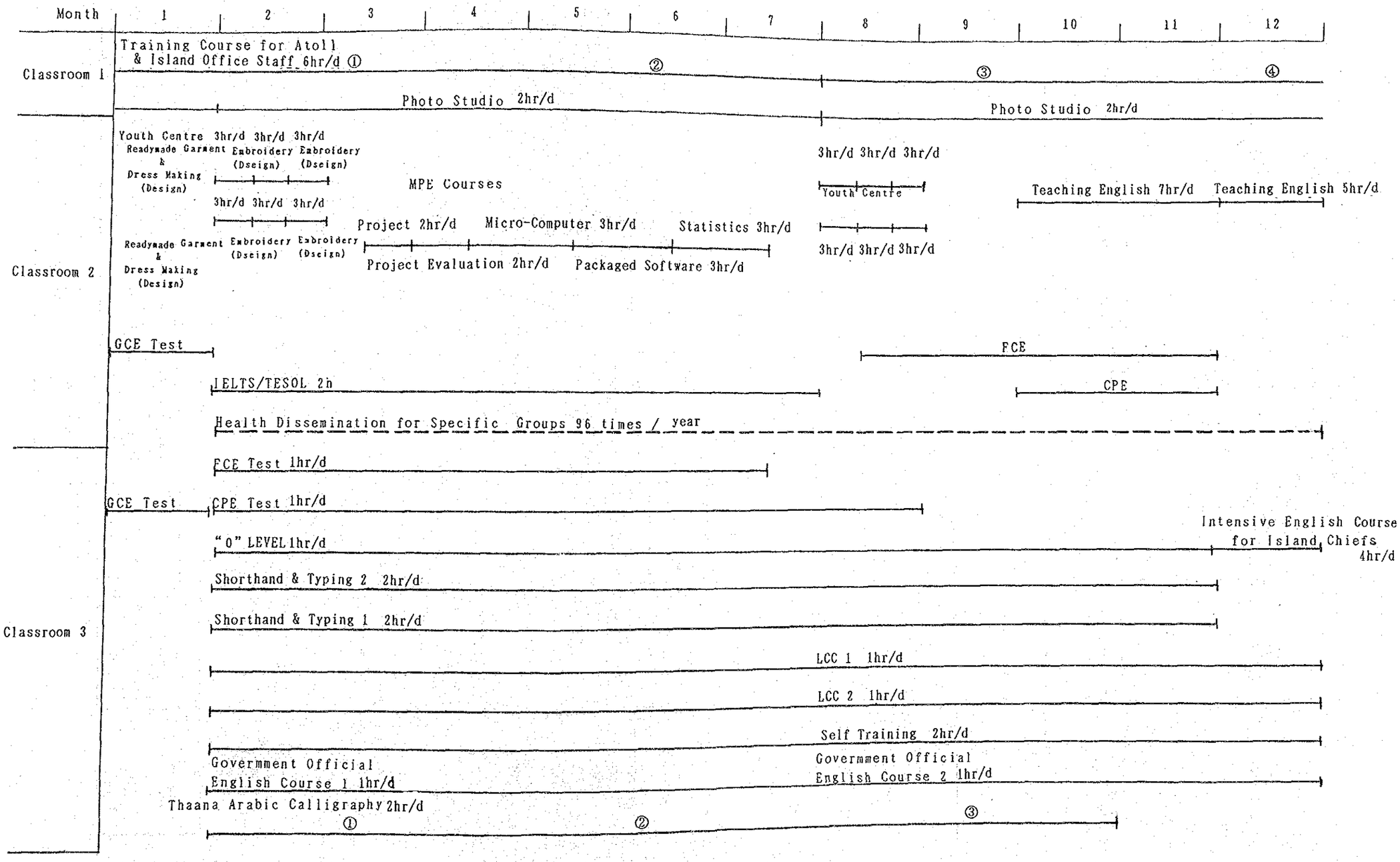


Chart 3-3-1 (3) Facility Utilization Schedule in February (1 of 2)

Day / Time	Multi-Purpose Hall	Seminar Room	Language Laboratory	Typing & Microcomputer Room	Darkroom	Classroom 1	Classroom 2	Classroom 3
Saturday 8	School Physical Training 1	President's Office In-service Training (Introductory Training Course) 1	Atoll Officials English	Atoll Officials' Thaana	Self Training	IETLS TESOL	Youth Centre Readymade Garment & Embroidery (Design) 1	Shorthand & Typing 1
9	School Physical Training 2		Self Training	Shorthand & Typing 1	Preparation			FCE
10	Sports Club activities				Photo (Studio)	Photo Studio		CPE
11								
12								
1								
2	School Physical Training 3		Self Training	Thaana Typing			Youth Centre Ready Garment & Embroidery (Design) 2	Shorthand & Typing
3	School Physical Training 4	President's Office In-service Training (Introductory Training Course) 2	English for Tourist Industry	1	Preparation	Training Cource for Atoll & Island Office Staff		GCE"O"Lebel
4	Youth Centre Vollyball		German for Tourist Industry	Shorthand & Typing 2	Photo Lab			LCC 1
5			Japanese for Tourist Industry					LCC 2
6	Sports Club Activities						Self Training	Thaana Arabic Calligraphy
7					Preparation			
8		Seminars	Self Training	Self Training	Photo Lab			Goverment Officials English Course 1
9								
10								
Sunday 8	Youth Centre Vollyball	President's Office In-service Training (Introductory Training Course) 1	Atoll Officials English	Atool Officials English	Self Training	IETLS TESOL	Youth Centre Readymade Garment & Embroidery (Design) 1	Shorthand & Typing 1
9	School Physical Training 1		Self Training	Shorthand & Typing 1	Preparation			FCE
10	School Physical Training 2				Photo (Studio)	Photo Studio		CPE
11								
12								
1								
2	Sports Club Activities		Self Training	Thaana Typing			Youth Centre Readymade Garment & Embroidery (Design) 2	Shorthand & Typing 2
3	School Physical Training 3	President's Office In-service Training (Introductory Training Course) 2	French for Tourist Industry	Shorthand & Typing 2	Preparation	Training Cource for Atoll & Island Office Staff		GCE"O"Lebel
4	School Physical Training 4		Itarian for Tourist		Photo Lab			LCC 1
5								LCC 2
6	Sports Club Activities						Self Training	Thaana Arabic Calligraphy
7					Preparation			
8		Seminars	Self Training	Self Training	Photo Lab			Goverment Officials English Course 1
9								
10								
Monday 8	School Physical Training 1	President's Office In-service Training (Introductory Training Course) 1	Atoll Officials English	Atoll Officials' Thaana	Self Training	IETLS TESOL	Youth Centre Readymade Garment & Embroidery (Design) 1	Shorthand & Typing 1
9	School Physical Training 2		Self Training	Shorthand & Typing 1	Preparation			FCE
10	Sports Club Activities				Photo (Studio)	Photo Studio		CPE
11								
12								
1								
2	School Physical Training 3		Self Training	Thaana Typing			Youth Centre Readymade Garment & Embroidery (Design) 2	Shorthand & Typing
3	School Physical Training 4	President's Office In-service Training (Introductory Training Course) 2	English for Tourist Industry	Shorthand & Typing 2	Preparation	Training Cource for Atoll & Island Office Staff		GCE"O"Lebel
4	Youth Centre Vollyball		German for Tourist Industry		Photo Lab			LCC 1
5			Japanese for Tourist Industry					LCC 2
6	Sports Club Activities						Self Training Self Traing	Thaana Arabic Calligraphy
7					Preparation			
8		Seminars	Self Training	Self Training	Photo Lab			Goverment Officials English Course 1
9								
10								
Tuesday 8	Youth Centre Vollyball	President's Office In-service Training (Introductory Training Course) 1	Atoll Officials English	Atool Officials English	Self Training	IETLS TESOL	Youth Centre Readymade Garment & Embroidery (Design) 1	Shorthand & Typing 1
9	School Physical Training 1		Self Training	Shorthand & Typing 1	Preparation			FCE
10	School physical Training 2				Photo (Studio)	Photo Studio		CPE
11								
12								
1								
2	Sports Club Activities		Self Training	Thaana Typing			Youth Centre Readymade Garment & Embroidery (Design) 2	Shorthand & Typing 2
3	School Physical Training 3	President's Office In-service Training (Introductory Training Course) 2	French for Tourist Industry	Shorthand & Typing 2	Preparation	Training Cource for Atoll & Island Office Staff		GCE"O"Lebel
4	School Physical Training 4		Itarian for Tourist		Photo Lab			LCC 1
5								LCC 2
6	Sports Club Activities						Self Training	Thaana Arabic Calligraphy
7					Preparation			
8		Seminars	Self Training	Self Training	Photo Lab			Goverment Officials English Course 1
9								
10								

Chart 3-3-1 (3) Facility Utilization Schedule in February (2 of 2)

Day / Time	Multi-Purpose Hall	Seminar Room	Language Laboratory	Typing & Microcomputer Room	Darkroom	Classroom 1	Classroom 2	Classroom 3
Wednesday 8	School Physical Training 1	President's Office In-service Training (Introductory Training Course) 1	Atoll Officials English	Atoll Officials' Thaana	Self Training	IETLS TESOL	Youth Centre Readymade Garment & Embroidery (Design) 1	Shorthand & Typing 1
9	School Physical Training 2							FCE
10	Sports Club Activities		Self Training	Shorthand & Typing 1	Preparation			CPE
11					Photo (Studio)	Photo Studio		
12								
1								
2	School Physical Training 3		Self Training				Youth Centre Readymade Garment & Embroidery (Design) 2	Shorthand & Typing
3	School Physical Training 4	President's Office In-service Training (Introductory Training Course) 2		Thaana Typing	Preparation	Training Cource for Atoll & Island Office Staff		GCE "O" Lebel
4	Youth Centre Vollyball		English for Tourist Industry		Photo Lab			LCC 1
5			German for Tourist Industry	Shorthand & Typing 2				LCC 2
6			Japanese for Tourist Industry					
7	Sports Club Activities				Preparation		Self Training	Thaana Arabic Calligraphy
8		Seminars	Self Training	Self Training	Photo Lab			Goverment Officials English Course 1
9								
10								
Thursday 8								
9	Sports Club Activities						Health Information Dissemination for Specific Group	
10								
11	Health Information Dissemination	Seminars	Self Training	Self Training				
12								
1								
2	or							
3						Training Cource for Atoll & Island office staff	Youth Centre Readymade Garment & Embroidery (Design) 2	
4	Sports Club Activities							
5							Self Training	
6								
7								
8								
9								
10								
Friday 8								
9	School Handcraft Show, etc.					Exhibition, etc		Exhibition, etc
10								
11								
12								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

3-3-2 Location and Condition of Project Area

(1) Location

The Project site is located at the west end (Maafannu area) of Male'. Three lots already developed by the Urban planning were allocated for the Project site. Three sides of the site are bounded by roads -- Majeedhee Magu, the main road that divides Male' into east and west sections is on the north side; the trunk road Kanba Aisa Rani Magu that connects the western commercial port to the site where a new inter-island harbour is to be built in the future is on the east side; on the west side is the Marine Drive which goes around Male' (this circular route was built by combining it with the tide embankment that was constructed only several meters landward from a deep sea cliff). The south side is facing the future extention area.

(2) Outline of the Project Site

The site is flat. There are two basketball courts and spectator stands on the site that were constructed in 1989. The courts and stands are to be removed by the Government of Maldives prior to the commencement of Project facility construction. Drain pipes with two manholes are installed in the site.

At one time, a storm surge flooded the site and water reached approximately 5 cm above the east side road. The groundwater table in the site fluctuates together with the tide level. Drainage from the site is very poor.

The site area is 5,600 m^2.

(3) Conditions of the Surrounding Area

The Thaajudheen Primary School that consists of a three-story building and a two-story building is located on the opposite side of the 7.6 m wide south side road. The school lot is 35 cm higher than the road surface. A hospital is being constructed one block south of the school. There is a breakwater located on the opposite side of the 8.6 m wide west

side road. During storms, high waves roll over the breakwater and flood the site.

The Maafaanu Private School is located on the opposite site of the north side road. A residential area is on the opposite side of the south side road.

(4) Existing Projects in the vicinity of the Project Site

In February 1990, the Ministry of Public Works decided to widen the Marine Drive, the road bounding the Project site on the west side, to 12.5 m. Details of the plan have not been formulated as yet.

Kanba Aisa Rani Magu, the round on the east side of the Project site, will be upgraded with aid provided by the Asian Development Bank. The design for the road upgrading is being prepared by the consultant, the William Hawkins Company. Accoring to the consultant, the walkways will be raised 18 cm higher than the existing level. Construction work will start in February 1991.

In February 1990, the President's Office decided to set the Project site 1.5m(5 feet) back from the surrounding roads. The Office is studying the possibility of utilizing the 1.5m(5 feet) wide strips along the road for car parking.

At the Thajudeen Primary School located to the south of the Project site, the construction of an auditorium with aid from UNICEF is presently suspended and it is not known when it will be completed.

A 200 bed hospital is being constructed with aid from India on a nearby lot that was newly developed by urban planning.

(5) Result of Boring Tests

The Project site was originally a garbage dumping area. In 1981, the site was filled and reclaimed. The boring tests reveal that the site ground consists of (from top to bottom) a filled soil layer (about 1.5 m thick), a gravel layer (7.4 m thick), weathered reef coral (1.0 to 1.9 m

thick), and reef coral (more than 4.5 m thick).

The filled soil is not strong enough for the bearing ground or Project facilities. Thus, foundations for the facilities will be constructed on the gravel layer. Foundation weight should be less than 8 tons/㎡. By taking into consideration the possible variation of the gravel layer's bearing strength, it may be reasonable to set the bearing capacity as being 6.0 tons/㎡. A two-story concrete building can be built on the layer without fear.

The soil and groundwater have a high sulfate content. Thus, some anti-sulfate measure should be taken to prevent possible concrete deterioration.

(6) Conditions of Infrastructures

1) Electricity Supply

As Project facility sizes were not decided upon at the time when the field surveys for the Project were conducted, the Maldives' Electric Board could not provide specific answers to the Study Team's questions concerning the power supply for Project facilities. However, no problems will be confronted in obtaining a reliable power supply for Project facilities after facility construction is completed.

In Male', power is suspended about once a week for a period of approximately one hour. Power necessary for facility construction will be supplied by a portable generator.

2) Water Supply

Male' is a coral island where the groundwater table is high and most of the well water is saline. The water can be used for flushing toilets but not for drinking. The residents rely on rainwater for drinking. The rainwater is collected from roofs and stored in underground tanks.

The rainwater at the beginning of a rain period contains dust and

must, therefore, be drained away. When it becomes cleaner, it is stored in the tanks.

For sanitary reasons, water filters should be installed for Project facility use.

3) Drainage

160 mm diameter sewage drain pipes are installed underneath the roads on the north, east and south sides of the Project site. 100 mm diameter sewer connection pipes are installed to the site.

4) Telephone

Telephone cables are installed on poles along the roads on the north and east side of the Project site. It will be possible to run telephone lines from the cable to Project facilities.

3-3-3 Outline of Project Facilities and Equipment

(1) Outline of Project Facilities

The outline of Project facility sizes derived from facility use plans is shown in Table 3-3-3(1):

Table 3-3-3 (1) Outline of Project Facility Sizes

Item	MULTI-PURPOSE HALL BUILDING	CLASSROOM AND ADMIN. BUILDING
Structure Type	· Reinforced concrete, partially steel frame	· Reinforced concrete, parfially steel frame
Number of Floors	· Two stories	· Two stories
Floor Space	2,077.3 m2	1,444.2 m2
Room Names	· Multi-purpose hall: approx.900m2 · Stage · Spectator seats · Lobby · Movie Room · Lighting and Sound Control Room · Toilets (separate male and female) · Machinery Room · Hallways and stairways · Shower Room	· Classrooms: 3 · Workshops: 2 · Seminar room: 1 · Darkroom · Administration Office · Janitor Room · Director's Room · Meeting Room · Instructors' Waiting Room · First Aid Room · Toilets (separate male and female) · Machinery Room · Hallways and stairways
		3,521.5 m2

(2) Project's Majour Equipment

The following equipment units will be needed for the Project:

1) Equipment Units for the Multi-purpose Hall

a. Public-address System: Microphones, amplifiers, speakers, and sound control equipment for seminar or meeting use.

b. Audio-visual Equipment: 16mm movie projector, screens for officers' training seminars and resident meetings.

c. Stage Lighting Equipment: Spotlight equipment, light control equipment.

2) Equipment Units for Gymnasium Use

a. Basketball set with movable baskets

b. Volleyball set with removable poles and net (for training Maldivian physical education teachers, for providing physical education to primary and secondary school children, and for game or match play by youths and residents).

c. Complete set of gymnastic equipment, such as vaulting horse, tumbling mats, high bar, and balance beam for use by primary and secondary school children holding gymnastic events.

3) Seminar Room Equipment

a. Microphones, amplifier, and speakers

b. Projection screens, overhead projector, TV monitor, video deck, and video table for officer's training courses and resident meetings

c. Lighting equipment including light controller.

4) Language Laboratory Equipment

a. A complete set of language laboratory equipment for 30 students. This will include language laboratory desks, booth tables, and head sets.

b. Air conditioning unit

5) Typing and Microcomputer Room Equipment

As the typewriters and microcomputers will be provided by the Maldives' side, it will only be necessary to install a sufficient number of electrical outlets and an air conditioning unit.

6) Classroom Equipment

The classroom to be used as a photo studio should be equipped with lighting equipment, light control equipment, a moveable stage (a type that can be disassembled), and light stands.

7) Darkroom Equipment

The photograph enlarging equipment that is presently being used at the Youth Centre will be relocated to the Project's darkroom. However, chemical storage shelves, a refrigerator unit and an air conditioning units should be provided.

8) Administration Office Equipment

a. One copying machine capable of making A3 size copies.

b. Filing equipment: File cabinets for filing documents

9) First-aid Room

A simple bed, a stretcher, and a first-aid kit.

3-3-4 Examination of the Management, Operation, and Maintenance Plan of Project Facilities

Project facilities were planned by taking into account the area's natural conditions so that they will be operated with a minimum maintenance cost.

As described in the previous section, the management, operation, and maintenance of Project facilities will be carried out by a new organization whose tentative name is Social Education Basic Facility Management Office that will be under the supervision of the President's Office.

Based on the preliminary Project facility figures, the appropriateness of the facility management operation and maintenance plan was examined as follows:

(1) Personnel Expenditures

As mentioned in Section 2-4-2, the management cost for Project facilities will be approximately 1.5 million Rufiyaa a year. This is nearly equivalent to the Youth Centre's annual budget. About 320,000 Rufiyaa of the cost will be for personnel expenditures.

No statistical data showing the average salary of Maldivians is available. Compared to the salaries of specialists in the private sector (averaging 2,000 Rufiyaa per person per month), salaries of government employees are lower.

TV Maldive personnel could be called in to repair and maintain the Project facility's audio-visual and electrical equipment. But this is not considered practical because it would not be flexible to dispatch one agency's personnel to another agency.

It will not be necessary to have a separate administration and personnel section and a financial section for Project facility management. It would be more appropriate to combine these two sections into an "administration section."

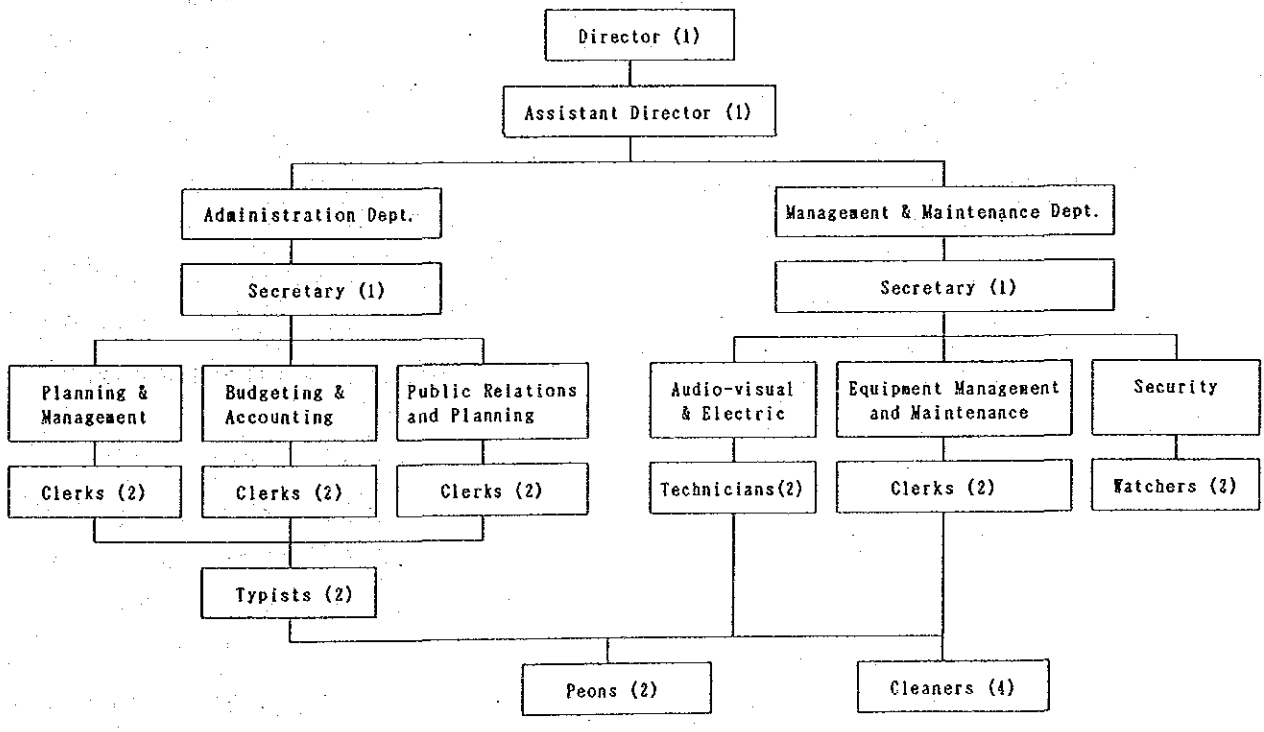
The two secretaries presently planned to be assigned will not be required; one secretary will be sufficient. Two clerks will be sufficient for the administration section.

For reference purposes, the management organization of the Youth Centre is shown in Attachment Chart 1.

As Project facilities will be open daily from 8:00 to 22:00, management personnel should be scheduled to work in two shifts.

For the above reasons, the management organization for the Project facilities should be as shown in Fig. 3-3-4(1).

Fig. 3-3-4(1) Project Facilities' Management Organization



* The number in parentheses shows necessary number of officers.

Based on the salary scale of government employees, the personnel expenditures for the organization was estimated as shown in Table 3-3-4(2).

Table 3-3-4(2) Personnel Expenditure for Management of Project Facilities

(Unit: Rufiyaa)

Position	Number of Personnel	Annual Salary Per Person	Annual Salary
Director	1	17,400	17,400
Assistant Director	1	13,800	13,800
Secretary	2	7,800	15,600
Technician	2	11,100	22,200
Clerk	8	6,120	48,960
Typist	2	6,120	12,240
Watcher	2	4,500	9,000
Peon	2	4,200	8,400
Cleaning Staff	4	4,200	16,800
Total Labour Cost			170,700

Project facility operations should be carried out in accordance with a present facility use schedule.

The Budgeting and Accounting Division should take care of employee's salary calculations as well as performing the clerical work for the director and assistant director.

The Public Relations and Planning Division should be responsible for planning community activities and planning and coordinating the inter-ministry educational courses.

Personnel expenditures for the management of the Project facilities will be borne by the President's Office. The funds necessary for personnel expenditures will be allocated in the President's Office's budget for the fiscal year when Project facilities are completed.

Each ministry and agency will be able to use the Project facilities free of charge.

(2) Operating Cost

By assuming that each Project facility will be illuminated four hours a day, the monthly electric bill will be 12,000 Rufiyaa for the 900 ㎡ multi-purpose hall building and the common use space of 1,100 ㎡. For the 3,400 ㎡ classroom and administration building the bill will be 15,000 Rufiyaa. It will cost about 320,000 Ryfiyaa anually for electricity.

By assuming that the air conditioning units in the seminar room (including the preparation room), the language laboratory (including the preparation room), the typing and microcomputer room (including the preparation room), the darkroom, and the photo studio will operate six hours a day, it will cost 25,000 Rufiyaa a month for electricity or about 300,000 Rufiyaa a year.

The total power consumption of the projector and speaker amplifier units in the multi-purpose hall and seminar room will be 6 kwa. These units will be operated an average of two hours a day. It will cost about 8,000 Rufiyaa annually for electricity.

The sewerage use fee for the toilets in the Project facilities will be about 13,500 Rufiyaa a year.

Assuming that it will cost about 20,000 Rufiyaa a year to operate the hot water maker, the total utility fee for the Project facilities will be 674,000 Rufiyaa a year.

It will be sufficient to allocate 30,000 Rufiyaa for holding a meeting; this includes planning and publicity fees.

The basic charge for two telephone units is 600 Rufiyaa a year. The use fee for the two circuits in the Project facility will cost about 6,000 Rufiyaa a year.

Summarizing the above costs, the total operating costs will be in the rage of 710,000 Rufiyaa.

The cost summary is shown in Table 3-3-4(3).

Table 3-3-4 (3) Annual Operating Costs for Project Facilities

(unit in Rufiyaa)

Cost Item	Estimated Amount
1. Operating Costs	30,000
· Meeting	
· Planning	
· Publicity	
2. Utility Cost	
· Electricity	320,000
Indoor Illumination	5,000
Outdoor Illumination	8,000
Pumping	8,000
Speaker Amplifier and Projectors	8,000
Hot Water Maker	20,000
Air Conditioning Units	300,000
· Sewerage Use	13,500
Subtotal	674,500
3. Communications (Telephone Charge)	6,000
TOTAL	710,500

(3) Maintenance Cost

It would be necessary to repaint the Project buildings ten years after their construction. The estimated costs for repainting is 440,000 Rufiyaa at present prices.

As the Project site is located close to the beach, Project equipment units should be replaced every five years, ie., twice in a ten year period. The replacement costs would be 380,000 Rufiyaa (190,000 Rufiyaa X 2) for pump equipment and 1,400,000 Rufiyaa (700,000 Rufiyaa X 2) for air conditioning units.

About 100,000 Rufiyaa would be necessary to effect minor repairs to the water supply and drain systems' polyvinyl chloride pipes' support fixtures and the electrical facility over a ten-year period.

Replacement costs of other equipment over a ten-year period would be 250,000 Rufiyaa for language laboratory equipment and 190,000 Rufiyaa for audio-visual equipment. During the 10-year period, an additional 190,000 Rufiyaa would be necessary for effecting repairs to the audio-visual equipment.

Furniture types should be carefully selected so that replacement would not be required for at least ten years.

Summing up the aforementioned costs, the total maintenance and replacement costs for a ten-year period would be approximately 2.95 million Rufiyaa. Thus, it would be necessary to allocate an annual sum of 295,000 Rufiyaa at the present value to a repair and maintenance fund (the calculation was made based on the assumption that the annual interest rate and inflation rate are the same).

(4) Expendable Item Cost

The Cost necessary for purchasing expendable items is estimated to be 40,000 Rufiyaa a year -- 10,000 Rufiyaa for files, paper, and stationery; 2,000 Rufiyaa for copy paper and 3,000 Rufiyaa for copy expendable parts (approx. 10,000 sheets per year); 20,000 Rufiyaa for language laboratory use items; 5,000 Rufiyaa for miscellaneour items.

The Total cost necessary to manage Project facilities is summarized in Table 3-3-4(4).

Table 3-3-4(4) Project Facility Management Costs

(Unit in Rufiyaa)

	Cost
Personnal Expenditures	170,700
Expendable Item Costs	40,000
Maintenance Costs	295,000
Operating Costs	710,500
Reserve Fund (for unexpected expenditures)	50,000
Total	1,266,200

The management organization for the Project facilities and such outer agencies as the Youth Centre come under the control of the President's Office. The President's Officer's total annual budget for such purposes is 137.44 million Rufiyaa. The estimated Project facilities' management costs will represent only 0.9% of the budget; thus, there will be no problems in financing the costs.

3-4 Technical Assistance

3-4-1 Technical Assistance from Japan

Japanese technical assistance related to the Project should be carried out by the Japan Overseas Cooperation Volunteers (JOCV). The Government of Maldives has requested technical assistance from Japan in the following fields: ready-made garment making; embroidery, designing of handicraft items, ready-made garments and embroidery; language training; photography; others.

As described in the previous Section, these courses are thought to be necessary in view of Maldives' human resources development. It will, however, be difficult to conduct all of these courses at Project facilities.

For the requested fields, it is thought to be necessary to dispatch specialists for the following:

(1) Gymnastics (request from the Ministry of Education)
Volleyball (request from the Youth Centre)

In Maldives, gymnastic education is conducted only at the Kalaafaanu Primary School.

After Project facility construction is completed, gymnastic education for school children as well as for physical education teachers will be taught by two JOCV members at the Project facility.

Continuous technical assistance by JOCV will also be necessary to give volleyball instructions to school children and volleyball instructors at the Project facility.

(2) Designing of Ready-made Garments and Embroidery

No courses for designing ready-made garments and embroidery have been introducted in Maldives; thus, the design courses at the Project facility must relay on a foreign instructor. To conduct the designing course as well as to educated Maldivian design course instructor, JOCV should dispatch a specialist.

The Government of Maldives requests JOCV to send two specialists, but judging from the number of course applicants, one will suffice.

(3) Japanese Language Training (request from the Ministry of Tourism)

The Ministry of Tourism has requested JOCV to send a Japanese language instructor. JOCV sent a Japanese language instructor to

Maldives once before. If JOCV sends another Japanese language instructor to Maldives it will be possible to educate Maldivian Japanese language instructors. Presently, the Japanese language course is given at the Hotel School.

After the completion of Project construction, it will be possible to carry out Japanese language training courses in a better manner at the language laboratory.

(4) Photography (request from the Youth Centre)

The photography course presently conducted at the Youth Centre will be transferred to the Project facility after construction completion. JOCV plans to retain a photography instructor in Maldives on a continuous basis.

3-4-2 Technical Assistance From Other Organizations

(1) Government Officers' Training

UNDP, with cooperation from the Government of Maldives, is going to proceed with the project for the Maldives' Centre for Management and Administration (MCMA) (see Section 3-2-2, 1)).

However, no technical cooperation plan exists between the Project and MCMA. Also, there is no requirement to UNDP to dispatch instructors of technical cooperation for the Project.

(2) Language Training

Other than the Japanese language course, English education is conducted by EC volunteers.

After Project facility construction completion, German, French, and Italin, as well as English, courses will be taught at Project facilities by EC volunteer instructors.

(3) Dissemination of Health and Hygienic Information

A UNDP official told the Study Team that technical assistance for the dissemination of health and hygienic information could be carried out with flexibility.

Even after 1992 (the year the Project facility is to be completed), the United Nations will continue to provide the technical assistance for disseminating the information. In accordance with UNDP's plan, WHO and UNICEF will continuously provide the necessary specialists.

UNDP will also provide technical assistance for the health seminars to be held for the general public and for specific groups that will be conducted by the Allied Health Service Training Centre of the Ministry of Health and Welfare. Instructors for the health seminars will be dispatched from the United Nations Volunteer Organization.

The Government of Maldives unofficially requested Japan to send the instructors for the health seminars, but, since WHO and UNICEF will send them, the Government of Japan decided not to.

3-5 Basic Policy for Project Implementation

As a result of the various examinations concerning the Project, Project effects and reality, and Maldives' capability to implement the Project were confirmed.

Because the effects of the Project will conform to the rules of the Government of Japan's grant aid programmes, it was thought to be appropriate to implement the Project with grant aid from the Government of Japan. Thus, the Basic Design for the Project was prepared based on the premise that the Project would be implemented with grant aid from the Government of Japan. However, as described in Section 3-2-4 and 3-3-3, it was deemed to be appropriate to revise some of the items requested by the Maldives.

CHAPTER 4 BASIC DESIGN

CHAPTER 4 BASIC DESIGN

4-1 Basic Design Policies

With an aim of expanding social education in Male', the Project is to construct a multi-purpose hall and a building having classrooms.

By carefully taking into account the educational situation, the social situation, the natural conditions, and the construction industry situation in Maldives, the following basic policies were established to determine the types and scales of Project facilities that can adequately accommodate the training courses selected as a result of the examination of the contents of the Maldives' request.

(1) The climate, environment and cultural background in Maldives should be taken into consideration for Project building design.

(2) The building forms should be simple and functional as a social education facility.

(3) To make maximum use of Project facilities, they should be types that will incur minimum management and maintenance costs. Thus, special attention should be paid to the following aspects:

1) The facility design should be taken into consideration of insufficient electric supply condition in Male'.

a. In order to effectively utilize natural lighting and ventilation, a corridor or a courtyard should be planned. Furthermore, rooms should be spacious and ceilings should be sufficiently high.

b. To prevent direct sunlight and rain from entering the room, the building should have a balcony and the windows should be recessed.

c. To minimize the load on air conditioning units, insulation and a means for preventing moisture should be used.

2) Local materials and local construction methods should be adopted as much as possible so that repairs to Project facilities can easily

be made.

3) Project use equipment units should be types that can be maintained and operated easily. The units should be reliable and long lasting, and after-service must be readily available.

4) The Project site is a reclaimed area. Utmost consideration should be given to building safety. Foundation work, in particular, must be carefully constructed.

5) The high tide levels that accompany the rainy season must be taken into consideration when designing Project facilities. The first floors of the buildings should be 100 cm higher than the road surface.

6) Special attention should be paid to the corrosion effects of salt water. In particular, the covering of reinforcing bars used in building foundations should be thick enough to protect them from salty ground water. Special attention must also be given to paint application in the corrosive environment.

7) Rainwater is used as a supplemental drink water source in Maldives. The plans for the Project's water tank should take in not only Project related uses, but the use by local residents.

8) The buildings should be able to withstand the strong seasonal winds. The building axis should be planned so that the rooms will not recieve direct strong wind from the west.

9) The buildings should be designed in conformity with Maldives' rules and standards and by making reference to related Japanese standards, if necessary.

10) It will take 14 months to complete Project facility construction. The construction period should be divided into two phases; phase I for the Project's mutli-purpose hall construction; phase II for the Project's classroom and administration building construction.

4-2 Basic Building Design

4-2-1 Determination of Facility Size

The number and sizes of rooms for Project buildings were decided upon by analysing the outline of Project facilities shown in Section 3-3-3 and the management organization described in Section 3-3-4, and by referring to an example giving the number and sizes of a junior high school's classrooms calculated in accordance with Government Subsidy Standards (described in the Planning and Designing of School Buildings published by the Japan Society of Architects) and the rules for Japanese junior high school buildings having more than 12 classrooms. Reference was also made to the standards set forth in the Building Design Data Manual (published by the Japan Society of Architects).

The reasons for using the rules and standards established for junior high school buildings were 1) junior high school students use multi-purpose halls for physical education course, and 2) in Japan there are rules and standards for classrooms and special rooms, such as workshops, for junior high schools but not for primary schools.

The bases for determining the number and sizes of Project building rooms are described herewith:

(1) Multi-purpose Hall

The Project hall will be used for multiple purpose, such as for school children's physical education, training of physical education teachers, conducting national level examinations, training of Government officers, and for holding seminars and meetings of residents.

According to the standards for gymnasiums and sports facilities for Japanese residential areas (established by the Health and Physical Education Council of the Japanese Ministry of Education), an area having a population of 50,00 people should be provided with three 720 ㎡ indoor stadium, one 300 ㎡ judo gymnasium, and three 400 ㎡ swimming pools. According to the Japanese National Treasure Laws for Compulsory Education Expenses. Secondary schools should have a 780 ㎡ gymnasium with a 100 ㎡

stage per every 6 to 12 classes, and a 1,200 ㎡ gymnasium with a 180 ㎡ stage per every 18 to 30 classes.

The size of the multi-purpose hall was determined by taking into account the size of a basketball court (28.0 m by 15.0 m) and limiting the gymnasium size to that used as the standard for a Japanese secondary school (1,200 ㎡ gym with a 180 ㎡ stage). This hall will be able to accommodate the playing of four badminton games simultaneously. The hall will be able to accommodate either one basketball game, two volleyball games, or eight table-tennis games at a time. Tumbling mats, vaulting horses, and a horizontal bar can be placed in the gym.

260 spectator seats will be installed on the second floor of the hall. 980 folding chairs can be set up on the first floor. Thus, the hall will be able to accommodate up to 1,240 people when used as meeting place -- if desk and chairs are to be used, 640 seats can be provided.

For the General certificate Examinations (GCE) a maximum of 320 seats can be set up. An examination rule stipulates that each seat must be separated by 1.5 m in all directions.

Echo boards, electrical audio equipment, and stage illuminating equipment most suitable for multi-purpose use are planned to be installed.

A natural ventilation system is to be adopted, but plans are to be made for the installation of a forced air ventilation system that can be used whenever large meetings are held.

Louvers and blinds are to be installed as protection against the strong westerly sunlight. The corridors are planned to have long eaves to act as a shelter from driving rain.

The planned multi-purpose hall is compared, as shown in Table 4-2-1(1), to similar existing facilities in Maldives:

Table 4-2-1 (1) Space of the Project's Multi-purpose Hall Compared to Existing Facilities in Maldives

Facility	Hall Space	Stage Space
Kalaafaanu Primary School's Gymnasium-Auditorium (built with grant aid from the Japanese Goverment)	20 m X 13.6 m = 272.0 m2	4 m X 15.25 m = 61.0 m2
Iskandar Primary school's Music Hall	21.4 m X 9.3 m = 199.0 m2	9.3 X 6 m = 55.8 m2
Jamaaludheen Primary School's Music Hall	16.67 m X 18.25 m = 304.2 m2	4.7 m X 18.25m = 85.8 m2
Thaajudheen Primary School's Music Hall(under construction)	22.7 m X 13.5 m = 306.5 m2	6 m X 15 m = 90 m2
Kurumba Auditorium	29 m X 14.5 m = 420.5 m2	NONE
The Project's Multi-purpose Hall	30 m X 30 m = 900.0 m2	109.5 m2

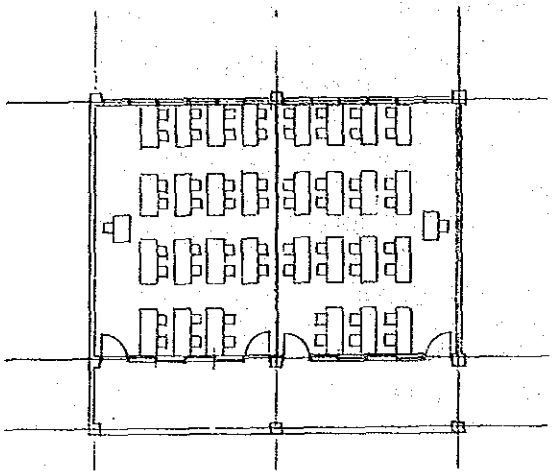
(2) Classrooms

Sizes are of fundamental importance for Project classrooms. The sizes are planned based on the furniture layout plan.

Desk-chairs are not suitable for GCE. Thus, plans have been made to install 2-seat desks in the classrooms.

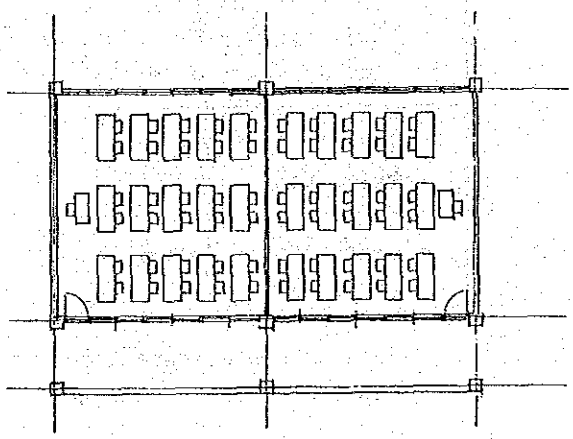
The most desirable shape for a classroom is a square. Two alternative classroom shapes (alternative "A" and alternative "B") were examined to determine which one could be most effectively used. As a result of the examinationds, alternative "A" was selected for the Project.

It is planned to install a partition between the two classrooms having a removable sliding door that will allow combining the two classrooms into one large room whenever there is a need to do so. The combined room will be able to accommodate the seating of 60 people. Also, when the room is used for GCE purposes, only one proctor will be required.



Classroom: 6 x 8.5 = 51 m²
Hallway: 6 x 2.0 = 12 m²
TOTAL 63 m²

ALTERNATIVE "A"



Classroom: 7 x 7.5 = 52.5 m²
Hallway: 7 x 2.0 = 14.0 m²
TOTAL 66.5 m²

ALTERNATIVE "B"

(3) Darkroom

A darkroom with a double-sink, workbench, shelves, and a refrigerator is planned adjacent to the classroom. The minimum necessary space (4.25 m by 4.0 m = 17.0 m²) is allocated for the darkroom.

(4) Preparation Rooms

Preparation rooms will be used by photography instructors for course preparation and information and data storage. The rooms will also be used for course preparation by other instructors. The minimum necessary space (3.0 m by 4.25 m = 12.8 m²) is allocated for each preparation room.

(5) Workshops (1: for Typewriter and Micro-Computer, 2: for L.L.)

The workshops are planned to be on the second floor of the classroom building. They will be located some distance from the classrooms so that noises will not interfere with classroom activities. Room arrangements were made to provide adequate space and to permit natural lighting and ventilation.

Size for Project workshops were determined after comparing the sizes of special rooms for primary school science and homemaking courses (92 ㎡ per room), special rooms for secondary school science, handicraft, and homemaking courses (in the range of 112 ㎡ to 151 ㎡ per room), and the audio-visual classrooms (110 ㎡ per room) used at primary and secondary schools.

Rooms to be used for multiple purpose just have sufficient space to handle the various courses to be taught in them.

By assuming the class size as being comprised of 40 students, the workshop size was decided upon as being 13.2 m by 9 m (118.8 ㎡).

The workshop 2 for 30 students was decided upon as being 12 m by 9.1 m (109.2 ㎡).

The preparation room to be used for the showing of motion pictures, instructors' room, or recording room for the language laboratory was decided upon as being 3.0 m by 13.2 m (39.6 ㎡) for Workshop 1, 4.1 m by 9.0 m (36.9 ㎡) for Workshop 2 which includes a space for air conditioning equipment.

(6) Seminar Room

According to the rules for arranging desks and chairs in Japanese schools, the standard space for 2-person desks and chairs is 2.25 ㎡ /students, for 3-person desks and chairs is 1.48 ㎡/student. By taking into account the use of the seminar for GCE, it was decided upon to install 2-person desks and chairs.

When 100 people are to use the room, the room space should be 225

㎡. However, the seminar room size was decided upon as being 13.2 m by 15.0 m (198.0 ㎡) as an economic measure.

The preparation room to be used for showing of motion pictures, an instructors' room, or as a recording room for the language laboratory was decided upon as being 3.0 m by 13.2 m (39.6 ㎡) which includes a space for air conditioning equipment.

(7) Director's Office:

It is a custom in Maldives to provide the director with a separate office. Thus, his office is planned to be located in the administration building. After examining the furniture arrangement, the office size was decided upon as 19.2 ㎡.

(8) Administration Office:

The administration office will be used by 15 personnel. Because of 2 work shifts, 9 desk and chaires are required. Then, 2 desks for typewriter and word processor are necessary. In all, 11 desk and chairs are required in the office. The standard office space requirement for one person is 3.6 ㎡. If this standard is adopted, a 39.6 ㎡ space (3.6 ㎡ X 11 persons) will be needed. However, based on the results of the examination on the necessary arrangement(10.3㎡ for assistant Director, 36.0㎡ for 10 other desk and chaires, 3.0㎡ for usher desk, and 3.6㎡ for cabinets), a 53.3 ㎡ office space was decided upon.

(9) Storage Room:

As it is important to have a storage space for effective office use, a 22.3 ㎡ space is planned on.

(10) Meeting Room for Administration Officers and Instructors:

The size of meeting room is 6.2 m by 2.9 m (18.0 ㎡).

(11) Janitors' Room:

The janitors room is planned to be located adjacent to the administration office. The room will be used by four janitors and two other workers. Also, copy machine is placed in the room. The room will be 18.0 ㎡.

(12) Instructors' Room

This room will be used by instructors preparing class material and checking papers after classes. Instructors using the workshops or seminar rooms will use the preparation room while preparing their material. To accommodate a desk, a chair and a closet, the minimum space necessary for the instructor' room was decided upon as being 4.15 m by 4.0 m (17.0 ㎡).

(13) First Aid Station

A first aid station that is properly equipped to handle emergency situations, and minor sicknesses and injuries is planned to be located in the immediate vicinity of the athletic field, multi-purpose hall, and offices. Regulations for Japanese secondary schools require one 30 ㎡ first aid station for every six classes. However, the size of the Project's first aid station was decided upon as being 3.0 m by 4.25 m (12.8 ㎡).

(14) Toilet:

Separate male and female toilets will be installed in each Project building. Urinals are not installed in men's toilets in Maldives. It is planned to install a water faucet in each toilet booth.

If Japanese standards are adopted, 25 toilet bowls will be needed to accommodate 1,000 people at the multi-purpose hall. 12 bowls will be for 500 people. Even if less than 25 toilet bowls are provided at the hall for accommodating 1,000 people, the problem can be solved either by planning longer intermission periods or by using the toilet facilities in other buildings. Therefore, it is planned to install 16 toilet bowls in the multi-purpose hall and 20 in the classroom and administration building (10 on the ground floor and 10 on the first floor).

(15) Corridor and Stairways:

The corridor has the important function of preventing direct sunlight from entering the building. Also, the corridor will be a pleasant place for youths to gather and hold enjoyable conversations during class recesses. This 2 m wide corridor will provide the separation between indoor and outdoor areas. Two stairways are planned: one for emergency use; the other for regular use.

(16) Water Tank:

People in Maldives often have to rely on rainwater for their drinking water.

Although Project facilities do not require the need of a large water tank, it would be a social responsibility to install a water tank to collect and hold the rainwater from those Project buildings having large roof areas. The tank should have a capacity corresponding to the one month storage capacity. More than one month reserved water will not used for drinking water, because of duckweed growth. Necessary water per day per capita is 10 litter. The maximum capacity of the Hall is 1200 and avarage usage is 10%. Thus, the water tank for the Hall was designed to have 36 ton capacity. Then, maximum capacity in the Classroom and Administration Building is 260. These 260 people will replace three times per day. Thus, water tank for the Classroom and Administration Building was designed to have 234 ton capacity. The stored water will be used for Project facilities and for drinking water by area residents. So, 60 to 100 ton additional reservoir will be taken into consideration to the Hall building water tank. As the result, water reservoir in Hall Building was designed to have 130 ton capacity, and water reservoir in Classroom and Administra-tion Building was designed to have 230 ton capacity. For sanitary reasons, the tanks should be equipped with a simple filtration device.

The outline of the determination of Project facility sizes is shown in Table 4-2-1(2).

(A) shows the refference from the Government Subsidy Standards, and (B) shows the refference from the Building Design Data Manual.

Table 4-2-1 (2) Determination of Project Facility Sizes (1 of 6)

A) Multi-purpose Hall Building

(unit in square meter)

Name of Room	Use and Installing Equipment	Basis of Room Size Determination	Remarks	Determined Floor Space	Standard Floor Space
Multi-purpose Hall with Spectator Seats	Volleyball Gymnastics Basketball Seminars and meetings Examinations	·Japanese junior high schools' gymnasium design standards ·Space should be sufficient for making two volleyball courts	·Capable of accommodating 1,000 folding chairs ·Capable of accommodating 200 spector seats on the second floor ·Capable of accommodating 320 seats for GCE	900 (hall) and 236.1 (spectator seats)	1,200(A)
Stage	Seminars and meetings	·Japanese junior high schools' facility design standards		109.7	180(A)
Lobby	Entrance lobby Exhibition space	·Space necessary to take off shoes ·Minimum space necessary for hold exhibitions	·For exhibiting school students and residents' paintings and handicraft items	65.8	48(A)
Storage	Storage of folding desks, sports equipment units, and stage equipment units	·Sufficient space to store all equipment units		43.2	120(A)
Machinery Room	Ventilation fan, pumps, transformer equipment, etc.			111.6	
Administration Office				15.1	36(A)
Projector Room	16 mm projector and slide projector	·Minimum required space for operating projector equipment		18.9	14.65(A)
Anteroom			Can also be used as a dressing room	15.8	36(A)

Table 4-2-1 (2) Determination of Project Facility Sizes (2 of 6)

A) Multi-purpose Hall Building (unit in square meter)

Name of Room	Use and Installing Equipment	Basis of Room Size Determination	Remarks	Determined Floor Space	Standard Floor Space
Corridor and Stairway				492.7	
Toilets and Shower Rooms				68.4	Toilets:16 Showers:44 Subtotal:60 (A)
Total Building Floor Space				2,077.3	

Notes: (A)indicates figure obtained in accordance with the planning and designing of school buildings published by the Japan Society of Architects.

(B)indicates figure obtained in accordance with the Building Design Data Manual published by the Japan Society of Architects.

Table 4-2-1 (2) Determination of Project Facility Sizes (3 of 6)

B) Classroom and Administration Building (Classroom Related Rooms)

(unit in square meter)

Name of Room	Use and Installing Equipment	Basis of Room Size Determination	Remarks	Determined Floor Space	Standard Floor Space
Workshop 1	Language laboratory	·30 seats for language courses	·Need to install a package type air conditioning unit	109.2	112 to 151 (A)
Workshop 2	Typing and microcomputer room	·40 seats for typing and micro-computer courses	·Need to install a package type air conditioning unit	118.8	112 to 151 (A)
Seminar Room	Government Officers' training, seminars and examinations	·Capable of accommodating 100 seats with two-person desks and chairs	·Capable of accommodating 50 seat for GCE ·Need to install a package type air conditioning unit	198.0	2.25x100 persons = 225(B)
Classrooms(3 each)	Various educational courses and photo studio	·Each room should be able to accommodate 30 seats	·Capable of accommodating 30 seat for GCE if a partion between two rooms is removed	51 x 3 each = 153	1.9 x 30 persons (A) =57 per room
Toilets		·Number of toilet bowls should be determined based on the number of personnel using the building. ·Toilet space should be decided upon based on the number of toilet bowls	·No urinals are to be installed	80.6 (40.3x2rooms	70(A)
Darkroom	Photograph developing and enlarging	·Sink, workbench, chemical shelves, and chemical storage refrigerator ·Room should be sufficient for four people to work in	·Need to install a package type air conditioning unit	17.0	
Preparation Room (3 each)	One room for each Workshops and one for seminar room	·sufficient space to install instructor's desks, lockers, and a projector unit	·Need to install a package type air conditioning unit	116.1 (36.9x1rooms (39.6x2rooms	24 to 30(A)

Table 4-2-1 (2) Determination of Project Facility Sizes (4 of 6)
B) Classroom and Administration Building (Classroom Related Rooms)

(unit in square meter)

Name of Room	Use and Installing Equipement	Basis of Room Size Determination	Remarks	Determined Floor Spac	Standard Floor Space
Preparation Room	Room for photophraphy instructor, data storage, and work space	・sufficient space to conduct preparation work for photo-graphy course, such as making photo panels	・Need to install a package type air conditioning unit	12.8	24 to 30(A
Corridor and Stairway			・Need to provide emergency exits at both ends of corridor	227.2	
Subtotoal of B):				1,032.7	

Notes: (A)indicates figure obtained in accordance with the planning and designing of school buildings published by the Japan Society of Architects.
(B)indicates figure obtained in accordance with the Building Design Data Manual published by the Japan Society of Architects.

Table 4-2-1 (2) Determination of Project Facility Sizes (5 of 6)
C) Classroom and Administration Building (Administration Related Rooms)

(unit in square meter)

Name of Room	Use and Installing Equipment	Basis of Room Size Determination	Remarks	Determined Floor Space	Standard Floor Space
Director's Office		·Space to work and arrange furniture		19.2	28(A)
Administration Office	Reception, administrative, and clerical work	·Space necessary to install 11 desks		53.3	39.6
Storeroom	Storage			22.3	25(A)
Janitor and Peon's Room		·Sufficient space to arrange four person desk and chairs, and one copy machine		18.0	33(A)
Kitchenette	Hot-water maker	·Space necessary to arrange Kitchen equipment		12.0	
Meeting Room	Meeting	·Determined based on the number of persons		18.0	30(A) (small Meeting)
Instructors' Room		·Space necessary to arrange instructor's(one instructor for each course, except one who will use preparation room)desk, chair and locker		17.0	110(A) (based on rules for teachers' room
First Aid Room		·Minimum required space to provide a simple bed and first-aid kits		12.8	45(A)
Toilet				24.0	17(A)

Table 4-2-1 (2) Determination of Project Facility Sizes (6 of 6)
C) Classroom and Administration Building (Administration Related Rooms)

(unit in square meter)

Name of Room	Use and Installing Equipment	Basis of Room Size Determination	Remarks	Determined Floor Space	Standard Floor Space
Guard Room	Guards	·Space for one person (two guards will work on a two-shift basis)		8.7	10(A)
Machinery Room	Pumps			10.0	
Corridor and Stairway				196.2	
Subtotal of C):				411.5	
Total Floor Space of Classroom and Administration Buiding (B) + (C):				1,444.2	
Total Floor Space of Project Buildings (A) + (B) + (C):				3,521.5	

Notes: (A)indicates figure obtained in accordance with the planning and designing of school buildings published by the Japan Society of Architects.
(B)indicates figure obtained in accordance with the Building Design Data Manual published by the Japan Society of Architects.

4-2-2 Site and Layout Plan

Building arrangement should be made by taking into account the following aspects:

(1) The axies of buildings should be planned so that the rooms will not receive direct sunlight and strong seawind from the west.

(2) By taking into account the wind direction, building axies should be planned so that the maximum effects of natural ventilation can be attained.

(3) The buildings should be so arranged to facilitate the installation of the shortest most economical connection of utility lines (including the power main).

(4) Because of possible high storm surges, the number of openings on the western sides of builodings should be kept at a minimum.

(5) The location of the Project facilities' main gate should be decided upon by taking into account city planning in Male'.

(6) The existing two basketball courts and the spectator stands should be removed by the Government of Maldives prior to commencing Project facility construction.

(7) As land space in Maldives is limited, the arrangement plan for Project facilities should be prepared by taking into account the country's future land-use plan and the future expansion plan for Project facilities to be carried out by the Government of Maldives (details of the expansion plan have yet to be decided upon).

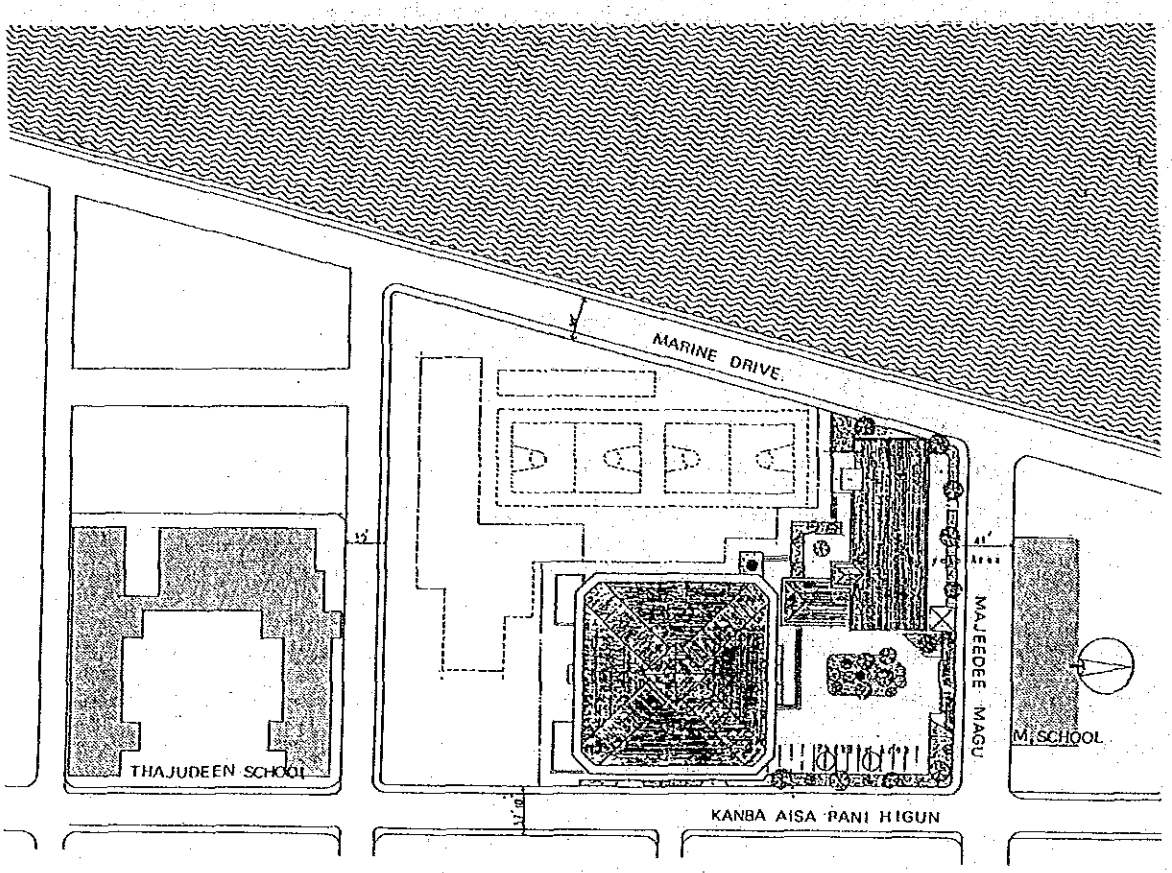


Fig. 4-2-2(1) Neighbourhood Explanation

(1) Layout Plan

In male''s City Plan, the intersection between Majeedee Magu that will be the east-west direction main street and Kabaa Aisha Rani Higun that will be the north-south direction main street connecting the northern and southern part ports will be the most important point in the western part of Male'. Thus, the location of the Project facilities' main gate is planned adjacent to the intersection.

To avoid possible flooding by storm surges and wave splashing caused by strong winds, the Project facilities are planned to be located inland as far as possible.

Further, the layout of the facilities is made to allow for possible future facility expansion in view of the effective land use.

The layout calls for planting trees (of the palm family) on the sea side lot that are salt resistant. Such trees will offer Project building a degree of protection against salt damage. The tree planting work will be borne by the Maldives' side.

4-2-3 Architectural Design

(1) Floor Plan

The size of the Project's multi-purpose hall building was determined based on requirements for a gymnasium. The building will be able to accommodate the seating of 1,000 people on the ground floor and 200 in the spectator seats on the second floor.

The size of the Project's classroom and administration building was determined based on the Facility Use Plan.

To create comfortable room conditions by utilizing natural ventilation, window sizes and ceiling heights are planned larger than called for in Japanese standards.

To provide natural venting without installing a central air conditioning system or forced ventilation system, the buildings are designed as outer-wall structure types having corridors. Common use floor were designed to be spacious.

The quality grades of the buildings are established in conformance with related Maldives' facilities.

(2) Section Plan

As the Project site is reclaimed land along the ocean front, all Project buildings are planned to be two-storied for structure safety reasons. For improved ventilation, the height of the second floor was decided upon as being 3.6 m. The eaves are planned to offer protection against direct sunlight and driving rain. Ceilings are planned for insulation. By taking into account the possibility of flooding, first floors of buildings are planned to be 1.0 m above the road surface.

Because the Project hall will be used for multiple purposes, the building structure must be both strong and economical and must satisfy the following conditions:

1) There are no rules regulating ceiling height for gymnastics events, but 6 m will be adequate.

2) According to the Japane Volleyball Association, the overhead of a regulation volleyball court must exceed 12.5 m at its center.

3) Basketball courts must have overheads of more than 7.0 m.

By taking the above conditions and the second floor section where spectator seats are to be installed into account, the ceiling height of the multi-purpose hall was decided upon.

Taking into account the year-round temperature and humidity in Maldives, the room heights for classrooms and administration building offices and rooms are planned to be higher than the ordinary ceiling heights found throughout the country in order to maximize the natural ventilation effects.

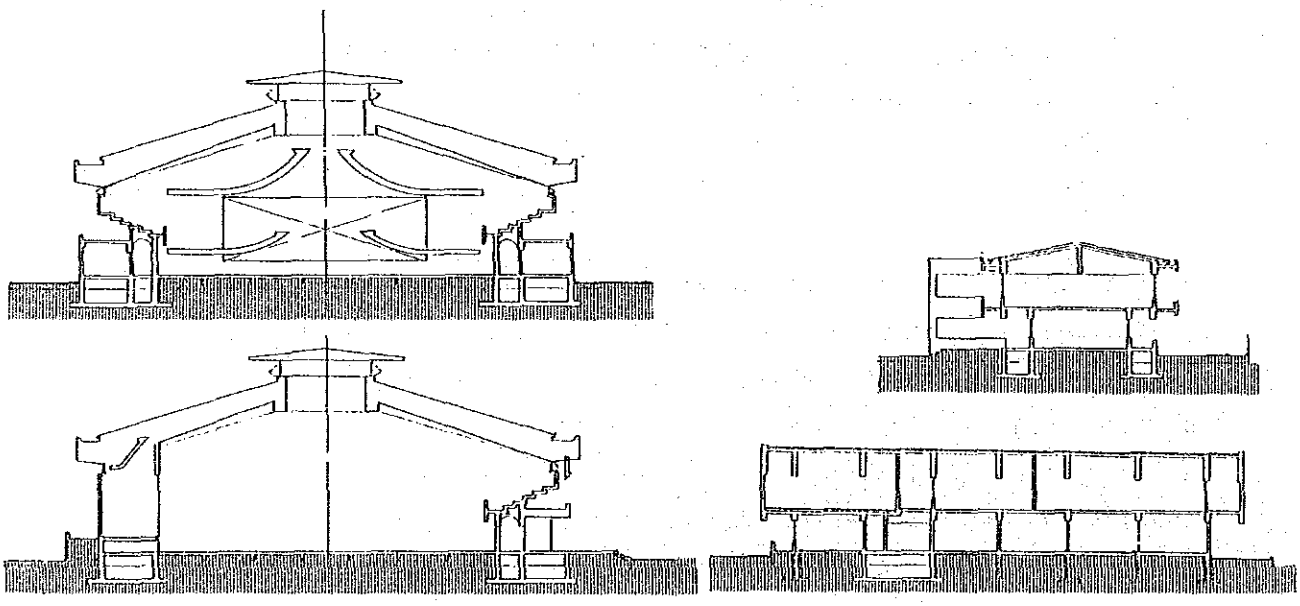


Fig.4-2-3(1) Section Plan

(3) Structural Plan

1) Basic Requirements

a. The structural types for Project buildings should be appropriate for the sizes, the use purpose of the buildings.

b. The structural types for Project buildings should be decided upon by taking into account local material procurement conditions, the availability of local labour, and the capabilities of local contractors.

2) Design Policies

a. Building Structure

By carefully considering the area's climate, the Project site area, and the site's geological conditions, the structural type for Project buildings was decided upon as being the two-story reinforced-concrete frame type. The roofs will be steel frame structures. The steel frame structures are to be covered with long steel panels.

b. Foundation Type

Boring tests found the existence of hard rock in the shallow area of the Project site. It was therefore decided to use mat foundations directly on the bearing layer having a bearing capacity of 8.0 tons/m^2 at DL - 1.29 m by taking into account the ground water table.

c. Loads and External Force

(a) Dead Load:

Actual weights of building structure materials, finish materials and equipment.

(b) Live Load:

Determined based on each room's use condition and on Japanese building standards.

(c) Seismic Force:

Seismic force was not taken into consideration.

d. Major Building Materials

(a) Concrete:

Fc = 240 kg/cm² (28-day compressive strength of concrete).

(b) Reinforcing Bars:

Diameter equal to or larger than 19 mm: Japanese Industrial Standards (JIS) SD35 or equivalent

Diameter smaller than 19mm: JIS SD30 or equivalent

(c) Steel:

JIS SS41 or equivalent.

3) Foundation Work

The Project site was reclaimed from a beach front area. The filled material consisted of coral rock, gravel, and dirt. The filled material is approximately 1.5 m. The surface of the ground is hard, but the layer beneath it is still soft. It appears that the Project site remains in an irregularly filled condition -- it is not consolidated evenly. A foundation cannot be constructed directly on this ground because it may settle unevenly.

By assuming the width of Project building foundations as being 1.8 m, the weight of each building floor as being 1.2 tons/m² the number of floor as being 2, and the column intervals as being 6.0 m and 13.0 m, the

load (P) on the mat foundation arranged in a crisscrossed form will be

$$P = \frac{1.2t/m^2 \times 2floors \times 6m \times 13m/2}{6m \times 1.8m + (13m/2-1.8m) \times 1.8m} = 4.9t/m^2$$

From the above calculation, it is believed there will be no problem if the ground bearing capacity is approximately 5 tons/m^2.

4) Deterioration of Concrete

At the Project site the sulfite (SO3) content is 0.48 to 0.50 % in the soil, and 0.53 to 0.65 g/liter in the ground water. If ordinary cement is used in the construction of foundations on ground having the above mentioned sulfite content, Japanese standard required the use of a minimum of 330 kg of cement per cubic meter, and a maximum water-cement ratio of 50%. If anti-sulfite cement is used, the same standard required the use of a minimum of 290 kg of cement per cubic meter, and a maximum water-cement ratio of 55%. Thus, foundation construction should be carried out by taking into account the above standards.

5) Water in Test Pit

Water sampled from a test pit at the Project site contained from 4.5 to 6.4 g/liters of chlorine (4,500 to 6,400 ppm). This water is not usable for mixing concrete. Well water in the central part of Male' contained from 1.32 g/liters of chlorine. If materials like sea sand which contains chlorine is not utilized, maximum chlorine content is not exceed the limitation by both of British and Japanese standards. Water for mixing concrete should therefore be obtained from the wells located in the central part of Male'.

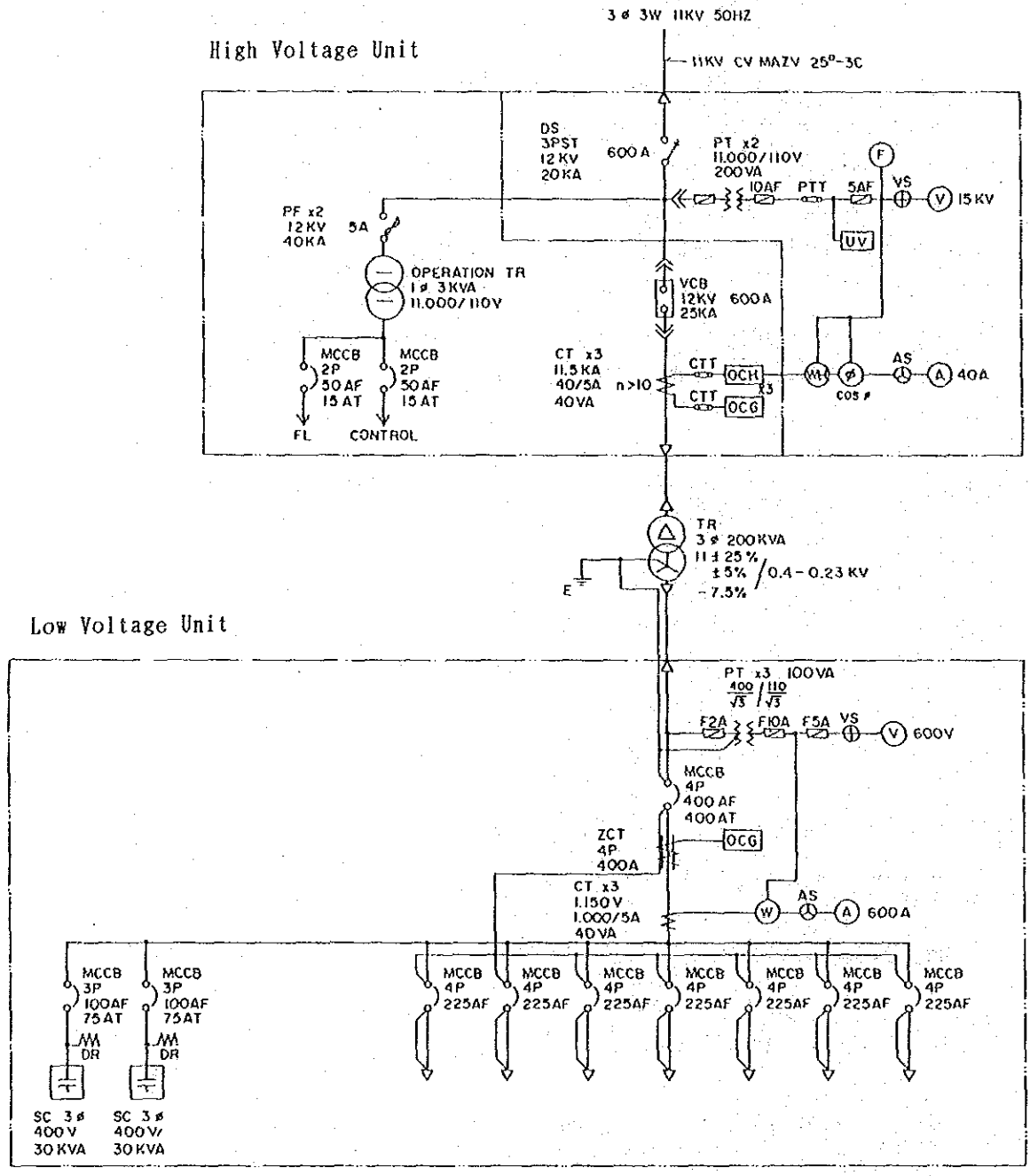
(4) Building Facility Plan

1) Electrical Facilities

Single line diagram are shown in Fig. 4-2-3(1).

a. Power Receiving and Transformer Units

Fig. 4-2-3(1) Single Line Diagram



SINGLE LINE DIAGRAM — POWER RECEIVING AND DISTRIBUTION

An electric power room will be located in one of the Project buildings. The room will be equipped with a high voltage receiving board, a transformer, and a distribution board. The high voltage received from the power company will be stepped down by a transformer and then distributed to each Project building via the distribution board.

- Power Receiving method:
  High voltage side: 3 phase 3 wires, 11,000 V, 50Hz
  Low voltage side: 3 phase 3 wires, 400 w/230 V, 50Hz

- Transformer capacity: 200 KVA

- Switch: Vacuum switch unit

b. Power Facility

This facility will be used for supplying electricity for the operation and control of drinking water and general use water pumps.

c. Lighting Facility

- Multi-purpose Hall:

The hall will be used not only for general sporting events, but also for social eduction, meetings, recreational activities, etc. Thus, by taking into consideration economy and stage effect requirements, it was decided to use mercury lamps.

- Seminar Room, Workshops, and Classrooms:

Fluorescent lamps are planned to be used. Direct mounted types are to be used in rooms having ceilings. The pipe-hanging type are to be used in rooms not having ceilings.

The planned illumination intensity for each room is shown in the following table:

Table 4-2-3(2) Necessary Illumination Intensity

Name of Room	lux
Classroom	300 - 400 lux
Office	350 - 450 lux
Seminar Room	300 - 400 lux
Workshop	300 - 400 lux
Preparation Room	300 - 400 lux
Multi-purpose Hall	450 - 500 lux
Corridor and Stairway	30 - 50 lux

d. Ceiling Fan

The seminar room, classrooms, administraion office, and Director's office are planned to be equipped with ceiling fans.

e. Outlets

Each rooms is planned to have ordinary type electrical outlets for small electrical appliance use. For possible future air conditioning unit installation, an appropriate outlet is planned to be provided.

f. Telephone System

One telephone outlet is planned for the administraion office, the manager's office, the seminar room, and each workshop. Telephone cables will be installed in conduits.

g. A public address system

A public address system that includes chimes is planned to be installed for making announcements and for notifying students of class commencement and class completion. The public address amplifier and microphone will be installed in the office room.

An independent amplifier system is planned to be installed in the

Projection room. It will be used for playing music or for broadcasting lectures in the multi-purpose hall.

2) Water Supply, Sewer and Sanitation Facility

a. Drinking Water Supply Facility

The most important drinking water source in Maldives is rainwater. It is planned to use rainwater for drinking water in the Project buildings. Rainwater from the roofs of the multi-purpose hall, classroom and administration building will be collected in troughs and lead to a reinforced concrete water storage tank through pipes. Water in the storage tank will be pumped up into an elevated FRP tank and then distributed to each building by gravity flow. By taking into account installation workability and anti-sulfite capabilities, hard polyvinyl chloride pipes are planned to be used in the water distribution system.

b. Non-drinking Water supply Facility

Facility use water (non-drinking purposes) will be supplied by digging two wells in the Project site -- one well will be for the use of the multi-purpose hall; the other well will be for the use of the classroom building. Well water will be pumped up into the elevated FRP tanks and then distributed by gravity flow. Hard polyvinyl chloride pipes are planned to be used in the distribution system.

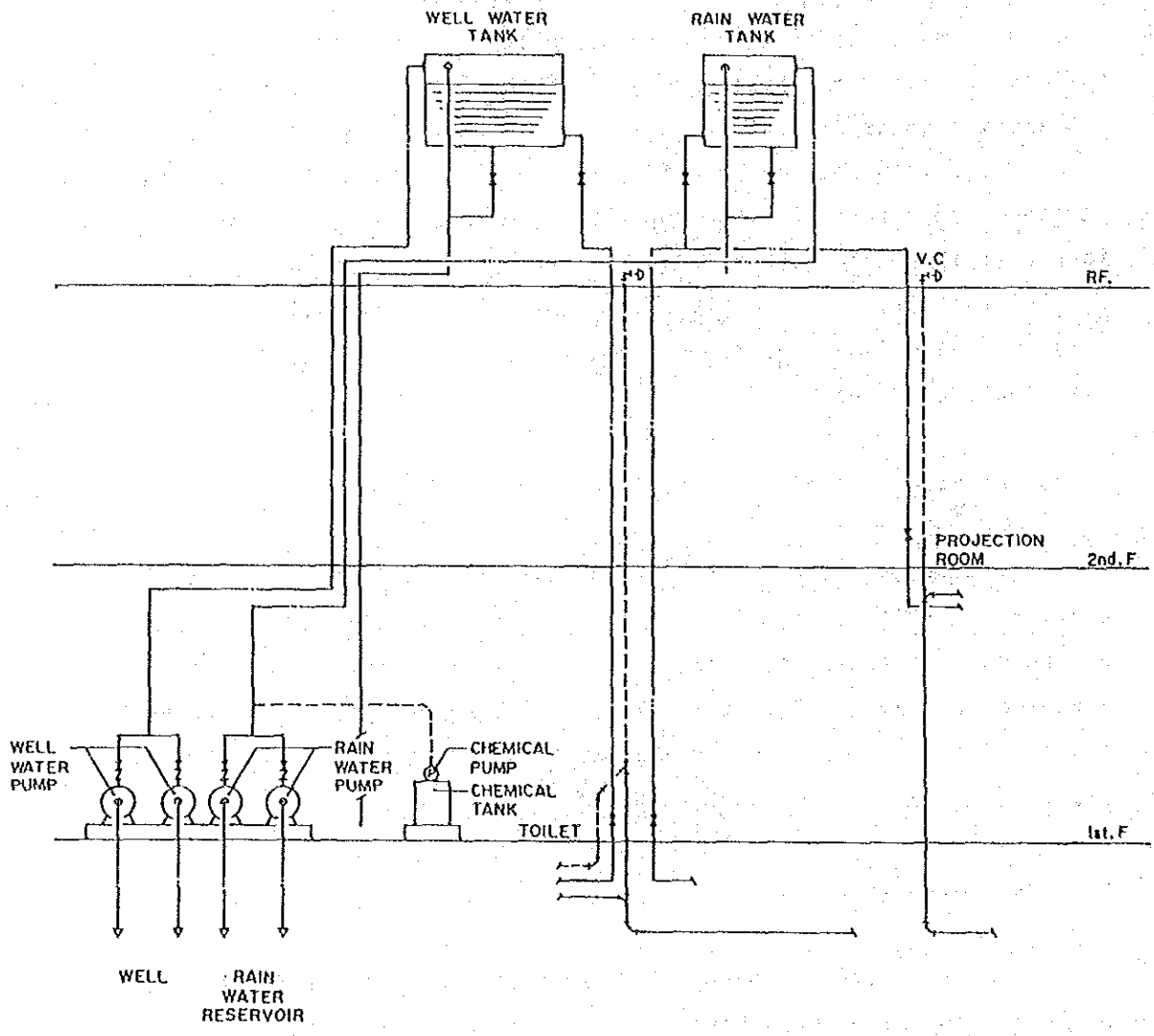
c. Sewer Facility

A combined type (sewerage and ordinary drain) sewer system is to be installed. The sewer water will be discharged into the sewer main installed beneath the road in front of the Project site. Looped air vent pipes are to be installed to the sewer pipe. Hard polyvinyl chloride pipes will be used for the sewer and air vent.

d. Sanitation Facility

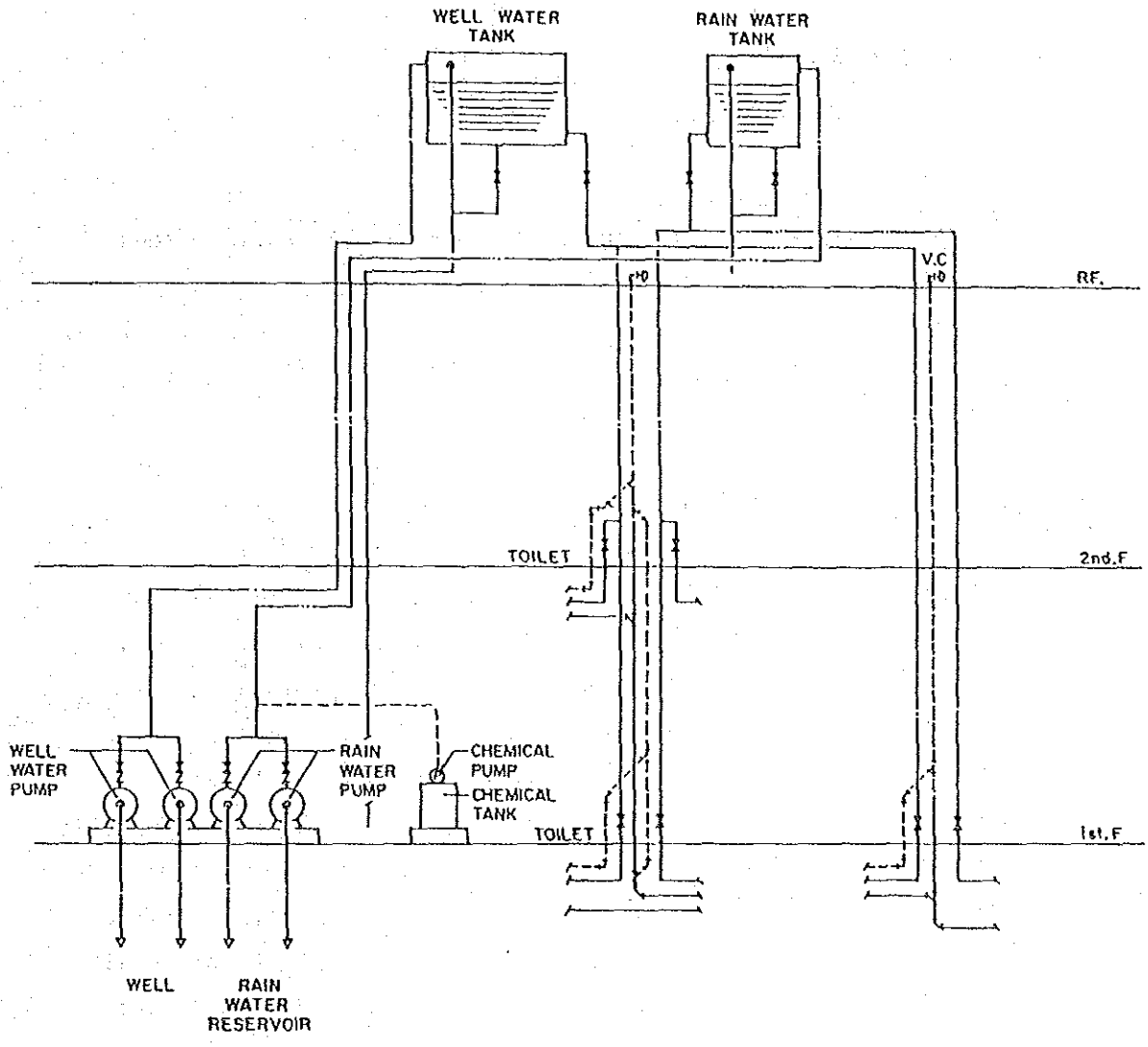
A saniataion facility that will meet the local custom is to be

Fig. 4-2-3(3) Water Piping Diagram(1of2)Multi-purpose Hall Block



PIPING DIAGRAM - HALL BLOCK

Fig. 4-2-3(3) Water Piping Diagram(2of2)Classroom and Administration Block



PIPING DIAGRAM - CLASS ROOM BLOCK

firmly installed. Salty well water will be used in the toilets. The selection of a sanitation facility should be made after taking corrosion causing problems into consideration.

e. Hot Water Maker

An electrical hot water maker (selected for fire safety reasons) will be installed in the kitchen.

Water piping diagrams are shown in Fig. 4-2-3(3).

3) Air Conditioning System

a. Air conditioning units are to be installed in the seminar room, workshops and darkroom.
b. Air supply ducts for air conditioning in the multi-purpose hall are taken into consideration for the installation of air conditioning units in the future.

(5) Construction Material Plan

The only available domestic construction material in Maldives is coral (coral stone, sand, and lime). However, because of over mining in the past, the mining of coral on inhabited islands is prohibited.

If coral for Project construction use is mined on uninhabited islands, it may effect Project scheduling and costs. The reason for this is that Maldives' law requires that on behalf of all mined coral must be sold to the Ministry of Public Works and Labor. Furthermore, coral is not suitable for reinforced concrete aggregate because of its high salt content and lack of strength. For these reasons, the gravel and sand needed for Project construction will be imported from Colombo.

As skilled construction workers are not available in Male', they will be brought in from the Philippines, India, or Sri Lanka with the permission and cooperation of the Government of Maldives. Local general labourers who worked on past Japanese Govenment's grant aid projects will be mobilized for Project construction from the atolls with the

cooperation of the Government of Maldives. On-the-job training will be provided to these labourers during Project construction.

A comparison of ordinary construction methods practiced in Maldives to methods to be used for Project facility construction is shown in Table 4-2-3(4).

Table 4-2-3 (4) Comparison of Ordinary Local Construction Methods to Project Facility Construction Methods

Work Item	Ordinary Local Method	Project Construction	Reason for Adoption
Foundations	Reinforced concrete	Reinforced concrete	Easy construction
Colums & Beams	Reinforced concrete	Reinforced concrete	Easy construction
Floors & Inside Walls	Reinforced concrete	Reinforced concrete	Easy construction
Outside Walls	Coral stone	Bricks or concrete blocks	Coral stone is not available. Concrete blocks will be imported from Colombo
Roofs	Clay tiles or steel plates	Steel frame structures covered with zinc coated sheets	For collecting rainwater and preventing the entry of sunlight
Exterior Finish :	Ordinary paint	Emulsion type paint	For easy maintenance and greater durability
Interior Finish :			
• Floors	Mortar, polyvinyl tiles, or stone	Vinyl floor tile	For easy installation and easy maintenance
• Walls	Paint on mortar	Paint on mortar	For easy application and easy maintenance
• Ceilings	Paint on mortar or	Paint or mortar	For easy application and easy maintenance

4-2-4 Equipment Plan

Because of the financial difficulties confronting the Government of Maldives, basic social and economic needs have not yet been met. Under these conditions, if the most advanced educational equipment is provided under the Project, a number of operational and maintenance problems related to the equipment may develop.

The Project's educational equipment must meet the local conditions and objectives of the training programs, but must be easy to maintain. The selection of equipment should be made by taking the following aspects into account:

(1) By taking into consideration the financial situation of the Government of Maldives and the roles Project facilities will play after construction, equipment that can accomplish the maximum effects with the least operating cost should be selected.

(2) As long-range educational programs are to be carried out, the types of equipiment selected for Project use should have easily obtainable spare parts. If it is necessary to select special equipment that require spare parts not easily obtainable in Maldives, the spare parts must be included with the equipment.

(3) Basically, equipment that is similar to the types presently used in Maldives should be adopted for Project use.

(4) Equipment types should be selected only after determining if their specifications and purpose are suitable for Project facility use. Also, equipment grade should be reasonable as a grant aid programme.

(5) Project equipment should be compatible with Maldives' equipment.

(6) When making the equipment selection, careful consideration must be giving to the corrosive environment in which it is to operate.

By considering the above items, Project equipment was selected as shown in Table 4-2-4(1).

TABLE 4-2-4(1) Equipment List

Physical Educational Equipment: Volleyball equip., gymnastics equip., etc.	
1. Tumbling Mats	6 sets
Video and Movie Equipment: Slide projectors, OHP, video appliance, etc.	
1. 16 mm sound projector	1 set
2. Video projector	1 set
Audio Appliance: Sound control mixing desk, speaker, microphone, etc.	
1. Sound control mixing desk switch panel	1 set
Language Laboratory Equipiment	
1. Colour monitoring television	1 set
2. Booth tape recorder	30 sets
3. Headset	31 sets
4. Master console	1 set
5. Booth desk	15 sets
Furniture & Others	
1. Desks for two persons (fixed type):	118 units
2. Desks for two persons (folding type):	332 units
3. Chairs (fixed type):	304 units
4. Chairs (folding type):	747 units
5. Storage Cabinet:	17 units
6. Copy machine:	1 unit

4-2-5 Basic Design Drawings

(1) Location Map

(2) Site plan

(3) Hall Block : Ground Floor Plan

(4) : First Floor Plan

(5) : Roof Plan

(6) : East and North Side Elevations

(7) : West and South Side Elevations

(8) : Sections

(9) Classroom and Administration Block : Ground Floor Plan

(10) : First Floor Plan

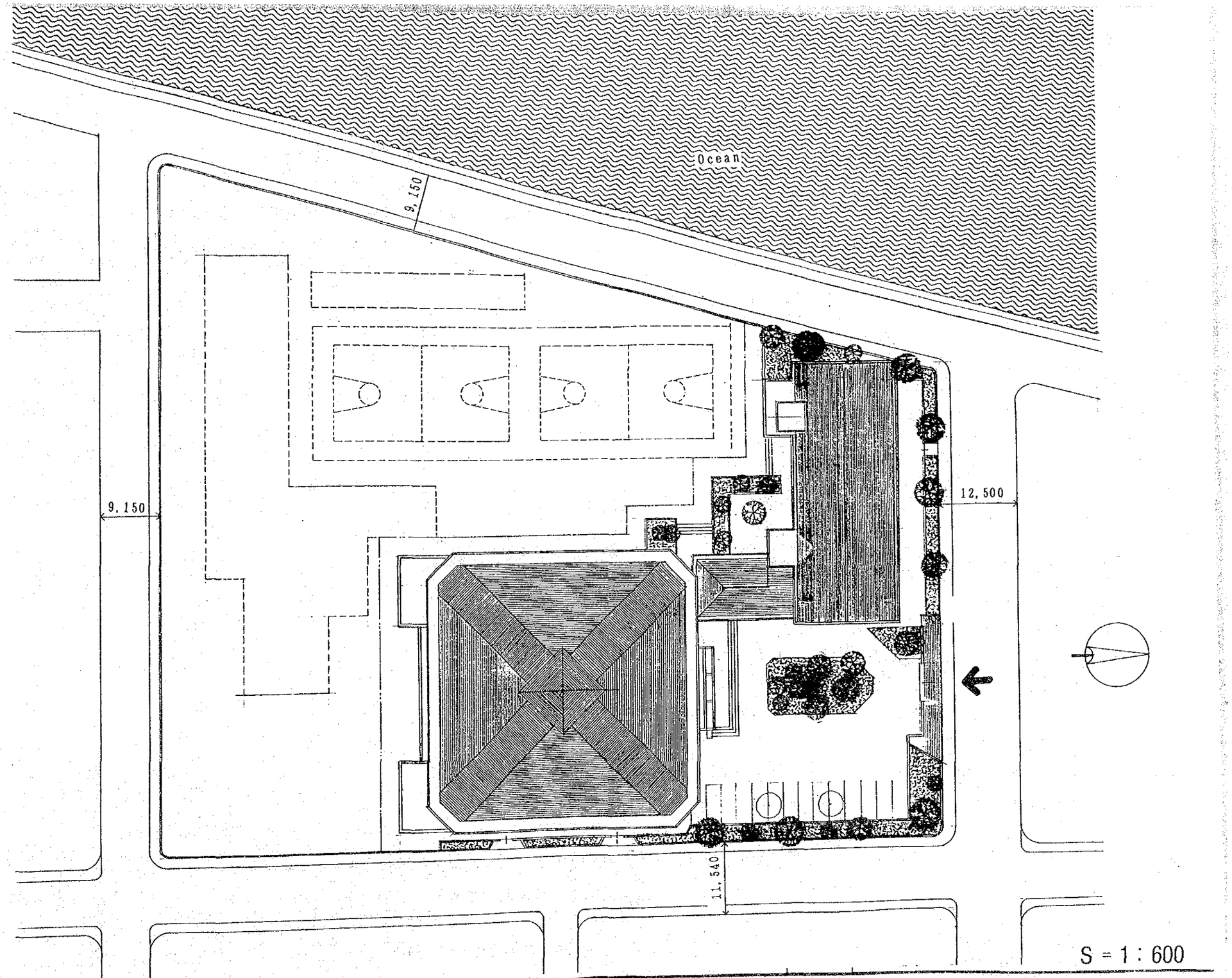
(11) : Roof Plan

(12) : Elevations

(13) : Sections

THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

LOCATION MAP



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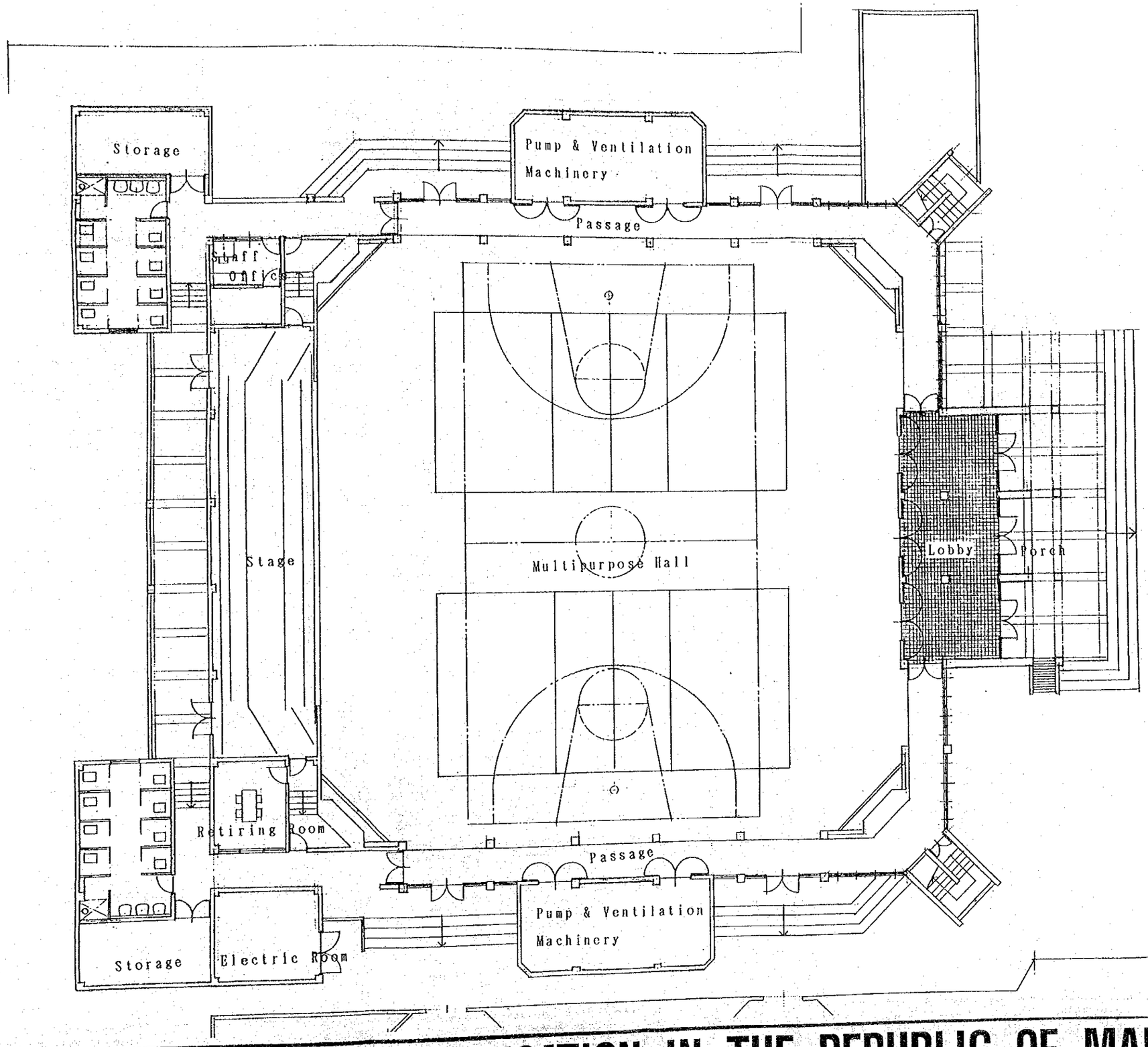
THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

SITE PLAN



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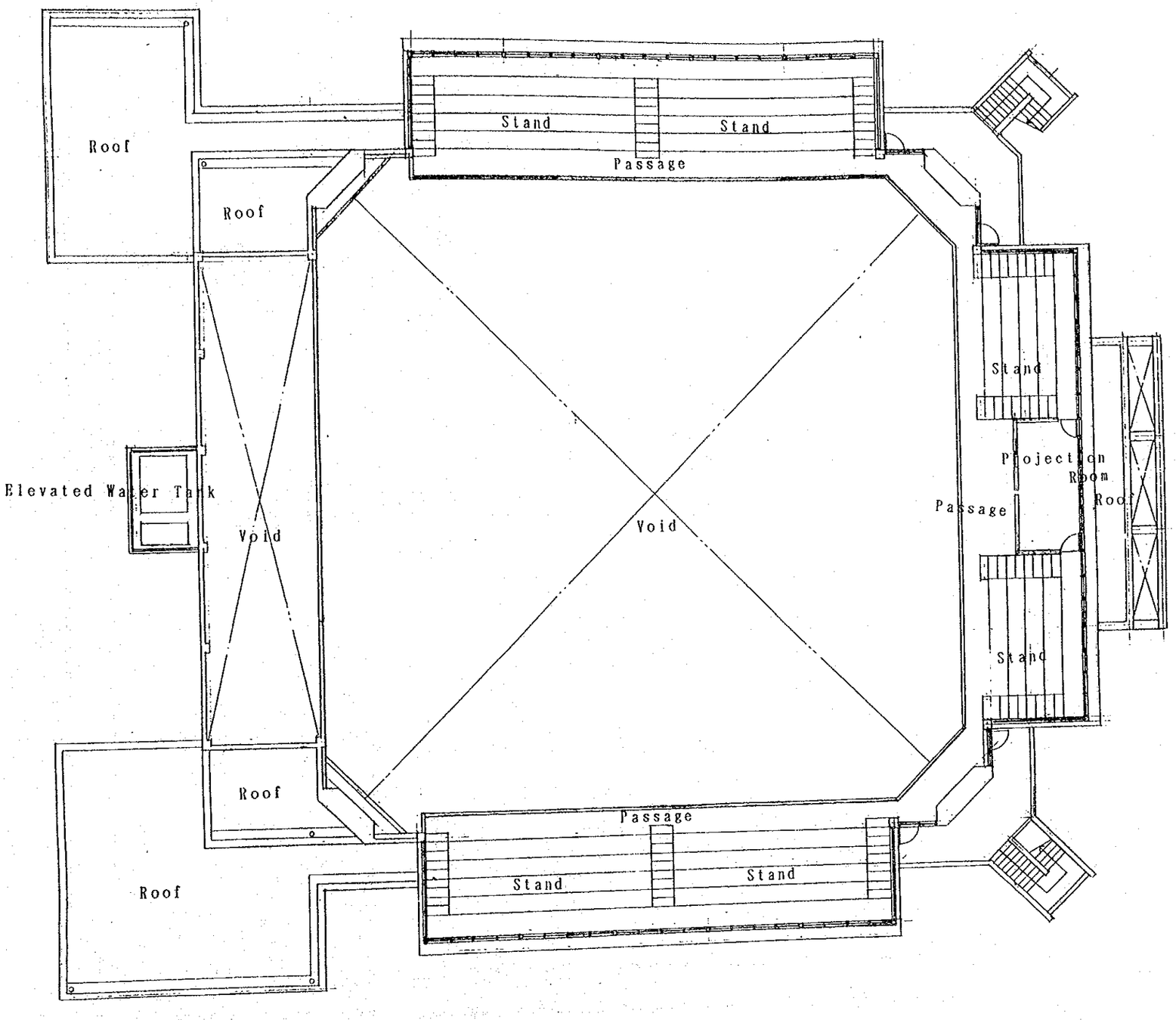
THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

GROUND F.L. PLAN



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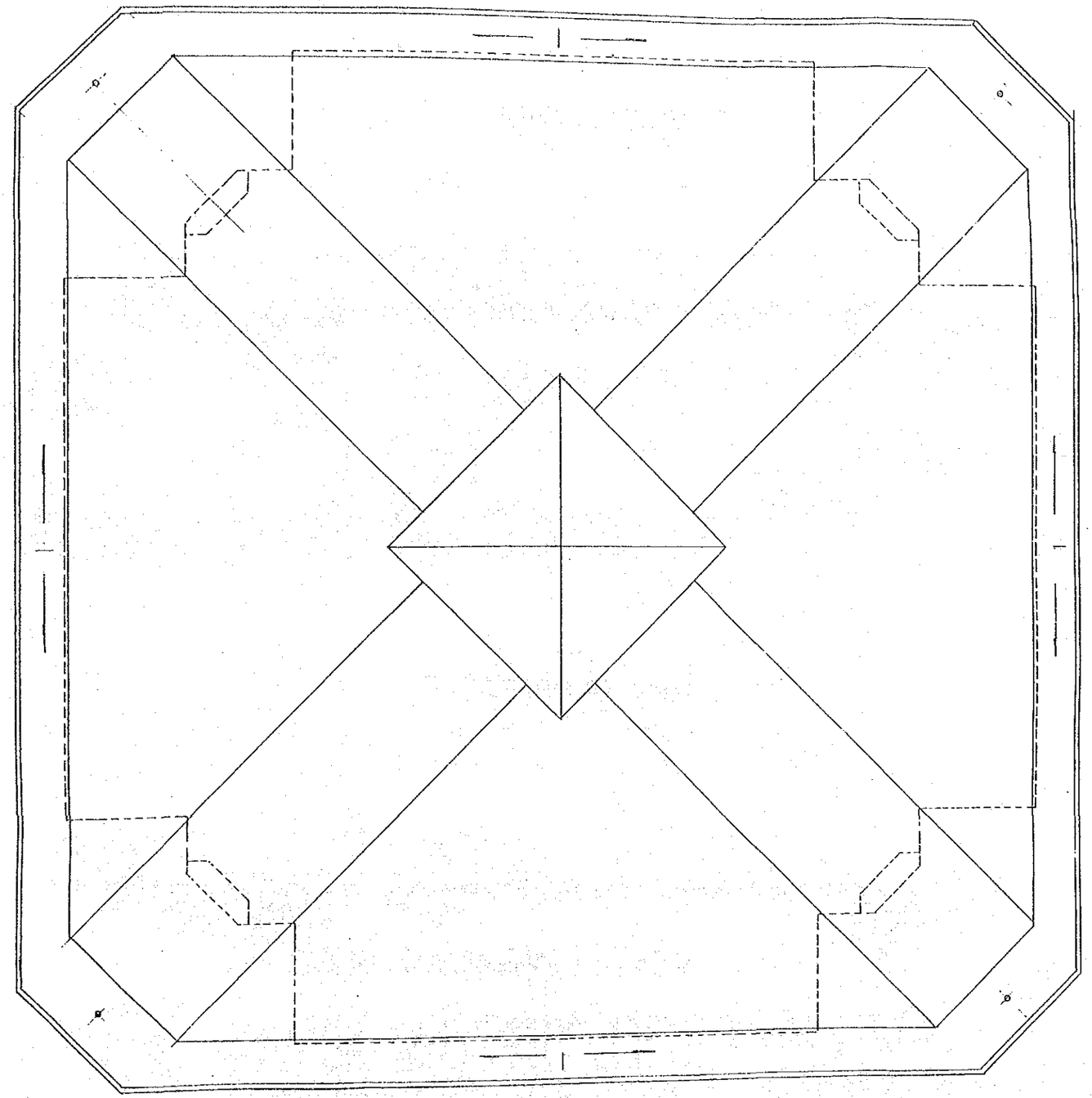
THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

1ST. F.L. PLAN



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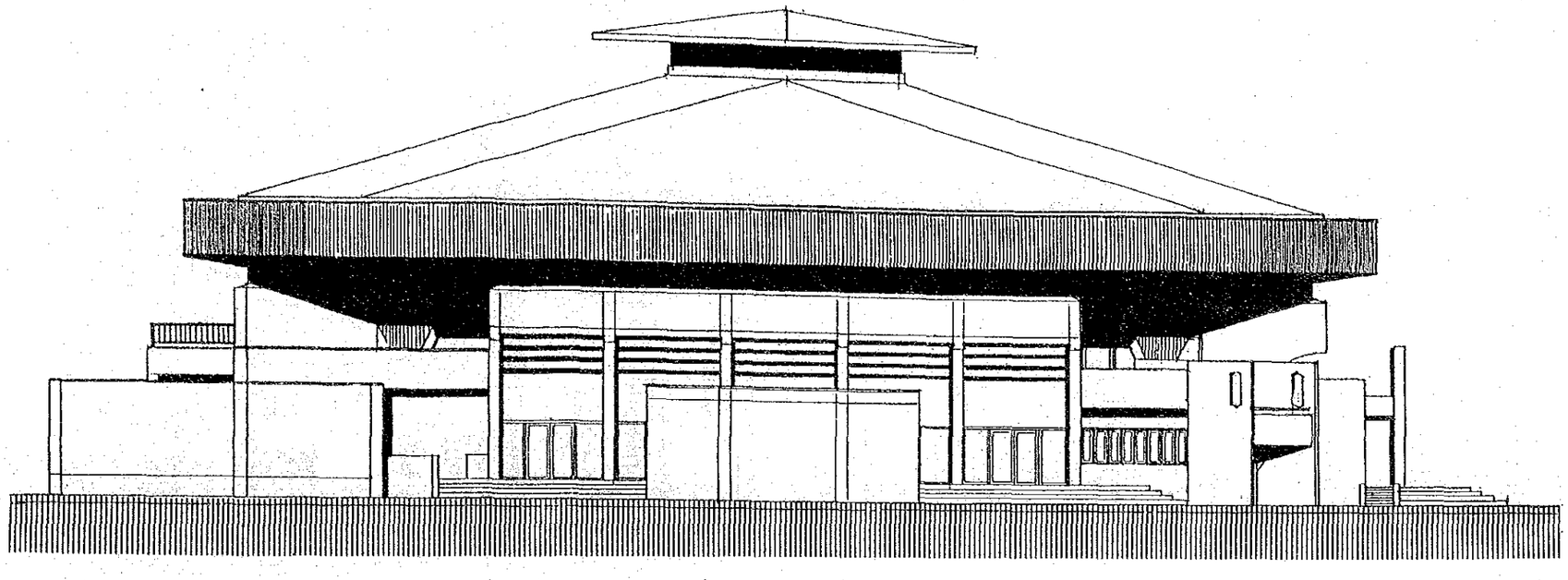
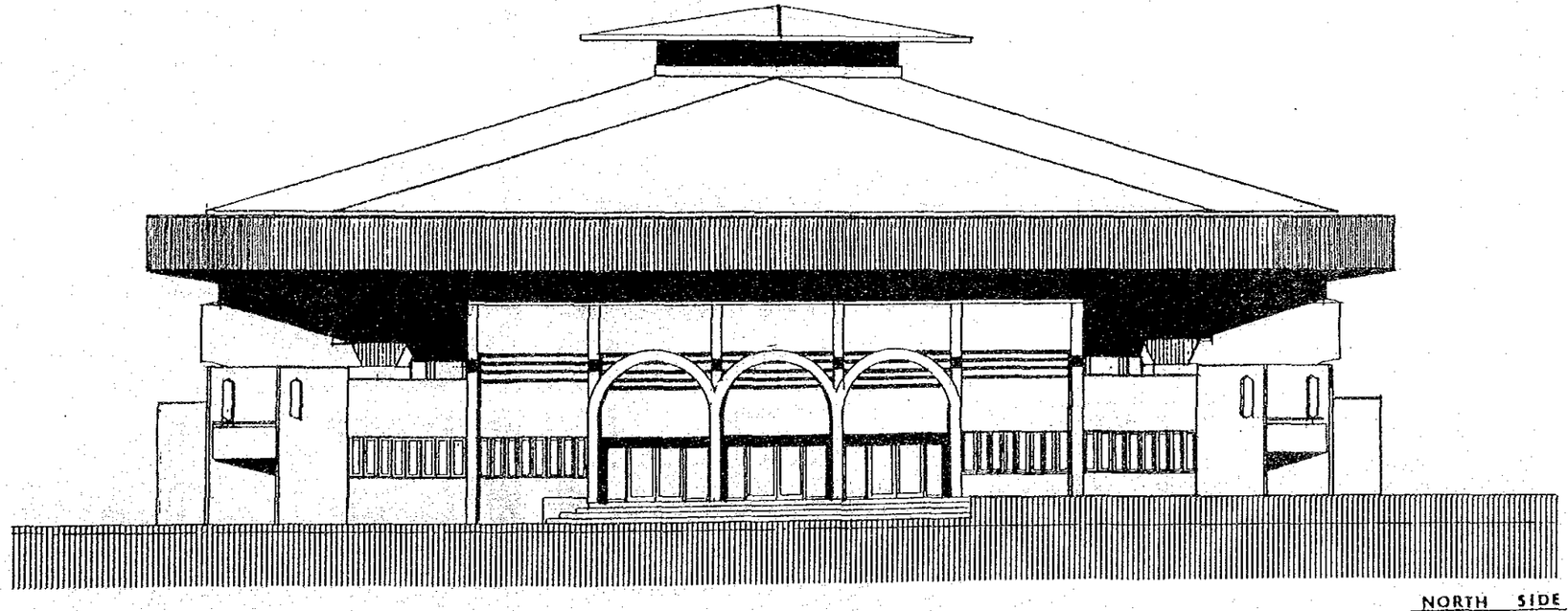
THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

ROOF PLAN



EAST SIDE



NORTH SIDE

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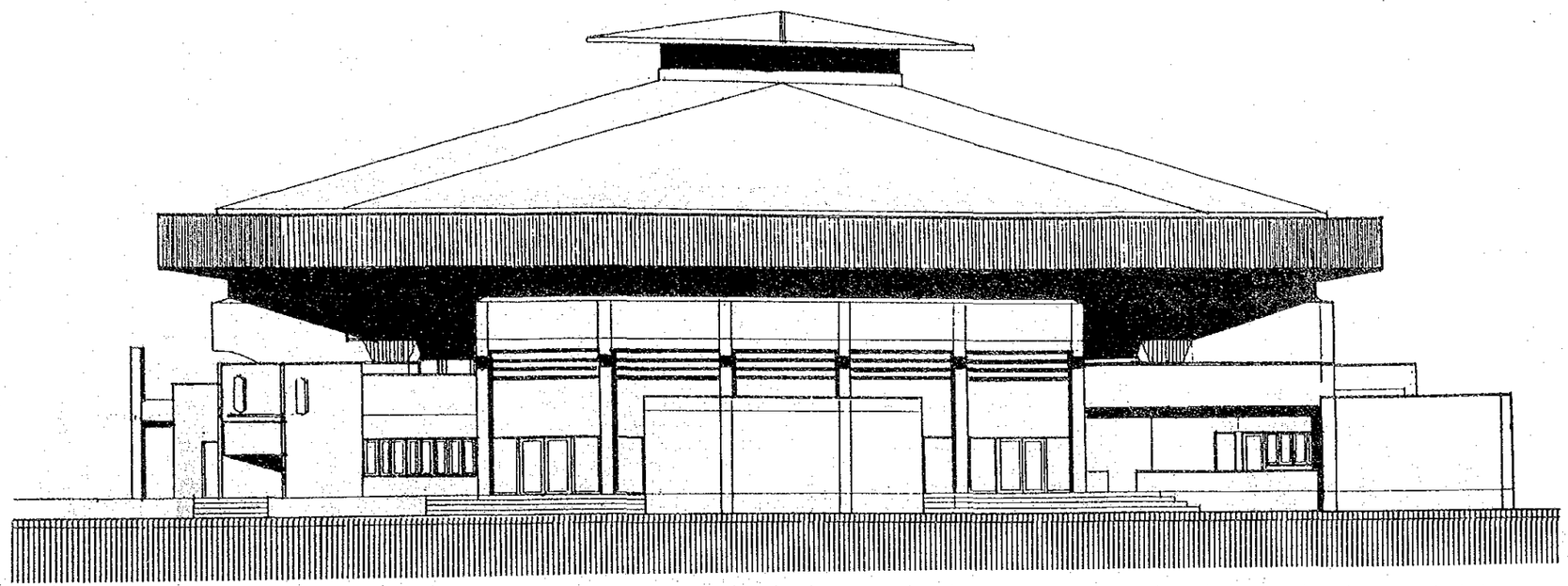
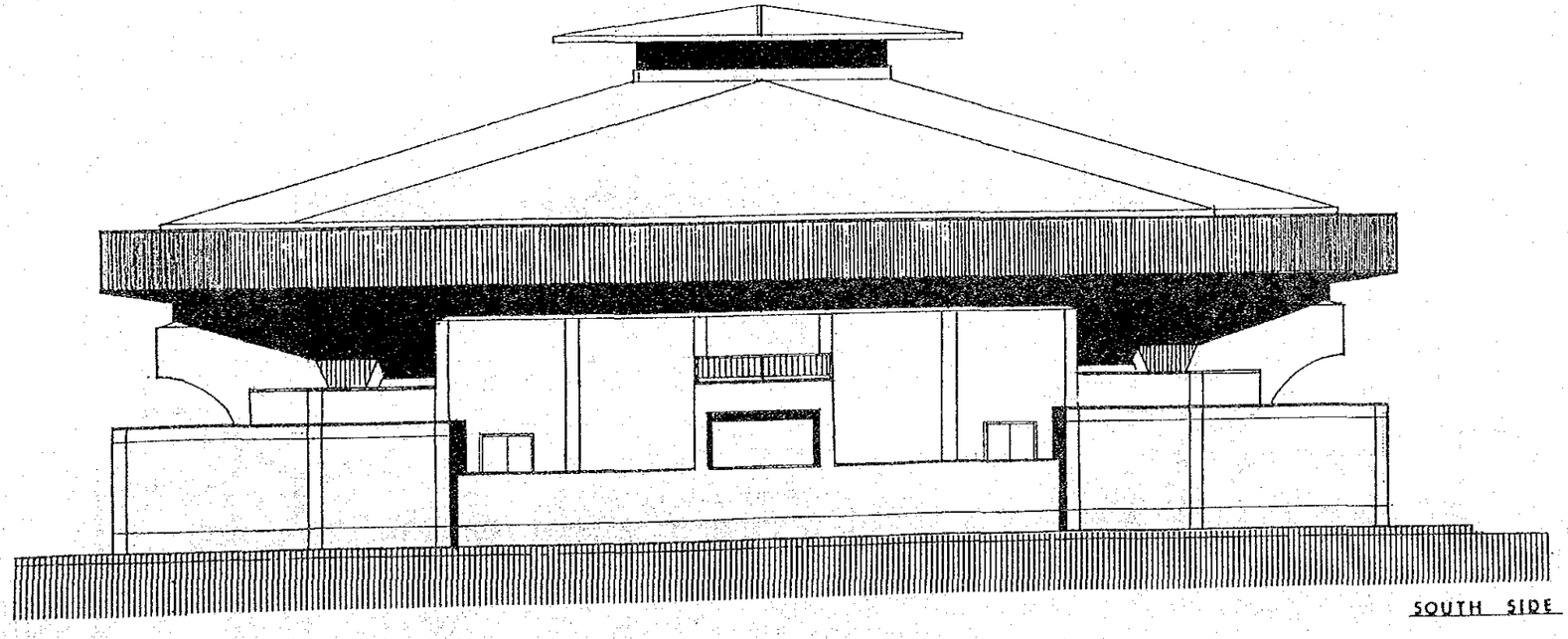
THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

ELEVATION



WEST SIDE

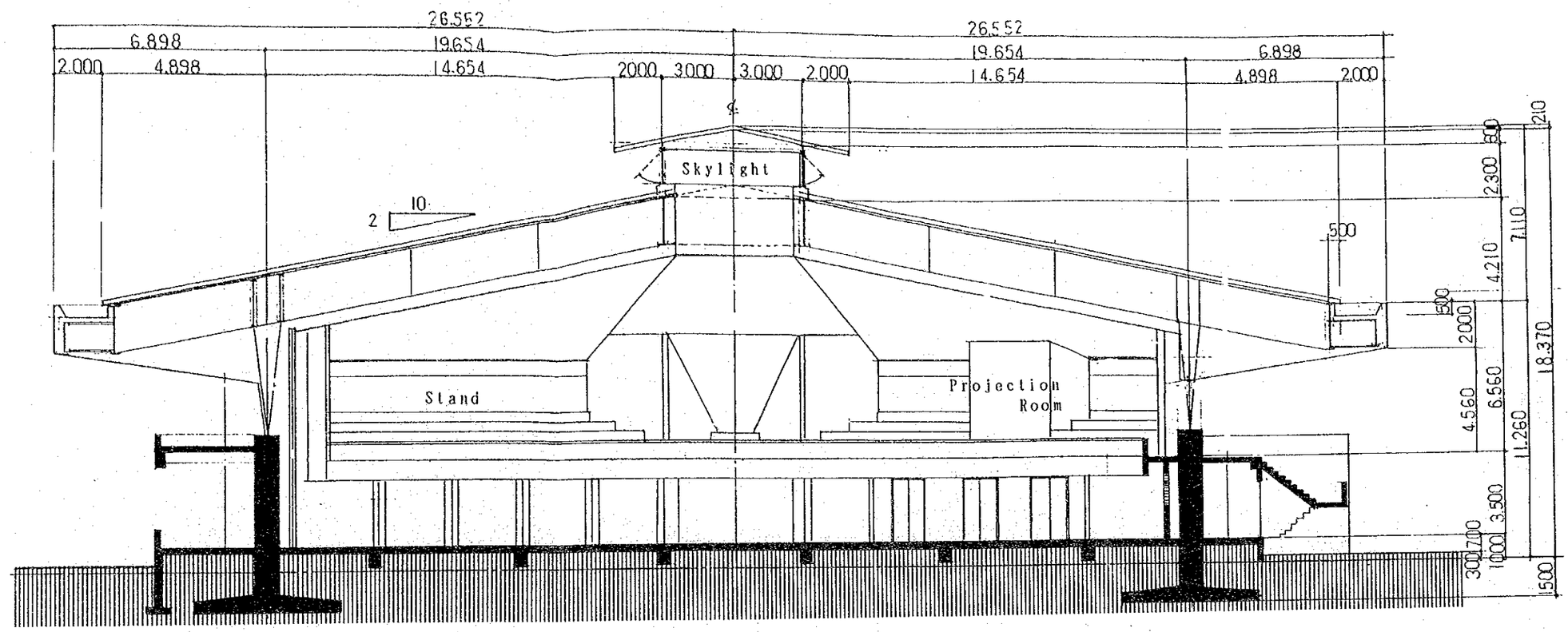


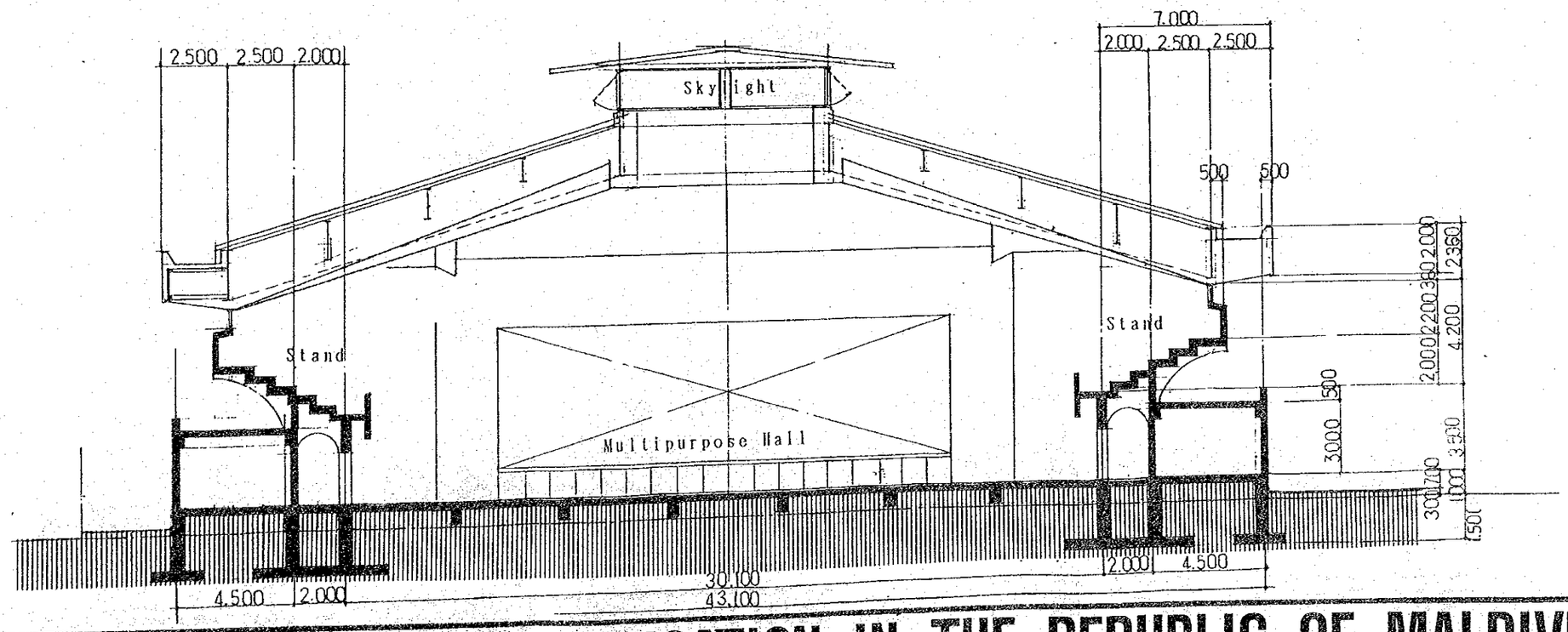
SOUTH SIDE

S = 1 : 200

THE CENTRE FOR SOCIAL EDUCATION IN THE REPUBLIC OF MALDIVES

ELEVATION





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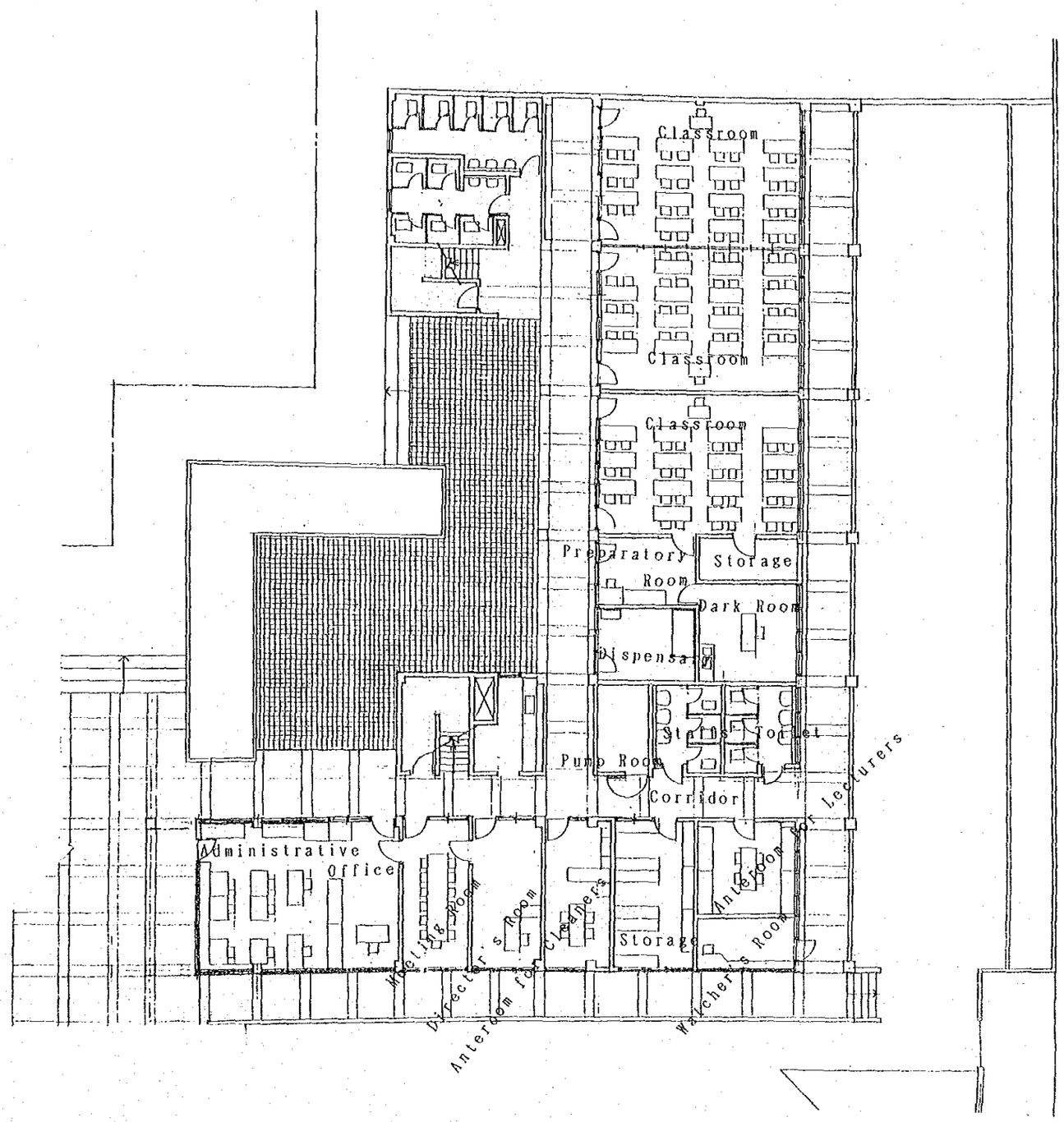

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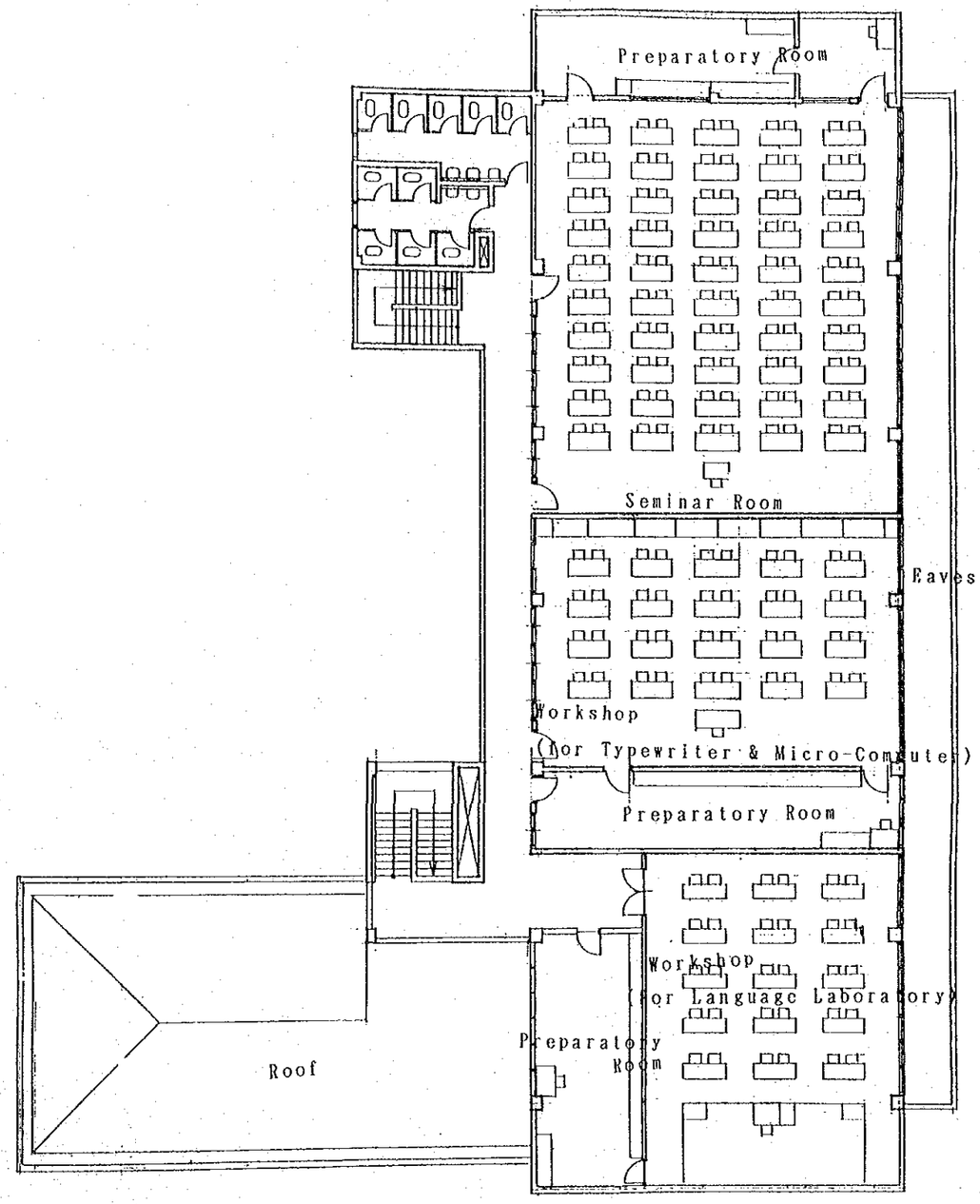
GROUND F.L. PLAN



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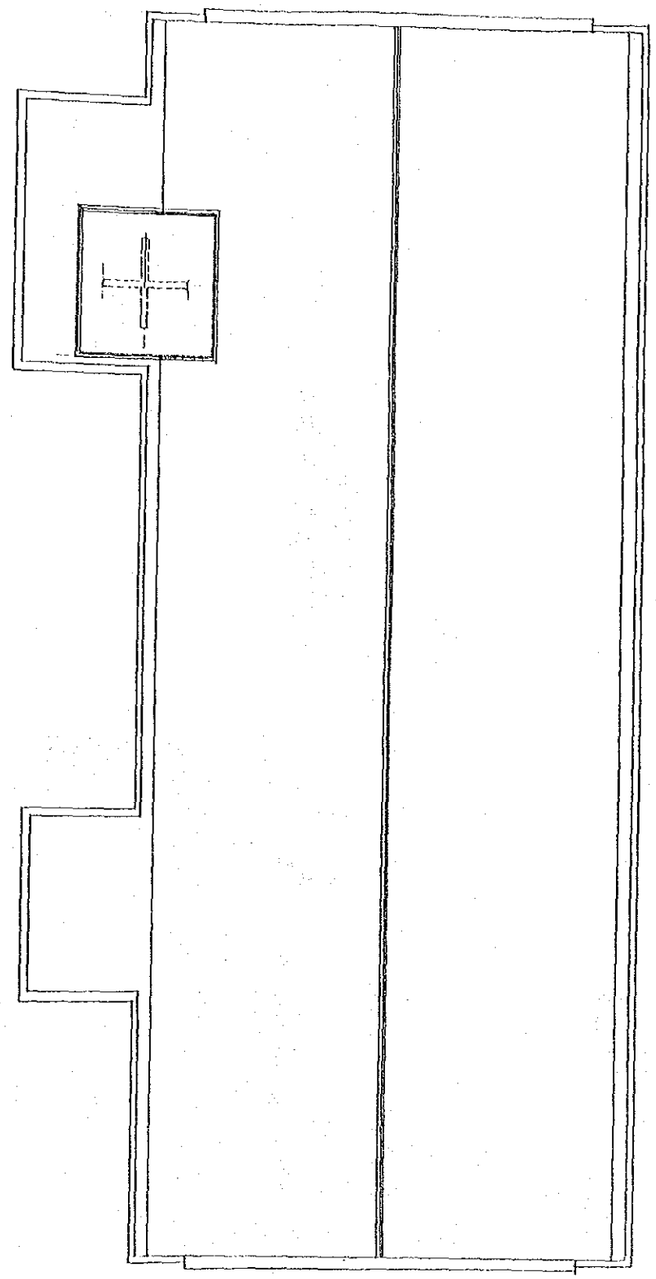
1ST. F.L. PLAN



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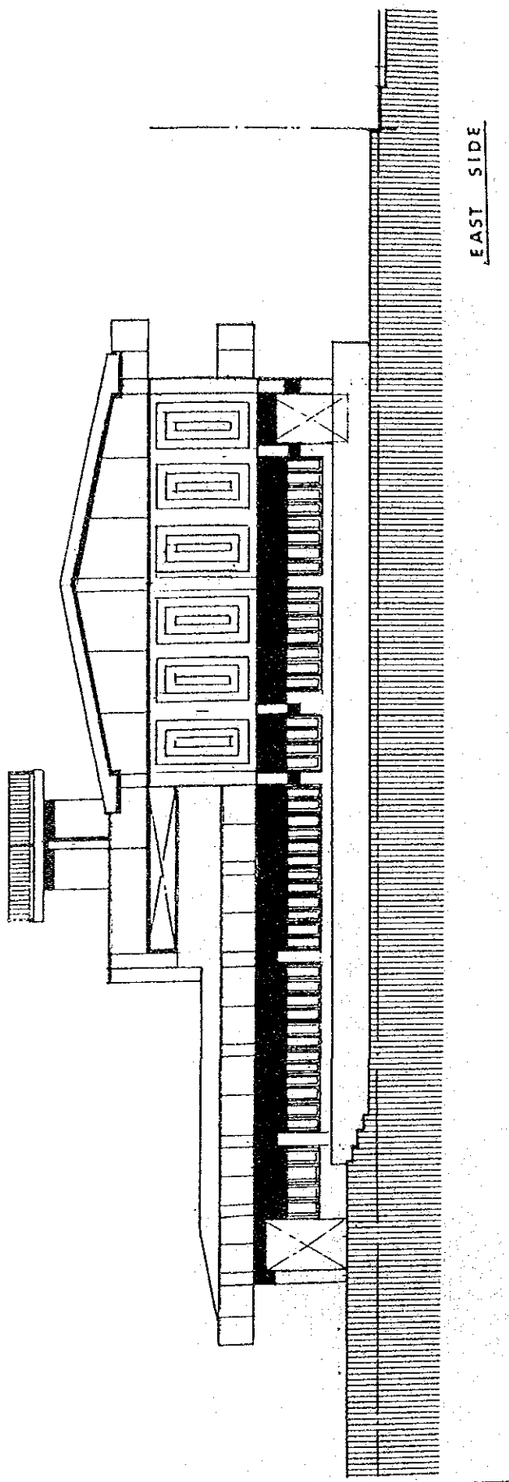
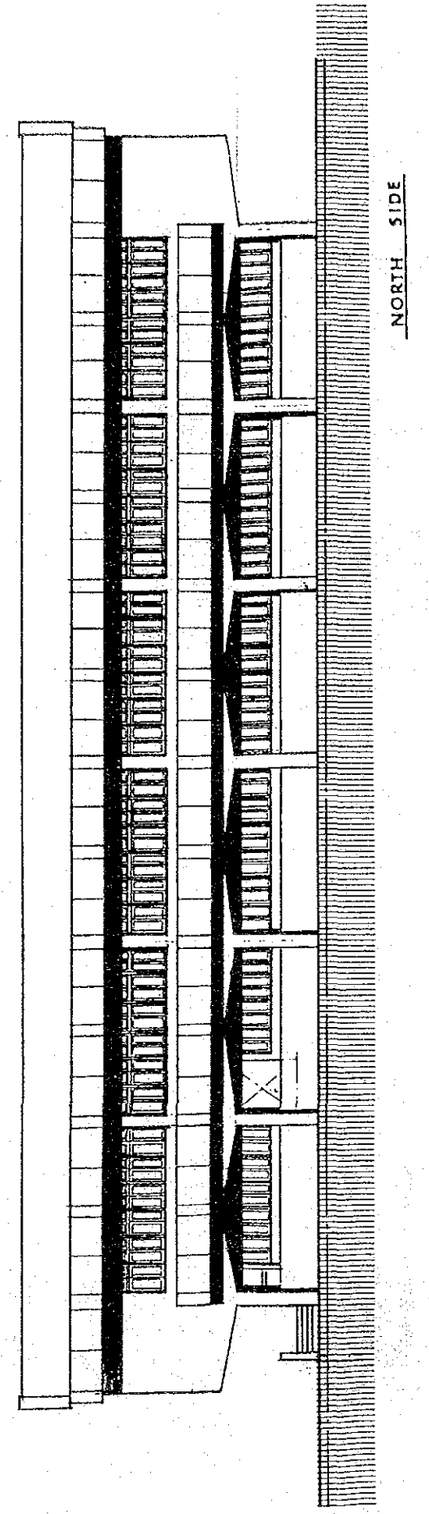
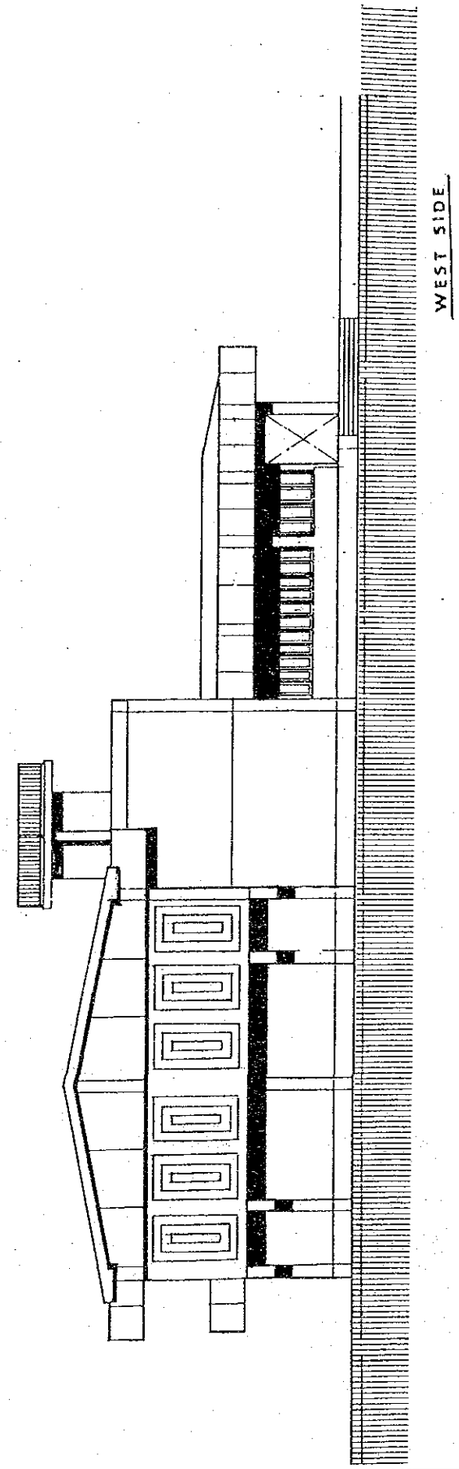
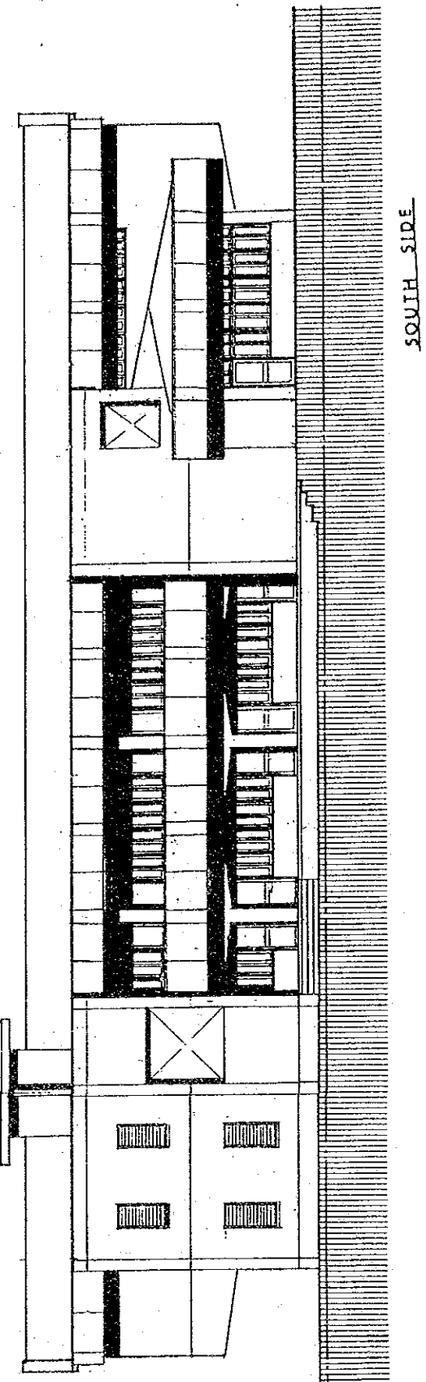
ROOF PLAN









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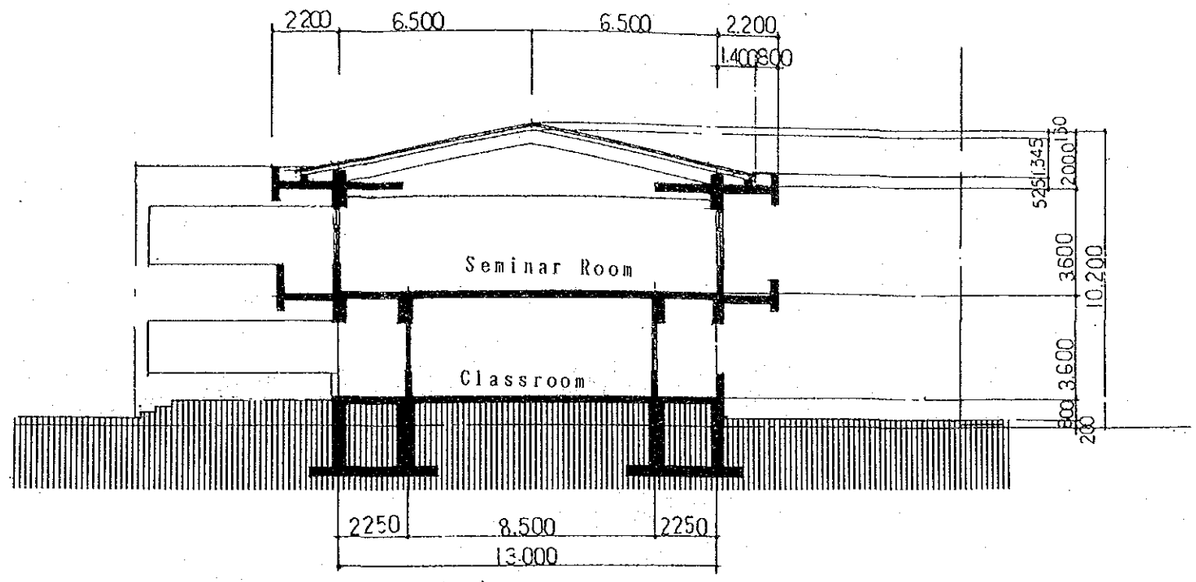
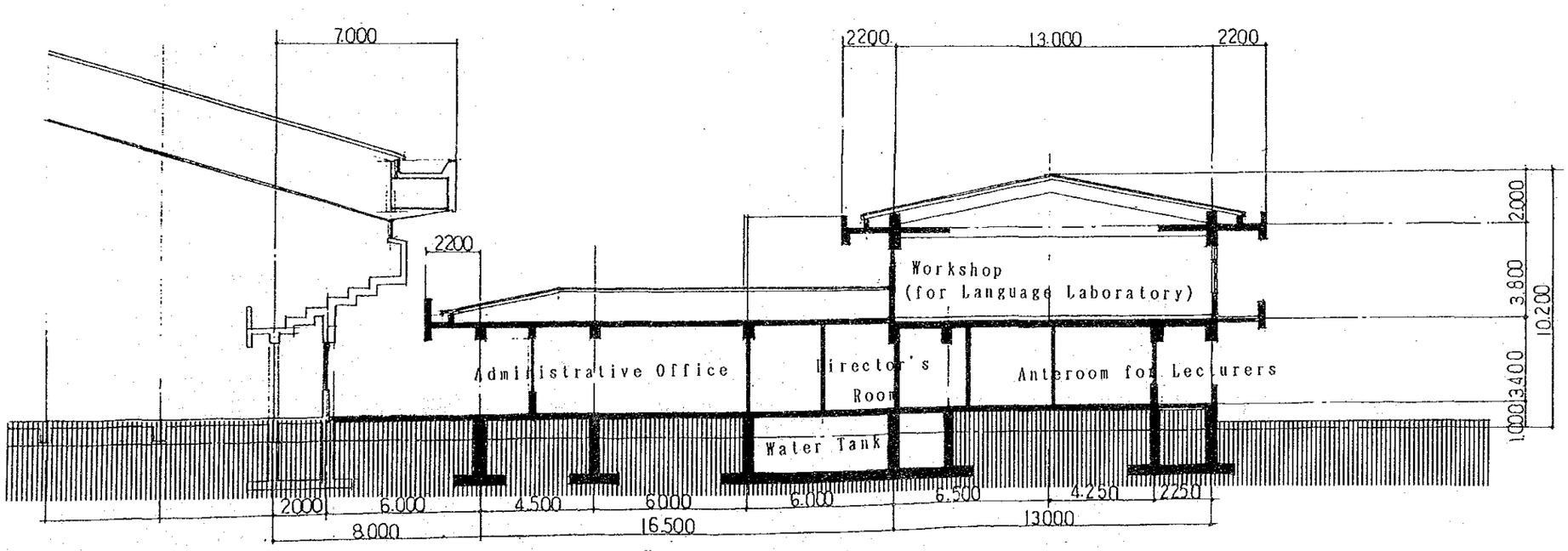
ELEVATION





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