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## ABBREVIATIONS

ADB	Asian Development Bank
APCD	Asia-Pacific Development Center on Disability
BOD	Biochemical Oxygen Demand
CBR	Community-based Rehabilitation
CCTV	Closed Circuit Television
DAISY	Digital Accessible Information System
DPI	Disabled People's International
DPW	Department of Public Welfare
E/N	Exchange of Notes
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
FAO	Food and Agricultural Organization
HI	Handicapped International
Hz	Hertz
IAB	International Advisory Board
ICT	Information & Communication Technology
IDA	International Disability Alliance
IMF	International Monetary Fund
KVA	Kilo Voltage Ampere
IL	Independent Living
ILO	International Labor Organization
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
LPG	Liquefied Petroleum Gas
LX	Lux
MLSW	Ministry of Labor and Social Welfare
NECTEC	National Electronics and Computer Technology Center
NGO	Non-Governmental Organization
RM	Room
SS	Suspended Solids
UNESCO	United Nations, Educational, Scientific and Cultural Organization
UNICEF	United Nations, Children's Fund
WB	World Bank
WHO	World Health Organization

Summary

## Summary

In the Asian-Pacific region, it is estimated that the population of persons with disabilities is approximately three hundred million, whereas one out of ten people. Most of these people have limited opportunities of basic social participations in various fields such as education and employment. Less than five percent of disabled children and youths in the region are considered to have access to education and vocational training. In addition, the majority of persons with disabilities in this region live in rural areas, yet most facilities and services for persons with disabilities are located in urban areas.

In the Kingdom of Thailand (hereinafter referred to as “Thailand”), it is reported that the population of persons with disabilities accounts for 3-8% of Thailand’s total population, which are classified as physically disabled (57%), visually impaired (20%), intellectually disabled (10%), hearing impaired (6%), psychiatrically impaired (5%), and the others. Thailand is considered as a leading country of the Mekong region in terms of disability related field as well as social and economic field. However, opportunities of social participations of persons with disabilities in Thailand are still limited. In 2001, 30% of persons with disabilities in Thailand received no educational services and approximately 60% of companies did not comply with regulation for employment of persons with disabilities. Especially, economic crisis occurred in 1997 brought serious impact to disadvantaged group including persons with disabilities, and supportive actions for these people are urgently needed.

On the other hand, various relevant organizations for persons with disabilities are based in Thailand, such as UN ESCAP, leading organization for persons with disabilities in the Asian-Pacific region, and Asia-Pacific regional office of DPI, a global self-help non-governmental organization of persons with disabilities. Therefore, Thai-based cooperation for the Asia-Pacific region on disability is expected to facilitate collaboration with these organizations and to promote regional cooperation effectively and efficiently.

Disability related strategies and legislation of Thailand are as follows.

1. The 9<sup>th</sup> National Economic and Social Development Plan (2001-2005)
2. The national plan on disabled rehabilitation (1997-2001)
3. The Eighth National Education Development Plan (1997-2001)
4. The Eighth National Health Development Plan (1997-2001)
5. The Rehabilitation for Disabled Persons Act of 1991

In addition to the above, the Government of Thailand proclaimed “the Declaration on the Rights of Thai Persons with Disabilities” in 1998. This declaration raised awareness toward the public including persons with disabilities and defined the further rights of people with disabilities such as rights of social participation, vocational training and access to information.

To improve the situation of persons with disabilities in Asia-Pacific region, considerable diverse activities have been organized in the Asian-Pacific region through projects such as “International Year of disabled persons” declared by the United Nations 1981, and “the United Nation’s Decade of Disabled Persons”, 1983 – 1992. In 1992, the 48<sup>th</sup> General Assembly of the UN ESCAP resolved that the decade from 1993 to 2002 would be “the Asian and Pacific Decade of Disabled Persons”, and the Agenda for Action, which aims for improvement of social status and social participation of persons with disabilities in the Asian-Pacific region, were adopted by thirty six (36) countries in the region. In accordance with the Agenda for Action, all countries would implement program to attain their targets for persons with disabilities set forth in each country within this period. Major focuses of the Agenda for Action were given to training, information support and networking organizations for and on behalf of persons with disabilities.

In order to support the implementation of the Agenda for Action, the establishment of the Asia-Pacific Development Center on Disability (hereinafter referred to as “APCD”) to commemorate final year of the Asian and Pacific Decade of Disabled Persons, proposed by the Governments of Thailand and Japan, was adopted in the 58<sup>th</sup> General Assembly of the UN ESCAP in May 2002.

In 1998, the Government of Japan conducted a project formation study and then dispatched an expert and a coordinator to Thailand to explore a possibility to establish a project to support empowerment of persons with disabilities in developing countries of the Asia-Pacific region to commemorate final year of “the Asian and Pacific Decade of Disabled Persons”

In this context, the Government of Thailand submitted a concept paper in establishing APCD, and made official request to the Government of Japan regarding technical cooperation, the third country training and grant aid cooperation to launch APCD. This concept paper contains a policy to support a proclamation of UN ESCAP, “the Full Participation and Equality of People With Disabilities in the Asian-Pacific Region” through establishment of a center in Thailand by collaboration of the Governments of Thailand and Japan, which promotes networking among disability-related organizations in the region, disseminates information and develops human resources. Outline of

request regarding grant aid cooperation is as follows:

1. Buildings: Administration Building (office, computer room, library, display room, etc.)  
Training Building(multi-purpose hall, conference room, canteen, bedrooms, etc.)
2. Equipment: Computers and network equipment  
Audio-Visual equipment (microphones, speakers, projectors, etc.)  
Furniture for training and conference (desks, chairs, cabinets, etc.)  
Furniture for bedrooms (beds, cabinets, etc.)  
Bus with lift

In response to the request made by the Government of Thailand, the Government of Japan conducted the Basic Design Study from May 27 to June 25, 2002. After preparation of the building and equipment plan based on analysis in Japan and explanation of the Draft Report from October 13 to October 22, 2002, the Basic Design Study Team prepared this Basic Design Report.

Based on the field survey, discussions in Thailand and analysis in Japan, the Basic Design of building and equipment plan were prepared in accordance with the following policies:

#### 1. Scope of Facilities

The scope of the facilities requested under Japanese assistance is determined based upon the activity plan of the technical cooperation program confirmed in the Record of Discussion on the technical cooperation concluded between the Governments of Thailand and Japan.

- Training Courses: To train persons with disabilities and representatives of organizations for persons with disabilities in the Asian-Pacific region. The training courses are planned as follows:

**Table: Training Courses of APCD**

No	Course Name	Participant	Duration	Times
1*	IL workshop	40	1 week	2
2	IL training	12	2 months	3
3	Peer-counselor	12	2 weeks	3
4*	W/S for common understandings	12	10 days	1
5	CBR training	12	2 months	3
6*	W/S for capacity building	12	10 days	1
7	Self-help organization	12	2 months	3
8	Capacity building	40	1 week	5
9	Web-based networking	20	1 week	5
10	VIP	5	3 months	3
11	ICT for ALL	10	2 months	3
12	Training material	10	2 months	3
13	Non-handicapping environment of ESCAP	10	1 month	3

(1\*, 4\*, 6\*: to be completed before inauguration of new center building)

- Information Support: To disseminate and develop database on information on persons with disabilities.
- Networking: To identify and collaborate with APCD's focal point organizations, NGOs and associate organizations in the Asia-Pacific region
- Administration: To conduct fund-management and project evaluation and to promote collaboration with disability-related research and public awareness of human rights.

## 2. Building Layout

Project site is located at the center part of Bangkok city near Chitlada Palace. The site is composed of two parts, a area facing Ratchawithi Road and the other area facing Rama VI Road, which are connected by a narrow land. Therefore, building layout shall be planned with a careful attention on maximum use of this irregular shape of the site. In consideration of visitor from outside, the Administration Building is planned to be at the area facing Ratchawithi Road, having an information resource room, a canteen and an entrance hall on the ground floor, offices and a conference room on the first floor, and offices for associate agencies on the second floor. The Training Building is planned to be at the other area having training rooms on the ground floor and hostel rooms on the first floor. These two buildings are to be linked with a connecting corridor having a ramp accessible for wheel chair users.

## 3. Barrier-free environment

Accessible environment for persons with disabilities is indispensable in the facility plan. Moreover, APCD itself is shall be designed as a model of a barrier-free facility. APCD facility shall be designed in accordance with the following design criteria and regulations:

- Promotion of Non-Handicapping Physical Environments for Disabled Persons Guidelines (1994, ESCAP)
- Ministerial Regulations No. 4

Outline of building and equipment plan prepared based on the above examination are as follows;

## Major Building Facilities

Department	Room Name	Area (m <sup>2</sup> )
Training	Multi-Purpose Hall	158.4
	Training room-1	74.5
	Training room-2	72.9
	Computer Training room	82.2
	Lecturer's room	22.9
	Reception , Duty room	38.7
	Bedroom (2 beds) ×14 rooms	29.5×14
	Bedroom (4 beds)	55.3×1
	Others	121.4
Information Support	Information Resource room	100.0
	Multi Media Production room	44.4
	Recording Booth	13.9
	Others	10.0
Networking	Conference room	97.8
	Office for associate agency 1	97.7
	Office for associate agency 2-4	228.6
	Others	38.9
Administration	Office	222.7
	Canteen	190.5
	Kitchen	62.2
	Others	157.8
Utilities	Linen Stores, Laundry	49.7
	Hostel Store	38.8
	Machinery rooms	Total 52.0
Common Facilities	Elevators	132.70
	Corridor, Lobby, WC, Store etc.	—
Outdoor Facilities	Connecting Corridor, Slope, Balcony of bedrooms	—
	Corridor, Staircases, porch	—
	Parking for PWD	—
Total Floor Area		3,390.5 m <sup>2</sup>

## Major Equipment

Equipment	Q'ty	Purpose
LCD Projector	3	Used for computer presentation at training or seminar.
Visual presenter	2	Used for computer presentation at training or seminar for magnification of materials
Digital video camera	2	Used to keep the records of activities or To produce materials
Speaker set, portable	3	Used for conference or seminar. Two types of microphone shall be included, the ireless hand-held microphone and tie pin type wireless microphone for persons with upper-limb disabilities.
Simultaneous interpretation set Portable type	1	Used for conference or seminar. They shall accept up to 3 languages for future intentional conferences with neighboring countries. Supposedly used in various rooms in the Center, they shall be a movable type.
Conference set	1	Used for conferences or seminar with other organizations, or for internal meetings. They shall be for as many as 20 persons.
Speaker set, wall mounted type	1	Used for conference or seminar. Two types of microphone shall be included, the wireless hand-held microphone and tie pin type wireless microphone for persons with upper-limb disabilities.
Video editing system	1	Used to produce educational or publicity materials, or to edit the videotapes brought in by trainees from various countries.
Computer set A	22	Used for general training at the Computer Training Center. The set shall be intended for 2 instructors and as many as 20 trainees and it shall include assistive device set designed to facilitate use of computers by persons with low vision or limb disability.
Computer set B	2	Used for retrieval of information at the Information Resource Center. 2 sets shall be necessary for providing visitors with various information on activities of the Center or on assistance of disabled persons.



Computer set C	2	Used for production of Braille documents by Braille printer at the Multi-media production room. Since 2 different kinds of Braille printer is requested according to its purpose, the one for cut sheet paper and the other for continuous tractor-fed paper, 2 sets of computer shall also be necessary
Computer set D	1	1 set to be used for production of CD book in DAISY format at Multi-media production room
Computer set E	3	Used for presentation at training or seminar. As they will be used in various situations, they shall be a laptop type.
Network set	2	2 server units shall be supplied, the one at the Training bloc and the other at the Administration bloc. Those 2 networks are connected by router unit; access from the Administration bloc to the Training bloc shall be allowed while the opposite access interdicted.
Braille printer for cut sheet paper	1	Used to produce Braille documents or materials for conferences or seminar, cut sheet paper type
Braille printer for Continuous tractor-feed Paper	1	Used to produce Braille documents or materials for conferences or seminar, continuous tractor-fed paper type
Tactile image maker	2	Apparatus designed to print out characters, drawings, pictures, etc. as a tangible, raised line material. Intended to foster imagination and creativity of persons with low vision by allowing them to feel and identify what they wrote.
CCTV (magnification and Display machine)	2	An apparatus designed to project in the TV screen the images of books, maps, etc. captured by a built-in CCD camera. They will be installed in the Information Recourse Center and used by persons with low vision to read materials.
CD book player	2	An apparatus designed to play the CD book produced in DAISY (Digital Accessible Information System) format. It shall have such functions as skimming, page jumping, skipping, speed adjustment, etc. It will be installed in the Information Recourse Center and used to read CD materials.
Motorized wheelchair	3	Used by seriously disabled persons who attend seminar for promotion of independent living.
Bus with a lift	1	Estimated by the expected volume of activities of the Center, it shall have a seating capacity of up to 20 persons. It will be used by trainees, helpers, instructors, interpreters, etc. for on site training. It also shall be equipped with a lift to facilitate convenience of wheelchair users and shall carry 5 to 7 wheelchairs. It shall also be able to accommodate motorized wheelchairs.

When the implementation of the Project with the grant aid cooperation is decided by the Government of Japan, it is appropriate that the construction work will be executed within nineteen (19) months including the period for detail design and tender in view of the scale of the Project, local construction situation, local weather condition. The project costs to be borne by the Government of Thailand are estimated as approx. BT 3 million.

When the Project has been implemented, facilities and equipment for training, conference, information support and networking of associate organizations to promote empowerment of persons with disabilities in the region will be provided, and consequently the following effects are expected.

- Human resource development in the field of persons with disabilities in the region is enabled through the training of approx. 120 persons per year in APCD.
- The building with barrier-free facilities provide barrier-free environment for use of persons with disabilities including trainee.

Further, the following activities will promote improvement of social status and social participation of persons with disabilities in the Asian-Pacific region

- Training courses in APCD enable leaders of persons with disabilities in the region to disseminate acquired knowledge and skills in their country.
- Disability related organizations and NGOs can utilize information provided by APCD
- Network among disability related international organizations, national organization and NGOs will be established. Within five years of establishment of APCD, it is expected that representative organization in thirty country and seventy-five associate organizations will be networked with APCD.

Buildings and equipment of the Project will not require high expertise or high cost for maintenance and management. Through the discussion during the Basic Design Study, it is confirmed that the Government of the Thailand will secure the budget necessary for operation of APCD, including cost for implementation of the Project.

Since the Project is expected to bring considerable effects and to support the promotion of empowerment of persons with disabilities in Asia-Pacific region, it is confirmed appropriate that the Project will be implemented by Japan's grant aid

For highly effective and efficient result of the Project, it is essential to obtain continuous operational support to APCD by the Government of Thailand and continuous cooperation from associate organizations in the Asia-Pacific region.

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## Chapter 1. Background of the Project

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In the Asian-Pacific region, it is estimated that the population of persons with disabilities is approximately three hundred million, whereas one out of ten people. Most of these people have limited opportunities of basic social participation such as education and employment. Less than 5 percent of disabled children and youths in the region have access to education and training. In addition, the majority of persons with disabilities in this region live in rural areas, yet most facilities and services for persons with disabilities are located in urban areas.

In the Kingdom of Thailand (hereinafter referred to as “Thailand”), it is reported that the population of persons with disabilities accounts for 3-8% of Thailand’s total population, which are classified as physically disabled (57%), visually impaired (20%), intellectually disabled (10%), hearing impaired (6%), psychiatrically impaired (5%), and others. Economic crisis occurred in 1997 brought serious impact to disadvantaged group including persons with disabilities, and supportive actions for these people are urgently needed. In 2001, 30% of persons with disabilities in Thailand received no educational services and only approximately 40% of companies did not comply with regulation for employment of persons with disabilities.

Thailand is considered as a leading country of the Mekong region in terms of disability related field as well as social and economic field. In addition, various organization for persons with disabilities are base at Thailand, such as UN ESCAP, leading organization for persons with disabilities in the Asia-Pacific region, and Asia-Pacific regional office of DPI, global self-help non-governmental organization of persons with disabilities. Therefore, the establishment of a Thai-based regional cooperation center on disability is expected to facilitate collaboration with these organizations and to promote regional cooperation effectively and efficiently.

Disability related strategies and legislation of Thailand are as follows.

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In addition to the above, the government of Thailand proclaimed “the Declaration on the Rights of Thai Persons with Disabilities” in 1998. This declaration raised awareness toward the public including persons with disabilities and defined the further rights of people with disabilities such as rights of social participation, vocational training and access to information.

In 1998, the Government of Japan conducted a project formation study to explore a possibility to establish a project to support empowerment of persons with disabilities in developing countries of the Asia-Pacific region in 2002, final year of “the Asian and Pacific Decade of Disabled Persons” and then dispatched an expert and a coordinator to Thailand for project formation.

In this context, the Government of Thailand submitted a concept paper in establishing the Asia-Pacific Development Center on Disability (hereinafter referred to as “APCD”), and made official request to the Government of Japan regarding technical cooperation, the third country training and grant aid cooperation to launch APCD. This concept paper contains a policy to support a proclamation of UN ESCAP, “the Full Participation and Equality of People with Disabilities in the Asian and Pacific Region” through establishment of a center in Thailand by collaboration of the Governments of Thailand and Japan, which promote networking among disability-related organizations in the region, disseminate information and develop human resources. Outline of request regarding grant aid cooperation is as follows:

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2. Equipment: Computers and network equipment  
Audio-Visual equipment (microphones, speakers, projectors, etc.)  
Furniture for training and conference (desks, chairs, cabinets, etc.)  
Furniture for bedrooms (beds, cabinets, etc.)  
Bus with lift

## Chapter 2. Contents of the Project



## **Chapter 2. Contents of the Project**

### **2-1 Basic Concept**

To improve the situation of persons with disabilities in Asia-Pacific region, considerable diverse activities has been organized in the Asian-Pacific region through projects such as “International Year of Disabled Persons” declared by the United Nations 1981, and “the United Nation’s Decade of Disabled Persons”, 1983 – 1992. In 1992, the 48<sup>th</sup> General Assembly of the UN ESCAP resolved that the decade form 1993 to 2002 would be “the Asian and Pacific Decade of Disabled Persons”, and the Agenda for Action, which aim for improvement of social status and social participation of persons with disabilities in the Asian-Pacific Region, were adopted by thirty six (36) countries in the region. In accordance with the Agenda for Action, all countries would implement program to attain their targets for persons with disabilities set forth in each country within this period. Major focuses of the Agenda for Action were given to training, information support and networking organizations for and on behalf of persons with disabilities.

In order to support the implementation of the Agenda for Action, the establishment of the Asia-Pacific Development Center on Disability (APCD) to commemorate final year of the Asian and Pacific Decade of Disabled Persons, proposed by the Governments of Thailand and Japan, was adopted in the 58<sup>th</sup> General Assembly of the UN ESCAP in May 2002 with presence of representatives of twenty-nine (29) countries.

The objectives of APCD are to provide disability-related information support and human resource development services to promote improvement of social status and social participation of persons with disabilities in the Asian-Pacific region, and to contribute to the implementation of the above Agenda for Action.

This Project aims at the establishment of APCD to assist activities for empowerment of persons with disability in the Asian-Pacific region. The requested Japanese assistance consists of construction of APCD buildings, which accommodate facilities for training, conference, information support and networking of associate organizations, and procurement of necessary equipment for the above activities.

## 2-2 Basic Design of the Requested Japanese Assistance

### 2-2-1 Design Policy

#### 2-2-1-1 Basic Design Criteria

##### (1) Scope of the Requested Japanese Assistance

The requested Japanese assistance is to be implemented to support the activities of the Japanese Technical Cooperation for the Asia-Pacific Development Center on Disability Project launched in June 2002, and to support its activities. The scope of the requested Japanese assistance is determined based upon the activity plan of the said technical cooperation program and the activities of APCD confirmed in the Record of Discussion on the technical cooperation concluded between the Governments of Thailand and Japan.

##### Training Courses

Training courses are to be conducted by APCD in cooperation with associate organization to promote empowerment of persons with disability and a barrier-free society. The training courses are planned as follows:

**Table 2-1 Training Courses of APCD**

No	Course Name	Participant	Duration	Times
1*	IL workshop	40	1 week	2
2	IL training	12	2 months	3
3	Peer-counselor	12	2 weeks	3
4*	W/S for common understandings	12	10 days	1
5	CBR training	12	2 months	3
6*	W/S for capacity building	12	10 days	1
7	Self-help organization	12	2 months	3
8	Capacity building	40	1 week	5
9	Web-based networking	20	1 week	5
10	VIP	5	3 months	3
11	ICT for ALL	10	2 months	3
12	Training material	10	2 months	3
13	Non-handicapping environment of ESCAP	10	1 month	3

(1\*, 4\*, 6\*: to be completed before inauguration of new center building)

## Information Support

Information support activities are to disseminate and develop database on information on the relevant organizations of APCD and other information useful for persons with disabilities including the following activities:

- To support the capacity building of APCD's focal point organizations to access and share information
- To provide information referral services through "information resource room" with relevant organizations and the public
- To provide periodically information on APCD such as its activities, database, etc.

## Networking and Collaboration

APCD is to identify and collaborate with the following organizations:

- APCD's focal point organizations in the Asia-Pacific region
- Non-governmental organizations
- APCD's associate organizations in the Asia-Pacific region

## Administration

The following activities are to be conducted to ensure APCD's sustainability:

- To conduct fund-management and fund raising activities
- To conduct evaluation of the Project
- To promote support and collaborate with disability-related research and development
- To promote human rights concerning disability issues

## (2) Selection of the project site

The construction site of APCD is located in the corner of Ratchawithi Road and Rama VI Road, close to Chitlada Palace in Bangkok. The site is a part of a block of land owned by the Department of Public Welfare (hereinafter referred to as DPW), adjacent to its new office, the 60<sup>th</sup> Anniversary Building. This site is judged to be appropriate for construction of APCD, in terms of area, form and conditions of the available infrastructures.

During the field survey, the necessities of relocation of the existing homes for girls were studied. However, as a result of the detailed site investigation, it was clarified that enough area for APCD is

available without the relocation of the above existing buildings.

### (3) Barrier-free environment

It is indispensable that accessible environment for persons with disability is to be prepared in the facility planning. Moreover, APCD itself is to be designed as a model of a barrier-free facility. The following considerations are to be given to the facility planning.

- The whole building shall be designed as an universal environment accommodating individuals with all ranges of abilities, without separate facilities for persons with disability such as a ramp set off to the side of a stairway at an entrance.
- Requirements of persons with disability for the facilities shall be considered carefully, such as entrances doors, corridors, lifts, plumbing equipment, floor finishes, furniture, handles / switches, etc.
- For emergency measures, it is necessary to secure safety for persons with disabilities, as well as compliance with building regulations.
- Signage, communication equipment shall correspond to a diverse range of disabilities.

APCD facility shall be designed in accordance with the following design criteria and regulations:

1. Promotion of Non-Handicapping Physical Environments for Disabled Persons Guidelines (1994, ESCAP)
2. Ministerial Regulations No. 4

#### **2-2-1-2 Policy on facility design**

##### (1) Function of APCD

APCD is expected to perform as a main focal point for disability-related field in the Asian and Pacific region and to provide facilities for training courses, information support, networking among disability-related organizations in this region. The major components of the APCD's facilities are as shown in Table 2-2.

**Table 2-2 Major components of the facility**

<b>Training Department</b>	
Major facilities	Function, Major Features
Training Rooms	<ul style="list-style-type: none"> <li>▪ Designed for training courses and workshops</li> <li>▪ Capacities of training rooms are 20 people, which is determined on the basis of number of total attendants at regular 12-trainee courses including assistants, interpreters and lecturers.</li> <li>▪ Two training rooms are required according to syllabus of training courses.</li> <li>▪ Barrier-free featured furniture should be layout in consideration of adequate clearance for wheel chair users. Working desks must be barrier-free.</li> <li>▪ A store for training activities is required to accommodate training materials, equipment and furniture for multi-purpose hall,</li> </ul>
Multi-Purpose Hall	<ul style="list-style-type: none"> <li>▪ Designed for functions or seminars with a capacity of 60 to 80 seats.</li> <li>▪ To be utilized as a lobby and hall way of training rooms in consideration of frequency of use of multi-purpose hall.</li> <li>▪ Audio-visual presentation equipment is installed.</li> <li>▪ Counters with LAN and power outlet to connect portable computers are installed.</li> </ul>
Computer Training Room	<ul style="list-style-type: none"> <li>▪ Designed for computer training and information support activities</li> <li>▪ Capacity of the room is determined on the basis of 20-trainee courses with two lecturers.</li> <li>▪ Access floor is required for updating of computer equipment and flexible room layout.</li> </ul>
Reception/Duty Room	<ul style="list-style-type: none"> <li>▪ This section provides management services for training and hostel facilities and guest relation services e.g. switchboard operation and fax correspondence.</li> <li>▪ Lodging facilities to provide 24-hour basis service for hostel management are required in this section.</li> <li>▪ Installation of Intercom, attendant, public address and emergency alarm indicator are required in this section.</li> </ul>
Hostel	<ul style="list-style-type: none"> <li>▪ This section provides accommodation to trainees, lecturers and assistants from outside of Bangkok.</li> <li>▪ Total 15 rooms with maximum capacity of 32 people are included in hostel in consideration of feasible occupancy rates and possibility of use of outside facilities in Bangkok.</li> <li>▪ Bedrooms are designed with various measures to create an accessible environment for PWD.</li> <li>▪ Fire prevention and communication facilities for vision and hearing impaired people, e.g. chime with flush light, are installed.</li> <li>▪ One 4-bed room is to be included to accommodate a group of trainee or to stay with family</li> <li>▪ Balconies connecting to a ramp is secured for all bedrooms for easy evacuation</li> </ul>
<b>Information Support</b>	
Information Resources room	<ul style="list-style-type: none"> <li>▪ This section provides services for display of assistive devices, access to information (publication, database, VTR) of PWD.</li> <li>▪ Space for display panels of program exhibition is allocated</li> <li>▪ A staff to guidance for visitors and supervision of display is stationed at this section.</li> </ul>
Multimedia Production room	<ul style="list-style-type: none"> <li>▪ Designed for production of training material and publications.</li> <li>▪ Printing facilities and for vision-impaired people and AV training material production facilities, e.g. video editing system, are installed</li> <li>▪ Walls should be sound proof to protect noise from Braille printers.</li> <li>▪ A recording booth for AV training material production is required.</li> </ul>
<b>Networking</b>	
Conference room	<ul style="list-style-type: none"> <li>▪ This section can be used for conferences with relevant organization, seminars and formal meetings in APCD with the capacity of approx. 20 people.</li> </ul>
Office for associate agency	<ul style="list-style-type: none"> <li>▪ This section provide base for relevant organizations to support APCD activities</li> <li>▪ This section can be divided into two to four rooms with partition, layout of which can be changed as required.</li> </ul>
<b>Administration</b>	
Administration Office	<ul style="list-style-type: none"> <li>▪ Office space for director of APCD, each department's staff, experts, lecturers and necessary meeting and storage space are allocated.</li> <li>▪ Office space for administration, accounting, facility management etc. is allocated depend on staff assignments</li> </ul>

Canteen	<ul style="list-style-type: none"> <li>▪ Existing canteen is commonly used by staff working in PWD building adjacent to APCD site and people from neighboring areas.</li> <li>▪ A canteen for approx. 70 seats with enough spaces for ticket and drink sales and food stall, equal size as existing canteen is allocated in the Center.</li> </ul>
<b>Utilities</b>	
Store	<ul style="list-style-type: none"> <li>▪ Stores for hostel and training facilities near the reception shall have socket outlets to charge battery of electric wheel chair</li> <li>▪ Stores for consumable supplies e.g.. lighting fittings and maintenance tools</li> <li>▪ Linen store for laundry services to be located near carry-in entrance</li> <li>▪ Stores for training materials near multi-media production room, training room</li> </ul>
Machinery room	<ul style="list-style-type: none"> <li>▪ Infrastructure facilities to provide water, electricity, and telephone are installed.</li> <li>▪ Essential incidental facilities, e.g. air conditioning machine, are installed.</li> </ul>
<b>Outdoor Facilities</b>	
Ramp	<ul style="list-style-type: none"> <li>▪ A ramp shall be required at connecting corridor for persons with physical disability as escape rout in case of emergency. Details of ramp, e.g. gradient, landings etc. shall be in accordance with standards of Thailand and ESCAP</li> </ul>
Accessible Parking	<ul style="list-style-type: none"> <li>▪ Accessible parking shall be located on the shortest accessible route into the entrance of training building. Parking space should have enough clearance and roof to ensure easy approach to vehicles.</li> </ul>

## (2) Facility plan

The capacity of each facility is to be determined corresponding to the activities of APCD. The size of each room is decided upon accessible space requirements of persons with disabilities, and layouts of furniture/equipment. Design criteria for the accessible space requirements for the persons with disabilities shall follow the regulation in Thailand as well as the guideline issued by ESCAP.

## (3) Site conditions

The proposed site is composed of two parts; one area is facing Ratchawithi Road (site A :16m × 70m), and the other area is facing Rama VI Road (Site B: 40m × 38m), and both areas are connected by a narrow land approximately 8m wide. There are shops, restaurants, and public toilets within the area facing Ratchawithi Road (Site A), and staff quarters of DPW within the area facing Rama VI Road (Site B). The level of the site is nearly flat. Since the soil of the site is damp, ground floor levels are to be raised to protect building from flood caused by heavy rain. Prevention of noise from the highway along Rama VI Road shall also be considered.



**Fig. 2-1 Site conditions**

(4) Environmental conditions

Bangkok is characterized by strong sunlight, high temperature, heavy rain and high humidity, thus heat prevention measures shall be considered for the facility. The reduction of air conditioning load shall be considered by heat insulation of the walls and the roofs, and the direct sunlight into the rooms shall be avoided by the use of deep eaves. Furthermore, ceiling height, sunlight control, and ventilation shall be considered to ensure a comfortable environment. Attention shall also be paid to appropriate drainage and protection of rainwater inflow by intensive heavy rain.

Highly durable exterior finishing materials shall be selected to resist deterioration caused by rainfall, humidity and strong sunlight.

(5) Building code and building permit

There are well-established building codes and systems for building permit in Bangkok. For the architectural planning, it is essential to comply with the local building codes and appropriate procedures for the building permit. Since APCD is considered as a public organization, building permission will be obtained by notification of the project from DPW, which own a property of this facility, to the Bangkok Metropolis Administration.

The building laws and regulations which are applicable to the facility plan on APCD are as stated below.

- Building Control Act
- BMA BYE-LAW, RE: Building Construction Control 2544
- Town and Country Planning Act
- Promoting and Controlling the Quality of Environment Act

Moreover, there is a detailed regulations issued by the Ministry of Interior. Major regulations of those are as listed below.

**Table 2-3 Ministerial Regulations**

Ministerial Regulation 33 (1992):	Regulation for building facilities including emergency protection
Ministerial Regulation 41 (1994) :	Regulation for parking lot, parking spaces
Ministerial Regulation 44 (1995) :	Regulation for plumbing
Ministerial Regulation 48 (1997) :	Regulation for fire-resistant structure
Ministerial Regulation 49 (1997) :	Regulation for structural load, earthquake-resistant construction
Ministerial Regulation 50 (1997) :	Regulation for surrounding environment, floor coverage of large-scale buildings, floor area rate
Ministerial Regulation 55 (2000) :	Regulation for structure of rooms, corridors, stairs, etc.

The following town planning related regulations are applicable to the project site:

- Building line : Building shall be constructed within six meter from road border, three meter from neighboring border.
- Height restriction : Maximum building height is twelve (12) meter since the site is close to the palace. Buildings as well as any other facilities, e.g. elevated water tank, shall not exceed this height.
- Parking requirements : One car for every 150 m<sup>2</sup> is required.

Moreover, since the site is close to hospitals and the palace, restriction on noise and vibration from construction work may be applicable.

(6) Local construction condition

Thailand outperforms other neighboring countries in terms of building technology and experience of construction work. Major building materials are manufactured in compliance with the local standard



and available in local market. Therefore, the application of Japanese standards for construction materials is not effective for local construction. For this reason, local construction methods, which are considered reliable and in compliance with the local building standard, shall be used for construction.

(7) Local consultant and contractors

In Bangkok, local consultants and contractors have considerable experience in construction of many public and private facilities. Moreover, many foreign consultants and contractors including Japan hold local branches in Bangkok. From this reason, it is practical to hire the locally operated consultants and contractors for the Project.

(8) Grade of facilities

In Thailand, there are few similar facilities of APCD, which is designed especially for persons with disability. Therefore, the grade of machinery equipment and finishing materials shall be determined on the basis of other typical public facilities in Thailand in consideration of easy maintenance and management. The priority of the selection of building materials shall be given to highly durable and locally common materials to reduce maintenance and management cost.

(9) Maintenance and management

Facility management of APCD will be supported by engineering section in DPW. As qualified engineers may not be assigned to APCD, attention shall be paid to the selection of machinery equipment and materials in terms of required technical skills for operation and maintenance.

With respect to routine maintenance, utmost emphasis is to be placed on simple operations and easy procurement of consumable parts for the reduction of maintenance and management costs. Consequently, maintenance system, which requires advanced technical skills such as big central air-conditioning system or central hot-water supply system, shall not be used.

(10) Construction Schedule

There is heavy rainfall in rainy season, between May and October, and the heaviest rainfall is expected in September where the monthly rainfall goes up to approximately 350 mm. In consideration with the rainfall effect on the construction schedule, it is undesirable to carry out earthwork and exterior finishing work during this season.

Furthermore, there are total sixteen (16) holidays per year, where most of the holidays are from April to August. This shall be considered in the construction scheduling actual working days.

### **2-2-1-3 Policy on Equipment Plan**

#### (1) Policy on selection

Based on the Design Policy set forth, selection of equipment shall be done in accordance with the functions of the project facility, considering all the factors made clear during the basic design study such as activities, technical level and maintenance skill of the recipients.

Also, as persons with disability are the primary users of APCD, barrier-free designed furniture including desk, chair, bookshelf, etc. that will maximize the functions of APCD, shall be included in the Requested Japanese Assistance.

#### (2) Policy on specifications

The equipment that can be easily and simply operated and maintained shall be selected. And the equipment whose specifications are popular and widely diffused in Thailand shall preferably be chosen. However, the equipment listed below are indispensable for the function of APCD, though not recognize as “widely diffused” equipment for disabled persons, and shall be included in the Requested Japanese Assistance after careful examination of the technical and maintenance level of the recipients.

- Assistive device set for computer
- Braille printer
- Tactile image maker
- CCTV (Magnification and display machine)
- CD book player
- Motorized wheelchair
- Bus with a lift

#### (3) Policy on spare parts and consumables

As the recipient is able to supply themselves with the spare parts and consumables, only the standard ones that comprise the unit price and the ones that cover initial operation shall be included in the Requested Japanese Assistance.

#### (4) Policy on quantity

Quantity of the equipment shall be decided through examining the quantity necessary to satisfy and fulfill the expected activities of APCD.

(5) Policy on local distributor

The equipment shall be used effectively for as long a period as possible. For the equipment that need consumables peculiar to it or require regular replacement of spare parts or periodical maintenance services by the manufacturers, they shall be selected from the manufacturers capable of providing spare parts or consumables at their local distributors or agents in Thailand.

(6) Policy on operation and maintenance

To use and maintain the supplied equipment efficiently, the following training sessions shall be given by the supplier at the delivery of equipment and also the technical documents including operation and service manual, agent list, etc. shall be prepared.

- Operation method (General information, operation procedure, points to be confirmed, etc.)
- Maintenance method (Cleaning/adjustment, minor repairing, etc.)

(7) Policy on procurement

The requested equipment are popular in Thailand and most of them are Japanese or Western products. Most of those manufacturers have their distributors in Thailand. As for furniture and office supplies, Thai products are ubiquitous.

Therefore, under the Requested Japanese Assistance, the equipment that require no spare parts or consumables shall be Japanese or Thai products. On the other hand, for the equipment that do require them or for the equipment that need maintenance services by manufacturers, they shall be selected from the manufacturers capable of providing spare parts/consumables and maintenance services through the distributors or agents in Thailand. Procurement of third-country products shall also be considered.

(8) Policy on installation schedule

Procurement of equipment shall be consistent with construction schedule. Special attention shall be paid to wiring work of computer network and broadcasting related equipment as they must be started before the finishing work in the construction phase.

## **2-2-2 Basic Plan**

### **2-2-2-1 Construction Plan**

#### **(1) Building Layout Plan**

##### Analysis of the Site Condition

The Project site is a irregular shape, which consists of two main rectangular areas facing Ratchawithi Road and Rama VI Road respectively, and a long narrow land connecting the two main rectangular areas. Ratchawithi Road is one of the major streets in Bangkok and leading to the palace, which brings high potential for publicity. For this reason, the Administration Building, which includes the main entrance, information support section, networking section and administration section shall be arranged on this side. On the other hand, Rama VI Road is a rather minor street. Therefore, the area facing Rama VI Road is suitable for trainees' accommodation and training facilities, which are not accessed by general visitors regularly. A canteen shall be located at Ratchawithi Road side of the site at same place as the existing canteen to keep easy access for the staff of adjacent DPW facilities as it is.

##### Access to the Facility

The boundary line facing Ratchawithi Road is only sixteen meters long, which is not wide enough to provide an access for other than pedestrian from the street. The area facing Rama VI Road accommodates a vehicle access to APCD for trainees using vehicles.

Inter-accesses for pedestrian and vehicle between DPW facilities side and the project site are secured. In case the parking lot is in short within the project site, the parking lot of DPW will be utilized.

##### Infrastructure

Although the project site is within DPW's property, the existing infrastructure cannot be utilized for the project buildings due to the shortage of the capacity of existing infrastructure. Therefore, it is necessary to provide a new water supply pipe, drainage, power supply, and telephone line from outside the site. All of these infrastructures are available from the street right outside the site. LP gas will be used for a cooking facility for the canteen.

## (2) Building Plan

### Basic Concept for the Floor Plan

Utilization of land area is limited due to the irregular shape of the site and building line regulations. Therefore, building layout shall be planned with a careful attention on maximum use of the site area.

The Administration Building is to be on the Ratchawithi Road side, where the land is narrow and thus the building is to be a linear plan with a side corridor having an information resource room, a canteen and a substation on the ground floor, offices and a conference room on the first floor, and offices for associate agencies on the second floor.

The Training Building is to be on the Rama VI Road side where the land shape is square. Training related rooms are arranged on the ground floor, hostel related rooms are on the first floor.

A connecting corridor links the Administration Building and the Training Building. A wheel chair accessible ramp is to be provided along the connecting corridor so that the ramp can be shared by the users for both of the buildings.

APCD building will not accommodate the following service facilities, which can be outsourced in consideration of the cost for the operation and personnel.

- Laundry : Only a laundry for the trainees and storages for used linens and clean linen will be provided.
- Kitchen : A major cooking facility enough to prepare meals for trainees is not to be provided in the Training Building because meal services after office hours planned as outsourced.

Fig. 2-2 shows the site layout plan in accordance with the above-mentioned concept.

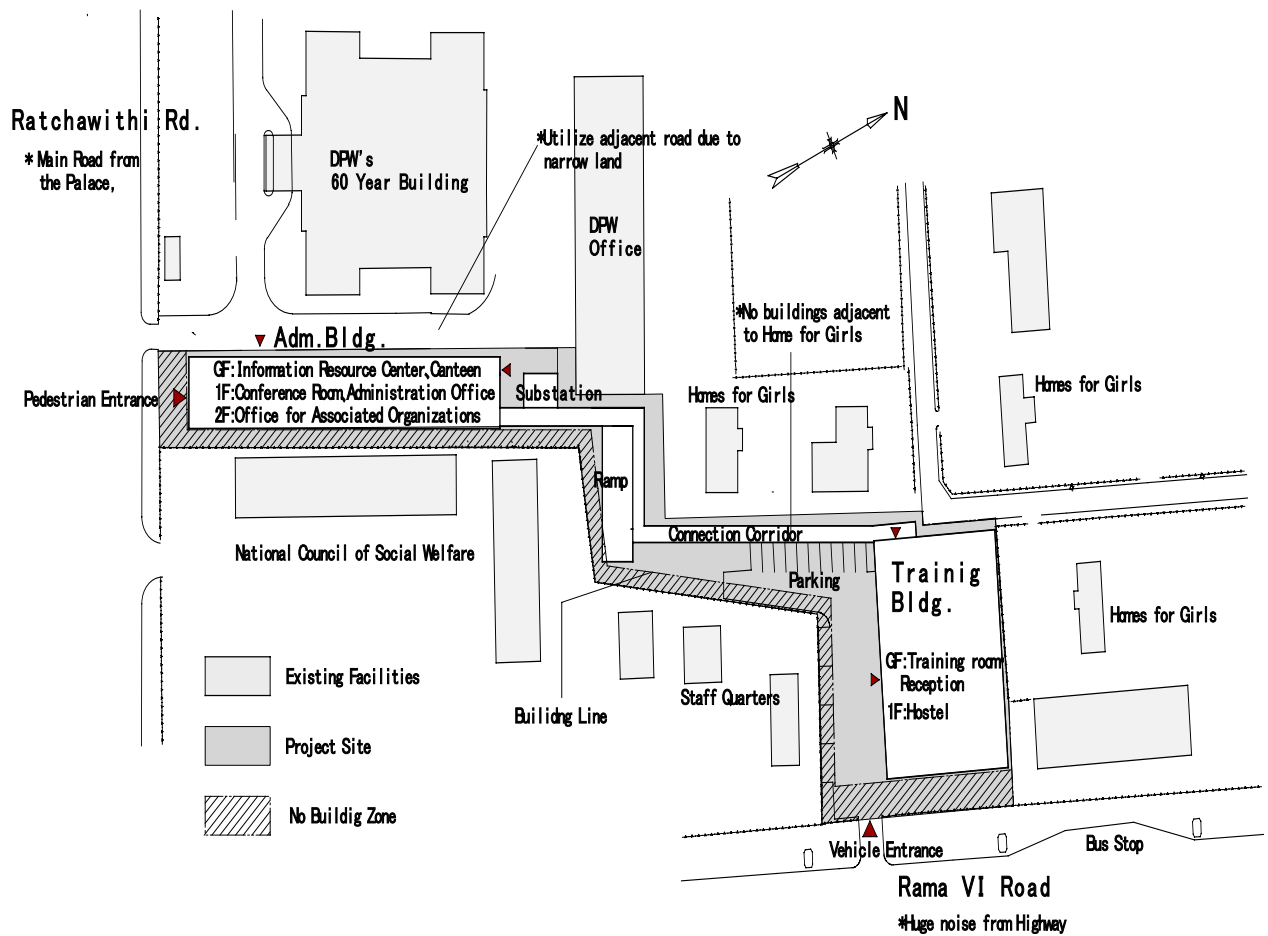


Fig. 2-2 Site Layout Plan

### Required Rooms

The floor area of each room is determined on the basis of required function, capacity, layout of furniture and equipment. To make maximum use of the facility, similar function rooms shall be integrated into one room. Table 2-4 shows necessary number of rooms and the floor area of each room based on the above assessment.

**Table 2-4 Room List of the Center Building**

Department	Room Name	Area (㎡)	Basis of Room Capacity
Training	Multi-Purpose Hall	158.4	Capacity: 60~80 seats for functions and seminars
	Training room-1	74.5	Capacity: 20 seats each and divisible into two rooms with approx. 10 seats each
	Training room-2	72.9	
	Training Store	18.6	Store for training equipment, furniture, stationeries, training materials
	Computer Training room	82.2	20 computers for trainees and 2 computers for lecturers and a printer and a scanner are installed
	Lecturer's room	22.9	Anteroom for lecturers and store for training equipment
	Reception	20.8	Reception counter, key control system, alarm indicator, intercom etc. are installed
	Duty room	15.8	A bed for night shift, lockers, first aid kit etc. are installed.
	Toilets (Female)	17.4	Closet: 3, Basin: 3, designed as usable for PWD
	Toilets (Male)	17.6	Closet: 2, Urinal: 2, Basin: 2, designed as usable for PWD
	Pantry (GF)	17.4	To serve tea for training rooms and receive meal for hostel from canteen
	Pantry (1F)	17.6	To serve drink and foods for training rooms. Usable for IL training program
	Bedroom (2 beds) × 14 rooms	29.5 × 14	Each room includes locker, desk, bathroom and designed as usable for PWD
Bedroom (4 beds)	55.3 × 1		
Information Support	Information Resource room	100.0	To display assistive devices and install equipment to provide information on PWD, Reception of administration building is required.
	Multi Media Production room	44.4	Video editing system, Braille printing system, recording booth and printing system are installed.
	Recording Booth	13.9	Microphone set, desk, etc. are installed
	Server room	10.0	Computer server and other network equipment are installed
Networking	Conference room	97.8	20 fixed seats with microphone system are installed
	Office for associate agency 1	97.7	Capacity: 12 to 18 staff (9 to 6 ㎡/person)
	Office for associate agency 2-4	228.6	Divisible into max. 4 rooms. Capacity: 25 to 35 staff (9 to 6 ㎡/person)
	Toilets (Female)	22.8	Closet: 2, Basin: 2, designed as usable for PWD
	Toilets (Male)	16.1	Closet: 1, Urinal: 2, Basin: 2, designed as usable for PWD
Administration	Office	222.7	Adequate space for the number of staff should be allocated (Director: 25 ㎡ w/meeting room × 1 person, Expert: 15 ㎡ × max. 6 persons, Center staff : 9 ㎡ × 6 persons, assistants : 9 ㎡ × 6 persons)
	Store (1F, 2F)	12.1	Store for document, publications, training materials
	Tea Kitchen	6.9	Small tea kitchen for office and conference room.
	Canteen	190.5	Capacity: approx. 70 seats
	Toilets (Female)	22.8	Closet: 2, Basin: 2, designed as usable for PWD
	Toilets (Male)	16.1	Closet: 1, Urinal: 2, Basin: 2, designed as usable for PWD
	Kitchen	62.2	Sink, cooking table, etc. are installed
	Food Store	16.5	Food racks are installed
Utilities	Linen Store 1 (GF)	23.0	Store for used Linen to be sent to the outside laundry agent
	Laundry	16.2	For trainee's own use, washing machine and drying machines are installed
	Linen Store 2 (1F)	10.5	For clean linen and bedroom utensils
	Hostel Store	38.8	Store for wheelchairs, consumable and fixtures for bedrooms and other rooms
	Machinery rooms (Adm. bldg.)	Total 80.7	Necessary facilities to operate building should be installed
	Machinery rooms (Training bldg.)	Total 52.0	
Common Facilities	Elevator 1, 2	23.5	Barrier-Free featured type e.g. announce system
	Corridor, Lobby, WC, Store etc.	-	Adequate space should be allocated for persons using mobility devices, e.g. wheelchairs, crutches
Outdoor Facilities	Connecting Corridor	—	To secure the width for two wheel chairs
	Slope	—	A ramp should be of gentle gradient, less than 1/15, with landings in every 0.75m high
	Balcony of bedrooms	—	Designed as escape route from bedrooms usable by PWD
	Corridor, Staircases, porch	—	Changes in floor height should be leveled off with a slope
	Parking for PWD	—	Located next to the entrance of building
Total Floor Area		3,390.5 ㎡	

## Section Plan

In the section planning, consideration shall be given to utilization of natural lighting and protection against direct sunlight and rainwater. Eaves and building shapes are to be designed for controlling direct sunlight and rainwater. The height of each story is to be determined in order to provide a comfortable indoor environment, energy efficiency, easy maintenance, etc.

Because of building height limit of twelve (12) meters high, buildings are designed with flat roof in order to maximize building height and to ensure suitable ceiling height. No machinery equipment can be placed on the roof of three stories Administration Building for the said height limit. Thermal insulation of the roof and sufficient ventilation under the roof slab shall be carefully designed in order to minimize the heat gain from direct sunlight on the flat roof.

## Barrier-Free Design

APCD building shall be planned as a model of universal design building, which provides the visitors with resources of barrier-free environment and technical expertise in architecture, utility design, and facilities management.

Major facility design criteria are as follows:

**Table 2-5 Design Criteria of Barrier-free Environment**

Kind of disability	Issues to be considered	Design Criteria
Physical Disability (Using wheelchair)	Difficult/impossible to travel around steps and steep slopes	<ul style="list-style-type: none"> <li>Walk path curb stone, level difference and steps at the entrance of buildings to be leveled off (level difference: max. 20mm)</li> <li>No steps at the area for getting in and out of cars (to be covered)</li> <li>Provision of elevators</li> </ul>
	Difficult/impossible to travel	<ul style="list-style-type: none"> <li>No uneven, unpaved and lawn surfaces at outdoor ground</li> <li>No thick carpets floors inside building</li> </ul>
	Large gap to catch small wheels, difficult/impossible to stride/jump over	<ul style="list-style-type: none"> <li>Minimizing the gap between elevator cars and hoist way door sill, the gap of gratings cover</li> <li>Gutters to be covered</li> </ul>
	Secure adequate path width	<ul style="list-style-type: none"> <li>Sufficient width for entrances, corridors, pathways</li> </ul>
	Secure adequate turning space	<ul style="list-style-type: none"> <li>Sufficient space at corners of corridors, around entrances, toilet booths</li> </ul>
	Secure transition space for wheelchairs	<ul style="list-style-type: none"> <li>Sufficient space around beds, toilet seats, bathtubs and parking lots</li> </ul>
	Difficulty of sideways movement	<ul style="list-style-type: none"> <li>Layout and height of shelves to be taking into consideration</li> <li>Access to the shelves to be done from the sides of wheel chairs since reachable space in front and at the back is limited.</li> <li>Adequate space for footrest, knees and armrest under a work counter when it is to be accessed from front side of wheelchair</li> </ul>
	Hands are occupied when in move.	<ul style="list-style-type: none"> <li>The rout to the parking lot to be covered because umbrella cannot be used when it rains</li> <li>Major entrance doors to be automatic</li> </ul>
	Limited hands' reachable area (higher area)	<ul style="list-style-type: none"> <li>Accessible position and shape of drawers/shelves</li> <li>Accessible position of switches, operation buttons</li> <li>Space for footrest at public phones and counters to be provided</li> </ul>



Kind of disability	Issues to be considered	Design Criteria
	Limited hands' reachable area (lower area)	• Accessible position of drawers and receptacles
	Position of upper body and sight are lower	• Height of wash basins, kitchen counters, mirrors to be adjusted to suitable level
	Position of knees and elbows are higher	• Sufficient space below desks, tables, sinks, wash basins
Physical Disability (Difficulty of walking)	Difficult to travel around steps and steep slopes	• Same as for wheelchair case (some cases can be overcome with provision of handrails)
	Tripping and difficulty to walk around	• Avoid uneven surface and unpaved road. • Avoid projection at the nosing of stairs. • Avoid frequent change of floor finish material. • Provide handrails around circulation area such as corridor
	Slip of the tip of a walking stick	• Avoid slippery floor finish, pebbled road, muddy road
	The tip of a walking stick or wheels gets caught/stuck	• Minimize the gap at gutter covers, elevators, etc.
	Space for turning around when using crutches	• Sufficient width for corridors, entrances, inside toilet booth, etc.
	Difficult to squat down	• Western style toilet
	Limited hands' reachable area (lower area)	• Accessible position of drawers and receptacles
	Difficult to keep standing position	• Provision of handrail at urinals
Physical Disability (upper limbs)	Difficult to handle subtle manual tasks	• Larger switches/buttons • Simplified shape for drawers and shelves
	Weak grip	• Lever handles for door instead of knobs • User friendly grip to be used
	Space for helpers	• Sufficient space of helpers for eating, changing clothes, etc.
Hearing impairments	Not able to hear	• Usable communication means in case of emergency (Provision of light/vibration alarm device) • Receive lamp for telephones • Provision of visual announcement (e.g. bulletin board)
	Worry for bumping into other at corners	• Corner cuts and provision of mirrors to eliminate blind spots
Visual impairments	Difficulty to recognize/ identify the shape, position, and state of objects for moving around	• Appropriate guidance/guiding blocks for the visually disabled. • No steps, gutters, obstacles in passages. • Easily recognizable signage for entrances, passages, etc. • Simple and easily memorable circulation plan (Avoid using oblique and/or curved passages) • Avoid protruding objects at the level of upper part of body
	Impossible to read/comprehend printed matter/visual info.	• Braille signage and/or public-address system
	Difficult to read/comprehend printed matter/visual info.	• Audible signage • Large character signage • Devise contrast, color scheme • Easily comprehensible signage plan
Internal disability	Fatigable when walking	• Provision of rest areas in long passages • Provision of low riser steps
	Functional disorder of the bladder and/or the rectum	• Well ventilated privacy conscious bathroom where the person can wash comfortably
	Fatigable	• Improvement of indoor environment with air-conditioning
Learning disability	Illiterate and/or no sense of directions	• Provision of guides at the reception, entrance, etc. • Utilization of easily comprehensible signage such as pictograph
	Difficult to operate apparatus	• Simple and error free apparatus/equipment
	Difficulty in space perception	• No steps in passages

### (3) Structural Plan

#### Foundation System

According to the soil investigation conducted at the site, piling foundation of approximately 30 m depth is judged suitable. Piling foundation can be designed with utilization of pre-cast concrete piles, which are commonly available in Bangkok. In consideration of the impact to surroundings of the site, typical driving piling method at the site, which causes big noise and vibration, is deemed inappropriate. Therefore, oil pressure sinking piling method or cast-in-place concrete piling method, less noise and vibration methods, is to be selected.

#### Superstructure System

Typical structures of public buildings in Thailand are RC rigid frame or RC flat diaphragm slab for superstructures and concrete blocks or bricks masonry for walls. This locally common materials and methods are to be employed considering economical efficiency and workability.

The roofs are to be RC flat slab considering the building height limitation. Water proofing and thermal insulation shall especially be taken into account for planning of the roof.

#### Applicable Structural Standards

Building structure is to be designed in accordance with local regulations, e.g. Building Control Act, Ministerial Regulation No. 49, and BMA Bylaw, Building Construction Control 2544.

Seismic force caused by earthquake shall be considered for structural design since earthquakes with maximum record of magnitude 5.5 were recorded around Bangkok in past twenty (20) years.

#### Reinforced Concrete Materials

The local construction materials for reinforced concrete can be used. Portland cement in Thailand is produced in accordance with ASTM C150-63 and strict quality control of TIS. Reinforcing iron bars produced in Thailand are also commonly used and the strength and quality of the local products are sufficient to be used as construction material.

### (4) Electrical Plan

#### Power Receiving Facility and Substation

24kV high-tension power shall be taken in from Ratchawithi Road side. An electric pole to

receive an overhead service wire is to be erected and a high-tension cable is to be installed through underground pipe thereafter between the pole and a substation in APCD. A new transformer is to be installed to have the high-tension power step down to 380/220V.

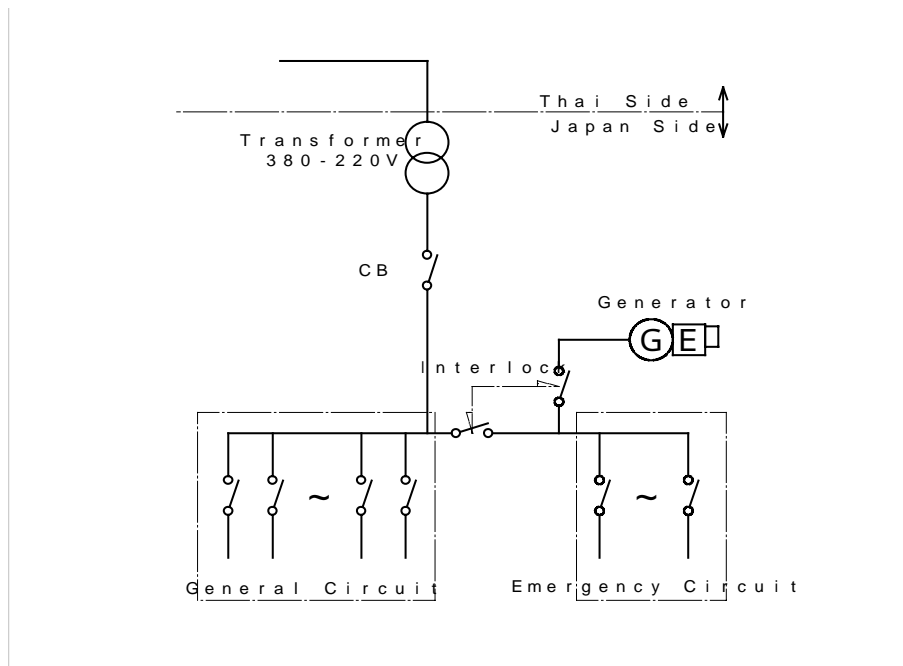
### Emergency Power Supply System

Possibility of continuous power failure of maximum three hours shall be considered. Therefore, a 50kVA radiator-type diesel engine generator is to be installed for emergency power supply. The emergency supply shall serve the water pumps and a part of air conditioning system in the Training Building.

### Trunk Line System

Cable trays are to be used for distribution of trunk lines from the substation to the distribution boards/power control units in the buildings. In order to control and distribute to air condition system, pump system, etc., power control boards and feeder pipes shall be installed.

An alarm board for monitoring the status of power supply in APCD shall be installed in the reception area.



**Fig. 2-3 Electricity Supply Plan**

## Lighting Fixtures and Receptacles System

Main lighting system shall be designed with fluorescent lamps in view of durability and operation costs. Emergency lamps with built-in battery and evacuation guide lights with battery are to be installed in major rooms and corridors. For the persons with hearing and visual disabilities, flashing light with guiding sound speaker/generator shall be also installed together with the evacuation guide lights.

In general, receptacles shall be of 2E type with earth electrodes. As for the Computer Training Room, floor type outlet under the raised access floor shall be installed so that power will be supplied directly to the computers. Specifications and positions of receptacles and switches shall be finalized taking the use of the persons with disability into consideration.

**Table 2-6 Target Illuminant of Major Room**

Room	Target Illuminance (lux)
Office • Computer Training room	300~
Training room • Multi-purpose room • Meeting room • Multi Media Production room	300~
Entrance Hall • Corridor • Toilet	200~
Machine room • Substation • Storage	100~

## Telephone System

A MDF and a PBX (16 outside lines and 96 extensions) to form an extension network within the building shall be installed. Multi-function extension phones are to be installed in the offices, phones with receipt indication lamp in the bedrooms and the lobby of the Training Building, general phone in other rooms.

The PBX system with telephone charge counting function shall be specified so that every use of out going phone call from the bedrooms and the offices for associate agencies will be indicated.

## Interphone System

Interphone shall be installed between outside of the entrances and the reception for the both buildings. Extension telephones will be utilized for communications within the buildings.

## Public Address (PA) and Emergency Alarm System

PA-cum-Emergency alarm system shall be installed in the entire building for general in-house

announcements and emergency use. An amplifier and microphones shall be installed in the administration office of the Training Building. Each room should be equipped with volume controller. In addition, the hostel shall have the following equipment for emergency:

Bedrooms : Flush lamp, alarm, vibratory alarm for emergency indication

Bathrooms : Flush lamp, alarm

#### Emergency Call System

Push buttons for emergency call system shall be installed in the bedrooms and bathrooms for the trainees in case of emergency in order to inform the center staff. An indicator/alarm shall be installed in the administration office of the Training Building.

#### TV Wiring System

Antennas for TV shall be installed on the roof and TV terminals will be installed in major rooms.

#### Local Area Network (LAN) System

LAN terminal shall be installed in all major rooms and necessary network apparatus, e.g. cable, hub shall be installed in the building.

#### Hearing Aid Support System

Training rooms and the multi purpose hall shall be equipped with flat-loop antennas for hearing aid.

#### Card Key System

The entrance door of each bedroom shall be equipped with card key system for the easy operation of door lock for the persons with physical disabilities.

#### Door Flush Lamp Indicator

Each bedroom entrance shall be equipped with flush lamp indicator along with door chime system for the persons with hearing impairments.

#### Fire Alarm System

Fire/smoke detectors shall be installed at required places and a control panel shall be installed in the reception area.

## Lift

An elevator for the use of the persons with disability shall be installed in each building. The specifications of the elevator will be as follows;

Capacity : approx. 11 persons

Door width : approx. 900 mm

Special features such as voice indicator and operation panels suitable for the use of the persons with disability shall be incorporated into the design.

## (5) Air Conditioning Plan

Air conditioning system shall be installed in all the major rooms in consideration of the use of persons with difficulty to control body temperature since it is hot all year around in Bangkok. In addition, it is difficult to keep windows open for natural ventilation in training buildings due to heavy traffic noise from a highway and a bus stop along Rama VI road.

In consideration of maintenance, operation and running cost, split-type air conditioning units are to be installed for most of the rooms. Each room shall be ventilated in accordance with the local regulations. A mechanical intake & exhaust type and a mechanical exhaust type shall be employed depending on the functional requirement of each room. Total enthalpy heat exchanger to intake fresh air shall be employed in order to minimize heat loss for efficient air conditioning. The canteen shall have ceiling fans since it is open to the outside.

**Table 2-7 Air Conditioning (A/C) System for Main Rooms**

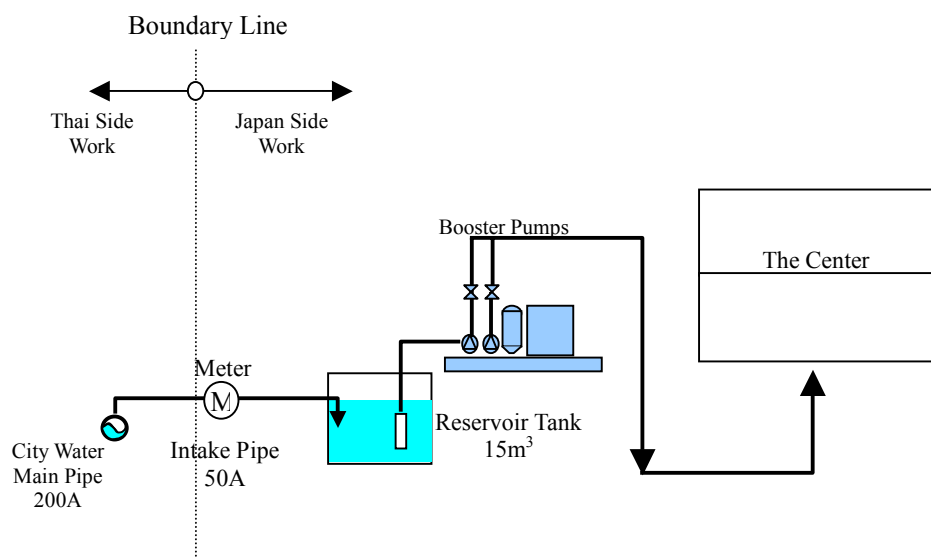
System	Room
Rooms with A/C and Ventilation (Intake of heat exchanged external air through filter heat exchanger and mechanical exhaust)	Training room, Computer Training Room, Office, Office for associate organization, Conference Room
Rooms with Mechanical (Air Intake through Filter and Mechanical Exhaust)	Substation
Rooms with Mechanical Exhaust	Toilet, Storage, Generator Room, Kitchen, Food Storage, others
Rooms with Air Conditioner	Training Rooms, Multi-purpose Hall/lobby, Computer Training Room, Server Room, Multi Media Production Room, Information Resource Room, Office, Reception, Bedrooms, Lobby, Administration Office, Food Storage, Recording Booth

## (6) Plumbing System Plan

### Water Supply System

A new 50A service pipe shall be connected to the 200A city water main along Rama VI road. It is not feasible to have an elevated water tank with sufficient height due to the 12 m height limit. Accordingly, up-feed distribution system with a panel type reservoir tank on the ground and pressure pumps shall be installed for the water supply system of the Center. The capacity of the reservoir tank shall be designed as equivalent volume to the Center's water consumption volume of one day considering possible suspension of water supply.

It is assumed that bottled drinking water will be supplied from the market.



**Fig. 2-4 Diagram of Water Supply System**

### Hot Water Supply System

The following hot water supply system shall be employed.

- Kitchen : LPG instantaneous water heater
- Bath Room : Electric instantaneous water heater

### Drainage System

Soil water, kitchen wastewater, general wastewater and rainwater shall be separately disposed.

Soil water and kitchen waste water shall be treated in separate septic tanks before discharged to the main sewer in accordance with Thai regulations. A grease trap shall be installed before the

septic tank for kitchen waste water.

Treated water after the septic tanks shall be discharged to the main sewer along with general waste water and rainwater.

**Table 2-8 BOD & SS requirements of discharge water**

	BOD	SS
Kitchen Waste Water	40ppm	50ppm
Soil Water	50ppm	50ppm

#### Sanitary Fixture

Sanitary fixture such as western water closets, urinals, washbasins, slop sinks, etc. shall be installed. The accessories such as mirrors, handles and handrails shall be of barrier free type.

#### Fire Extinguishing System

The following fire extinguishing system shall be installed in accordance with Thai regulations.

- Indoor fire extinguishing system
- Outdoor fire extinguishing system (extension of the existing outdoor fire extinguishing system)
- Fire extinguisher (dry chemical type)
- Fire extinguisher (wet chemical type)

#### LP Gas System

LP gas system for cooking facilities shall be installed in Canteen. A gas cylinder room shall be placed where carrying in and out of the cylinder is easier.

#### Kitchen

Room size of kitchen and food store shall be determined based on layout, which accommodates cooking facilities to provide two rounds of maximum seventy (70) meals at lunchtime.

#### (7) Building Material / Construction Methods

Construction Methods and building materials shall be decided through examination of the environmental conditions, performance, construction period, construction cost, quantity of supply, and the maintenance and management cost.



## Exterior Finish Material

The following table shows the plan of main exterior finishing materials and its rationale of selection.

**Table 2-9 Exterior Finish**

Part	Finish Material	Remark
Roof	Heat insulation block on asphalt waterproofing	Most reliable waterproofing material for flat roof and commonly used in Bangkok
Exterior Wall	Porcelain facing tile	Commonly used in Bangkok, Highly durable and free of maintenance. Since re-painting or repair work for cracks are not necessary, maintenance cost can be reduced.
Window	Aluminum sash	More durable compared to steel/wooden sash Soundproofing type to be used for Rama IV road side due to the traffic noise

## Interior Finish Material

The following table shows the plan of main exterior finishing materials and its rationale of selection.

**Table 2-10 Interior Finish**

Room Name	Floor	Wall	Ceiling	Remarks
Training Room, Multi-Purpose Hall	Seamless vinyl sheeting	Paint finish on plaster	Mineral acoustic board	Durable and Easily cleaned
Computer Training Room	Carpet tile on raised access floor	Paint finish on plaster	Mineral acoustic board	Flexible in terms of cabling layout
Bedroom	Seamless vinyl sheeting	Vinyl cloth	Paint finish on plaster board	Easily cleaned and wheelchair usable floor finish
Toilet, Bathroom	Ceramic tile	Ceramic tile	Paint finish on waterproofing board	Water resistant and easily cleaned

### 2-2-2-2 Equipment Plan

#### (1) Examination on the requested equipment

During the basic design study, the study team met with the Sub-committee for the Asian-Pacific Development Center on Disabilities and the Japanese experts of technical cooperation team working for APCD as a part of the Requested Japanese Assistance, and discussed about the contents of equipment necessary to satisfy and fulfill the functions of APCD. The contents of the requested equipment thus discussed were attached to the Minutes of Discussion (Appendice-1). After the Minutes of Discussion being signed, the study team further discussed with all concerned on the appropriateness and rationality of the requested equipment and elaborated an Equipment List.

Classification of the requested equipment and main equipment are as follows.

- Audiovisual equipment: LCD projector, TV monitor & VTR set, CCTV, etc.
- Broadcasting related equipment: Speaker set, Simultaneous interpretation set, Conference set, etc.
- Equipment for material production: Video editing system, Braille printer, Tactile image maker, etc.
- Computer related equipment: for instructor, material production, reading, network related apparatus, etc.
- Barrier-free designed furniture: Bed, Wardrobe, Desk, Chair, etc.
- Others: Bus with a lift, Motorized wheelchair, Table, Bookshelf, etc.

Under the policies described in “2-1 Design policy,” considering all possible factors made clear during the site survey including the expected functions and roles of APCD, technical and maintenance level, financial sustainability, the study team made a comprehensive judgment as to appropriateness and rationality of the requested equipment by following the criteria listed below.

#### Purpose

- : Basic equipment consistent with the activities of APCD
- × : Equipment not consistent with the activities of APCD

#### Necessity

- : Equipment necessary for the activities of APCD
- × : Equipment not necessary for the activities of APCD, in terms of cost-effectiveness and benefit of the recipients, or small articles, general furniture, office supplies, etc. the equipment which may not affect the activities of the Center, or the equipment purchasable by the Thai side

#### Technical level

- : Equipment consistent with the technical level of the recipients
- × : Equipment not consistent with the technical level of the recipients, nor contributory to improvement of it

#### Operation and maintenance

- : Equipment that can easily and simply be operated and maintained, produced by manufacturers with well organized maintenance system, whose spare parts or

consumables are available in Thailand

- × : Equipment that can not easily and simply be operated and maintained, which may cause maintenance problems afterwards, whose spare parts or consumables are not available in Thailand

#### Operation and maintenance costs

- : Equipment requiring few operation and maintenance costs, bearable by the Thai side
- × : Equipment requiring quite a few operation and maintenance costs, unbearable by the Thai side

#### Quantity

- : Equipment whose quantity and their distribution plan are appropriate and consistent with the activities, number of staff and trainees of APCD
- : Equipment whose quantity and their distribution plan are inappropriate and inconsistent with the activities, number of staff and trainees of APCD, thus requiring modification
- × : Equipment whose quantity and their distribution plan are inappropriate and thus excluded

#### Judgment

- : Equipment judged appropriate and thus included from the Requested Japanese Assistance
- × : Equipment judged inappropriate and thus excluded from the Requested Japanese Assistance

The results of individual examination are shown in Appendices-4 Examination of the Requested Equipment.

## (2) Examination of main equipment

### Audio visual equipment

- LCD projector
- Visual presenter
- TV monitor & VTR set
- Overhead projector
- Digital video camera

Those equipment are used to prepare presentation materials for training or seminar, or to keep the records of those events. Supposedly used in various rooms in the Center, they shall be a movable type with a mobile rack.

- CCTV(Magnification and display machine)

An apparatus designed to project in the TV screen the images of books, maps, etc.

captured by a built-in CCD camera. They will be installed in the Information Recourse Center and used by persons with visual impairment to read materials.

- CD book player

An apparatus designed to play the CD book produced in DAISY (Digital Accessible Information System) format. It shall have such functions as skimming, page jumping, skipping, speed adjustment, etc. It will be installed in the Information Recourse Center and used to read CD materials.

#### Broadcasting related equipment

- Speaker set, portable type / wall mounted type

Used for conference or seminar. Two types of microphone shall be included, the wireless hand-held microphone and tie pin type wireless microphone for persons with upper-limb disabilities.

- Simultaneous interpretation set, portable type

Used for conference or seminar. They shall accept up to three languages for future intentional conferences with neighboring countries. Supposedly used in various rooms in the Center, they shall be a movable type.

- Conference set

Used for conferences or seminar with other organizations, or for internal meetings. They shall be for as many as twenty persons.

#### Equipment for material production

- Video editing system

Used to produce educational or publicity materials, or to edit the videotapes brought in by trainees from various countries.

- Braille printer

Used to produce braille documents or materials for conferences or seminar. Two types of printer shall be included for different purposes, the one for cut sheet paper and the other for continuous tractor-fed paper. Acoustic cabinet, designed to alleviate its terrible noise, shall be also included.

- Tactile image maker

Apparatus designed to print out characters, drawings, pictures, etc. as a tangible, raised

line material. Intended to foster imagination and creativity of persons with visual impairment by allowing them to feel and identify what they wrote.

#### Computer related equipment

- Computer set A  
Used for general training at the Computer Training Center. The set shall be intended for two instructors and as many as twenty trainees and it shall include assistive device set designed to facilitate use of computers by persons with low vision or limb disability.
- Computer set B  
Used for retrieval of information at the Information Resource Center. Two sets shall be necessary for providing visitors with various information on activities of the Center or on assistance of persons with disability.
- Computer set C  
Used for production of Braille documents by Braille printer at the Multi-media production room. Since two different kinds of Braille printer is requested according to its purpose, the one for cut sheet paper and the other for continuous tractor-fed paper, two sets of computer shall also be necessary.
- Computer set D  
One set to be used for production of CD book in DAISY format at Multi-media production room
- Computer set E  
Used for presentation at training or seminar. As they will be used in various situations, they shall be a laptop type.
- Network set  
Two server units shall be supplied, the one at the Training bloc and the other at the Administration bloc. Those two networks are connected with each other; access from the Administration bloc to the Training bloc shall be allowed while the opposite access interdicted for security reasons.

#### Barrier-free designed furniture

- Bed, Bedside cabinet, Side unit, Wardrobe, Desk, Chair  
Those shall be designed for convenience of persons with disability.

## Others

- Bus with a lift

Estimated by the expected volume of activities of APCD, it shall have a seating capacity of up to twenty persons. It will be used by trainees, helpers, instructors, interpreters, etc. for on site training. It also shall be equipped with a lift to facilitate convenience of wheelchair users and shall carry six wheelchairs. It shall also be able to accommodate motorized wheelchairs.

- Motorized wheelchair, Wheelchair(standing type), Wheelchair(reclining type)

Used by persons with severe disability, who attend seminar for promotion of independent living.

- Wheelchair(manual standard type)

Used inside the Center temporarily by visitors on crutches or on poor-maintained wheelchair

- Table, Bookshelf, Cabinet, Rack, etc.

Those shall be designed for convenience of disabled persons.

Table 2-11 shows the specifications and purpose of the main equipment, which have been judged appropriate in the Requested Japanese Assistance.

**Table 2-11 Specifications of Main Equipment**

Equipment	Main specifications or components	Grade	Q'ty	Purpose Appropriateness of equipment grade
LCD Projector	1 . LCD panel : 0.9 inch TFTX3 2 . Pixel : 786,432 / panel 3 . Lens zoom : manual x12 4 . Brightness : 2,000ANSI lumen or more 5 . Screen size : 40 x 300 inch	Medium	3	Used for computer presentation at training or seminar.
Visual presenter	1 . Light source 1) Optical zoom : Max. x10 motorized or more 2) Focus : Auto / electric 3) Iris : Auto / manual 2 . Camera 1) Shooting area : 350 x 260mm 2) Image pick up device : 1/3 or 1/4" CCD 3) Pixels : 410,000 pixels or more	Medium	2	Used for computer presentation at training or seminar, for magnification of materials
Digital video camera	1 . Video system : Mini DV 2 . TV system : PAL 3 . CCD 1) Image pick up device : 1/3"CCD x3 2) Pixel : 380,000 or more 3 . Lens : Automatic x10 or more	Medium	2	Used to keep the records of activities or to produce materials

Speaker set, portable	<ul style="list-style-type: none"> <li>1 . Wireless meeting amplifier <ul style="list-style-type: none"> <li>1) Output : 20W</li> <li>2) Input : Wired mic 1, Aux</li> <li>3) Distortion : Under 10%</li> </ul> </li> <li>2 . Lavalier wireless microphone <ul style="list-style-type: none"> <li>1) Frequency range : 794 ~ 865MHz(UHF)</li> </ul> </li> <li>3 . Hand-held wireless microphone <ul style="list-style-type: none"> <li>1) Frequency range : 794 ~ 865MHz(UHF)</li> </ul> </li> </ul>	Medium	3	Used for conference or seminar. Two types of microphone shall be included, the wireless hand-held microphone and tie pin type wireless microphone for persons with upper-limb disabilities.
Simultaneous interpretation set Portable type	<ul style="list-style-type: none"> <li>1 . Desk top transmitter <ul style="list-style-type: none"> <li>1) Transmitting frequency : 470MHz(5ch)</li> <li>2) RF carrier power : 5mW</li> </ul> </li> <li>2 . Portable receiver <ul style="list-style-type: none"> <li>1) Receiving freq. : 470MHz (5ch)</li> <li>2) Receiving sensitivity : 25dB or better</li> </ul> </li> </ul>	Medium	1	Used for conference or seminar. They shall accept up to 3 languages for future intentional conferences with neighboring countries. Supposedly used in various rooms in the Center, they shall be a movable type.
Conference set	<ul style="list-style-type: none"> <li>1 . Center amplifier <ul style="list-style-type: none"> <li>1) Input : Mic./Line</li> <li>2) Output : Line/Recording</li> </ul> </li> <li>2 . Chairman unit <ul style="list-style-type: none"> <li>1) Output : Recording/Line/Internal speaker</li> <li>2) Control : Priority button</li> </ul> </li> <li>3 . Delegate unit <ul style="list-style-type: none"> <li>1) Output : Recording/Line/Internal speaker</li> <li>2) Control : Speaker, on/off switch</li> </ul> </li> </ul>	Medium	1	Used for conferences or seminar with other organizations, or for internal meetings. They shall be for as many as 20 persons.
Speaker set, Wall mounted type	<ul style="list-style-type: none"> <li>1 . Mixer amplifier <ul style="list-style-type: none"> <li>1) Rated output : 120W</li> <li>2) Input : 1 to 3</li> </ul> </li> <li>2 . Wireless tuner : 794 ~ 865MHz <ul style="list-style-type: none"> <li>1) Channel : selectable</li> </ul> </li> </ul>	Medium	1	Used for conference or seminar. Two types of microphone shall be included, the wireless hand-held microphone and tie pin type wireless microphone for persons with upper-limb
Video editing system	<ul style="list-style-type: none"> <li>1 . Type : Computer basis</li> <li>2 . Applicable system : PAL/NTSC</li> <li>3 . Conversion : PAL/NTSC</li> <li>4 . VTR : Mini DV</li> <li>5 . Other function : Postrecording</li> </ul>	Medium	1	Used to produce educational or publicity materials, or to edit the videotapes brought in by trainees from various countries.
Computer set A	<ul style="list-style-type: none"> <li>1 . Main unit <ul style="list-style-type: none"> <li>1) Processor : Pentium 4, 2GHz or higher</li> <li>2) Hard disk drive : 40 GB</li> <li>3) Optical drive : DVD+CD-R/RW</li> <li>4) LAN : 10/100Base-T, PCI Ethernet</li> </ul> </li> <li>2 . Monitor <ul style="list-style-type: none"> <li>1) Display size : 17 inch, CRT</li> </ul> </li> </ul>	Medium	1	Used for general training at the Computer Training Center. The set shall be intended for 2 instructors and as many as 20 trainees and it shall include assistive device set designed to facilitate use of computers by persons with low vision or limb disability.
Computer set B	<ul style="list-style-type: none"> <li>1 . Main unit <ul style="list-style-type: none"> <li>1) Processor : Pentium 4, 2GHz or higher</li> <li>2) Hard disk drive : 40 GB</li> <li>3) Optical drive : DVD+CD-R/RW</li> <li>4) LAN : 10/100Base-T, PCI Ethernet</li> </ul> </li> <li>2 . Monitor <ul style="list-style-type: none"> <li>1) Display size : 17 inch, CRT</li> </ul> </li> </ul>	Medium	2	Used for retrieval of information at the Information Resource Center. 2 sets shall be necessary for providing visitors with various information on activities of the Center or on assistance of disabled persons.
Computer set C	<ul style="list-style-type: none"> <li>1 . Main unit <ul style="list-style-type: none"> <li>1) Processor : Pentium 4, 2GHz or higher</li> <li>2) Hard disk drive : 40 GB</li> <li>3) Optical drive : DVD+CD-R/RW</li> <li>4) LAN : 10/100Base-T, PCI Ethernet</li> </ul> </li> <li>2 . Monitor <ul style="list-style-type: none"> <li>1) Display size : 17 inch, CRT</li> </ul> </li> </ul>	Medium	2	Used for production of braille documents by Braille printer at the Multi-media production room. Since 2 different kinds of Braille printer is requested according to its purpose, the one for cut sheet paper and the other for continuous tractor-fed paper, 2 sets of computer shall also be necessary
Computer set D	<ul style="list-style-type: none"> <li>1 . Main unit <ul style="list-style-type: none"> <li>1) Processor : Pentium 4, 2GHz or higher</li> <li>2) Hard disk drive : 40 GB</li> <li>3) Optical drive : DVD+CD-R/RW</li> <li>4) LAN : 10/100Base-T, PCI Ethernet</li> </ul> </li> <li>2 . Monitor <ul style="list-style-type: none"> <li>1) Display size : 17 inch, CRT</li> </ul> </li> </ul>	Medium	1	1 set to be used for production of CD book in DAISY format at Multi-media production room
Computer set E	<ul style="list-style-type: none"> <li>1 . Processor : Pentium4, 1.6GHz or higher</li> <li>2 . Monitor : TFT 14 inch or more</li> <li>3 . Hard disk drive : 40GB</li> <li>4 . Optical drive : DVD+CD-R/RW</li> <li>5 . LAN : 10/100Base-T</li> </ul>	Medium	3	Used for presentation at training or seminar. As they will be used in various situations, they shall be a laptop type.

Network set	<ul style="list-style-type: none"> <li>1 . Server set</li> <li>1) Type : Tower type</li> <li>2) Processor : Pentium4, 2GHz or higher</li> <li>3) Monitor : TFT 17 inch or more</li> <li>4) Hard disk drive : 120GB, PAD</li> <li>5) Optical drive : DVD+CD-R/RW</li> <li>6) LAN : 10/100Base-T</li> </ul>	Medium	1	2 server units shall be supplied, the one at the Training bloc and the other at the Administration bloc. Those 2 networks are connected by router unit; access from the Administration bloc to the Training bloc shall be allowed while the opposite access interdicted.
Braille printer for Cut sheet paper	<ul style="list-style-type: none"> <li>1 . Paper : Single cut sheet paper</li> <li>2 . Double side print : Possible</li> <li>3 . Speed (both side) : 75 characters/sec. Or faster</li> <li>4 . Acoustic hood</li> <li>Noise level : 55dB(A) or less</li> <li>Material : Fiber glass</li> </ul>	Medium	1	Used to produce braille documents or materials for conferences or seminar, cut sheet paper type
Braille printer for Continuous tractor-fed Paper	<ul style="list-style-type: none"> <li>1 . Paper : Continuous tractor-fed paper</li> <li>2 . Double side print : Possible</li> <li>3 . Speed (both side) : 75 characters/sec. Or faster</li> <li>4 . Acoustic hood</li> <li>Noise level : 60dB(A) or less</li> <li>Material : Fiber board and noise absorbing materials</li> </ul>	Medium	1	Used to produce braille documents or materials for conferences or seminar, continuous tractor-fed paper type
Tactile image maker	<ul style="list-style-type: none"> <li>1 . Speed : 10 seconds/sheet or faster</li> <li>2 . Embossing item : Map, sign, graph, chart, etc.</li> <li>3 . Safety function : Provided</li> </ul>	Medium	2	Apparatus designed to print out characters, drawings, pictures, etc. as a tangible, raised line material. Intended to foster imagination and creativity of persons with low vision by allowing them to feel and identify what they wrote.
CCTV (magnification and Display machine)	<ul style="list-style-type: none"> <li>1 . TV monitor : 14 inch, color</li> <li>2 . Camera : 1/4 inch CCD, 300000 pixel or more</li> <li>3 . Magnification : Max x21, Min x4</li> <li>4 . Viewing mode : Color, Monochrome (+,-)</li> </ul>	Medium	2	An apparatus designed to project in the TV screen the images of books, maps, etc. captured by a built-in CCD camera. They will be installed in the Information Recourse Center and used by persons with low vision to read materials.
CD book player	<ul style="list-style-type: none"> <li>1 . Type : Slot in type</li> <li>2 . Function : Recording / Playing</li> <li>3 . Player format : CD-DA, DAISY202/20, MP3</li> <li>4 . Speaker microphone : Built in</li> <li>5 . Interface : USB port</li> </ul>	Medium	2	An apparatus designed to play the CD book produced in DAISY (Digital Accessible Information System) format. It shall have such functions as skimming, page jumping, skipping, speed adjustment, etc. It will be installed in the Information Recourse Center and used to read CD materials.
Motorized wheelchair	<ul style="list-style-type: none"> <li>1 . Type : Motorized, adult, foldable</li> <li>2 . Operation : Joystick, adjustable, right hand</li> <li>3 . Traction : Rear wheel drive</li> <li>4 . Power requirement : 24V or 2x12V rechargeable battery (gel battery)</li> </ul>	Medium	3	Used by seriously disabled persons who attend seminar for promotion of independent living.
Bus with a lift	<ul style="list-style-type: none"> <li>1 . Seating capacity : 20 seats with wheelchair</li> <li>2 . Wheelchair capacity : 6</li> <li>3 . Wheelchair fixing device : 4 point fixing, Built in type</li> <li>4 . Lift : Hydraulic and motorized</li> </ul>	Medium	1	Estimated by the expected volume of activities of the Center, it shall have a seating capacity of up to 20 persons. It will be used by trainees, helpers, instructors, interpreters, etc. for on site training. It also shall be equipped with a lift to facilitate convenience of wheelchair users and shall carry 6 wheelchairs. It shall also be able to accommodate motorized wheelchairs.

### (3) Contents of equipment

After examining the requested equipment, the following equipment shall be supplied under the Requested Japanese Assistance. Appendices-7 “Equipment Distribution Plan” shows a distribution plan of equipment.



**Table 2-12 Equipment List**

Item No.	Equipment	Q'ty	Procured	Country Of Origin	Agent	
					Spare parts Consumables	Maintenance
1	LCD projector	3	Thailand	Japan	○	
2	Visual presenter	2	Thailand	Japan	○	
3	Digital video camera	2	Thailand	Japan	○	
4	Screen, wall mounted type	4	Thailand	Japan		
5	Screen, portable type	4	Thailand	Japan		
6	Overhead projector	1	Thailand	Japan	○	
7	Speaker set, portable type	3	Thailand	Japan	○	○
8	Simultaneous interpretation set, portable type	1	Thailand	Japan	○	○
9	Conference set	1	Thailand	Japan		○
10	Speaker set, wall mounted type	1	Thailand	Japan	○	○
11	TV monitor & VTR set	6	Thailand	Japan		
12	Video editing system	1	Thailand	Japan	○	○
13	Computer set A	1	Thailand	* *		○
14	Computer set B	2	Thailand	* *		○
15	Computer set C	2	Thailand	* *		○
16	Computer set D	1	Thailand	* *		○
17	Computer set E	3	Thailand	* *		○
18	Network set	1	Thailand	* *	○	○
19	Scanner	1	Thailand	Japan		○
20	Laser printer	1	Thailand	Japan	○	○
21	Photocopier	2	Thailand	Japan	○	○
22	Printer	1	Thailand	Japan	○	○
23	Binding machine	1	Thailand	Japan	○	○
24	Braille printer for cut sheet paper	1	Thailand	* *	○	○
25	Braille printer for continuous tractor-fed paper	1	Thailand	* *	○	○
26	Tactile image maker	2	Thailand	* *	○	○
27	CCTV (Magnification and Display machine)	2	Thailand	* *	○	○
28	CD book player	2	Thailand	Japan		
29	Whiteboard	4	Thailand	Japan		
30	Motorized wheelchair	3	Thailand	* *		○
31	Wheelchair, standing type	2	Thailand	* *		○
32	Wheelchair, reclining type	2	Thailand	* *		○
33	Wheelchair, manual standard type	6	Thailand	Japan		
34	Washing machine	3	Thailand	Japan		
35	Linen trolley	2	Thailand	Japan		
36	Laundry trolley	2	Thailand	Japan		
37	Refrigerator, type A	2	Thailand	Japan		
38	Refrigerator, type B	15	Thailand	Japan		
39	Food trolley	2	Thailand	Japan		
40	Bus with a lift	1	Thailand	Japan	○	○
41	First aid set	1	Thailand	Japan		
42	Maintenance tool set	1	Thailand	Japan		
43	Bed	32	Thailand	Thailand		
44	Bedside cabinet	32	Thailand	Thailand		
45	Side unit	15	Thailand	Thailand		
46	Wardrobe	32	Thailand	Thailand		
47	Chair, type A	84	Thailand	Thailand		
48	Chair, type B	20	Thailand	Thailand		
49	Chair, type C	32	Thailand	Thailand		
50	Chair, type D	80	Thailand	Thailand		
51	Lobby chair	12	Thailand	Thailand		
52	Desk, type A	20	Thailand	Thailand		
53	Desk, type B	20	Thailand	Thailand		
54	Desk, type C	2	Thailand	Thailand		
55	Desk, type D	2	Thailand	Thailand		
56	Desk, type E	5	Thailand	Thailand		

57	Desk, type F	2	Thailand	Thailand		
58	Desk, type G	32	Thailand	Thailand		
59	Conference table	1	Thailand	Thailand		
60	Lobby table	9	Thailand	Thailand		
61	Round table	1	Thailand	Thailand		
62	Bookshelf	10	Thailand	Thailand		
63	Magazine rack	2	Thailand	Thailand		
64	Showcase	3	Thailand	Thailand		
65	Carrel desk, type A	2	Thailand	Thailand		
66	Carrel desk, type B	2	Thailand	Thailand		
67	Reception counter	1	Thailand	Thailand		
68	Storage cabinet	24	Thailand	Thailand		
69	Storage rack, type A	18	Thailand	Thailand		
70	Storage rack, type B	4	Thailand	Thailand		
71	Bench	4	Thailand	Thailand		
72	Bed for duty room	1	Thailand	Thailand		

\* \* Equipment that can be the products of third country origin

### 2-2-3 Basic Design Drawing

The following drawing shows the basic design plan of the Center building based on the examinations on requested facilities.

Site Plan

1F Plan - Administration Building

2F Plan - Administration Building

3F Plan - Administration Building

Elevations - Administration Building

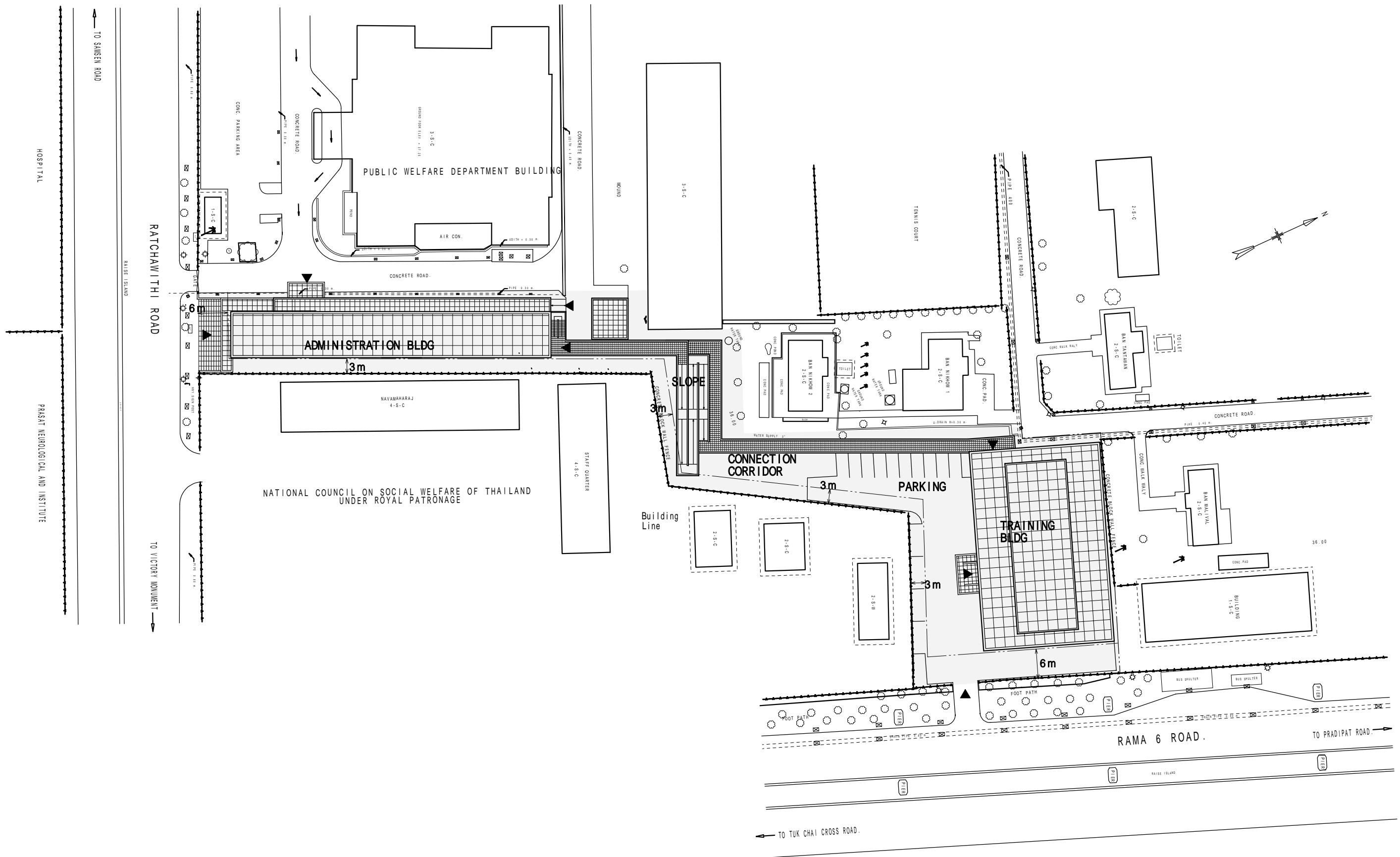
Section - Administration Building

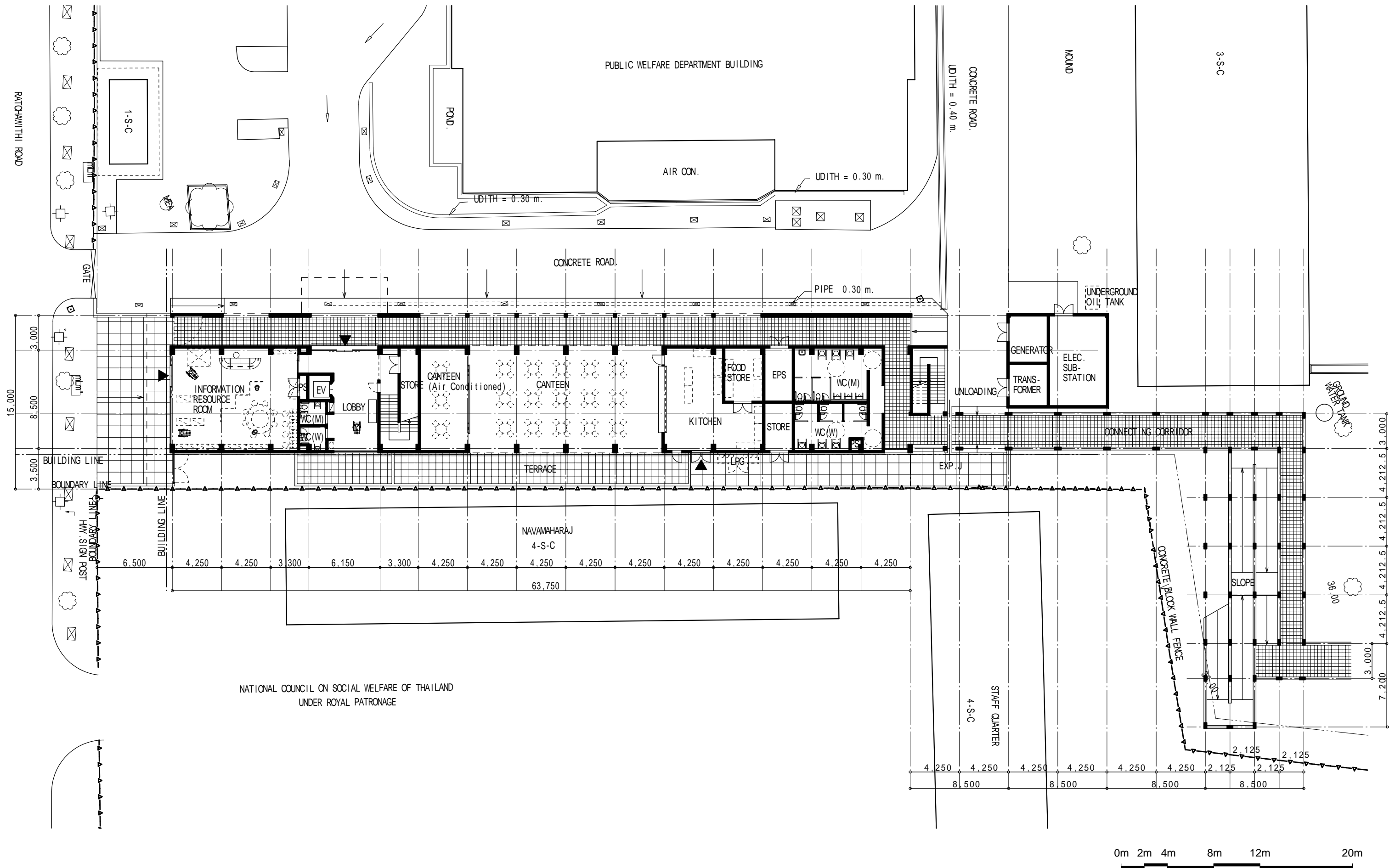
1F Plan - Training Building

2F Plan - Training Building

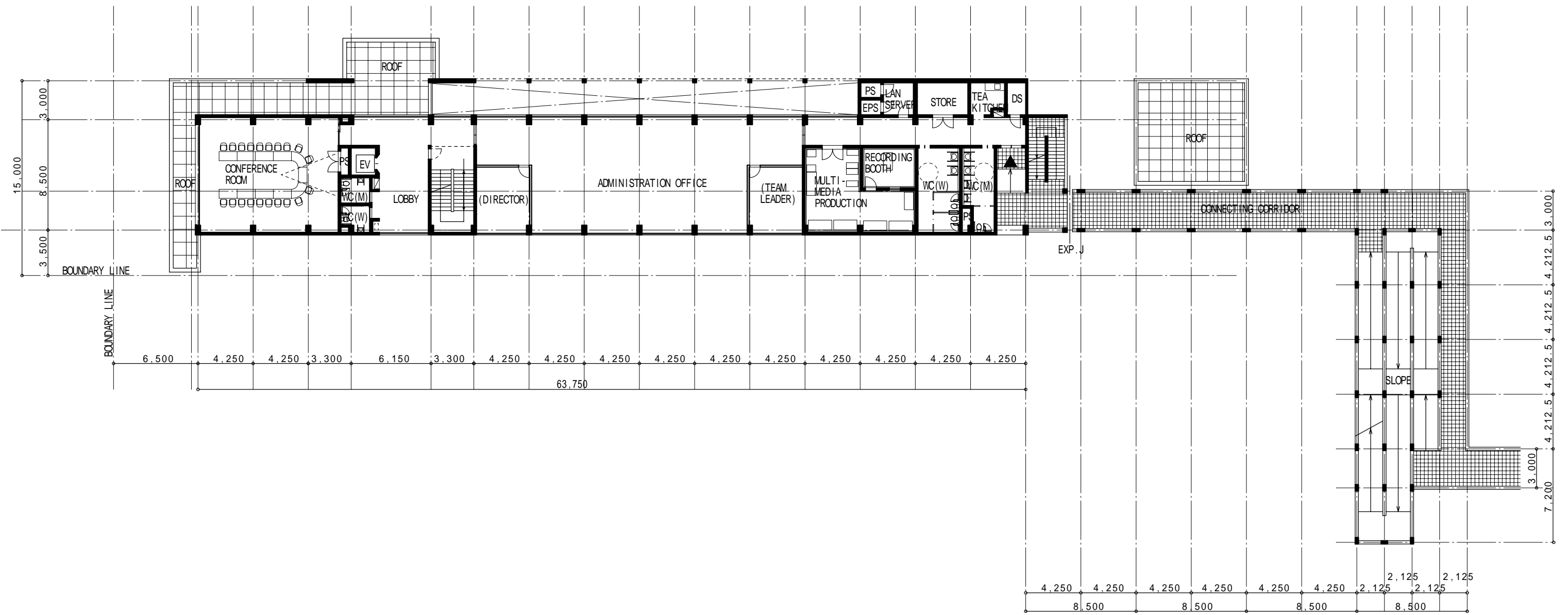
Elevations - Training Building

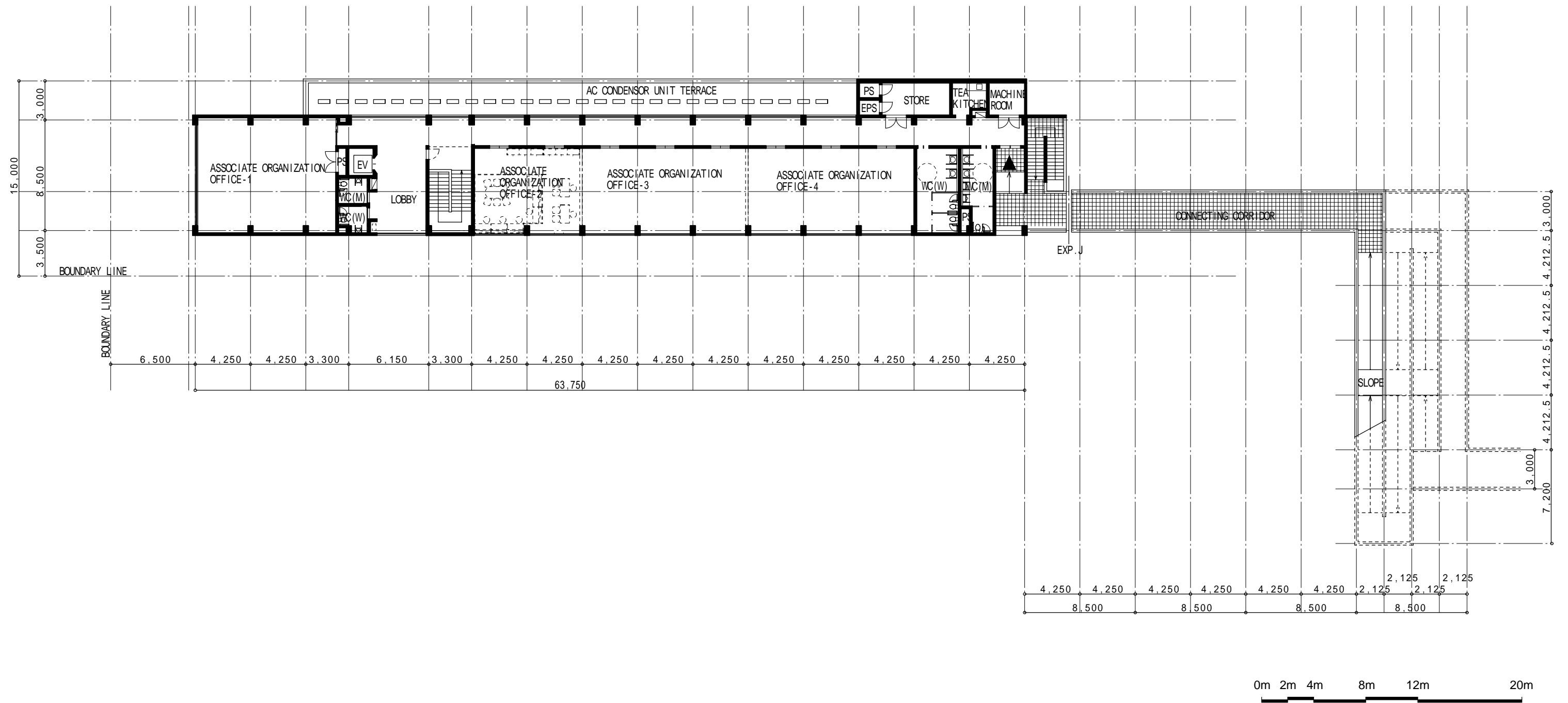
Sections - Training Building

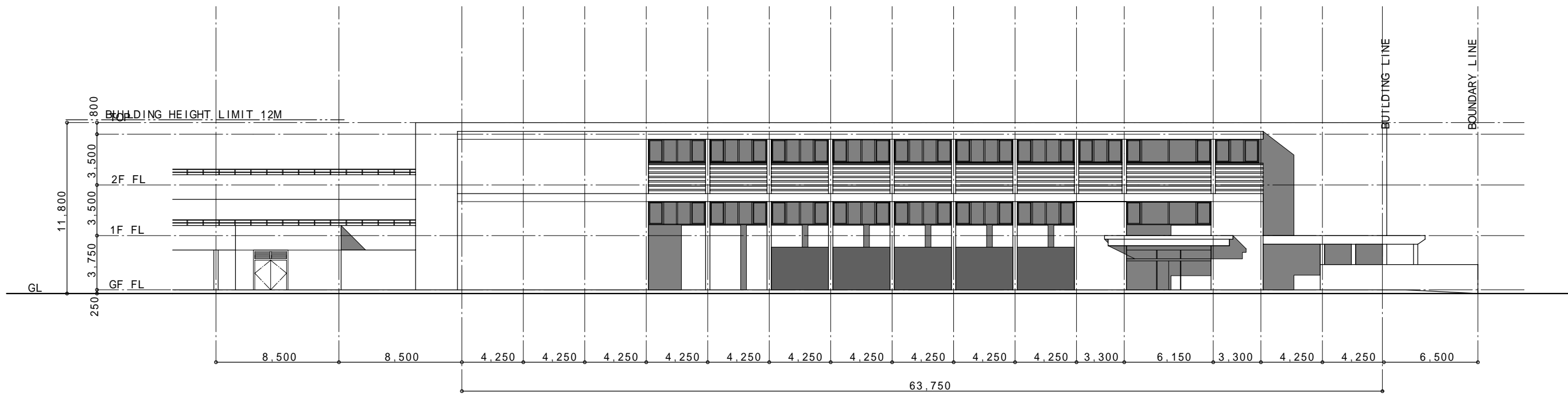




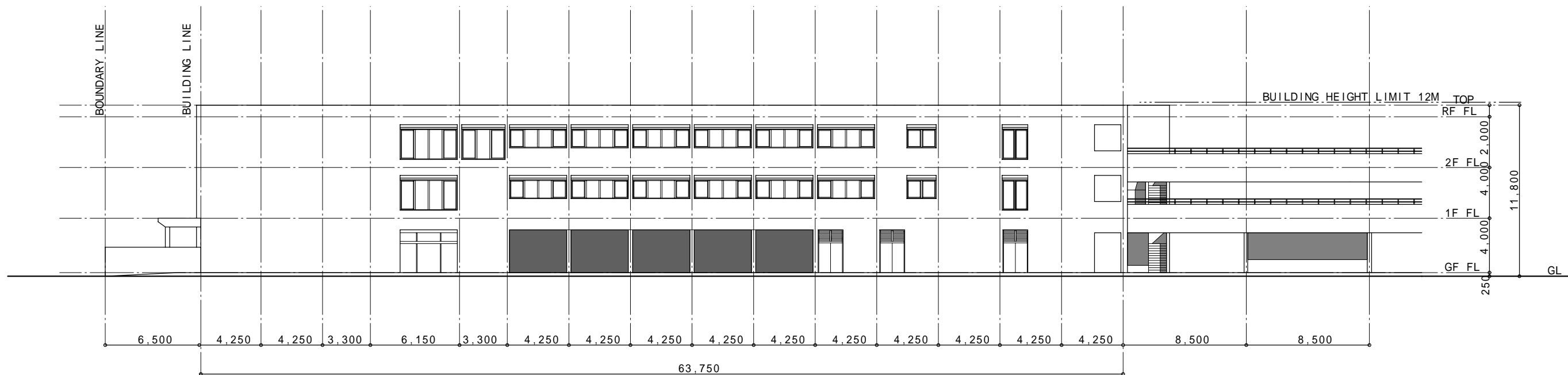
NATIONAL COUNCIL ON SOCIAL WELFARE OF THAILAND  
UNDER ROYAL PATRONAGE





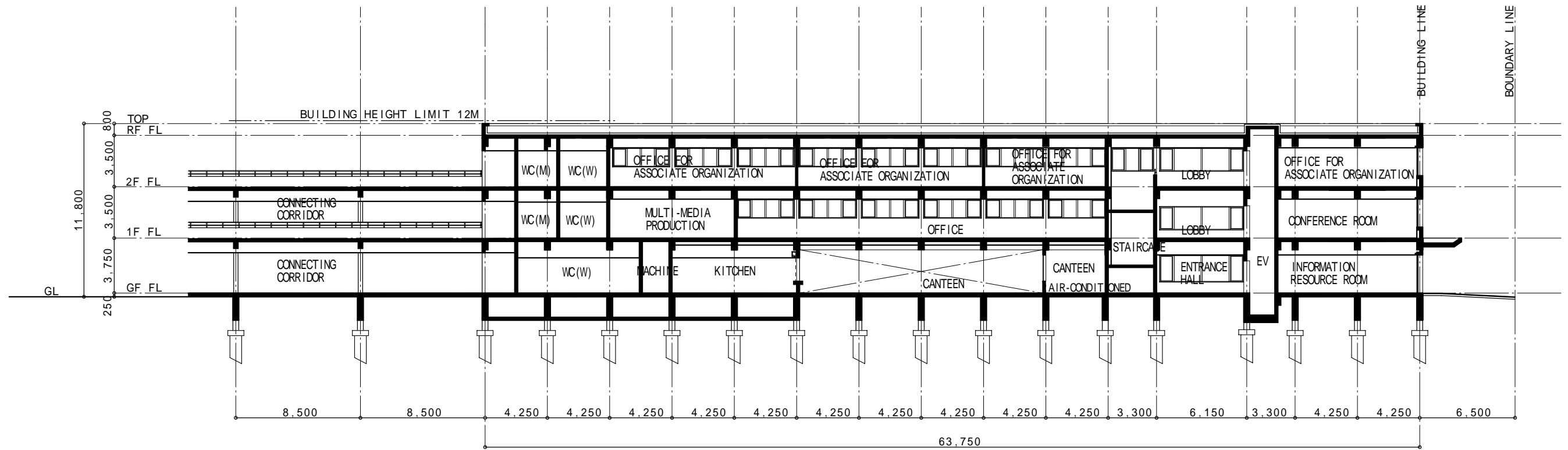


WEST ELEVATION

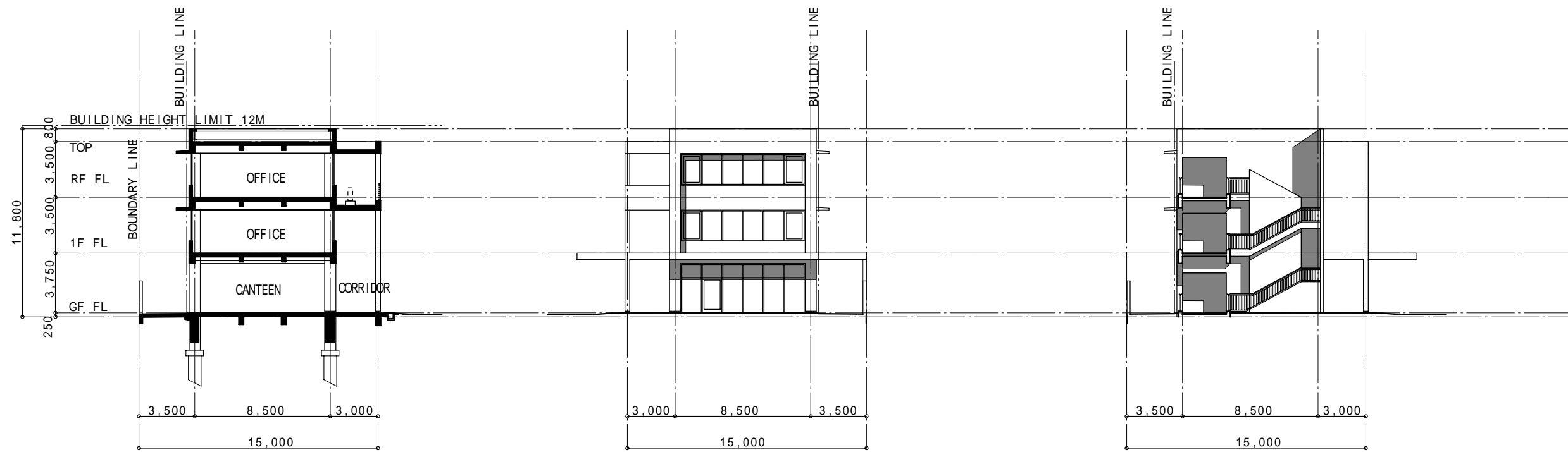


EAST ELEVATION





SECTION



SECTION

SOUTH ELEVATION

NORTH ELEVATION



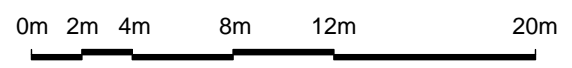
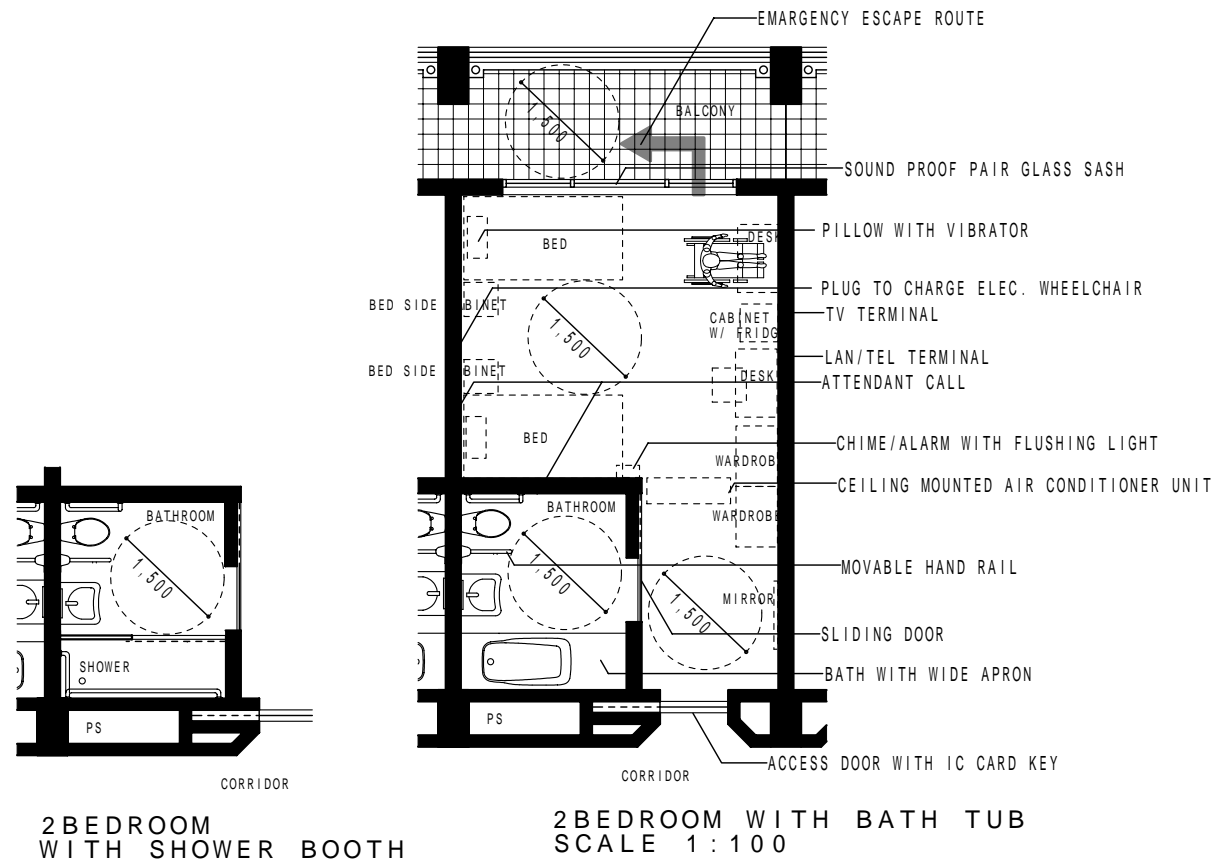
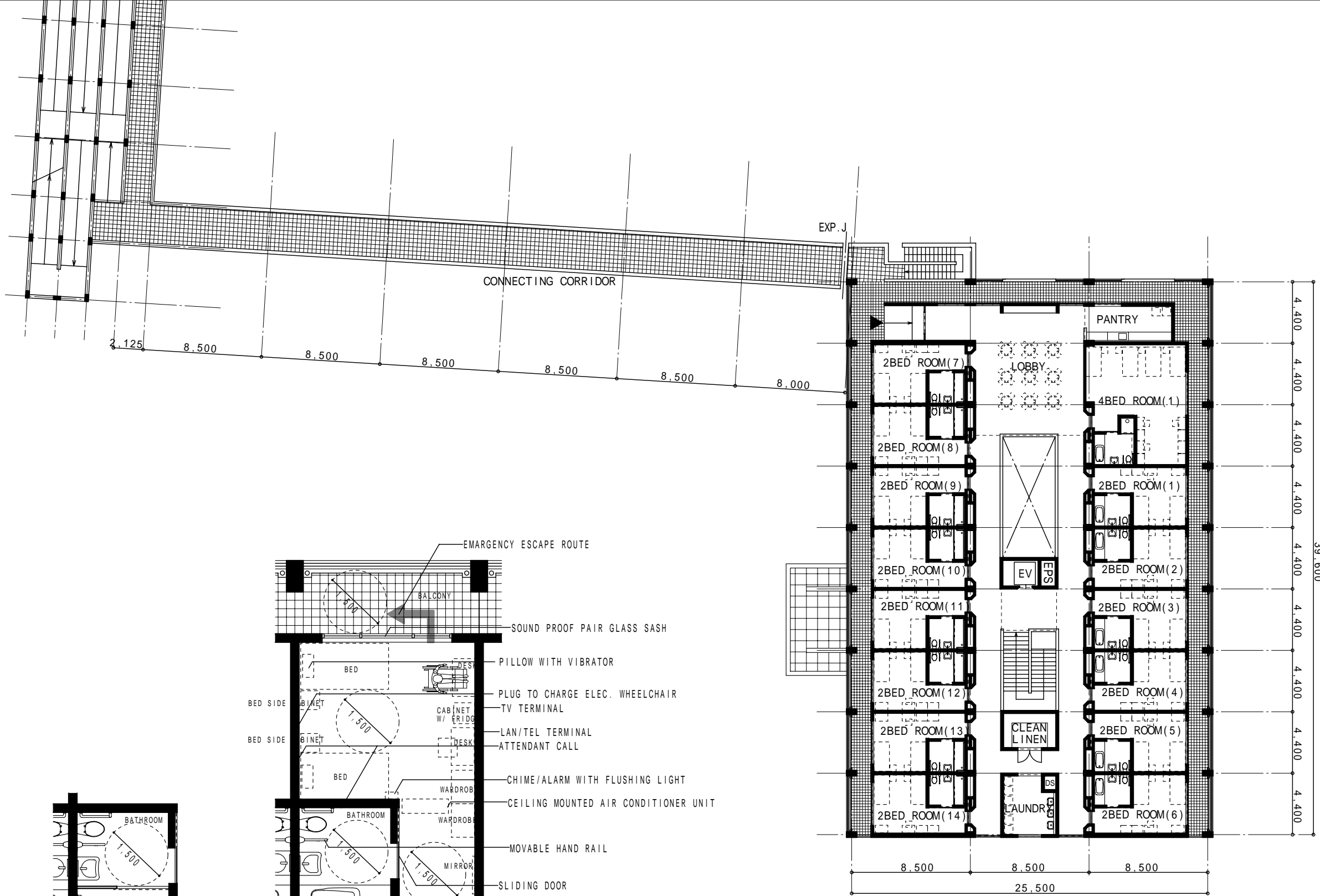


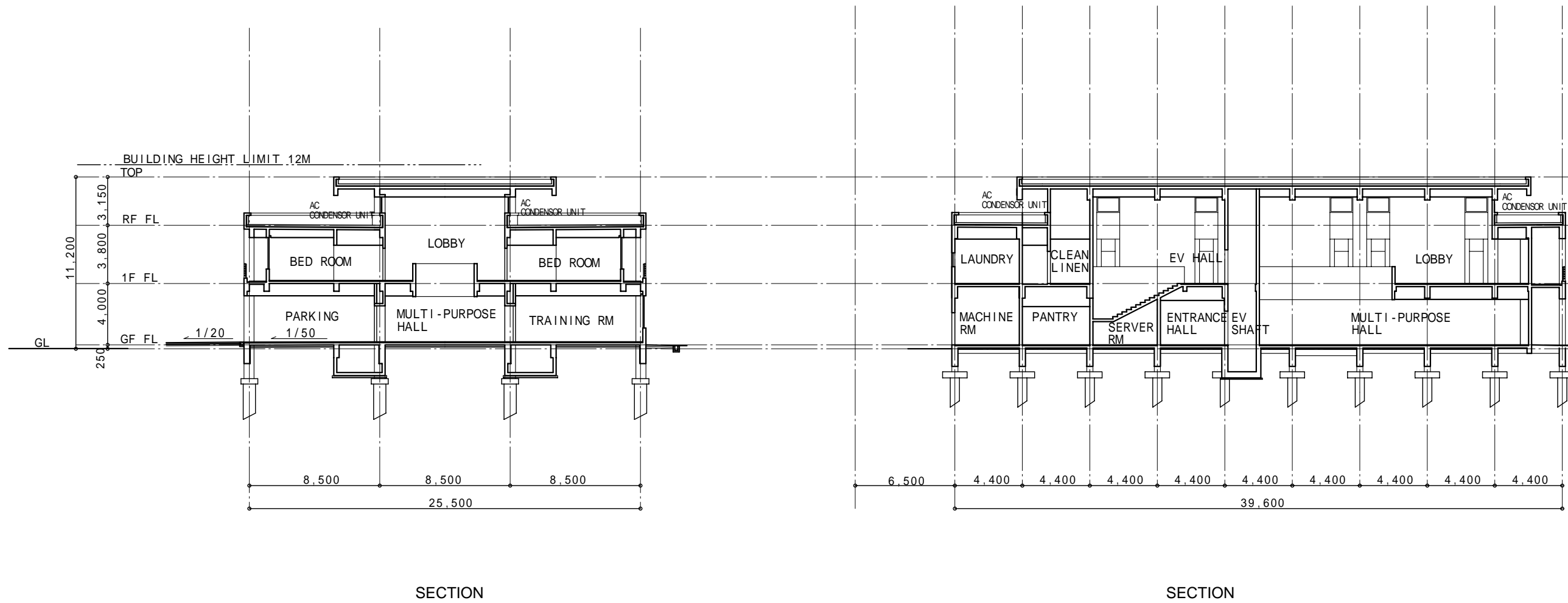


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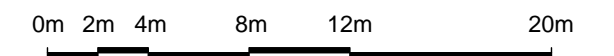
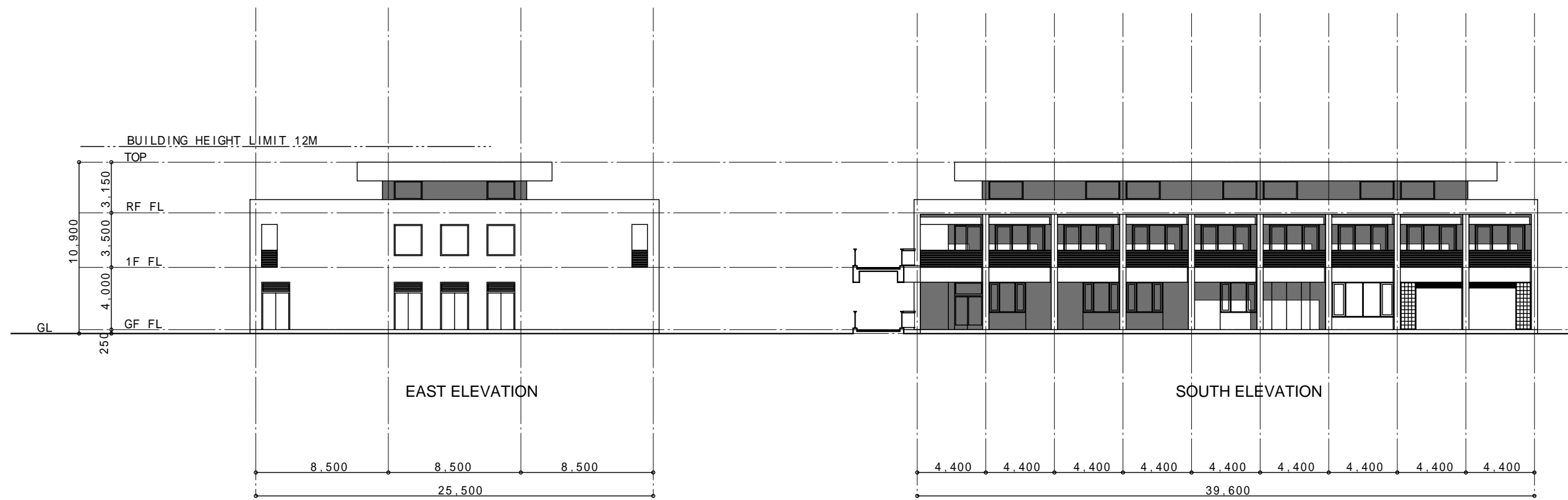
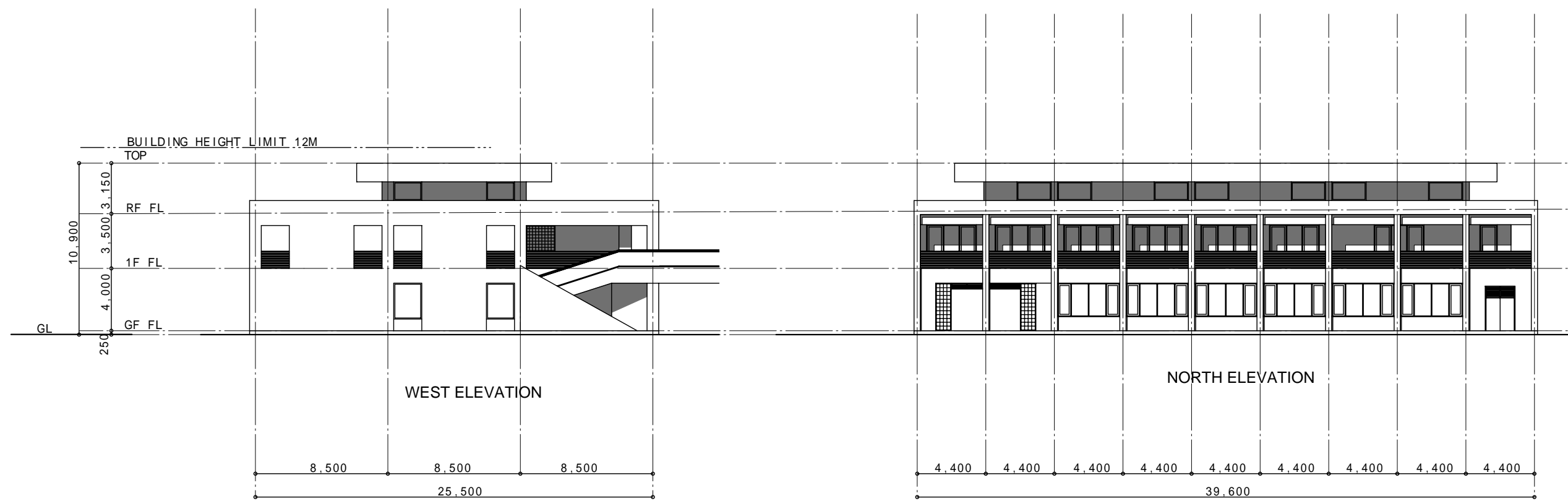




SECTION

SECTION





## **2-2-4 Implementation Plan**

### **2-2-4-1 Implementation Policy**

The Requested Japanese Assistance contains building work and equipment work, which shall be executed in accordance with the framework of Japan's grant aid scheme.

The Requested Japanese Assistance will be implemented after signing of Exchange of Notes by the two Governments. This procedure will be followed by fulfillment of the consultant agreement and preparation of detail design documents. Upon completion of the detail design documents, tendering for the selection of the construction contractor (hereinafter referred to as "the Contractor") and the equipment supply contractor (hereinafter referred to as "the Supplier") will be held. The Contractor and Supplier selected through the tenders shall then execute both building work and equipment work.

#### **(1) Implementing Organization**

This Project is implemented under the jurisdiction of the following department:

Responsible organization: Department of the Public Welfare (DPW) under the Ministry of Labor and Social Welfare

DPW will bear overall responsibility for the implementation of the Project as a counterpart of the Government of Thailand. The Director-General or Deputy Director-General of DPW will be the signer for the official documents for the Project. After public sector reforms in the Kingdom of Thailand around October 2002, a new disability concerned department or a new ministry tentatively entitled "Ministry of Social Development and Human Security" will take over the responsibility of the Project.

Consultative organization: Sub-Committee for the Asia-Pacific Development Center on Disability

The committee deliberates upon the contents of this Project. Members of the committee are appointed by the Minister.

Execution organization: Office for the Committee of Rehabilitation on Disabled Persons (OCRDP) belong to DPW under the Ministry of Labor and Social Welfare

OCRDP take necessary measures for the administration and implementation of this project under

DPW. After public sector reforms in the Kingdom of Thailand around October 2002, a new division solely for the Center under a new disability concerned department will take over the responsibility of OCRDP for the Project.

## (2) Consultant

Immediately after the signing of Exchange of Notes between both governments, the Government of Thailand will conclude a consultant agreement with a selected Japanese consultant in accordance with the framework of grant aid extended by the Government of Japan. The consultant will carry out the following services in compliance with the provisions of the consultant agreement.

**Detail Design:** Preparation of the detail design documents (including specifications and other technical documents)

In Detail Design stage, the Consultant will prepare the tender documents including detailed specifications and drawings of building work and equipment work based on the Basic Design, and tender instructions and condition of the contract.

**Assistance of Tendering:** Assistance of tendering to select the Contractor and the Supplier, and concluding the contract.

In Tendering stage, the Consultant will provide the tendering services, e.g. public notice of tender, receipt of applications, pre-qualification, distribution of tender documents, tender opening, evaluation of the tender results. Furthermore, the Consultant will assist on concluding the contract between the Government of Thailand and the Contractor and the Supplier, as well as report to the Japanese Government.

**Supervision:** Supervision of building work and equipment work including installation and instruction for operation and maintenance.

In Supervision stage, the Consultant will ensure that building work and equipment work will be carried out with justice in accordance with the contract documents as well as instructions, advice and coordination, for implementation of the Project. The Supervision service includes the followings:

- Instruction, advice and coordination to the Contractor and Supplier  
The Consultant will examine the construction schedule, construction plan, the building materials procurement plan and the equipment procurement / installation plan, and shall give the instruction, advice and coordination to the Contractor and the Supplier.
- Examination and approval of working drawings on building work  
The Consultant will examine, instruct and approve the shop drawings and other relevant documents submitted by the Contractor.
- Confirmation and approval of building materials and equipment  
The Consultant will confirm and approve the building materials and equipment proposed by the Contractor and the Supplier in compliance with the contract documents.
- Factory inspection  
The Consultant shall inspect the building materials and equipment at the manufacturers' factories to ensure the quality and performance.
- Reporting progress of work  
The Consultant shall grasp the actual conditions of the construction site and progress, and report them to both governments of Thailand and Japan.
- Completion inspection and commissioning test  
Upon completion of building work and Equipment work, the Consultant will conduct a final inspection and a commissioning test of the completed facilities and installed equipment to ensure that all the works are completed in compliance with the contract documents, and will submit the completion certificate to the Government of Thailand.
- Training in operation of the equipment  
Some equipment will require expertise on operation and maintenance. Therefore, the persons concerned to operation of the facilities will be required to receive on-site training in proper equipment operation during the installation / adjustment / test-run period. The Consultant shall give instruction and advice concerning the training program.

(3) Contractor and Supplier

The Contractor will carry out building work and the Supplier will procure, supply and install equipment in accordance with the contract documents, and instruct on operation and maintenance for these equipment. The Supplier will also ensure aftercare services to procure spare parts and consumable parts for the major equipment within the guarantee period from the local suppliers, as well as technical assistance.

(4) Japan International Cooperation Agency (JICA)

To ensure compliance with Japan's Grand Aid Scheme, Japan International Cooperation Agency (JICA) will monitor conclusions and implementations of the agreements/contracts between the implementation agency of Thailand and the Consultant, the Contractor and the Supplier, and have discussions with the implementation agency of Thailand for promotion of the project when necessary.

**2-2-4-2 Implementation Conditions**

(1) Building Work

Building Permit Procedure

In Thailand, there are regulations on facility planning and construction. Upon the completion of the detail design, the plan will be notified to the Bangkok Metropolitan Administration, by the implementing organization in Thailand along with designated necessary the drawings and planning data according to the regulation. Building materials and machinery equipment related to fire protection regulations shall also comply with industrial standards in Thailand.

Consideration of effect on neighborhood

There are homes for girls, DPW's office and a dormitory inside the project site, and also many health and social welfare facilities surrounding the project site. Consequently, necessary measures to reduce impacts of noise, vibration, waste, traffic jam occurred from neighborhood shall be considered in the building work plan.



## (2) Procurement of Equipment

### Schedule Management

As the equipment will be delivered to a newly constructed facility, schedule management shall be carefully planned under mutual cooperation among the constructor, the supplier and the consultant, considering delivery of equipment, installation, inspection, training, etc.

### Technician

Under the Requested Japanese Assistance, engineers shall be dispatched from either manufacturers or local agent for equipment installation/adjustment, operation and maintenance training

## **2-2-4-3 Scope of Works**

### (1) Building Work

#### Work under Japan's Grant Aid

- Construction of the buildings described in the Basic Design Study report
- Electrical, mechanical and sanitary installations
- Water circulation, electric cabling and drainage work within the premises
- Installation, removal of temporary fence and temporary building such as warehouse for construction
- Payments for electricity, water and telephone used for construction
- Transportation of materials and equipment to Thailand
- Inland transportation of materials and equipment in Thailand

#### Work under the Government of Thailand

- Securing the site for the Project
- Removing existing structures, trees and any other obstacles for the building work from the Project site
- Landscaping work such as planting and gardening
- Construction of boundary fence and other necessary exterior structures
- Electricity supply up to the boundary line of the Project site

- Extension of telephone lines up to the boundary line of the Project site
- Extension of water supply and storm water line up to the boundary line of the Project site
- Extension of public sewage line up to the boundary line of the Project site
- Provision of sites for temporary construction site office, workshops and material storage places
- Connection of temporary supply line of electricity, telephone, water and drainage

(2) Equipment Work

Work under Japan's Grant Aid

- Procurement, transportation, loading of the equipment to the Project site
- Installation and test operation of the equipment
- Explanation, operation and maintenance training for the equipment

Work under the Government of Thailand

- Provision of space for temporary storage for the equipment
- Securing accessibility to the site for equipment transportation
- Exemption from internal taxes and custom duty which may be imposed in Thailand

**2-2-4-4 Consultant Supervision**

(1) Supervision Policy on Construction and Procurement

In accordance with the Japan's Grand Aid, the Consultant will organize the Project team to ensure smooth implementation of the Project based on the policy of the basic design. The supervision policy on building work and equipment work are as stated below.

- To keep close communication with the persons in charge of the Project of the both Governments to ensure completion of building work and equipment work without delay.
- To give proper advice and instruction promptly to the Contractor and the Supplier in justice
- To give proper advice and instruction promptly concerning installation of equipment and operation of equipment after handover.
- To confirm completion of equipment installation and construction of the Center in compliance with conditions of the contract, and attend handover of equipment and the Center, and conclude the services with approval of the Government of Thailand.

(2) Supervision Plan on Building Work and Equipment Work

Judging from the scale of the Project, it is advisable that, in carrying out the aforementioned tasks, the Consultant shall dispatch one consultant/engineer to Thailand throughout the term of works. The Consultant shall also dispatch necessary consultants/engineers to the site at relevant occasions for inspection, instruction and coordination, and at the same time assign necessary consultants/engineers in Japan to establish communication and a backup system. The Consultant shall report the progress of the works, payment procedures, completion of construction work and equipment work, and any other relevant matters to the competent agencies of the Japanese Government.

**2-2-4-5 Procurement Plan**

(1) Building Work

Major building materials are produced and available in Thailand. There are also many factories of foreign building material suppliers exporting their products to other countries. Therefore, no problem will be expected regarding the procurement of maintenance materials after completion of the Project.

The following table indicates the procurement source of materials / equipment for building, electrical, plumbing and mechanical work.

**Table 2-13 Procurement Plan of Building Materials**

	<b>Material / Equipment</b>	<b>Country</b>	<b>Remarks</b>
Building	Cement	Thailand	Produced locally, based on TIS standard
	Sand / Gravel	Thailand	Produced locally
	Re-bar	Thailand	Produced locally
	Form	Thailand	Produced locally
	Aluminium windows	Thailand	Produced locally
	Steel doors	Thailand	Produced locally
	Hardware	Thailand	Produced locally and imported (procured in local market)
	Face brick	Thailand	Produced locally
	Floor tiles	Thailand	Produced locally and imported (procured in local market)
	Paint	Thailand	Produced locally
Electrical	Distribution panel	Thailand	Produced locally, imported parts assembled locally
	Lighting fixture	Thailand	Produced locally, imported parts assembled locally
	Electric cable cover (PVC pipe)	Thailand	Produced locally
	Electric wire, cable	Thailand	Produced locally
Mechanical	Air-conditioning unit	Thailand	Produced locally, imported parts assembled locally
	Ventilation fan	Thailand	Produced locally

Sanitary	Pump	Thailand	Imported (procured in local market)
	Sanitary fittings	Thailand	Produced locally
	PVC pipe	Thailand	Produced locally
	Water tank	Thailand	Produced locally

(2) Procurement of equipment

Procurement of equipment

The equipment that require no spare parts or consumables shall be Japanese or Thai products. On the other hand, for the equipment that require them or for the equipment that need maintenance services by manufacturers, they shall be selected from the manufacturers capable of providing spare parts/consumables and maintenance services through the distributors or agents in Thailand. Procurement of third-country products shall also be considered.

Table 2-11 "Equipment List" indicates the contents of equipment that can be the products of third country origin and the equipment that shall require distributors or agents in Thailand.

Method of transportation

Since all the equipment are procured in Thailand, the equipment will be delivered directly to the project site under on the Contractor's responsibility.

**2-2-4-6 Quality Control Plan**

(1) Building Work

Construction supervision under this Project is to be conducted in compliance with the following criteria in order to achieve the designated quality of building work. These criteria are based on Thailand or Japan's relevant standards in principle.

**Table 2-14 Criteria for Quality Control**

	Typical criteria for quality control			Remarks
	Items	Target value	Testing method	
Earth work	Inclination	Within accepted range	Slant guage, observation	The consultant will instruct the Contractor to submit the Summary of construction techniques which include types of inspection, target value, contents of inspection, method of testing, curing, construction, and check prior to construction.
	Acuracy of floorlevel	+0 ~ -5cm	Leveling, observation	
	Height of foundation Height of leveling concrete	+0 ~ -3cm  ± 1cm	As above  As above	
Reinforcing bar work	Minimum concrete covering thickness	Sides not in contact with the earth: 30m/m Sides in contact with the earth: Foundation 60m/m Others 40m/m	Observation, measurement	As above
	Processing precision	Tolerable size: Stirrup / hoop  Others ± 5m/m ± 10m/m		
	Tensile strength	2 pieces taken from 1 lot at site (1lot= 20 tons for each diameter)	Tested at factory at the presence of consultant	
Concrete work (freshly mixed concrete)	Compressive strength	Planned strength over 210kg/cm <sup>2</sup>	3 samples x 3 types for every batch as well as every 150 m <sup>3</sup> (tested at site at the presence of consultant)	As above
	Slump level	15cm ± 2.5cm	Once for every batch as well as every 150 m <sup>3</sup> (tested at site at the presence of consultant)	
	Chloride level	Under 0.3kg/m <sup>3</sup>	As above	
Masonry work	Compressive strength	40 ~ 70kg/cm <sup>2</sup>	Tested at manufacture at the presence of consultant Observation	As above
	Other materials (cement, re-bars)			
Plaster work Paint work Roof waterproofing work Doors / windows	Material, storage construction, compound, finishing thickness, curing, precision			As above
Plumbing work	Water supply pipe Sewage pipe	Air pressure test Water filling test	Tested at the presence of consultant	As above
Electrical work	Electrical cabling	Insulation resistance test Performance test	As above	As above

**2-2-4-7 Implementation Schedule**

Upon the signing of Exchange of Notes designating the implementation of the Project, the following work shall be executed as shown in Table 2-15.

(1) Detail Design

After conclusion of the consultant agreement with DPW, the Consultant shall start to prepare a detail design, equipment specifications and tender documents in accordance with the Basic Design Study Report. In the meantime the Consultant shall obtain approval for those documents from the Thailand side.

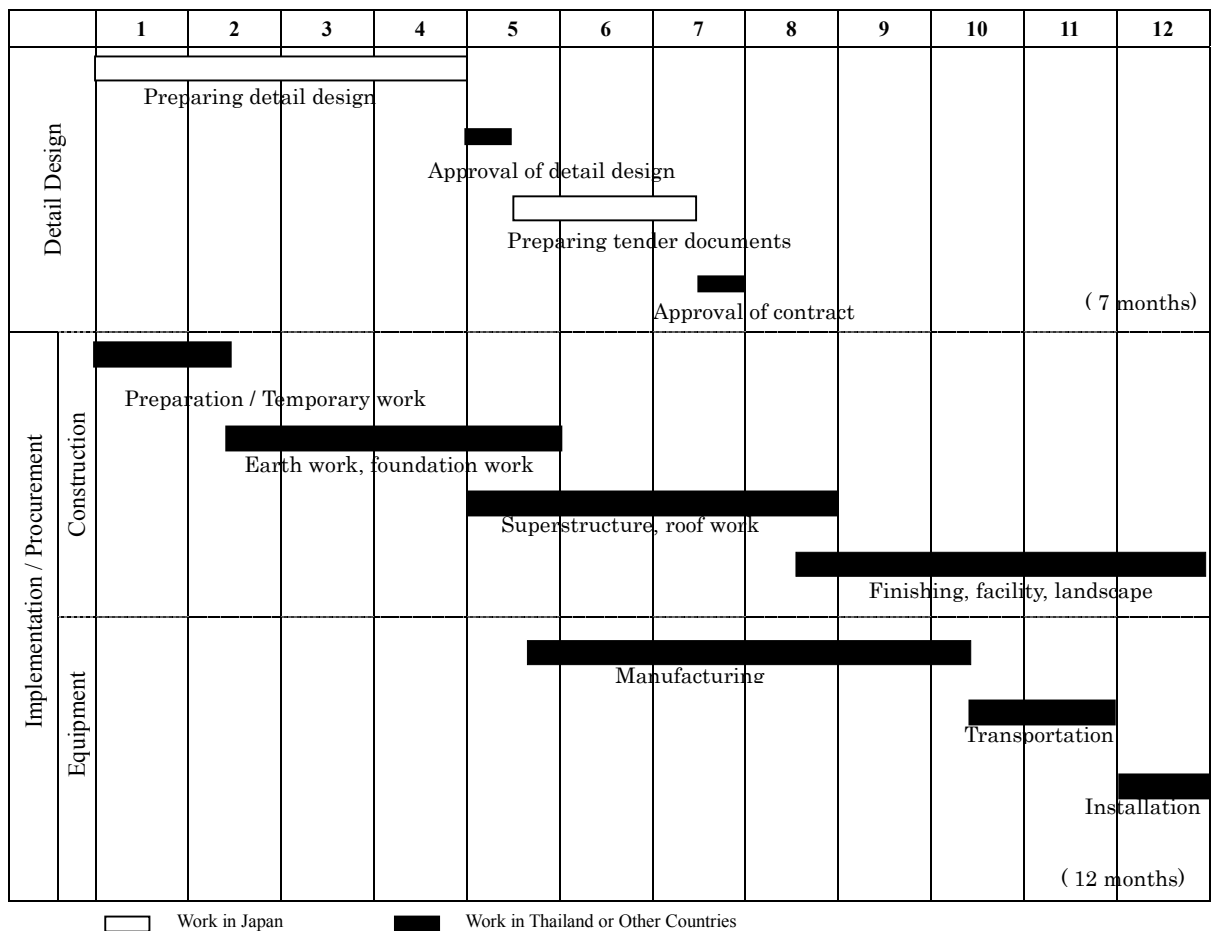
(2) Tender

The Contractor and the Supplier shall be selected through tender. Tendering stage shall start from a public announcement, pre-qualification, explanation and distribution of tender documents, questions and answers, tendering, tender evaluation and conclusion of supply contract. Meanwhile, the Thailand side shall take any necessary measures to obtain land permission, construction permission or working visa, etc. prior to the construction. The Consultant shall assist these procedures.

(3) Building work

Judging from the contents and conditions of the construction techniques, the construction period including installation of equipment shall take thirteen months under the condition that construction material will be procured without hindrance.

**Table 2-15 Implementation Schedule**



### **2-3 Obligations of Recipient Country**

Following necessary measures shall be taken by the Government of Thailand in condition that the Grant Aid by the Government of Japan is extended to the Project.

To secure land necessary for the Project and to obtain approval of building plan;

The implementing organization of the Project in Thailand shall notify the building plan to the authorities concerned and take procedure for obtaining the building permit.

To clear and remove any existing structure, rubbish, trees and any other obstacles from the site to implement the building work;

To undertake incidental outdoor works, such as gardening, fencing, exterior lighting, and other incidental facilities in and around the Project site, if necessary;

To provide facilities for distribution of electricity, water supply, telephone trunk line and drainage and other incidental facilities to the boundary of the site;

To provide sites for temporary office, workshop and warehouse for building work and to provide temporary connection line of electricity, telephone, water supply and drainage;

To ensure proper operation and maintenance of the facilities and the equipment of the Project;

To secure the necessary personnel to ensure that the facilities constructed and equipment procured under the Japan's Grant Aid be maintained and used properly and effectively for the Project and to secure budget for implementation of the Project other than those covered by the Japan's Grand Aid.

To bear commissions, namely advising commissions of an Authorization to Pay (A/P) and payment commissions, to a Japanese bank for the banking services based upon the Banking Arrangement (B/A);

To ensure prompt unloading and customs clearance of the products purchased under the Japan's Grant Aid at ports of disembarkation in Thailand;

To exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in Thailand with respect to the supply of the products and services under the verified

contracts;

To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such facilities as may be necessary for their entry into Thailand and stay therein for the performance of their work;

To provide necessary permissions, licenses, and other authorization for implementing the Project, if necessary; and

To bear all the expenses, other than those covered by the Japan's Grant Aid, necessary for the Project.



## 2-4 Project Operation Plan

### (1) Operation Plan

#### Personnel arrangement

In considerations of scale of the facilities and activities of APCD, The staff assignment by job type and position for the Center is supposed to be as shown in the following table.

**Table 2-16 Staff Establishment of APCD**

Position	Nos.	Remarks
Director	1	
Assistant Director	1	
Admin. Secretary	1	
Head of Section	3	One person each for 3 sections
Section Officer	3	- ditto -
Section Staff	3	- ditto -
Hostel Worker	4	Superintendent, Bed making
Canteen Worker	4	Cooks and workers for three meals service
Driver	2	Mini-bus, Passenger car
Watchman	2	Gate guard
Common Worker	4	Janitor, Cleaning worker
Total	28	

\*At least one staff should have a skill of communication in sign language

Six main staffs from the implementation organization of the Project will be transferred to APCD. In addition, supportive staff for cleaning, security guard, building management will be hired under outsourced contract basis.

Since 4,233 public officer and other 4,065 regular employees (at year 2000) are working for the implementing organization of this Project, DPW, there will be no problem regarding staff arrangement to APCD.

#### Budget plan

There is 5,000,000 BT for five-years operating budget for preparation of transferring APCD into a public corporation. Personnel expenses will basically be supplied separately from DPW. Personnel cost for the abovementioned outsourced supportive staff will be included in the budget. Budget deficiency will be covered by the interest from the fund for Franklin Delane Roosevelt International Disability Award (50,000 US\$) and additional fund raised by other organizations.

Since the year 2000 budget for DPW is 4,496,860,000 BT, whereas the budget for the APCD is estimated merely approximately 0.1% of this budget, this financial plan is judged reasonable.

(2) Maintenance and management plan

Support from engineers from DPW can be available for maintenance and management. Private outsourced services can also be utilized where necessary. Therefore, it is not necessary to assign any technical experts exclusively for APCD. Person in charge for daily maintenance such as exchanging broken glass windows, shall be sufficient.

(3) Operation and Maintenance Costs

Building

The annual operation and maintenance costs for APCD is estimated as follows.

**Table 2-17 Operation cost for the new Center**

Item	Operations cost (BT)	Calculation basis, remarks
Electricity	1,740,000	Annual consumption: approx. 465,000kwh
Telephone	280,000	24telephone lines, assumed as 12min / hour used during daytime on weekdays
Water supply	37,000	Annual consumption: approx.18,000 L / day
Maintenance for emergency facilities	36,000	Approx. 3,000BT / month
Maintenance for elevator maintenance	84,000	Approx. 7,000BT / month
Total	2,177,000	There is annual cost of LP gas used in the canteen estimated approx. 100,000BT, however, this will be included in the price of food.

Equipment

A rough estimate of spare parts, consumables and operation costs involved in annual maintenance contracts necessary for implementation of the Requested Japanese Assistance is estimated as approximately 700,000BT. Appendices-2 shows breakdown of spare parts and consumables by item.

## Chapter 3. Project Evaluation and Recommendations

## **Chapter 3. Project Evaluation and Recommendation**

### **3-1 Project Effect**

#### **3-1-1 Direct Effect**

When the Project has been implemented, building and equipment for training, conference, information support and networking of associate organizations to promote empowerment of persons with disabilities in the region will be provided, and consequently the following effects are expected.

- Human resource development in the field of persons with disabilities in the region is enabled through the training of approx. 120 persons per year in APCD.
- The building with barrier-free facilities provide non-handicap environment for use of persons with disabilities including trainees.

#### **3-1-2 Indirect Effect**

The following activities will promote improvement of social status and social participation of persons with disabilities in the Asian-Pacific region

- Training courses in APCD enable leaders of persons with disabilities in the region to disseminate acquired knowledge and skills in their country.
- Disability related organizations and NGOs can utilize information provided by APCD
- Network among disability related international organizations, national organization and NGOs will be established. Within five years of establishment of APCD, it is expected that representative organization in thirty country and seventy-five (75) associate organizations will be networked with APCD.

### **3-2 Recommendations**

For sustainable and effective and efficient result of the Project, it is essential to obtain the following supports:

- Operational support to APCD by the Government of Thailand

The Government of Thailand shall ensure to assign operational staff (approx. 28 staff) and allocate operational budget (approx. 5 million Bahts)

- Cooperation from associate organizations in the Asia-Pacific region

Continuous support from disability-related public organizations and NGOs in the region, e.g. provision of information, dispatch of trainees and experts, shall be indispensable.