

**Preparatory Survey for
the Project for the Improvement of the
Specialized Hospital for Infectious
Diseases Treatment in Addis Ababa**

Final Report

April 2025

Japan International Cooperation Agency (JICA)

Oriental Consultants Global Co., Ltd.

K.ITO Architects & Engineers Inc.

International Total Engineering Corporation

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**The Federal Democratic Republic of Ethiopia
Ministry of Health**

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PREFACE

Japan International Cooperation Agency (JICA) decided to conduct Preparatory Survey for the Project for the Improvement of the Specialized Hospital for Infectious Diseases Treatment in Addis Ababa, entrusting the survey to the Joint Venture of Oriental Consultants Global Co. Ltd. (OCG), K.ITO Architects & Engineers Inc. and International Total Engineering Corporation.

The Survey Team held a series of discussions with the officials concerned of the Government of the Federal Democratic Republic of Ethiopia and conducted field investigations from May 2024 until December 2024. As a result of further studies in Japan, the present report has been finalized.

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

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of the Federal Democratic Republic of Ethiopia for their close cooperation extended to the Survey Team.

April 2025

MORISHITA Hiromichi
Director General,
Human Development Department
Japan International Cooperation Agency

Summary

SUMMARY

1. Country Overview

Ethiopia is a regional power of about 100 million people located at the heart of the Horn of Africa. Its capital, Addis Ababa, is home to the headquarters of the African Union (AU) and the United Nations Economic Commission for Africa (UNECA), making it one of the centers of African diplomacy. In recent years, Ethiopia has maintained a high annual economic growth rate of around 6% (IMF), and has achieved certain results in areas such as improving agricultural productivity, expanding access to primary education, and reducing poverty. However, its gross national income (GNI) per capita remains low at USD 1,130 (2023, World Bank). Enhancing the productivity and quality of agriculture and industry (which serve as the main pillars of its export sector), developing infrastructure crucial for economic growth and attracting foreign investment, addressing vulnerability to natural disasters such as drought, and tackling urbanization amid rapid population growth remain important development challenges.

In February 2016, the Ethiopian government formulated its Second Growth and Transformation Plan (GTP2), setting a goal to achieve lower middle-income status by 2025. Alongside its traditional focus on agriculture, it is undertaking industrialization centered on manufacturing.

2. Background, History and Outline of the Project

In Ethiopia, respiratory infections are the third leading cause of death, and infectious diseases (including diarrheal diseases) account for 36.24% of all causes of death. This indicates that infectious diseases continue to threaten people's lives. Compared to maternal/neonatal mortality and cardiovascular diseases (the first and second leading causes of death), infectious diseases are difficult to prevent through immunization alone, and outbreaks cause a significant impact on the country and other regions. However, Ethiopia does not have special isolation rooms for infectious diseases with high fatality rate such as Ebola hemorrhagic fever or novel coronavirus infection (COVID-19). In particular, this situation made it difficult to save the lives of patients with severe COVID-19 and maintain normal medical functions. It highlighted the vulnerability of the country's infectious disease control measures (inadequate facilities and equipment, insufficient knowledge of medical personnel, etc.). The government of Ethiopia has set up a 10-year development plan (2021-2030) to improve the healthcare system for infectious disease control. It has also set the achievement of universal health coverage (UHC) and the strengthening of the healthcare system as priority issues in the Health Sector Development Plan II (2020-2025, HSTP II). From the perspective of preparing for crises such as outbreaks of infectious diseases, strengthening diagnosis and treatment of infectious diseases are top priorities.

St. Peter's Specialized Hospital (SPSH) in Addis Ababa is the only one of the nine public tertiary care hospitals to be certified by the National Organization for Higher Education Quality as a hospital that provides treatment, education and research on multidrug-resistant tuberculosis (MDR-TB). The hospital is positioned as a core center for infectious diseases by the Ministry of

Health (MOH). It is a top referral hospital (a national center of excellence for higher-level medical care) specializing in infectious diseases. Based on the above background, in order to strengthen the diagnosis and treatment of infectious diseases in this country, it is important to strengthen the treatment, education and research functions of SPSH.

First, concerning treatment, many secondary care facilities do not have medical facilities to isolate and treat patients with infectious diseases simultaneously. Although many patients are transported to SPSH, it does not have negative pressure control facilities to prevent airborne transmission of tuberculosis (TB), etc. TB patients are treated in rooms adjacent to patients with other diseases. In addition, due to the small medical facilities and lack of equipment, the internal medicine ward is under pressure with a bed occupancy rate of 98%. X-ray and CT examinations are available only at night to avoid the time when other patients use the ward, and the life-saving rate of patients with respiratory tract infections requiring intubation with a ventilator is only 50%. The hospital does not have sufficient functions for the diagnosis and treatment of infectious diseases. Thus, although the hospital has been designated as a center for infectious disease control in the country, it is currently unable to fulfill its role. Therefore, in order to increase the life-saving rate of patients with infectious diseases in the country, it is essential to expand the facilities and improve its equipment. In addition, in the early stages of the COVID-19 outbreak, the overwhelming majority of patients were in Addis Ababa. Also, the most common source of infection was the influx of patients from other countries. Strengthening initial response capacity in Addis Ababa is essential to prevent the spread of infectious diseases to rural areas with weak healthcare delivery systems. SPSH is located in Addis Ababa, where the population is concentrated, and the number of potential beneficiaries is higher than that of a hospital in rural area. From these perspectives, strengthening the functions of this hospital is cost-effective.

As for education, SPSH is accumulating knowledge on the prevention of infection after COVID-19 crisis. As a center for training in infectious disease treatment and countermeasures, it has already accepted medical personnel from other hospitals and developing human resources. In addition, through the dispatch of Advisor for Improving Operations of Hospitals through Kaizen by JICA, the capacity of hospital management has been strengthened. However, due to insufficient facilities with infection control measures, clinical training has not been implemented, and practical skills have not been sufficiently strengthened. The expansion of facilities and equipment at SPSH will enhance clinical education for domestic healthcare professionals, improve the capacity of subordinate medical institutions, and strengthen the referral system.

Finally, conducting clinical research to establish diagnostic and therapeutic procedures is one of the important roles of SPSH, as a top referral infectious disease hospital. The facilities and equipment at SPSH are expected to improve the quality of clinical research and ultimately strengthen Ethiopia's ability to respond to future health crises.

In light of this situation, the Project for the Improvement of the Specialized Hospital for Infectious Diseases Treatment in Addis Ababa (hereinafter referred to as 'this project') will make available

the facilities and equipment for infectious disease treatment and education provided by SPSH to fulfill its role as the top referral infectious disease specialized hospital in the country.

3. Outline of the Survey Results and Project Description

Based on the above, JICA dispatched a Survey Team to the site according to the following schedule, conducting two on-site surveys in total.

- 1st Field Survey: 20 May - 22 June of 2024
- 2nd Field Survey: 9 December - 21 December of 2024

After returning to Japan, the Survey Team compiled facility and equipment plans based on domestic analyses, provided an on-site briefing on the outcomes of the preparatory survey, and prepared a preparatory survey report.

“The Project for the Improvement of the Specialized Hospital for Infectious Diseases Treatment in Addis Ababa” is positioned to contribute to the improvement of the country’s healthcare system by enabling SPSH to fulfill its role as the nation’s top referral infectious disease hospital, in accordance with the master plan that SPSH established. This involves the provision of facilities and equipment essential for infectious disease treatment and education.

Table 1 Outline of the Facility

Facility	Total Floor Area 3,241.47 m ² / Outdoor Floor area 485.94 m ²	
Floor	Department	Major rooms
B3F	Kitchen	Cooking room, washing room, food storage, garbage storage
	Laundry	Laundry, used linen storage, clean linen storage
	Administration	Bed and material storage, changing rooms (for kitchen and laundry staff)
B2F	Administration	Administrative office, conference room, changing rooms, server room
	Service	Firefighting water tank and pump space
B1F	Inpatient ward	Special isolation rooms (2), preparation room, AC machine rooms
		Temporary ward (10 beds during infectious disease outbreak), nurses' station, dirty utility
	Radiation diagnosis	CT room, control room
	Administration	Security Office, Maintenance staff room
	Service	General waste storage, medical waste storage, space for generator and substation equipment, space for water reservoir, electrical room, medical gas supply room, mortuary
GF	OPD	Reception office, examination rooms (2), treatment room, specimen collection room, pharmacy, patient toilets
	Surgery	Operating room, preparation room, changing rooms, sterile material supply room, AC machine rooms
	Delivery	Delivery room, neonatal room
	Inpatient ward	3-bed rooms (6), nurses' station, dirty utility
1F	Inpatient ward	One-bed rooms (8), two-bed rooms (4), intensive care units (4), nurses' station, ward pharmacy, staff rooms, duty room, physicians' room, dirty utility janitor's storage, equipment storage, linen closet

Floor	Department	Major rooms
RF	Service	Elevated water tank yard, AC machine yard
	Public Facilities	Hospital elevators (2), staircases (2), PPE (personal protective equipment) dressing rooms, corridors, toilets, pipe shafts, etc.

Source: JICA Survey Team

Table 2 Outline of Medical Equipment

Emergency Department	Mobile X-ray, Ultrasound Machine, Defibrillator, ECG, Patient Monitor, Suction Unit, Treatment Table, Examination Table, Treatment Cart
Radiology Department	CT Scan
Operation Department	Anaesthesia Machine, Operation Light, Operation Table, Electrosurgical Unit, Defibrillator, Patient Monitor, Autoclave
Obstetrics Department	Operation Light (Mobile), Delivery Table, Fetal Monitor, Baby Incubator, Infant Warmer
Inpatient Department (Special Beds, ICU HDU, General Beds)	Mobile X-ray, Defibrillator, Ventilator, Patient Monitor, Infusion Pump, Syringe Pump, Suction Unit, ICU Bed, Patient Bed, Patient Bed (Foldable), Emergency Cart
Medical Waste Room	Autoclave
Laboratory Department (Existing Facility)	Autoclave, Dry Oven, Incubator, Clean Bench, Water Bath, Colony Counter, Electric Balance, Homogenizer, Hot Plate, pH Meter, Vortex Mixer

Source: JICA Survey Team

4. Project Implementation Period and Project Cost Estimation

The duration of the detailed design and tender preparation is 6 months after the signing of the agreement for consulting services. Thereafter, the process for tendering and contract for the building construction and equipment procurement takes 4 months. The period of construction and procurement is 24 months, including 1 month of domestic preparation after the signing of contract.

The initial cost for this project to be borne by the Ethiopian side is estimated at USD 0.4 million.

5. Project Evaluation

(1) Relevance

Based on the reasons below, the implementation of this project under Japan's grant aid is deemed appropriate.

- The new ward to be constructed under this project is the only ward in Ethiopia that will allow negative pressure management. The project will benefit not only the residents of Addis Ababa, but also the entire population of Ethiopia. Furthermore, considering the role of the airport as an African hub, this project will also contribute to infection prevention measures in the African region.
- This project is in line with the targets and indicators for infectious diseases set out in Ethiopia's Ten-Year Development Plan, Second Health Sector Transformation Plan, and National Specialty and Sub-Specialty Service Road Map 2020-2029.

- It is also consistent with Japan's Country Assistance Policy for Ethiopia (April 2017), under Priority fields (4) Education and Health, “Japan supports the development of a health system and improvement of the quality of medical service based on the philosophy of UHC”.

(2) Effectiveness

The following are effect indicators related to the direct effects (outputs) of the implementation of the project subject to cooperation, and the effects (outcomes) expected to be achieved in the future through the implementation of the overall project plan.

1) Quantitative Effect

Table 3 Quantitative Effect Indicators

Quantitative Effect Indicators	Base value (Actual value in 2023)	Target value (2031) 【Three years after completion of the project】
Number of medical facilities staffed by healthcare professionals who have completed clinical training related to infectious diseases and passed an examination upon completion (cases)	0	30
Number of hospital-acquired infections among healthcare workers (persons)	N/A	0
Number of patients delivered/operated on at this facility who will have a new infection within 30 days after surgery (persons)	N/A	0

Source: JICA Survey Team

2) Qualitative Effect

Table 4 Qualitative Effect Indicators

Qualitative Effect Indicators
The safety of healthcare workers is ensured through the development of facilities that enable appropriate infection control, and the prevention of nosocomial infections to healthcare workers and between patients is thoroughly implemented.
Appropriate collaboration with the Ethiopian Public Health Institute (EPHI), which conducts quarantine, will enable appropriate isolation of patients (including suspected patients) with serious infectious diseases from overseas at Bole International Airport (Addis Ababa) and other border crossings.

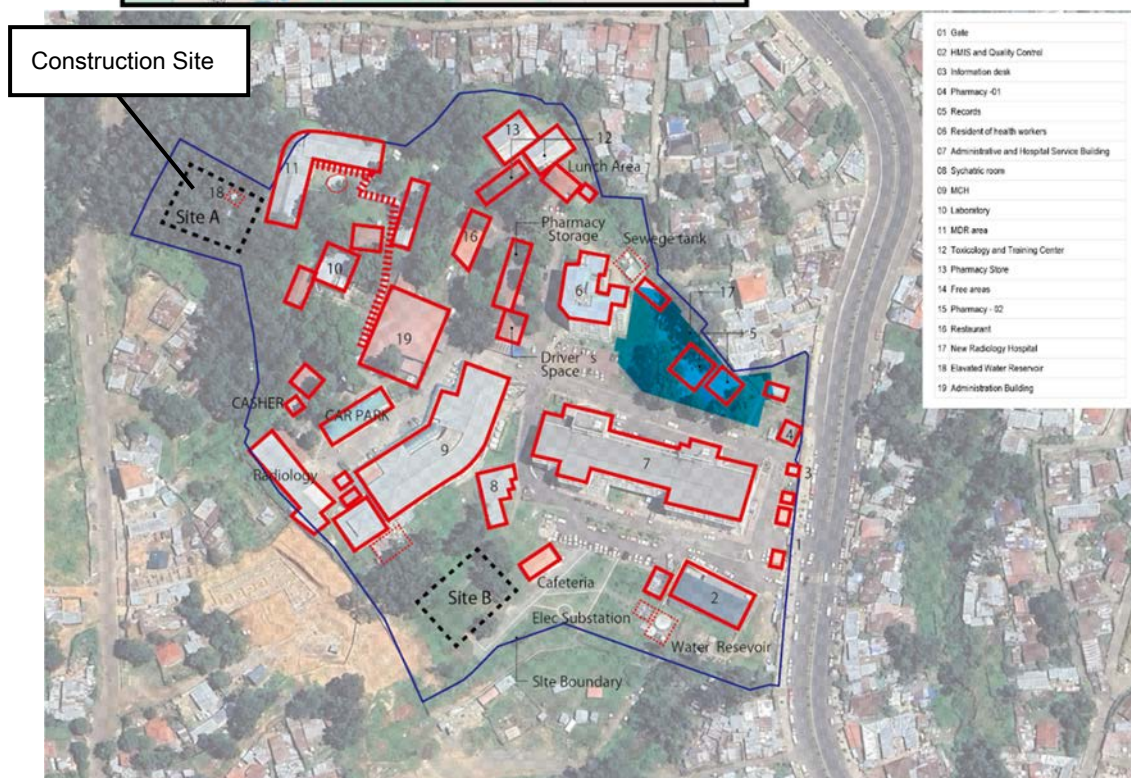
Source: JICA Survey Team

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Source: JICA Survey Team

Location Map



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Abbreviations

Abbreviation	English
A/P	Authorization to Pay
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AU	African Union
AVR	Automatic Voltage Regulator
B/A	Banking Arrangement
BOD	Biochemical Oxygen Demand
CAD	Computer Aided Design
CCTV	Closed-circuit Television
CES	Compulsory Ethiopian Standards
CHC	Community Health Center
CHS	Community Health Service
COD	Chemical Oxygen Demand
COVID-19	Coronavirus disease 2019
CSSD	Central Sterile Supply Department
CT	Computed Tomography
DAC	Development Assistance Committee
DICOM	Digital Imaging and Communications in Medicine
EN	European Norm
E/N	Exchange of Notes
DS-TB	Drug-Sensitive Tuberculosis
EBSC	Ethiopian Building Standard Code
EFDA	Ethiopia Food and Drug Authority
EMP	Environmental Management Plan
EPHI	Ethiopia Public Health Institute
ESA	Ethiopian Standards Agency
EU	European Union
G/A	Grant Agreement
GDP	Gross Domestic Product
GNI	Gross National Income
HEPA	High Efficiency Particle Air (Filter)
IBC	International Building Code
ICU	Intensive Care Unit
IMF	International Monetary Fund
JASS	Japanese Architectural Standard Specification
JICA	Japan International Cooperation Agency
JIS	Japanese Industrial Standards
JPY	Japanese Yen
LAN	Local Area Network

Abbreviation	English
LED	Light-emitting Diode
LGS	Light Gauge Steel
M/D	Minutes of Discussion
MDR-TB	Multidrug-resistant TB
M/P	Master Plan
MRI	Magnetic Resonance Imaging
NFPA	National Fire Protection Association
NGO	Non-Government Organization
NICU	Neonatal Intensive Care Unit
NO	Nitric Oxide
NPO	Non-Profit Organization
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OR	Operating Room
PC	Personal Computer
PCR	Polymerase Chain Reaction
PEPFAR	President's Emergency Plan For AIDS Relief
PIP	Pre-Import Permit
PPE	Personal Protective Equipment
RC	Reinforced Concrete
SDGs	Sustainable Development Goals
SNS	Social Networking Service
SPD	Surge Protective Device
SPSH	St.Peter's Specialized Hospital
TOR	Terms of Reference
TTS	Telegraphic Transfer Selling Rate
UHC	Universal Health Coverage
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UPS	Uninterruptible Power Supply
USAID	United States Agency for International Development
USD	United States Dollar
UV	Ultra Violet
VIP	Very Important Person
WFP	World Food Programme
WHO	World Health Organization

Chapter 1 Background of the Project

Chapter1 Background of the Project

1-1 Background of the Project

In Ethiopia, respiratory infections are the third leading cause of death, and infectious diseases (including diarrhoeal diseases) account for 36.24% of all causes of death. This indicates that infectious diseases continue to threaten people's lives. Compared to maternal/neonatal mortality and cardiovascular diseases (the first and second leading causes of death), infectious diseases are difficult to prevent through immunization alone, and outbreaks cause a significant impact on the country and other regions. However, Ethiopia does not have special isolation rooms for infectious diseases with high fatality rate such as Ebola hemorrhagic fever or novel coronavirus infection (COVID-19). In particular, this situation makes it difficult to save the lives of patients with severe COVID-19 and maintain normal medical functions. It highlighted the vulnerability of the country's infectious disease control measures (inadequate facilities and equipment, insufficient knowledge of medical personnel, etc.). The government of Ethiopia has set up a 10-Year Development Plan (2021-2030) to improve the healthcare system for infectious disease control. It has also set the achievement of universal health coverage (UHC) and the strengthening of the healthcare system as priority issues in the Health Sector Development Plan II (2020-2025, HSTP II). From the perspective of preparing for crises such as outbreaks of infectious diseases, strengthening diagnosis and treatment of infectious diseases are top priorities.

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patients from other countries. Strengthening initial response capacity in Addis Ababa is essential to prevent the spread of infectious diseases to rural areas with weak healthcare delivery systems. SPSH is located in Addis Ababa, where the population is concentrated, and the number of potential beneficiaries is higher than that of a hospital in rural area. From these perspectives, strengthening the functions of this hospital is cost-effective.

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In light of this situation, the Project for the Improvement of the Specialized Hospital for Infectious Diseases Treatment in Addis Ababa (hereinafter “this project”) will make available the facilities and equipment for infectious disease treatment and education provided by SPSH to fulfil its role as the top referral infectious disease specialized hospital in the country.

1-2 Natural Conditions

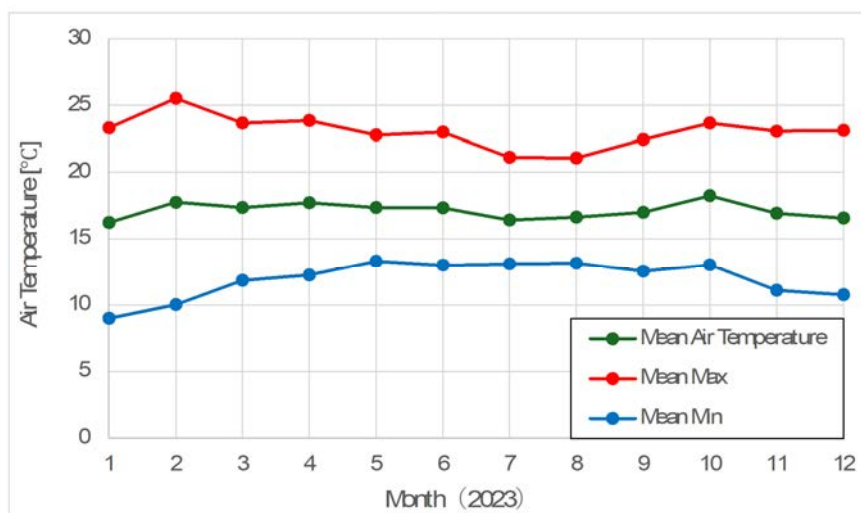
1-2-1 Air Temperature

Addis Ababa belongs to subtropical highland climate (Cwb) under the Koppen climate classification. The mean monthly temperature in 2023 did not vary significantly throughout the year, ranging between 16.2°C and 18.2°C. The mean monthly maximum temperature in 2023 was 25.5°C (February), and the mean monthly minimum temperature was 9.0°C (January). The annual maximum temperature was 33.0°C (February), and the minimum temperature was 1.5°C (March).

Mean temperature data for 2023 are shown in Table 1-1 and Figure 1-1.

Table 1-1 Mean Air Temperature in Addis Ababa (2023)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Air Temperature °C	16.2	17.8	17.4	17.7	17.4	17.3	16.4	16.6	17.0	18.2	16.9	16.6
Mean Max °C	23.3	25.5	23.7	23.9	22.8	23.0	21.1	21.1	22.4	23.7	23.1	23.1
Mean Min °C	9.0	10.0	11.8	12.2	13.3	13.0	13.1	13.2	12.5	13.0	11.1	10.8



Source: OGIMET, Global Summary of the Day Selection, Ethiopia, Bole International Airport

Figure 1-1 Mean Air Temperature, Mean Maximum Temperature, and Mean Minimum Temperature (2023)

1-2-2 Rainfall and Humidity

Ethiopia has a light rainy season from February to May, a heavy rainy season from June to September, and a dry season from October to January. In 2023, the highest rainfall was 197mm (July). The highest number of rainy days was 17 days (July), and the number of days with rainfall more than 10mm was 8 days (July).

As rainfall is limited to short bursts and rarely lasts all day, the impact on earthworks during the rainy season is expected to be low. The construction period should be planned with consideration of recent natural conditions.

Table 1-2 Rainfall, Days of Rainfall, and Humidity Data in Addis Ababa (2023)

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Rainfall	mm	0	1	73	84	55	111	197	129	104	0	10	0
Days of Rainfall	day	0	1	11	10	6	13	17	13	11	0	3	0
Days of Rainfall more than 10mm	day	0	0	3	3	2	4	8	2	4	0	0	0
Mean Humidity	%	46.2	35.5	66.7	67.0	75.1	73.8	83.0	80.9	78.6	53.8	56.4	51.6

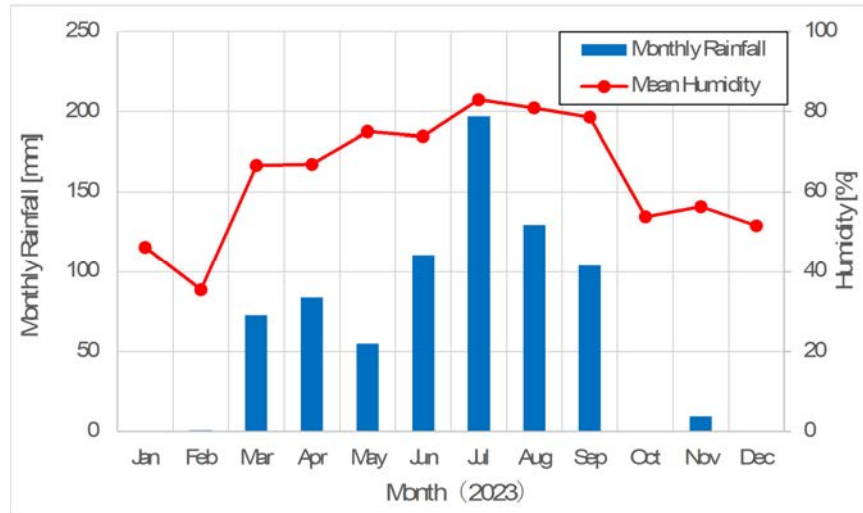


Figure 1-2 Rainfall and Humidity Data (2023)

Source: OGIMET, Global Summary of the Day Selection, Ethiopia, Bole International Airport

1-2-3 Wind Speed

In 2023, the mean monthly wind speed was 2.8-4.4 m/s and the mean maximum wind speed was 5.9-8.9 m/s.

Table 1-3 Wind Speed Data in Addis Ababa (2023)

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean Wind speed	m/s	4.3	4.4	3.3	3.2	2.8	2.8	2.9	2.9	2.9	4.3	4.4	4.2
Mean Max	m/s	8.0	8.1	7.8	6.4	6.3	6.5	5.9	6.4	7.0	8.6	8.5	8.9

Source: OGIMET, Global Summary of the Day Selection, Ethiopia, Bole International Airport

1-2-4 Earthquake

Ethiopia has the Great Rift Valley of Africa running through the center of the country and several volcanoes. Although the magnitude and frequency of earthquakes are not large, a magnitude 5.2 earthquake occurred seven years ago, with its epicenter near Ziway, about 140 km south of the center of Addis Ababa.

The Ethiopian Standard (Design of Structure for Earthquake Resistance) stipulates that it must comply with "EN 1998: Eurocode 8". According to the standard, Addis Ababa is located in seismic zone 3 (Ground surface acceleration 0.1G).

1-2-5 Disaster History in the Construction Site

Based on interviews with hospital staff, no disasters such as flooding or landslides have occurred. However, the site is in a sloping area, so the construction method should be carefully planned.

1-2-6 Natural Conditions Survey Results

The survey items, contents, and results of the site condition survey are shown in Table 1-4.

Table 1-4 Site Condition Survey

Survey Item		Survey Content	Survey Result
Topographic survey (by sub-consultant)		Level and topographic survey, confirmation of site boundaries, structures and trees (species, height) on the construction site. Deliverables: Survey drawings, CAD data, report	Topographic survey was conducted for the entire hospital site. SPSH is located at the foot of Mt. Entoto on the northern edge of Addis Ababa. The proposed construction site is located on the northwestern edge of the entire hospital site, on a slope covered with trees. The slope drops from the west side facing the road to MDR-TB ward on the east side of the site, with a maximum difference in elevation of approximately 15 meters.
Geotechnical Survey (by sub-consultant)		Borehole test (3 locations), standard penetration test, sampling and laboratory testing. Deliverables: Columnar map, standard penetration test results, specimens and photographs, list of samples with soil test results and report.	Borehole test was conducted to a depth of 10 m at each location. The SPT result was "Refusal", which indicates that the soil is strong enough to support the building. No groundwater was recorded.
Site conditions (Conducted by the Survey Team)	Weather Conditions	Monthly maximum and minimum average temperatures, monthly rainfall, monthly relative humidity, monthly average and maximum wind speed, natural disaster history	As noted above.
	Site status	Condition of existing buildings and structures	MOH is planning to redevelop the campus with a hospital master plan for SPSH. There is a plan to construct a New Radiology Building on the north side of the Administrative and Hospital Service Building.
	Existing buildings	On-site confirmation, interviews	No as-built drawings were stored.
	Existing structure	On-site confirmation	Existing water tank and concrete trestle were present. These need to be removed and relocated prior to construction.
	Underground structures	On-site confirmation	The proposed construction site is a wooded area with no history of building construction, and no underground structures exist other than the above-mentioned water tank.
	Religious and cultural structures	On-site confirmation	No religious or cultural structures are in the proposed construction site.
Utility Survey (by sub-consultant)	Electrical facilities survey	Location of receiving power, transmission route, status of receiving and transforming facilities, interviews Deliverables: Report, data	Supplied by the Ethiopian Electric Utility (EEU) medium voltage distribution network (15KV) overhead and receives power from a substation installed outdoors on the premises.
	Water supply survey	Status of water supply facilities, water quality, and supply volume, interviews Deliverables: Report, data	The water source is municipal water supply from the Addis Ababa Water and Sewage Authority. Due to the unstable supply of water, the city water and water trucks are used to deliver water. The well water is depleted and not in use.
	Drainage survey	Drainage system status, wastewater treatment methods, interviews Deliverables: Report	Public sewage systems have been installed in Addis Ababa, but not yet in the vicinity of the existing hospital facilities. Domestic wastewater (sewage and miscellaneous wastewater) and medical wastewater are treated in three septic tanks on site, and the treated water is, in principle, treated by infiltration on site.
	Medical waste	Waste collection methods, final disposal methods, interviews Deliverables: Report	Medical waste is separated from general waste and processed in an incinerator on site.

Source: JICA Survey Team

1-3 Environmental and Social Considerations

1-3-1 JICA Environmental and Social Considerations Category

This project is classified as Category C.

1-3-2 Recipient Country's Environmental and Social Considerations Category

It has been determined that the project is subject to environmental assessment procedures in the recipient country. The procedures will be conducted by the Ministry of Health with internal experts. The same environmental assessment process has been conducted when the existing radiology building at SPSH has been built.

1-4 Consistency with Sustainable Development Goals (SDGs)

This project will work with related institutions to build an infectious disease ward in Addis Ababa, a city that still does not have a sufficient system to deal with infectious diseases, which are the leading causes of death in Ethiopia. The infectious disease ward will be maintained along with the equipment. The aim is to provide medical care for infectious diseases, benefiting not only the residents of Addis Ababa, where the population is concentrated, but also residents of the surrounding areas. Furthermore, as Bole International Airport (Addis Ababa) serves as a central hub airport in Africa, it is also expected to have a beneficial effect on infectious disease control nationwide. This means that strengthening the function of SPSH, which is a public hospital, in terms of infectious disease control will provide access to infectious disease treatment regardless of the gap between rich and poor. It is also expected to benefit the whole of Africa. In addition, the design and construction will enable the introduction of energy-saving technology that utilizes Japanese know-how, aiming to construct a sustainable facility with consideration of the environment. Furthermore, by promoting the hiring of gender-balanced staff not only during the construction period, but also after the new building opens, the project is expected to create employment and have positive economic effects. This way, the project will realize certain initiatives that are in line with the Sustainable Development Goals (SDGs).

Chapter 2 Contents of the Project

Chapter2 Contents of the Project

2-1 Basic Concept of the Project

The facility and medical equipment to be provided under this project are summarized in the tables below.

Table 2-1 Composition of Facility Components

Floor	Department	Major rooms
B3F	Kitchen	Cooking room, washing room, food storage, garbage storage
	Laundry	Laundry, used linen storage, clean linen storage
	Administration	Bed and material storage, changing rooms (for kitchen and laundry staff)
B2F	Administration	Administrative office, conference room, changing rooms, server room
	Service	Firefighting water tank and pump space
B1F	Inpatient ward	Special isolation rooms (2), preparation room, AC machine rooms
		Temporary ward (10 beds during infectious disease outbreak), nurses' station, dirty utility
	Radiation diagnosis	CT room, control room
	Administration	Security Office, Maintenance staff room
GF	Service	General waste storage, medical waste storage, space for generator and substation equipment, space for water reservoir, electrical room, medical gas supply room, mortuary
	OPD	Reception office, examination rooms (2), treatment room, specimen collection room, pharmacy, patient toilets
	Surgery	Operating room, preparation room, changing rooms, sterile material supply room, AC machine rooms
	Delivery	Delivery room, neonatal room
1F	Inpatient ward	3-bed rooms (6), nurses' station, dirty utility
	Inpatient ward	One-bed rooms (8), two-bed rooms (4), intensive care units (4), nurses' station, ward pharmacy, staff rooms, duty room, physicians' room, dirty utility janitor's storage, equipment storage, linen closet
RF	Service	Elevated water tank yard, AC machine yard
Public Facilities		Hospital elevators (2), staircases (2), PPE (personal protective equipment) dressing rooms, corridors, toilets, pipe shafts, etc.

Source: JICA Survey Team

Table 2-2 Components of Medical Equipment

Emergency Department	Mobile X-ray (1), Ultrasound Machine (2), Defibrillator (1), ECG (1), Patient Monitor (1), Suction Unit (1), Treatment Table (3), Examination Table (2), Treatment Cart (3)
Radiology Department	CT Scan (1)
Operation Department	Anaesthesia Machine (1), Operation Light (1), Operation Table (1), Electrosurgical Unit (1), Defibrillator (1), Patient Monitor (1), Autoclave (2)
Obstetrics Department	Operation Light (Mobile) (1), Delivery Table (1), Fetal Monitor (1), Baby Incubator (1), Infant Warmer (1)
Inpatient Department (Special Beds, ICU HDU, General Beds)	Mobile X-ray (2), Defibrillator (8), Ventilator (6), Patient Monitor (13), Infusion Pump (13), Syringe Pump (13), Suction Unit (6), ICU Bed (6), Patient Bed (34), Patient Bed (Foldable) (20), Emergency Cart (8)

Medical Waste Room	Autoclave (2)
Laboratory Department (Existing Facility)	Autoclave (1), Dry Oven (1), Incubator (1), Clean Bench (1), Water Bath (1), Colony Counter (1), Electric Balance (1), Homogenizer (1), Hot Plate (1), pH Meter (1), Vortex Mixer (1)

Source: JICA Survey Team

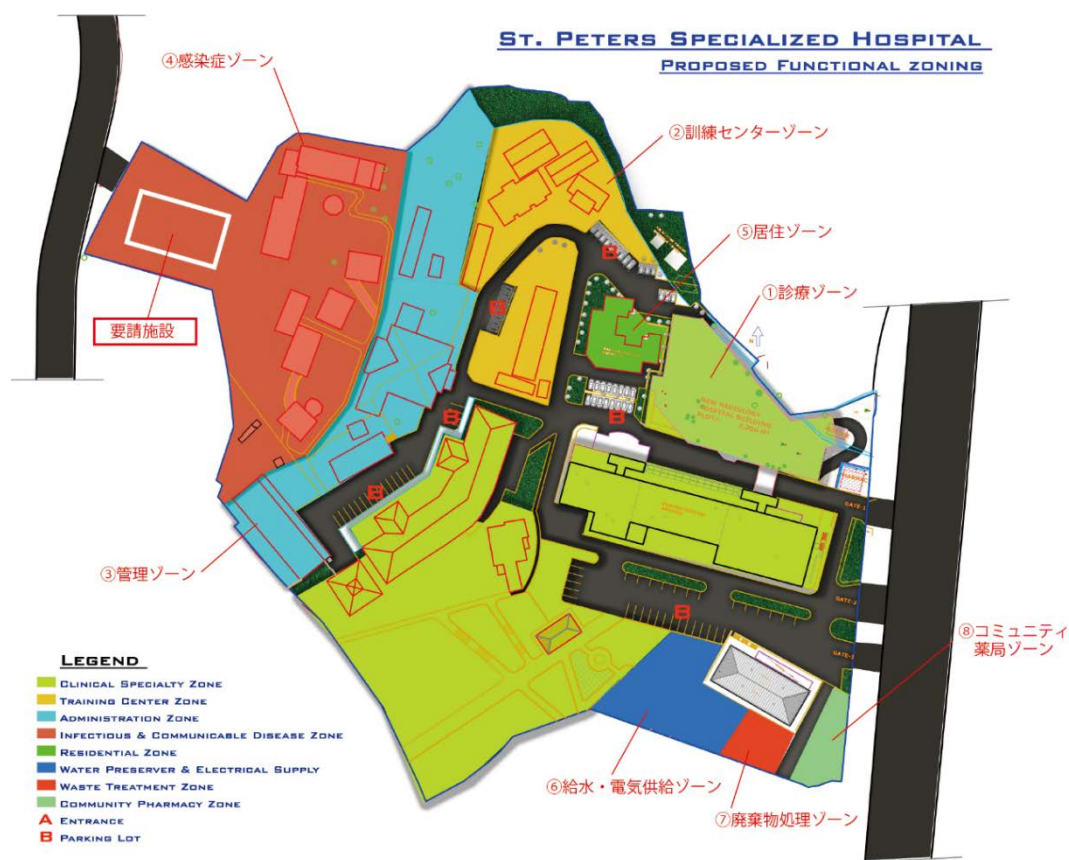
2-2 Outline Design of the Japanese Assistance

2-2-1 Design Policy

2-2-1-1 Basic Policy

(1) (Policy 1) Development of facilities and equipment in accordance with the Master Plan

According to the master plan formulated by MOH, SPSH site is to be redeveloped into eight zones: (1) Clinical Specialty Zone, (2) Training Center Zone, (3) Administration Zone, (4) Infectious and Communicable Disease Zone, (5) Residential Zone, (6) Water Preserver and Electrical Supply Zone, (7) Waste Treatment Zone, and (8) Community Pharmacy Zone. MOH has requested the construction of the planned facilities in zone (4), which is the zone for infectious and communicable diseases. (See Figure 2-1).



Source: MOH

Figure 2-1 SPSH Redevelopment Master Plan

Infectious disease-related facilities such as a MDR-TB ward, TB outpatient clinic, and clinical laboratories are already functioning within the Infectious and Communicable Disease Zone, and a dedicated entrance on the road behind it will allow for the development of a group of specialized facilities for infectious diseases that are isolated from the other zones. Therefore, in accordance with the main objectives of the Master Plan, the following policies will be used to develop the facilities.

1) Strengthening of functions as an infectious disease treatment facility

- Establish facilities and equipment capable of providing comprehensive diagnostic and therapeutic services, including general infectious diseases and emerging and re-emerging infectious diseases.
- The outpatient clinic will be dedicated to infectious diseases and will accept referral patients with suspected infectious diseases, return patients diagnosed with infectious diseases, and patients requiring quarantine isolation as needed. The outpatient entrance will be located on the rear street, and space will be provided to receive patients with specific symptoms in the event of an infectious disease outbreak (pandemic).
- All hospital rooms should be negative pressure-compatible rooms with an anteroom so that patients with diverse types of infections can be cared for in the same ward. In anticipation of long-term isolation of patients in the ward, each ward should be equipped with toilet, shower, and other essential facilities.
- A delivery room, an operating room, and a CT scan room dedicated to patients with infectious diseases will be established to strengthen the medical treatment function.
- Functional collaboration with existing facilities in the Infectious and Communicable Disease Zone. Specimens will be collected in the Infectious Disease Building, and they will be transported to the existing laboratory building for testing. Provide the necessary medical equipment in the laboratory building to expand laboratory functions.

2) Strengthening of functions as a risk control facility

- The facility will have 40 beds under normal circumstances and will be able to increase to 60 beds in the event of an outbreak of infectious diseases, thus ensuring both effective utilization during normal times and in the event of an emergency.
- The design will allow flexible operations. During normal times, patients with different infectious diseases are isolated in separate rooms, and during an infectious disease outbreak, the entire ward can be closed off and isolated. In case of a pandemic, the entire premises can be isolated.
- As a facility to accommodate patients suspected of having extremely dangerous infectious diseases, two (2) special isolation units with independent air-conditioning systems will be provided.

- A temporary ward (10 beds) to be provided for operation in the event of an infectious disease outbreak. It will be used also as training and education facilities during normal times.
- Support and strengthen quarantine functions at international airports.

3) Self-supporting operation, on site treatment of wastewater and solid waste

- A dedicated power supply system, stand-by generator, and water receiving tank will be provided to allow independent operation within the isolated zone.
- An infectious wastewater treatment plant and a solid waste treatment equipment will be provided on the site to prevent discharge outside the quarantine zone.
- A dedicated kitchen and laundry room should be established and used dishes and linens will be washed and sanitized in the facility.

(2) (Policy 2) Effective use of narrow and sloping land

- Create an architectural plan that minimizes land development costs and construction time.
- Take advantage of the difference of land height to separate access and flow lines for patients and medical staff.
- Set the level facing the road as the reference ground level (GL). The ground and upper floors are used for outpatient and hospital wards, and the basement floors with windows are used for offices, etc. The basement floors without windows are used for warehouses, equipment spaces, etc., making effective use of the space.

(3) (Policy 3) Model facility for infectious disease treatment and clinical training

- Establish facilities that comply with the healthcare facility standards of MOH and can practice infection prevention protocols.
- Separate flow lines between the infectious disease area and the general area to avoid contamination, and provide a place for donning and doffing Personal Protective Equipment (PPE).
- Separate clean and unclean areas and provide facilities for proper hand washing, washing, cleaning, disinfecting, sterilizing, and waste disposal.
- Develop facilities to properly treat wastewater and solid waste in accordance with their respective hazard levels.
- Provide practical Infection Prevention and Control (IPC) training through the operation of the facility and equipment.
- Aim to become a Center of Excellence (COE) for Infectious Diseases with medical treatment and education/training functions.

2-2-1-2 Policy for Natural Conditions

Based on the aforementioned natural conditions, the following policy shall be adopted.

- (1) Wall-mounted type air conditioners will be provided in CT room, CT control room, and server room. Special isolation ward will be provided with ceiling-mounted duct type air conditioner. Air Conditioners will not be provided in general wards.
- (2) Seismic forces specified in the Ethiopian Standards will be considered in structural design.
- (3) Since the construction site is in a sloping area, the construction method should be carefully planned.

2-2-1-3 Policy for Socioeconomic Conditions

- (1) In Ethiopia, unemployment due to a lack of employment is an issue, it will be given maximum consideration to sourcing workers locally.
- (2) Regarding the price escalation trend of construction materials in Ethiopia, based on the Consumer Price Index (CPI) in April 2024 by the International Monetary Fund (IMF), the price escalation coefficient from the next month (July 2024) following the estimation time (June 2024), to the planned bidding time (April 2026) is calculated to be 1.397 using the following calculation formula.

Price escalation coefficient :

2024 CPI : 25.572

$25.572 \div 12 \times 6 = 12.786 \rightarrow 1.128 \text{ (A)}$

2025 CPI : 18.187

$18.187 \div 12 \times 12 = 18.187 \rightarrow 1.182 \text{ (B)}$

2026 CPI : 14.281

$14.281 \div 12 \times 4 = 4.76 \rightarrow 1.048 \text{ (C)}$

Price escalation coefficient $= (A) \times (B) \times (C) = 1.128 \times 1.182 \times 1.048 = 1.397$

2-2-1-4 Construction Situation/Procurement Situation or Industry Specific Situation/Policy on Business Practices

(1) Facility Planning

Many mid-rise or larger buildings and under-construction sites were found in Addis Ababa, and local construction companies with a certain level of construction technology were also confirmed.

It was confirmed that the main local construction companies have their own concrete plants and various construction machinery.

	
Ready Mixed Concrete plant owned by a local contractor	Tower crane and concrete pump truck at a construction site

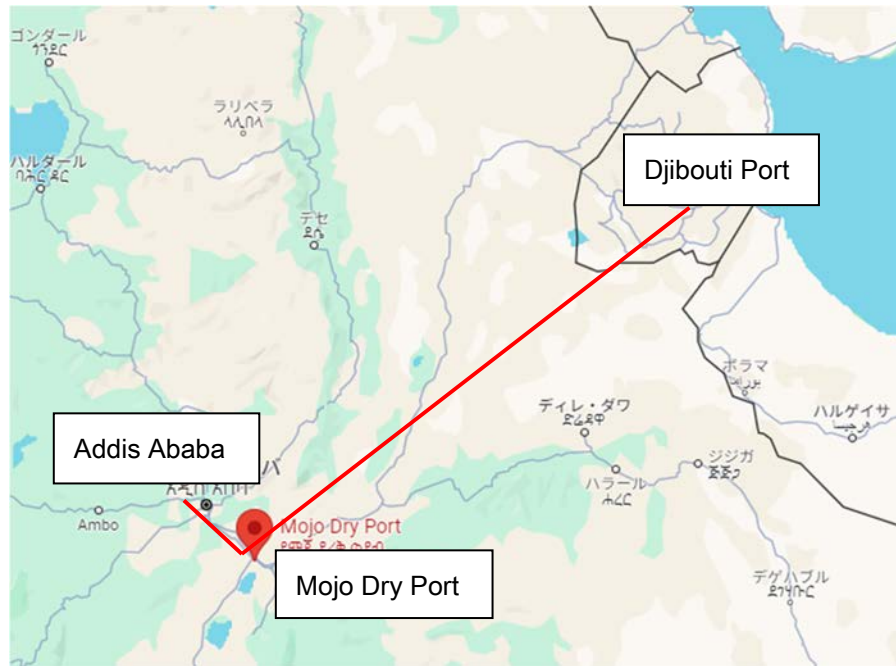
Based on the above, it was confirmed that this project can be carried out without any problems by having the Japanese construction companies subcontract with the local construction companies.

(2) Equipment Planning

1) Procurement Route

Ethiopia is a landlocked country, and when transported by sea from Japan, the cargo will be unloaded at the Port of Djibouti. Inland transportation from the Port of Djibouti to Addis Ababa is as follows.

- a) Djibouti Port Haulage, trucking from Djibouti Port to Addis Ababa via Mojo Dry Port in Ethiopia
- b) Djibouti port landing, rail transport from Djibouti port to Mojo Dry port, truck transport from Mojo Dry port to Addis Ababa



Source: JICA Survey Team

Figure 2-2 Procurement Route for Ethiopia

The time required from the start of ocean transport to arrival at the site in Addis Ababa City is about 3 months. Interviews with the shipping companies confirmed that the time required for transportation b) is a few days earlier, but there is no significant difference. The Japanese agent for Ethiopian Shipping is Eagle Shipping. If ocean freight is transported by other companies, it will be transported by truck from the port of Djibouti to Ethiopia.

2) Registration of Medical Devices with EFDA

All medical devices used in Ethiopia must be registered with the Ethiopia Food and Drug Authority (EFDA). However, medical devices to be developed by ODA are exempted from medical device registration by submitting a Pre-Import Permit (PIP) to EFDA. The Pre-Import Permit can be submitted online through EFDA's eRIS system, and is usually approved within five business days of application. The import permit is valid for 12 months after issuance.

3) Department in charge of grant aid within the Ministry of Health

The Survey Team visited the Medical Device Management Desk of the MOH and confirmed that this department handles pre-importation applications to EFDA for donations of medical devices, as well as tax exemptions and other procedures. The following documents must be submitted to the MOH for pre-importation application.

- a) Invoice (List of medical devices with prices clearly indicated)
- b) Packing List
- c) Certificate of Origin

d) Donation Certificate

Regarding import duties, MOH has confirmed with the Mojo Dry Port Department that import duties are exempted by submitting Duty-free letter and Tax-free letter to the Mojo Dry Port.

Regarding VAT on locally procured medical equipment, MOH has confirmed with the MOF (Ministry of Finance) that it is exempt from VAT (not refundable) by submitting a Support Letter to the MOF (Ministry of Finance).

2-2-1-5 Operation and Maintenance Policy

(1) Facility Planning

The Survey Team have identified a situation in which existing facilities have not been properly operated due to a lack of planned maintenance and management. For the purpose of improving the operation and maintenance management capacity of such facilities, the following two items will be incorporated as soft components.

(data) Item	Objective	Target Group	Contents
Strengthening facility management	Reinforcement of facility maintenance and management systems	Facility maintenance managers, hospital administrators, medical staff, cleaning and maintenance staff	Maintenance of special infectious disease wards, maintenance of air-conditioning systems, medical waste disposal, etc.
Establishment of a facility operation system in normal times and during outbreaks of infectious diseases	Strengthening the response to infectious diseases	Infection Control Committee [Director, department heads (physicians, nurses), facility and equipment maintenance managers]	Formulation of facility operation methods and on-the-job training during normal times and infectious disease outbreaks, etc.

(2) Equipment Planning

Maintenance of medical equipment can be divided into three categories: those performed by users such as physicians, nurses, and technicians regularly; those performed by clinical engineering department technicians on a regular basis or when equipment malfunctions; and those performed by manufacturers' agents and others. Daily preventive maintenance is important for the proper and sustainable use of medical equipment, and guidance by the manufacturer or others is required at the time of equipment installation. It is necessary that the clinical engineering department take the lead in preventive maintenance and prepare a checklist for users to perform such maintenance regularly. Although the clinical engineering department is able to provide staffing and support for repairs, there are cases where replacement parts cannot be procured due to budget shortfalls, etc. Appropriate budgetary measures are required in cooperation with the hospital administration department. The Japanese side will be responsible for the periodic inspection and repair of

advanced and expensive equipment (CT scans, mobile X-ray systems, ultrasound systems, anaesthesia machines, and ventilators), since it is difficult for the engineers in the clinical engineering department to handle such equipment. Under the two-year maintenance service contract, the company will provide support for failure, periodic inspections, and the provision of replacement parts. At the same time, the maintenance service contract will also include the confirmation of inspection items for daily inspections and guidance on inspection skills, in order to improve the maintenance and management capabilities of the equipment.

2-2-1-6 Policies for Setting Grades of Facilities and Equipment

(1) Facility Planning

As an infectious disease hospital, this facility will be designed to be of a grade that will enable continued operation even in the event of a disaster. The grade will be set with consideration given to the durability and structural safety required for the facility.

The construction material plan must consider climatic conditions, site location, local construction situation, construction period and cost, and maintenance and operation costs. The policy requires the following conditions:

Generally, building materials should be locally sourced, mainly using local construction methods, to reduce construction costs and shorten the construction period.

Select building materials suitable for the local climate. They must be weather-resistant and easy to maintain to reduce maintenance costs.

If suitable materials are not available through local procurement, importing them from Japan must be considered.

When applying local construction methods and locally procured products, the situation of existing facilities should be fully analyzed and used as a reference.

Based on the above basic policy, relevant facilities are analyzed, and construction materials are planned. Commonly used construction materials are available in Ethiopia, including ready mixed concrete and rebar. Therefore, making maximum use of locally procured materials for general construction materials is a policy after checking their specifications and quality. The project must ensure reasonable construction costs, considering it is a grant aid project.

(2) Equipment Planning

The equipment requested in this project is the minimum equipment required to operate the new emergency room, operating room, sterilization room, delivery room, special infection ward, ICU ward, HDU ward, and general ward, all of which are currently used in the existing hospital. The specifications of the requested equipment should be planned assuming the same level of functionality as the existing equipment. In addition to the functionality of the equipment, the project will also consider the ease of maintenance after procurement, the procurement of spare

parts and consumables, and the after-sales service of the manufacturer or manufacturer's agent. The number of beds should be sufficient to allow each department to operate appropriately, and the number of spare patient beds should also be planned as necessary to cope with outbreaks of infectious diseases.

2-2-1-7 Policies Related to Construction Methods/Procurement Methods and Construction Schedule

(1) Facility Planning

1) Construction Period

Ethiopia's rainy season is from June to September. With regard to the construction schedule for this project, earthworks and foundation work are scheduled during the rainy season in relation to the Japanese Cabinet calendar (April 2025).

The necessary construction period will be considered in advance and reflected in the construction plan.

2) Construction Planning

As part of the preparatory and temporary work for the facility construction, the existing concrete block wall will be temporarily removed and a temporary road for construction vehicles to pass through will be constructed on land adjacent to the construction site. In addition, a tower crane will be installed to carry construction materials.

After this preparation, the following works will be carried out: earthwork → foundation work → structural work → finishing work, equipment work, external work including restoration work for temporarily removed concrete block walls and completion inspection and handover.

3) Labor

Generally, workers can be procured locally for most construction work since Ethiopian construction companies have engineers. Since it is necessary to maintain a quality equivalent to that in Japan under the guidance of Japanese construction companies, in this project, the Japanese construction company will be in charge of overall construction management and quality control, including technical guidance (technology transfer) to engineers and local workers.

4) Construction Materials and Equipment

In Addis Ababa, the main construction materials (Portland cement, aggregates, reinforcing bars, ready-mix concrete, concrete blocks) can be locally procured. However, some finishing materials will be imported and procured through agents in Addis Ababa. Careful attention must be paid to ensure the homogeneity and quality of the products. Generally, the main construction materials required for construction work can be procured locally. In addition to

products produced in Ethiopia, construction materials from Europe, South Africa, and China are widely distributed and readily available in the local market. Therefore, construction plans will be drawn up using these materials as much as possible.

5) Procurement of Materials and Equipment

Construction materials that can be procured within Ethiopia are available in Addis Ababa. When transporting construction materials from a third country or Japan, they must be transported by sea to the port of Djibouti in the neighboring country and land transportation to site.

(2) Equipment Planning

1) Confirmation Period for Equipment Drawings

The period for confirming the equipment drawing of the procured equipment is expected to be 2 months at the maximum.

2) Production Period of Equipment

The delivery period of procured equipment is expected to be up to 8 months, depending on the product.

3) Inspection and Shipping Period

The inspection and shipping period, including pre-shipment inspections, is approximately one month.

4) Equipment Transportation Period

The total period of ocean transportation from Yokohama Port to Djibouti Port by container ship and land transportation from Djibouti Port to Addis Ababa is about 3 months.

5) Period of Installation Work, Acceptance Inspection, etc.

Installation work, adjustment and commissioning, and instruction on initial operation shall be carried out by the installation engineer. The hospital staff, the procurer, and the Consultant shall be present at the acceptance inspection and delivery of the equipment. Of all the equipment, the CT will take the longest time for installation and adjustment, which is approximately 18 days. Taking into account the weekend holidays, the total time required for the work is estimated to be 25 days.

2-2-1-8 Policy on Consideration for Gender and Persons with Disabilities

With respect to gender and equity considerations for vulnerable groups in the project, considerations in facility design shall be described in the design criteria. This section presents the results of the survey on gender and disability considerations in SPSH.

Table 2-3 Ratio of Male to Female Staff at SPSH

Category	Type of Profession	Sex		Total	Female Ratio
		Female	Male		
Health professional staffs of the Hospital	Specialist	46	56	102	45%
	General Practitioners	54	87	141	38%
	Public Health	25	31	56	45%
	Public Health Education and promotion professional IV	1	2	3	33%
	Pharmacy	21	39	60	35%
	Laboratory	31	29	60	52%
	Radiologic	15	23	38	39%
	Nurse	142	152	294	48%
	Midwifery	22	39	61	36%
	Physiotherapist Professional	3	2	5	60%
	Optometry Professional	1	2	3	33%
	Anesthesiology Professional	15	16	31	48%
	Environmental Health Profession	0	3	3	0%
	Psychiatry Professional	0	4	4	0%
	Biomedical Engineer	2	6	8	25%
	Dental	2	2	4	50%
	Other	4	8	12	33%
Admin Staffs of the hospital		191	113	304	63%
OVERALL TOTAL		575	614	1189	48%

Source : SPSH

The table above shows that the percentage of women staff in the hospital as a whole is 48%, an ideal balance considering the gender ratio. The ratio of female specialists is also high at 45%, and only environmental health professionals, psychiatry professionals, and biomedical engineers have ratios below 30%. Improvement of female ratio is needed in these occupations where the percentage of women is relatively low. On the other hand, it is noteworthy that in Japan and other countries, a high percentage of nurses and midwives are generally female, while in Ethiopia, the percentage of male nurses and midwives is higher compared to all categories. This is because in Ethiopia, including rural areas, men still have better access to education, and the proportion of men tends to be higher among nurses and midwives with qualifications that require higher education.

On the other hand, only two of the seven hospital board members (28.5%) are women, and although it is difficult to make a simple percentage comparison due to the small number of board members, one more woman would increase the ratio to 43%, which is close to the ratio of women staff in the hospital as a whole. It is desirable to have such a situation.

As for the handicapped, 12 of the total staff members are handicapped (based on hospital report), including doctors, pharmacists, human resource officers, and administrative staff. The hospital

does not have any special positions for people with disabilities, but rather provides equal opportunities for them according to their abilities. The Director in charge of human resources also has a disability, and it is expected that the hospital will continue to hire staff with disabilities in a supportive environment. In addition, about 20 patients with disabilities visit the hospital every day, and wheelchairs and other equipment are arranged at the registration room near the hospital entrance to provide transfer support, but the wheelchairs are getting old and there are requests for new equipment.

In terms of policies related to consideration for gender and persons with disabilities, the hospital has a balanced ratio of male to female staff. Also, equal opportunities are provided for the employment of persons with disabilities, and as mentioned above, they are in fact being hired. However, there is room for improvement in some positions where the gender ratio is skewed and in consideration for patients with disabilities. These issues will be incorporated into the plans for this project.

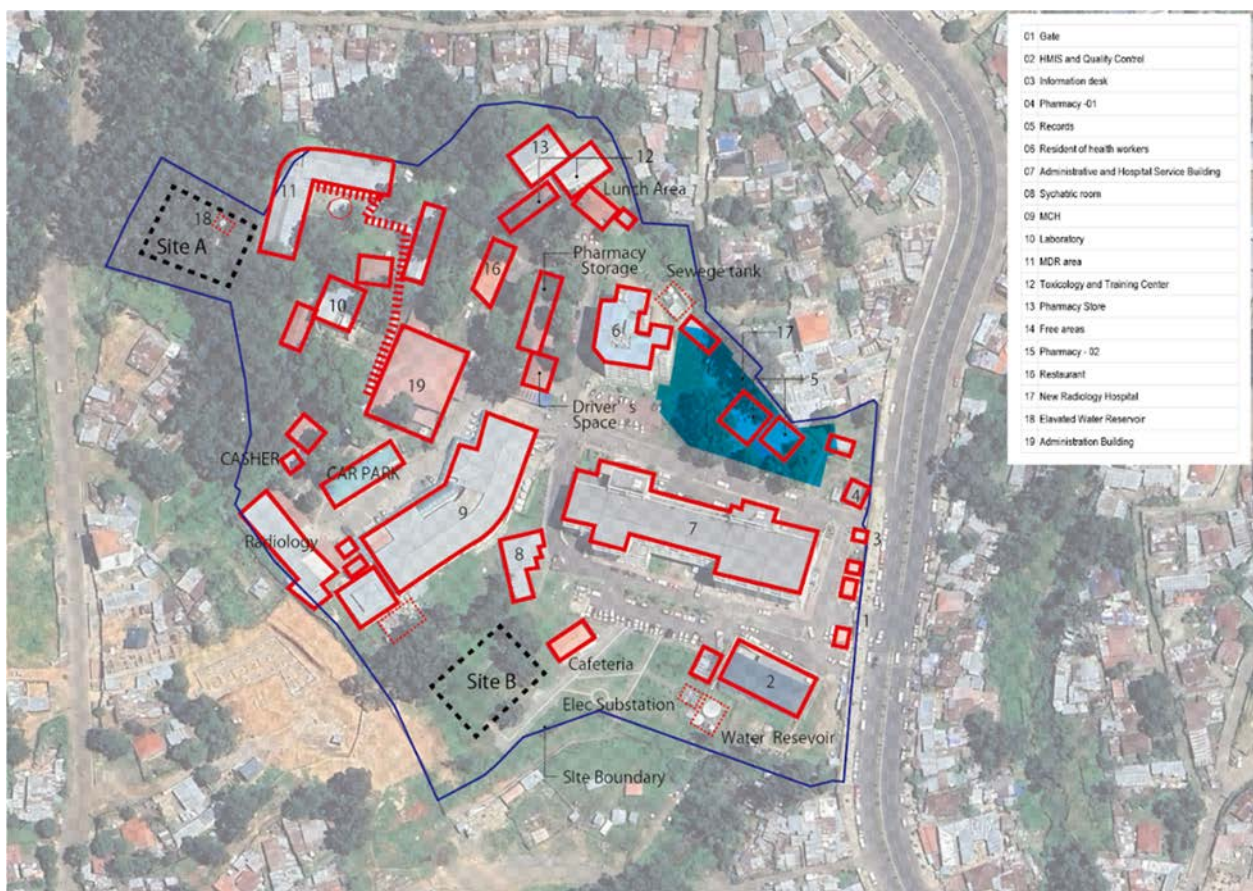
2-2-2 Outline Design

2-2-2-1 Site and Facility Layout Plan

(1) Construction Site

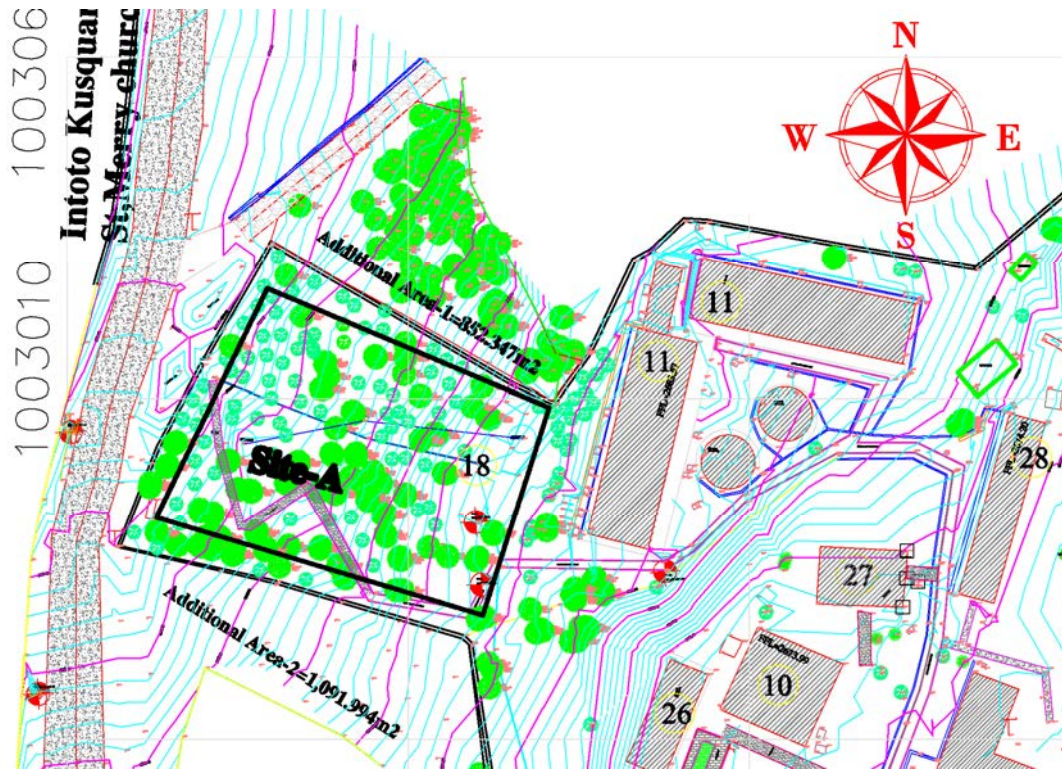
The hospital site map is shown in Figure 2-3. It includes candidate sites, Site A which is presented by the Ethiopian side, and Site B which is proposed by the Survey Team based on their on-site investigation.. As a result of discussions, it was agreed that Site A is the project site, as it could be planned to satisfy the number of beds requested (40 beds during normal operation / 60 beds during outbreaks) and it complied to the concept of the hospital master plan where the new infectious diseases building is planned to be in the Infectious & Communicable Disease Zone.

Site-A is a steeply sloping, wooded area with tall trees. In addition, there is a water supply facility used by the existing facility. Therefore, it was confirmed during the discussions that the removal of trees and existing facilities and other necessary preparations should be carried out prior to the start of construction, at the expense of the Ethiopian side.



Source: Survey team based on materials provided by MOH

Figure 2-3 Proposed Construction Site



Source: Topographic Survey Report

Figure 2-4 Topographic Survey Map

1) Facility layout plan

An entrance (main gate) dedicated to the Infectious Disease Building will be built on the existing road on the northwest side of the site (Site-A).

The main gate level (2,698 m above sea level) is used as the standard ground level (GL), and the main entrance is set at GL + 300 mm as the ground floor level (GL).

The site is steeply sloped, with an elevation difference of approximately 12 meters (equivalent to three stories of a building), so the building will be constructed along the slope, with two stories above ground level and three stories below ground level.

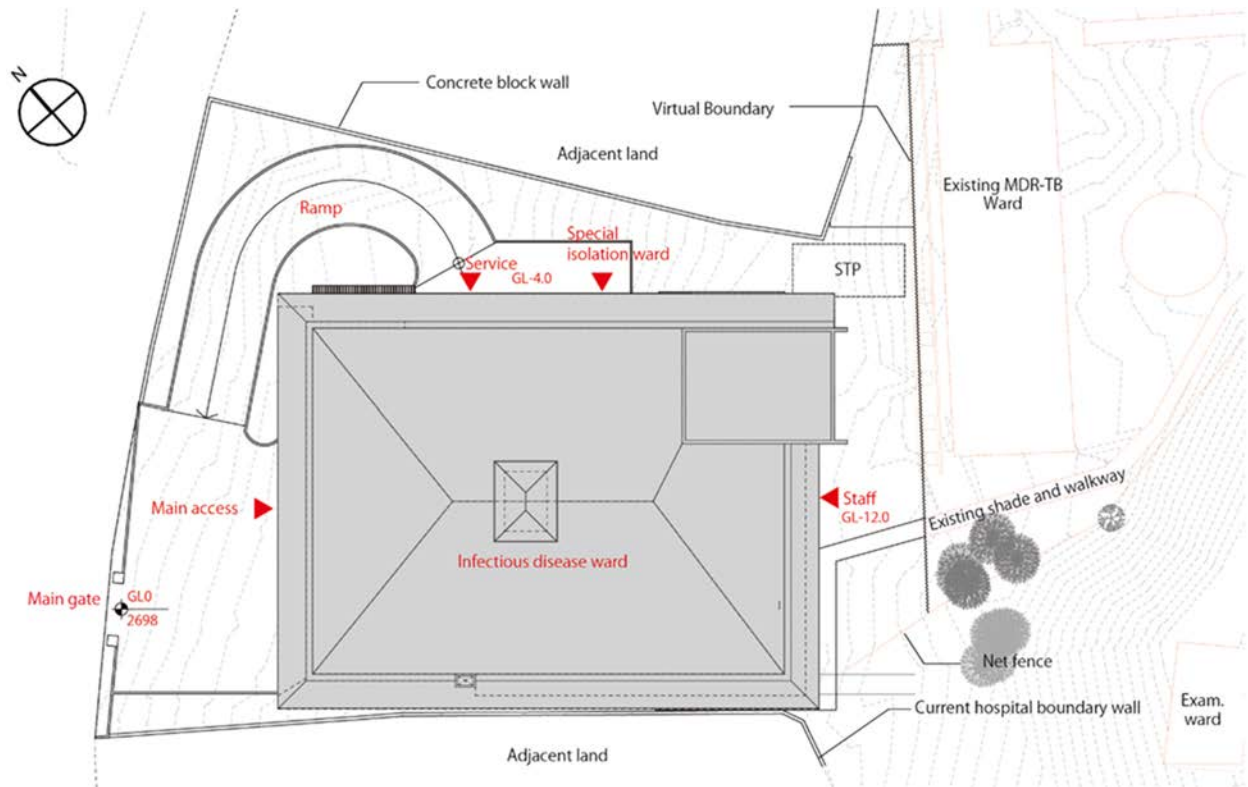
On the ground and the first floor will be medical facilities such as outpatient clinics and inpatient wards, while the basement floors (the 1st to 3rd basement floors) will be used for various rooms for staff, services, and temporally isolation facilities in the event of an infectious disease outbreak.

The front of the building (on the street side) should be filled in at the same level as the road to allow vehicles access and turn around on the side.

The building will be located close to the northwest boundary of the site, and a ramp will be provided on the northeast side to allow service vehicles to access the basement floor.

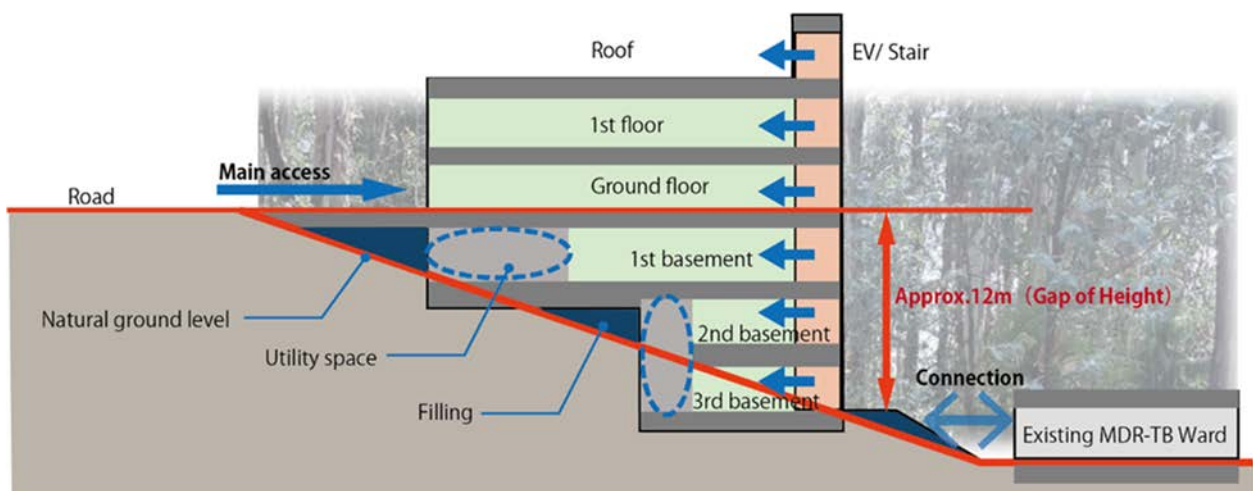
The height of each floor will be 4 m. A sub-entrance will be provided on the third basement level (GL-12 m) to provide access from existing facilities (e.g., MDR-TB ward and laboratory building).

Stairs and elevators will be provided from the sub-entrances directly to each floor.



Source: JICA Survey Team

Figure 2-5 Building Layout Plan



Source: JICA Survey Team

Figure 2-6 Use of the Sloping Land

(2) Building Plan

1) Facility Planning

a) Outpatient Clinic Functions

Patients with suspected infectious diseases, returning patients who have been diagnosed with infectious diseases, and patients requiring quarantine isolation will be accepted as needed. In the event of an infectious disease outbreak, isolation spaces for patients with specific symptoms will be planned both indoors and outdoors.

Emergency patients will be acceptable 24 hours a day, and a treatment room with space for 3 beds will be provided.

Provide two examination rooms that can also serve as treatment rooms.

Establish a pharmacy and a reception desk for patient registration and accounting,

A specimen collection room (negative pressure) will be provided. Specimen testing will be carried out in the existing laboratory.

b) Diagnostic and Treatment Functions

Provide a surgical operating room and delivery room dedicated to patients with infectious diseases.

Provide a CT examination room dedicated to patients with infectious diseases. General radiography will be handled by a mobile X-ray at the patient's location.

c) Inpatient Care Functions

Establish inpatient wards with 40 beds that can be expanded to 60 beds with extra beds in the event of an infectious disease outbreak.

The breakdown of the number of rooms and beds is as shown in Table 2-4.

Four of the one-bed rooms should be ICUs that are equipped with ventilators.

In addition to the above, four of the one-bed rooms and one of the three-bed rooms are designated as High Dependency Units (HDU).

The rooms should be designed so that infection control protocols against contact, droplet, and airborne infections can be practiced, and each room should be able to switch between negative and normal pressure.

The rooms where patients are isolated should be equipped with toilet, lavatory, and bathing facilities.

One-bed rooms should be large enough to accommodate an extra bed in the event of infectious disease outbreaks.

Table 2-4 Breakdown of number of rooms and beds

	normal times		In the event of an infectious disease outbreak	
	number of rooms	number of beds	number of rooms	number of beds
One-bed room	12	12	4	4
Two-Bedroom	4	8	12	24
Three-bedded room	6	18	6	18
Day room	-	-	-	2
Temporary ward	-	-	1	10
Special Isolation Units	2	2	2	2
Total		40		60

Source: JICA Survey Team

d) Administration and Service Functions

An administrative office, conference room, changing room, security guard room, and maintenance staff room will be provided.

Establish a kitchen and laundry room for food service and linen supply exclusively for patients with infectious diseases.

Provide extra bed storage (also serves as a materials warehouse), general waste storage, medical waste storage, and other necessary mechanical and equipment space.

Provide a dedicated mortuary.

e) Training and Educational Functions

The entire facility will be used as a clinical training facility for infectious disease care.

When not in use by patients, special isolation rooms are used for training and practice as a model for advanced isolation care facilities.

During normal times, the temporary ward will be used as lecture, training, and practice spaces.

2) Contents of the Facility Component

The facility component of the project consists of the following

Table 2-5 Composition of the Facility Component

Floor	Department	Major rooms
B3F	Kitchen	Cooking room, washing room, food storage, garbage storage
	Laundry	Laundry, used linen storage, clean linen storage
	Administration	Bed and material storage, changing rooms (for kitchen and laundry staff)
B2F	Administration	Administrative office, conference room, changing rooms, server room
	Service	Firefighting water tank and pump space
B1F	Inpatient ward	Special isolation rooms (2), preparation room, AC machine rooms
		Temporary ward (10 beds during infectious disease outbreak), nurses' station, dirty utility
	Radiation diagnosis	CT room, control room
	Administration	Security Office, Maintenance staff room
	Service	General waste storage, medical waste storage, space for generator and substation equipment, space for water reservoir, electrical room, medical gas supply room, mortuary
GF	OPD	Reception office, examination rooms (2), treatment room, specimen collection room, pharmacy, patient toilets
	Surgery	Operating room, preparation room, changing rooms, sterile material supply room, AC machine rooms
	Delivery	Delivery room, neonatal room
	Inpatient ward	3-bed rooms (6), nurses' station, dirty utility
1F	Inpatient ward	One-bed rooms (8), two-bed rooms (4), intensive care units (4), nurses' station, ward pharmacy, staff rooms, duty room, physicians' room, dirty utility janitor's storage, equipment storage, linen closet
RF	Service	Elevated water tank yard, AC machine yard
Public Facilities		Hospital elevators (2), staircases (2), PPE (personal protective equipment) dressing rooms, corridors, toilets, pipe shafts, etc.

Source: JICA Survey Team

3) Floor Plans

a) Third Basement Floor (B3F)

Provide a kitchen and laundry room where dishes and linens used by infected patients can be properly disinfected and stored.

Provide two elevators, one for supply and the other for collection to establish one-way supply and collection.

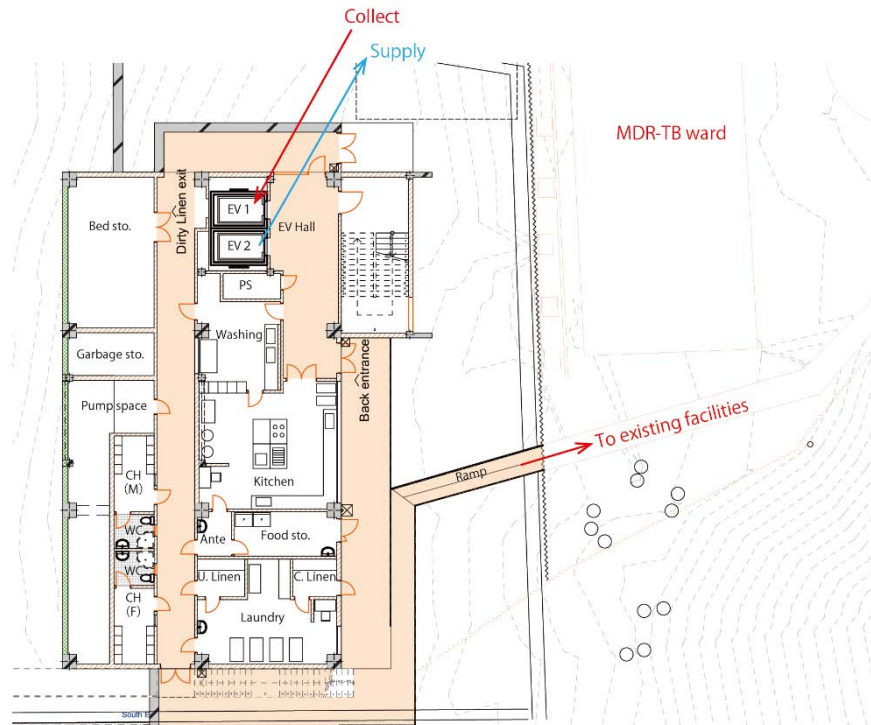
The kitchen should be demarked into clean and unclean areas by separating the food storage, cooking, and washing rooms. The cooking room should have an anteroom for hand washing and dressing.

The laundry room should have separate storages for used and clean linen to prevent contamination through a one-way process.

Provide separate female and male changing and break rooms for kitchen and laundry staff.

A rainwater harvesting tank will be installed using part of the foundation. Rainwater will be reused as washing water for the toilets.

Extra beds and general materials storage should be provided near the elevators.



Source: JICA Survey Team

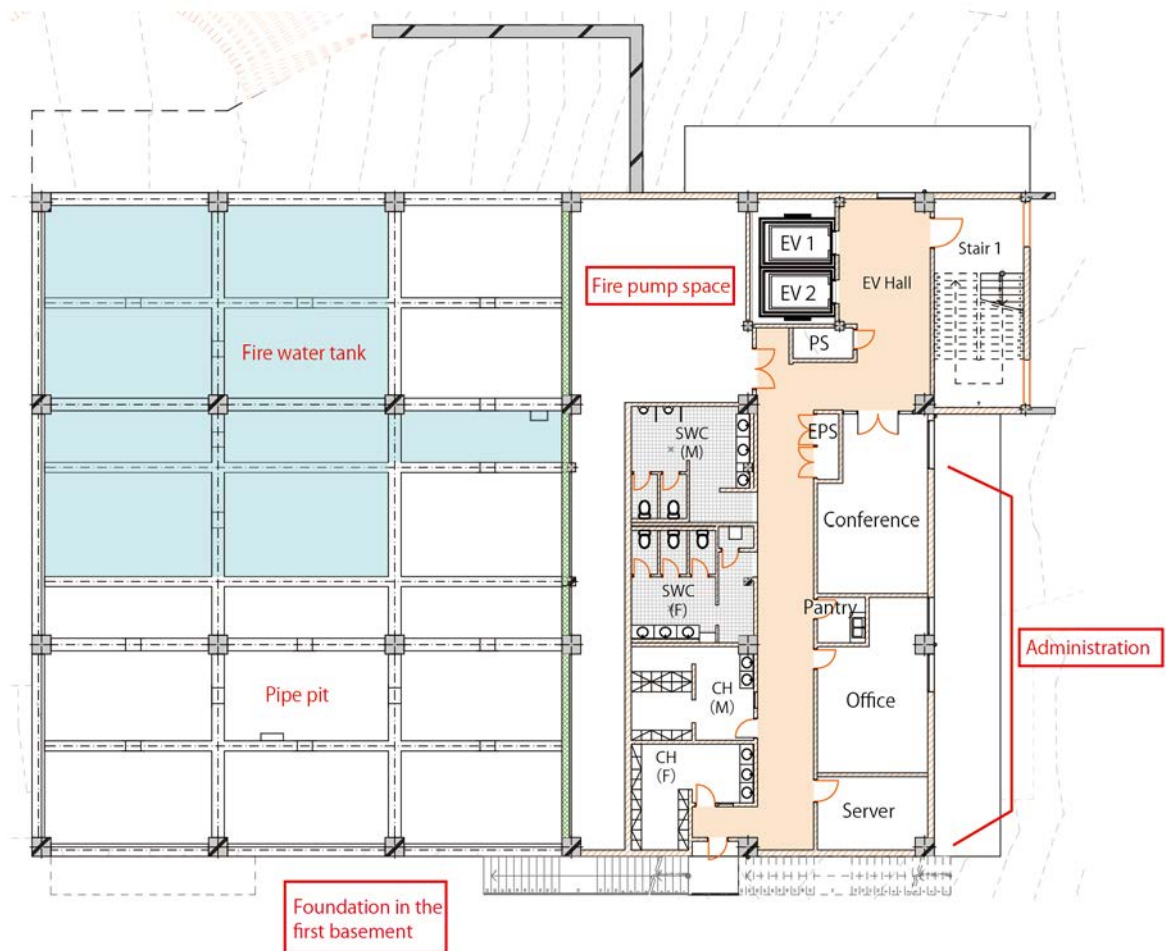
Figure 2-7 Plan of B3F

b) Second Basement Floor (B2F)

Mainly used as a facility for staff.

Conference rooms (for approximately 30 people), administrative office, kitchenet, IT server room, changing rooms for staff (men and women), and staff toilets (men and women).

A part of the foundation under B1F will be used for the fire water tank. Since local regulations require firefighting pumps to be installed at the same level as the water tank, a pump space will be provided on the second basement floor.



Source: JICA Survey Team

Figure 2-8 Plan of B2F

c) First Basement Floor (B1F)

A special isolation ward (2 x 1-bed rooms) will be provided. Patients are transported directly to the preparation room from the outside yard, and medical staff enter the preparation room from the interior corridor inside the ward.

A temporary ward (10 beds) will be opened in the event of an infectious disease outbreak for the purpose of providing cohort isolation (group isolation of patients with the same disease). The entrance and exit should be one-way, and there should be an anteroom for donning and doffing PPE and for receiving and disposing of goods and waste.

Provide a CT examination room close to the elevators.

A ramp and service yard will be provided for service vehicles to enter the building from the road at ground level. The service yard will include a water reservoir, stand-by generator, electrical substation, medical gas supply, general waste storage, medical waste storage, maintenance staff room, and a security office at the entrance to the building.

Establish a dedicated mortuary in a location where the body can be picked up by car without being seen by the public.

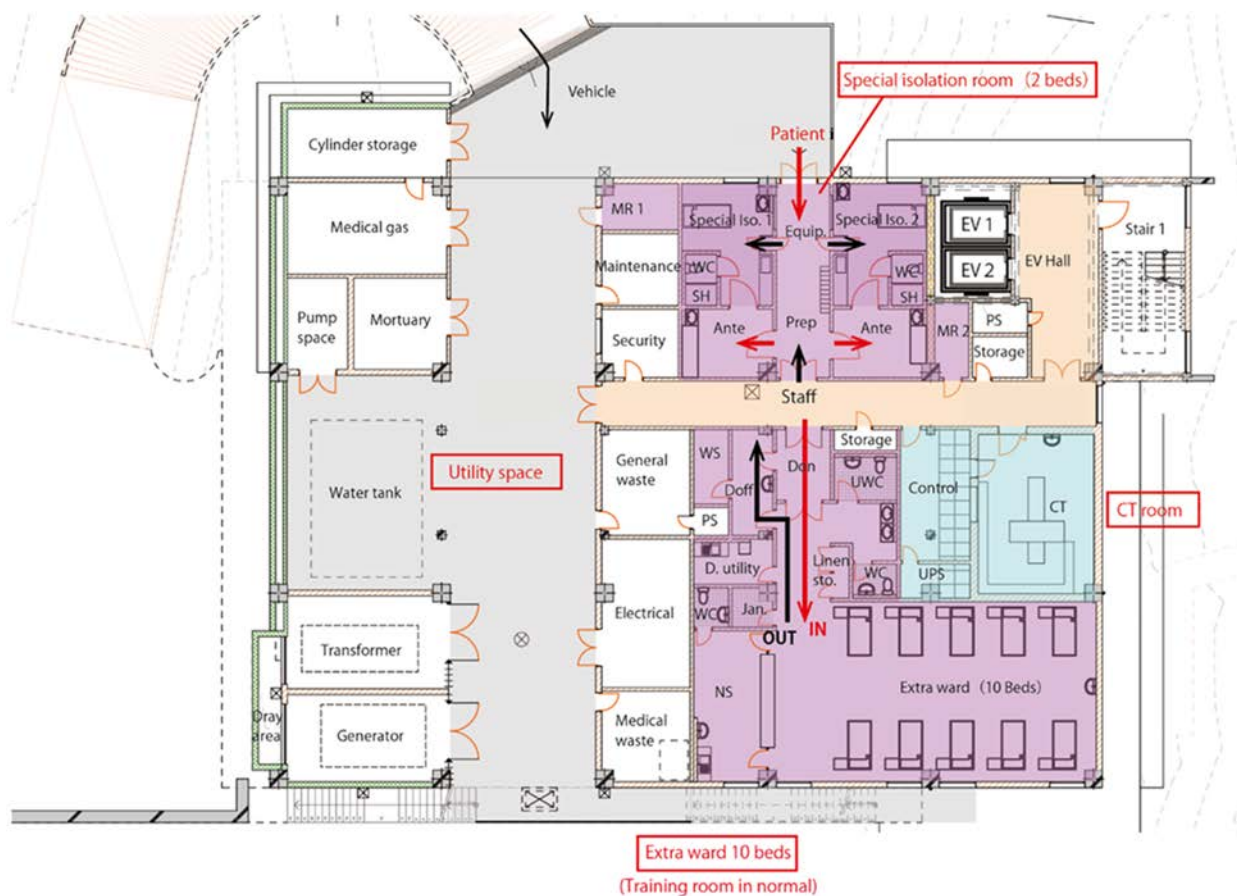


Figure 2-9 Plan of B1F

Source: JICA Survey Team

d) Ground Floor (GF)

To facilitate patient access, the outpatient department will be located on the Ground Floor. Main entrance should have an anteroom for mask donning and temperature measurement.

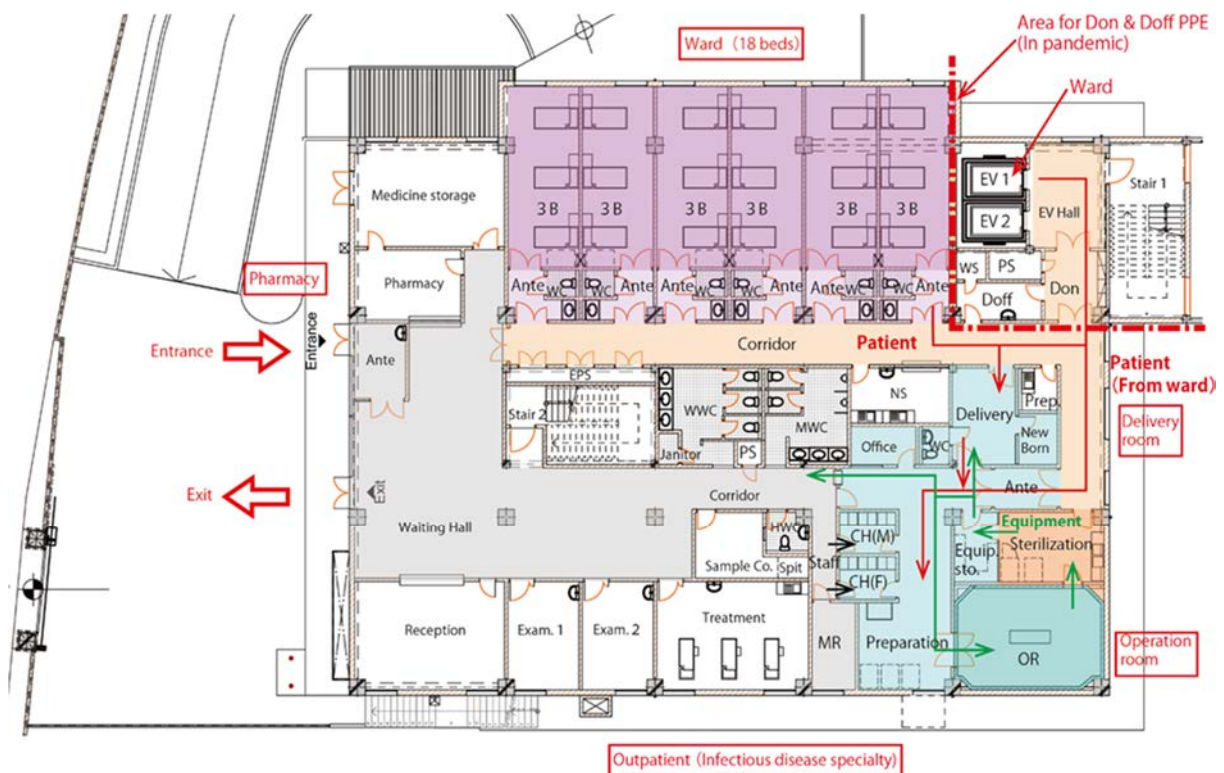
A reception, pharmacy, treatment room, specimen collection room and examination rooms, are located facing the outpatient waiting hall.

The operating room is located next to the sterilization materials room and is partitioned off as a clean area together with the preparation room. The delivery room is located near the hospital room (HDU), and in the event that emergency surgery is required, a back door is provided that allows direct access from the delivery room to the operating room.

There will be a ward with 6 rooms of 3 beds each, for a total of 18 beds. Each room will have an anteroom to enable negative pressure management.

The ward and the surgical and delivery areas should be separated by doors with card readers to prevent general users from entering.

An anteroom for putting on and taking off PPE will be set up at the entrance from the stairs and elevator, so that the entire first floor can be isolated in the event of an infectious disease outbreak.



Source: JICA Survey Team

Figure 2-10 Plan of GF

e) First Floor (1F)

There will be a total of 20 beds in the ward, consisting of 8 single rooms, 4 double rooms, and 4 ICU rooms. In the event of an infectious disease outbreak, the number of beds will be increased to a total of 30 by adding extra beds.

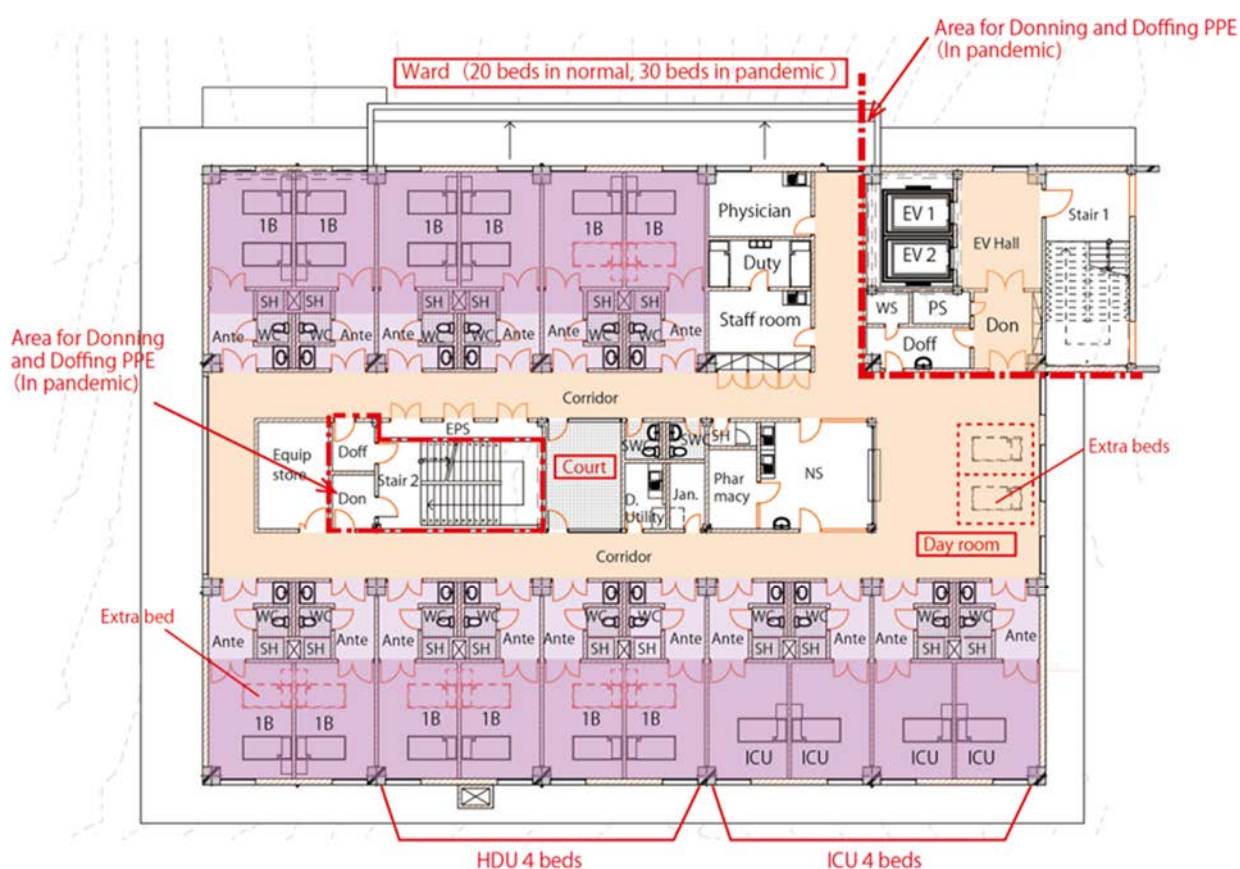
An anteroom is provided in each hospital room, and during normal times, patients can be isolated in their own rooms. For details of the hospital rooms.

An area for putting on/taking off PPE and for the delivery and collection of goods and waste will be provided at the entrance to the ward from the stairs or elevator, and in the event of an infectious disease outbreak, the entire ward can be closed off and isolated.

A compact double-corridor plan that allows for lighting and ventilation from all directions will be adopted.

A light court with a glass roof is provided in the center, which is used for lighting the corridors and bringing in outside air, as well as for multipurpose use as a sunroom, etc.

Provide staff facilities such as a nurse station (NS), ward pharmacy, waste disposal room, janitors' storage, equipment storage, linen storage, toilet/shower rooms, break room, duty room, and physicians' room.



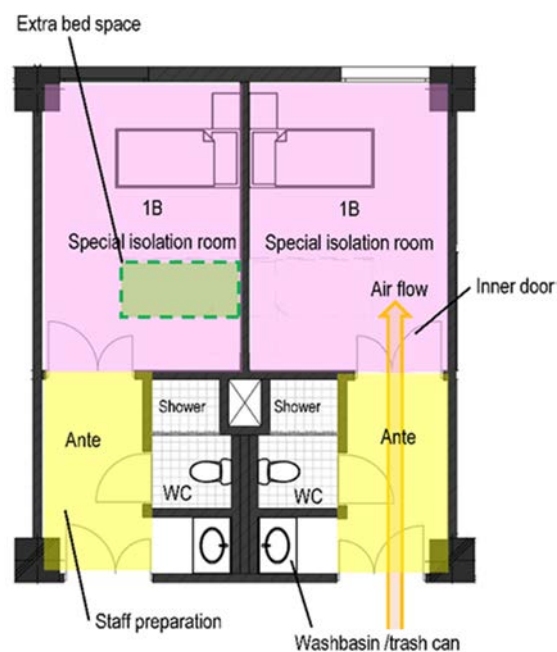
Source: JICA Survey Team

Figure 2-11 Plan of 1F

(3) Hospital Room Plans

1) Standard Room

- Private rooms with an anteroom are standard. In accordance with the hospital infection prevention protocol, the rooms should be able to respond to contact infection, droplet infection, and airborne infection.
- Assuming that a patient is to be isolated for a long period of time in the room, space should be secured for the installation of daily necessities such as a lavatory, toilet, and shower, as well as living necessities such as a desk, chair, and storage furniture for the patient.
- In the event of an infectious disease outbreak, the number of beds in the room will be increased to two by adding an extra bed. The internal width of the room should be at least 3.3m to allow for the bed to be moved in and out.
- The anteroom should provide space for a washbasin for staff use, hand sanitizer, paper towels, trash receptacles, etc. In addition, a storage cabinet for masks, gloves, gowns, goggles, etc. should be built in.
- If negative pressure control is required, close the front and rear doors of the anteroom to prevent air backflow.



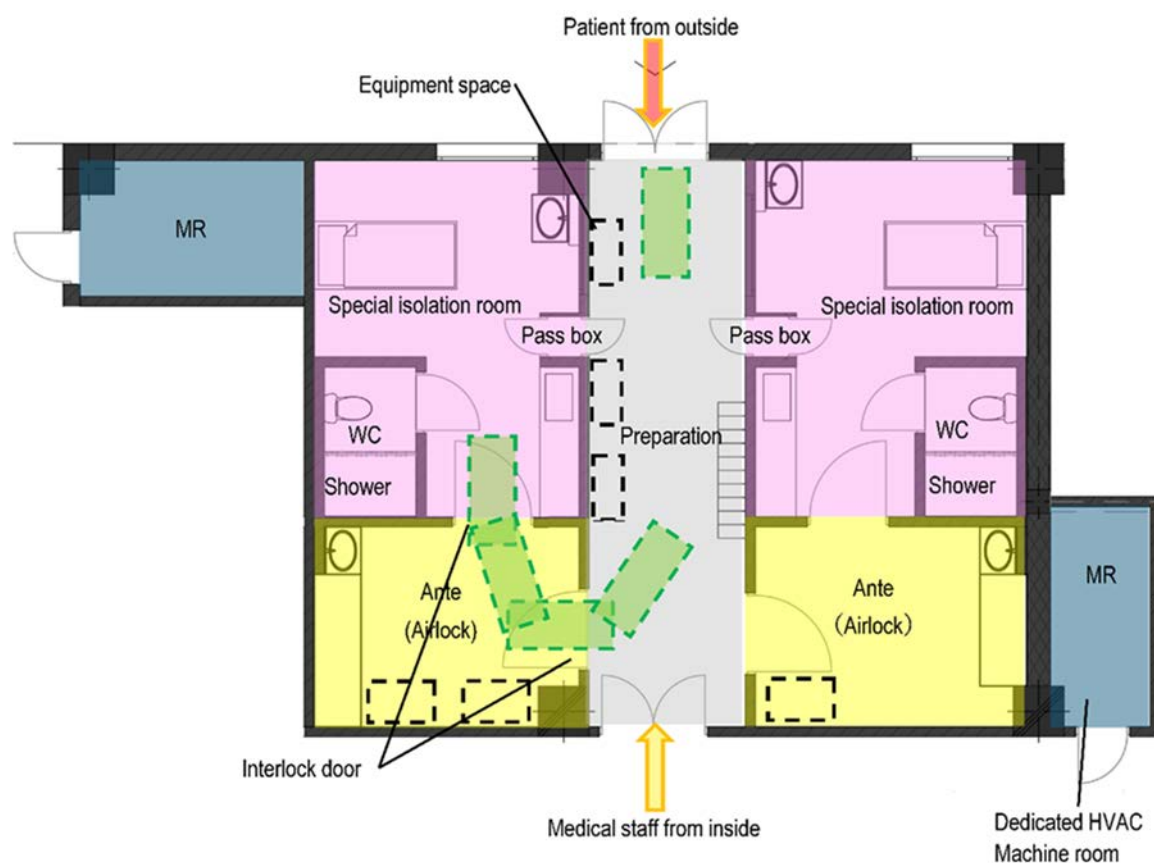
Source: JICA Survey Team

Figure 2-12 Standard Hospital Room Floor Plan

2) Special Isolation Ward

- The Special Isolation Ward is a facility for isolating and treating patients suspected of having a serious infectious disease that is highly contagious and poses a significant risk to society.
- The unit consists of two separate units made up of patient rooms and ancillary rooms, and patients are transported directly from outside through a dedicated door.
- Entry and exit to the patient room is via an anteroom room (airlock) with double interlocked doors, and the inside of the patient room is kept at a stable negative pressure of -20Pa. The air conditioning is all fresh air, and circulation and exhaust air are carried out via a HEPA filter.
- Medical staff can observe the inside of the patient room through glass from the preparation room, and food and medicine are delivered via a pass box.

- As the patient is completely isolated, the patient room should be a spacious private room (approx. 20m²) with toilet, washbasin, shower and other living facilities.
- A hand-washing basin, changing locker, medical cart, waste cart, etc. will be installed in the anteroom, and a hand-washing basin, work sink, tabletop sterilizer, etc. will be installed in the patient room.
- Infectious waste and wastewater from the special isolation ward will be treated on-site.



Source: JICA Survey Team

Figure 2-13 Floor Plan for Special Isolation Unit

(4) Area Table

The area of each floor is shown in following Table 2-6.

Table 2-6 Area Table

floor	Indoor floor area (m ²) (Total floor area)	Outdoor floor area (m ²)	Construction floor area (m ²)
		Service and machine yard	
B3F	263.67	80.62	344.29
B2F	344.28	-	344.28
B1F	649.81	325.40	975.21
1st floor	1,012.16	-	1,012.16
2nd floor	939.55	15.75	955.30
rooftop structure	31.89	64.17	96.07
plan	3,241.37	485.94	3,727.31

Source: JICA Survey Team

(5) Sectional Plan

- Make effective use of the sloping terrain. Use the parts of the basement that face the outside air and have windows as living spaces and use the parts that are buried underground as equipment spaces and warehouses.
- In accordance with the slope, install two levels of foundation on the first basement floor and the third basement floor. Use the vacant space created in the foundation structure as a water tank or piping pit.
- The roof will be a concrete slab with a 2% water gradient.
- Although there is relatively high rainfall in summer, there is almost no rainfall in winter and water sources are scarce, so rainwater from the roof will be collected in underground rainwater storage tanks and reused to the extent possible.
- The building is located in a mountainous area, so it is relatively cool throughout the year, but it is close to the equator and the sunlight is strong, so eaves are provided on each floor to mitigate the sunlight.
- The standard floor height is 4.0m, and the standard ceiling height for living spaces is 2.8m (3.2m for operating rooms and CT rooms), and the plan is designed so that there is no interference with the mechanical equipment piping, etc. in the ceiling.



Source: JICA Survey Team

Figure 2-14 Cross-Sectional Plan

2-2-2-2 Structural Design Concept

(1) Structural Design Philosophy

The structural design should fully consider the following:

- Ensure structural safety, stability, and the functionality and habitability of the building.
- Provide sufficient structural strength and rigidity to maintain the hospital's functionality during natural disasters.
- Adopt a structural system that does not only facilitate equipment maintenance but also enables flexible operations during normal times and pandemic.
- Design a highly flexible floor plan without walls to enhance usability and habitability.

(2) Applicable Codes

- 1) Building Directive Mo.2/2010 (Addis Ababa city Administration Construction Office)
- 2) Ethiopian Building Standard Code (EBSC, The Ministry of Urban Development and Infrastructure (MoUDI))
- 3) Compulsory Ethiopian Standards (CES, Ethiopian Standards Agency (ESA))

It was confirmed that all the codes below are based on ES EN 2015.

CES 141 Basis of Structural Design 2015

CES 142 Compulsory Ethiopian Standard: Actions on structures

- Part 1-1: General actions – densities, self-weight, imposed loads for buildings

CES 143 Compulsory Ethiopian Standard: Actions on structures

- Part 1-2: General actions – Actions on structures exposed to fire

CES 145 Actions on Structures

- Part 1-4: General Actions –Wind actions.

CES 148 Compulsory Ethiopian Standard: Actions on structures

- Part 1-7: General actions – Accidental actions

CES 149 Compulsory Ethiopian Standard Design of Concrete Structures

- Part 1-1: General rules and rules for buildings

CES 158 Compulsory Ethiopian Standard Geotechnical Design

- Part 1: General rules.

CES 160 Compulsory Ethiopian Standard Design of Structures for Earthquake Resistance

- Part 1: General rules – seismic actions and rules for buildings

CES 164 Building Spatial Design 2015

4) JIS Standard (Japanese Industrial Standard)

For items not clearly specified in 1) to 3) above, refer to JIS (Japanese Industrial Standards).

(3) Construction Materials for Structural Elements

1) Concrete Materials and Cover Thickness

Table 2-7 Compression Strength and Young's Modulus of Applicable Concrete Material

Position	Concrete Grade	Compression Strength (N/mm ²)	Young's Modulus (N/mm ²)
RC column, post, girder and beam, slab	C30	30	32,800
RC foundation	C30	30	32,800
lean concrete	C15	15	N/A
Other miscellaneous	C25	25	31,400

Source: JICA Survey Team

Table 2-8 Concrete Cover Thickness

Position		Concrete Cover Thickness (mm)
RC Beams		25
RC Slab	Top	RC Slab
	Bottom	20
RC Column and Post		40
Foundation		50

Source: JICA Survey Team

2) Rebar Materials

The rebar materials shall comply with the local procurement standards of Ethiopia. The rebar grade shall be Grade 60 ($f_y = 420 \text{ N/mm}^2$) for main bars and Grade 40 ($f_y = 280 \text{ N/mm}^2$) for other bars, with an elastic modulus of $200,000 \text{ N/mm}^2$. The applicable diameters, cross-sectional areas, perimeters, and weights of the reinforcement are as follows:

Table 2-9 Rebar Materials

Nominal Size (mm)	Cross Sectional Area (mm ²)	Mass (kg/m)
10	78.5	0.616
12	113	0.888
16	201	1.58
20	314	2.47
25	491	3.85
32	804	6.31

Source: JICA Survey Team

(4) Design Load

1) Dead Load

Dead load due to self-weight has been calculated according to the table below.

Table 2-10 Unit Weight of Structural Materials

Item	Unit	Value
Reinforced Concrete	kN/m ³	24.0
Plane Concrete	kN/m ³	23.0
Steel	kN/m ³	78.5
Compact Sand	kN/m ³	19.0

Source: JICA Survey Team

2) Live Load

Design Live Load condition is according to the table below, which refers to CES 142, unless otherwise noted.

Table 2-11 Live Loads for Floor Slab Design

Item	Uniformly Distributed Load / UDL (kN/m ²)	Concentrated Load (kN)	Super imposed Dead Load
a) Bed rooms, wards, dressing rooms, dormitories and lounges Assuming Category A	2.0	3.0	- 50mm of Topping concrete by 1.20 kN/m ²
b) Kitchens, laundries and laboratories Assuming Category C3	3.0	4.0	- Floor finish by 0.30 kN/m ² - Concrete block wall partition 2.0 kN/ m ²
c) Toilets and bathrooms	2.0	–	- Floor finish by 0.30 kN/m ²
d) X-ray rooms, operating rooms, general storage areas - to be calculated but not less than Assuming Category C3 maximum	5.0	7.0	- 50mm of Topping concrete by 1.20 kN/m ²
e) Office rooms and OPD rooms Assuming Category B	2.0	4.0	- Floor finish by 0.30 kN/m ²
f) Corridors, passages, lobbies and staircases including fire escapes Assuming Category C3 maximum considering medical equipment maintenance access	5.0	7.0	- Concrete block wall partition 2.0 kN/m ²
g) Balconies	Same as the rooms to which they give access but with a minimum of 4.0	2.0 per meter run concentrated at the outer edge	- Topping concrete and waterproof by 2.0 kN/m ²
h) Vehicle access	5.0	N/A	- Additional by 5.0 kN/m ²

Source: JICA Survey Team

Table 2-12 Live Loads for Roof Design

Item	Uniformly Distributed Imposed Load Measured on Plan	Super imposed Dead Load
a) Flat, sloping or curved roof with slopes up to and including 10 degrees / Access not provided except for maintenance	0.40 kN/m ²	- Topping concrete and waterproof by 2.0 kN/m ²
b) Flat, sloping or curved roof with slopes up to and including 10 degrees / Access not provided except for maintenance	2.0 kN/m ²	

Source: JICA Survey Team

3) MEP Load

The MEP design loads will be finalized after the specifications of the selected medical equipment are confirmed. For purposes of structural design development, live loads, including the loads from the medical equipment, have been assigned for outline design.

4) Wind Load

Wind load calculation is according to CES 145, with the minimum wind speed of 22m/s. On the other hand, the academic paper “Determining the reference basic wind speed in Ethiopia and comparing with compulsory Ethiopian standard CES 145, 2015 (Getinet Melesse, Habtamu Melesse, Devadass T)” has proposed the applicable design basic wind speed based on the observation. Therefore, for this project, design basic wind speed of 40m/s has been assigned. Also, considering the existing project site situation, category III has been assigned for the structural design.



Source: Determining the reference basic wind speed in Ethiopia and comparing with compulsory Ethiopian standard CES 145, 2015 (Getinet Melesse, Habtamu Melesse, Devadass T)

Figure 2-15 Design Basic Wind Speed in Ethiopia

Table 2-13 Surface Roughness Categories for Wind Load Calculation

Category	Explanative description
0	Sea or coastal area exposed to the open sea
I	Lakes or flat and horizontal area with negligible vegetation and without obstacles
II	Area with low vegetation such as grass and isolated obstacles (trees, buildings) with separations of at least 20 obstacle height
III	Area with regular cover of vegetation or buildings or with isolated obstacles with separations of maximum 20 obstacle heights (such as villages, suburban terrain, permanent forest)
IV	Area in which at least 15% of the surface is covered with buildings and their average height exceeds 15m

Source: JICA Survey Team

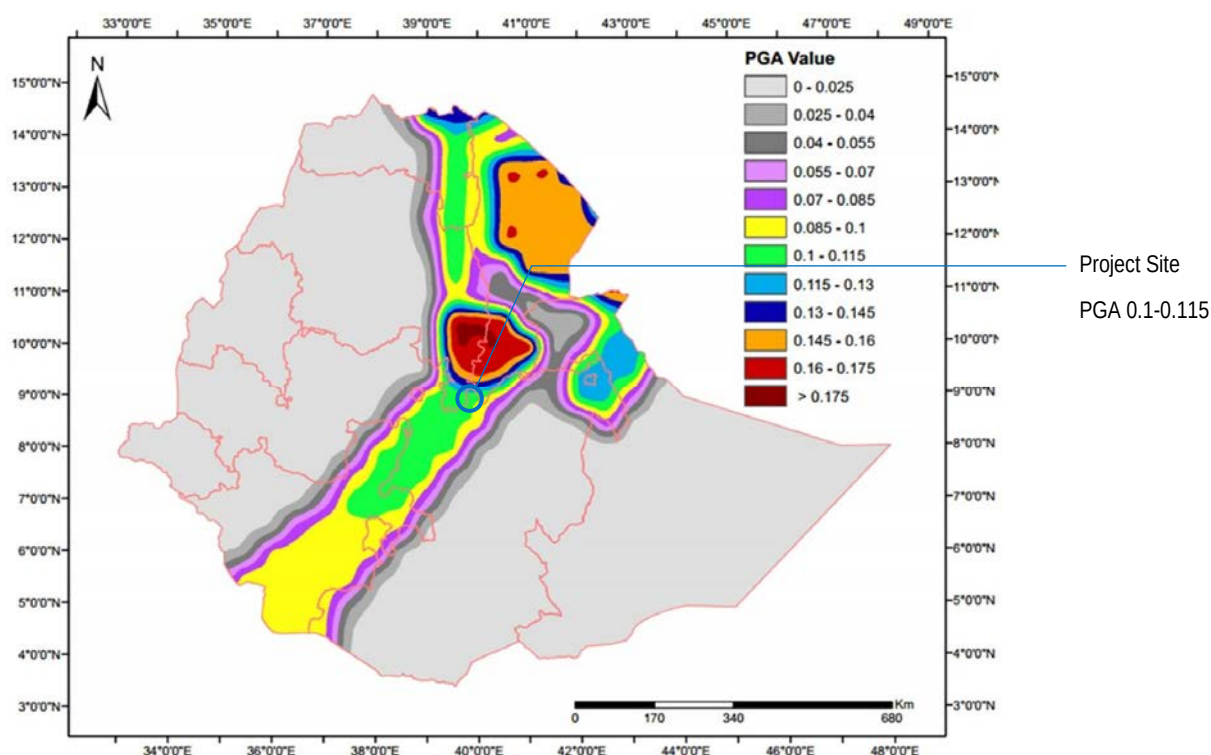
5) Snow Load

Not applicable for this project. No snowfall on the project site.

6) Earthquake Load

Earthquake load is according to CES 160, with the parameters shown below.

- Importance factor : IV (Buildings whose integrity during earthquakes are of vital importance for civil protection), defined as 1.4
- Soil type : A (Rock or other rock-like geological formation, including at most 5m of weaker material at the surface)
- Seismic Zone : “3” in Addis Ababa, $\alpha_{gR} = \alpha_g = \alpha_{0g} = 0.10$ ($\gamma_I = 1.0$)
- Behavior factor (q_0) : 1.5, flat slab system of DCM (Ductility Class Medium)

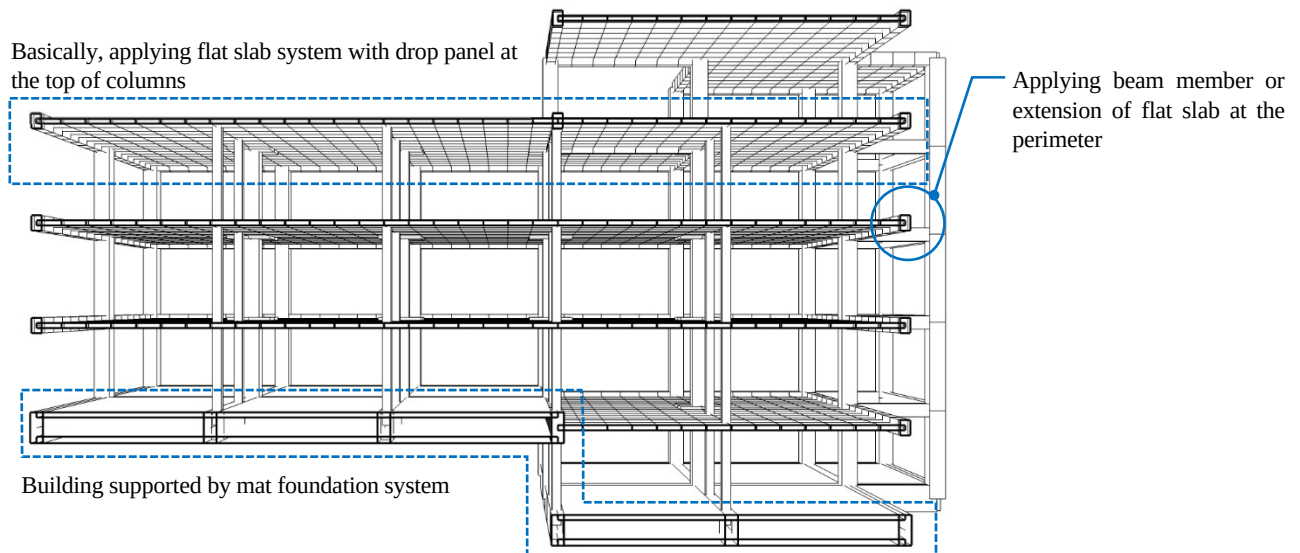


Source: CES160, Figure D2: Ethiopia's Seismic hazard map in terms of peak ground acceleration

Figure 2-16 Ground Surface Acceleration During Earthquakes in Ethiopia

(5) Structural Framing Concept

The underground structure has been planned as a reinforced concrete mat foundation, with the objective of optimizing construction costs by minimizing the excavation plane on the sloped site. The boring survey results show the presence of a stiff weathered rock layer directly beneath the surface. The superstructure will consist of a reinforced concrete frame with a flat slab system. Below is an overview of the structural framework.



Source: JICA Survey Team

Figure 2-17 Structural Framing Conceptual Image

2-2-2-3 Building Mechanical and Electrical Systems

(1) Electrical System Plan

1) Substation System

After discussions with the Ethiopian Electricity Utility (EEU) regarding the power supply to the new facility, it was determined that a Power Service Line (branch) from the 15kV Overhead Line through the existing site would make it difficult to bring heavy machinery onto the site and erect a pole. It was decided that a new branch from the overhead power line, approximately 350m away from the proposed site and drawn into the new facility would be preferable. It was also confirmed that the installation of overhead power cables from the existing power grid to the new facility would be undertaken by the Ethiopian side. An estimate of the construction costs required for this power drawn has been requested.

Electricity received: 3-phase, 4-wire, 400V/230V, 50Hz

- Transformer capacity: 500 KVA
- Main switchboard: 800 A

Assumed Power Load Capacity

Assumed load calculation for the power receiving and substation equipment will be the total capacity calculated in the table below.

Table 2-14 Assumed Power Load

Load	Load Density (VA/m ²)	Floor Area (m ²)	Load Capacity (KVA)	Note
Lighting and Outlet	60	3,000	180	-
Medical Equipment (CT Scanner)	-		100	
Ventilation System	50	1,500	75	-
AC (Special Isolation Wards, Operating Rooms, CT Rooms, etc.)	250	200	50	-
Kitchen Equipment	-	-	50	-
Plumbing Equipment	-	-	45	Pumps, laundry equipment, etc.
Firefighting System	-	-	100	-
Total	-	-	600	-

Source: JICA Survey Team

Assuming a total installed capacity of 600 KVA and demand factor of 60%, the maximum power demand will be as follows:

$$600 \text{ KVA} \times 0.6 = 360 \text{ KW}$$

2) Emergency Diesel Generator

Although there was no power outage during the field survey, interviews confirmed that power outage occurs for about four hours a week. The plan is to install a new emergency generator to provide a back-up power supply for the entire load, so that facility operations can continue in the event of a power outage.

- Type: Radiator-Cooled Outdoor Package Type
- Capacity: 3-phase 4-wire 400 V/230 V 50 Hz 500 KVA x 1 unit
- Fuel: Diesel Fuel
- Operating Time: 6 hours (Mounted standard Fuel Tank 490 L)

3) Main Power Supply Line (Trunk Line)

- The power will be distributed from the substation to each location via the respective Distribution Board on a 3-phase, 4-wire 380/220 V 50 Hz system, taking into account the load application and the classification of the facility. The Trunk Line capacity will be set to satisfy the appropriate voltage drop and allowable current value in accordance with the capacity of the connected equipment. In principle, the wiring system will be a

Cable Rack System in Shaft and Conduit Wiring in other areas. The power distribution system will be as follows:

- Power Distribution System/Trunk Line: 3-phase, 4wire, 220V/380V
 - Single-Phase Load: 1-phase, 2-wire, 220V
 - Power Load: 3-pahse, 3- wire, 380V
- b) As a result of an investigation into the quality of the power supply, the voltage fluctuations are stable within $\pm 5\%$ of the reference voltage for a standard voltage of 220 V. External factors (e.g., lightning strikes) may cause the voltage to temporarily exceed 5%, but it will recover after a few seconds. So, there is no effect on general equipment such as lighting and electric motors with an allowable voltage fluctuation of $\pm 10\%$. But for medical equipment (such as CT scanner) that is sensitive to power fluctuations, AVR (Automatic Voltage Regulator) will be provided in the facility's electrical equipment.
- c) For equipment in operating rooms, Uninterruptible Power Supply (UPS) System will be provided by the Equipment Procurement Side, taking into account the importance of ensuring power supply to the non-shaded lights and medical equipment system during surgery. However, the air conditioning and ventilation systems will not be supplied by the UPS system as they are not of high priority (in the event of a power failure, power will be supplied only by the emergency generator circuit).

For CT equipment, UPS will be provided by the Equipment Procurement Side to ensure power supply until it is supplied by the emergency generator.

- d) Earthing of Medical Equipment

Medical grounding will be provided to prevent electric shock to patients and to ensure stable operation of medical electronic equipment. Establish a grounding center and run ground wire to each required location (each hospital room, Examination Room, Operating Room, etc.).

4) Lighting System

Lighting fixtures in the new facility will use LED lamps for economic efficiency and to reduce the frequency of replacement. The illuminance of each room is shown in the table below.

Table 2-15 Illuminance Requirement

Room	Illuminance
Wards	200 Lx
Operating Rooms	500 Lx (Areas other than operating table)
Operating Rooms (Areas other than operating table)	10,000~20,000 Lx, Nonshadow Lights (Equipment Procurement Side)
Delivery Room	500 Lx
Outpatient Consulting Rooms, • First Aid Room	300 Lx

Room	Illuminance
Offices, Reception and Nurse Station	300 Lx
Waiting Rooms	200 Lx
Wash Rooms and Kitchens	300 Lx
Toilet and Storages	100 Lx
Corridor	150 Lx
Staircase	100 Lx
Electrical and Mechanical Rooms	200 Lx

Source: JICA Survey Team

5) Telephone System

At the existing SPSH, optical and analogue cabling for network services has been provided in the existing Outpatient Building to provide communication links to the premises. SPSH currently has a contract with Ethio Telecommunications Provider and the current communication speed specification is a 100 Mbps service. The existing SPSH also uses analogue fixed telephone lines and mobile telephones.

Telephone system will be provided with telephone cabling and telephones to contact the various departments in the new facility. The telephone equipment will be provided in offices, security room, reception area, examination rooms, operating room, corridor, nurse station, staff room, doctors' office, duty room, etc. The IP PBX will be provided by the Ethiopian side.

6) Information and Communication System

Information and communication system will be planned such that it will be used in the same way as the existing network, by connecting optical cable to the existing communication network (Server Room in existing outpatient wing). It has also been confirmed that the LAN cabling in the new building and the communication equipment such as access points and hubs for wireless LAN will be undertaken by the Japanese side, while the optical cable to the new building and the server equipment will be undertaken by the Ethiopian side.

7) Public Address System

Emergency speakers will be provided in examination rooms, waiting rooms, corridors, offices, staff rooms and operating rooms to enable calls and emergency broadcasts throughout the new facility. Amplifiers will be provided in the security room on the First Basement Floor.

8) Access Control System

To control access to the controlled area of the new facility, card readers will be provided in the corridors leading from the internal staircase to the controlled area corridors and in the special wards on the First Basement Floor. In addition, access control system will be installed

in the security room on the First Basement Floor, with a monitor to display status and record of entry and exit.

9) Master TV Antenna System

A parabolic antenna will be provided on the roof of the new building and outlets will be installed so that TVs can be viewed in the waiting rooms and offices.

10) Automatic Fire Detection and Alarm System

Automatic detectors and alarms will be provided in each room to provide early fire detection. Automatic fire alarm panel will also be provided in the security room at the basement to facilitate the evacuation of patients and others in the event of fire.

11) CCTV (Closed Circuit TV) System

CCTV cameras will be provided and monitored in the entrance hall, corridors and elevator hall. Monitor and recording device are installed in the security room at the basement for recording purposes.

12) Nurse Call System

Nurse call buttons will be provided in each hospital ward bed on each floor and will be displayed on the master unit at the nurse station.

13) Lightning Protection System

New buildings will be designed with lightning protection to avoid damage from lightning. The method of lightning protection will be airterminal and lightning protection conductor method.

(2) Water Supply and Wastewater Drainage

1) Water Supply System

At the existing SPSH, the municipal water supply is low and unreliable, so water from both municipal water supply and water trucks is stored in a receiving tank before being distributed. At the site of the new facility, an existing water supply intake pipe has been installed to supply water to the existing water reservoir tank. Additionally, an elevated water tank has been installed nearby to distribute water to each facility. It has been confirmed that the construction of the new systems will interfere with the construction of the existing systems and that the existing systems will be replaced prior to construction at the Ethiopian Side.

Water supply for the new facility had been discussed with the Addis Ababa Water Supply Authority (AAWSA). It had been decided to plan a new water supply from the municipal main water pipe on the northwest side of the road near the proposed new facility site. In

addition, as it is difficult to ensure a stable water supply from the municipal water supply alone, the system will be planned to enable water truck delivery.

The water supply gravity system is used to pump water from the water reservoir tank to the elevated tank, and from the elevated tank to each service point.

Interviews with experts involved in “The Project for Strengthening Addis Ababa Water and Sewerage Authority's Management Capacity of Non-Revenue Water Reduction”, currently being implemented by JICA, revealed that there is no prospect of improving the hospital's water supply situation. Therefore, rainwater harvesting system will be provided to reduce the use of tap water. Rainwater from the roof will be stored in an underground pit and use it to flush staff urinals.

- Diameter of water main pipe 50 mm dia. (according to interview with the Water Authority)
- Frequency of water supply: only 2 days a week from the municipal main water pipe. (according to interview with the AAWSA: Addis Ababa Water Supply Authority)
- Diameter of water supply pipe on site: 40 mm dia.
- The daily water consumption is 33 m³/day, based on the calculation of the daily water consumption below.
- The water storage capacity of the water tanks will be based on daily water consumption in consideration of drought, etc.

Table 2-16 Daily Water Consumption

Ward Bed	40 Bed×750L/(Bed·day)=	30,000 L/Day
Outpatients	60 person※①×40 L/(person·day) ※② =	2,400 L/Day
	Total	32,400 L/Day
	Daily Consumption	33 m ³ /Day
Elevated Water Tank Capacity		
Mean Hourly Consumption : Daily Consumption×Average Hour	33m ³ /day÷10hours=	3.30 m ³ /H
Max. Hourly Water Supply : Mean Hourly Water Supply × Coefficient (1.5-2.0)	3.3m ³ /H×1.5=	4.86 m ³ /H
Calculation of Elevated Water Tank Capacity: Hourly Max. Water Supply x Elapsed Time (2.0h)	4.86m ³ /H×2.0=	9.72 m ³
Elevated Water Tanks for Drinking Water (75% of total)	9.72m ³ ×75%=	7.29m ³ → 8m ³
Miscellaneous Water (Rainwater) Elevated Water Tanks (25% of total)	9.72m ³ ×25%=	2.43m ³ → 3m ³

※① : Adopted from the annual number of patients in the hospital as a whole, prorated for the new pediatric ward and the new ward (Survey Report).

※② : Society of Heating, Air-Conditioning and Sanitary Engineers of Japan Adopted values for 'Outpatients' in Government Buildings (Survey Report).

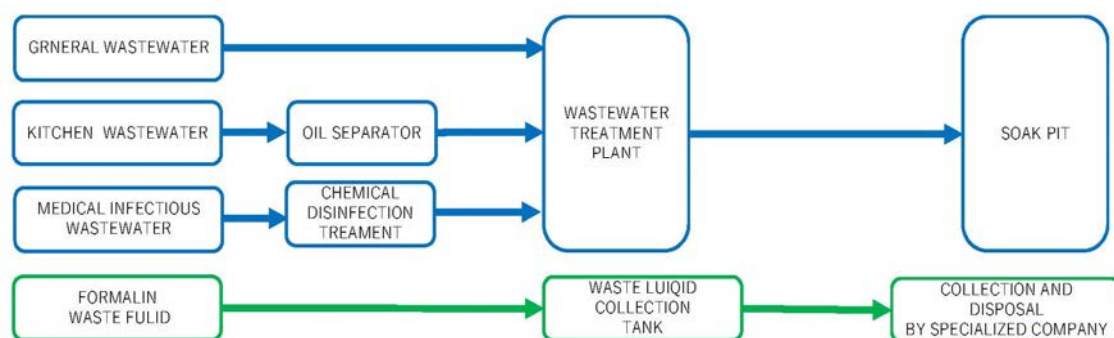
Source: JICA Survey Team

2) Sewage and Wastewater Drainage

There is no public sewerage system in the vicinity of the existing SPSH. Therefore, the sewage and other wastewater from the existing SPSH are treated in a septic tank in the hospital, and then infiltrated into the ground through a soak pit.

In the new facility, sewage and miscellaneous wastewater from the general drainage system will be treated in a wastewater treatment plant with soak pit. In addition, wastewater from infectious disease systems will be sterilized in chemical disinfection treatment and then pumped into the above wastewater treatment plant.

WASTEWATER MANAGEMENT(GENERAL AND INFECTIONOUS)



Source: JICA Survey Team

Figure 2-18 Methods for the Treatment of General and Infectious Wastewater

3) Plumbing Fixtures and Fittings

The existing facilities have western-type toilet bowl, and the project will also adopt the same design. In addition, multipurpose toilets will be provided at the basement and first floor, which are expected to be used by unspecified number of persons.

4) Firefighting System

The following standards have been developed in Ethiopia for disaster preparedness. In consultation with the relevant fire brigade, planning will be carried out using hose reel system and sprinkler system. However, to prevent the spread of infection in the event of a water spray, rooms such as infectious wards, operating theater and CT rooms will be excluded. Design of fire extinguishing systems will be in accordance with CES 165: Fire Precautions During Building Construction Design, Works and Use, as follows:

- Fire pumps will be in combination with hose reel and sprinkler systems. Jockey pump will also be provided to ensure the pressure in pipes for firefighting.
- The capacity of the firewater tank will be equivalent to the flow rate of the fire pump for 60 minutes. (Confirmed by the Fire Authority)

- In storages containing equipment, such as server rooms and those with medical equipment, gas fire extinguishers (e.g., FM 200) will be provided.

Table 2-17 Capacity of Fire Pumps and Tanks

Fire Pumps

Use	Flow Rate	Note
Pumps for Indoor Hose Reels	250GPM	
Sprinkler Pumps	317GMP	
Total	567GPM	NFPA20 Table 4.8.2 shows 1,000GPM (3,785L/min.)

Fire Tank (According to NFPA13, Table 11.2.3.1.2)

$567\text{GPM} \times 60 \text{ 分} = 2,577 \text{ L/min} \times 60 \text{ min} = 154,620 \text{ L} \rightarrow 155 \text{ ton}$

Source: JICA Survey Team

5) Medical Gas Distribution System

Manifold for oxygen cylinders, compressor for compressed air and suction pump for aspiration will be provided in the Gas Distribution Room on the First Basement of the new facility to supply each room from Central Distribution System. In addition, shut-off valves will be installed in the walls of the corridors to ensure that the entire hospital area does not stop functioning in the event of a leak, etc.

The following table shows the location and position of oxygen, compressed air and suction outlets in each of the various rooms.

Table 2-18 Type and Location of Medical Gas Outlets

Rooms	Type of Outlet	Location
Special Isolation Wards (2 rooms)	Oxygen and Suction	Wall
Emergency Room for First Aid	Oxygen and Suction	Wall
Birthing Room	Oxygen, Suction and Compressed Air	Wall
Operating Room	Oxygen, Suction and Compressed Air	Wall
ICU (Intensive Care Unit)	Oxygen, Suction and Compressed Air	Wall
Ward Rooms	Oxygen and Suction	Wall
Set-up Beds During Pandemic Response	Oxygen and Suction	Wall

Source: JICA Survey Team

(3) Air Conditioning and Ventilation System

1) Air Conditioning System

Wall mounted type air conditioners will be provided in CT room, CT control room, and server room. Special isolation ward's air conditioner will provide ceiling mounted duct type. Air conditioners will not be provided in general wards.

Floor-mounted duct connection type air conditioners will be provided in operating theaters, as these rooms need to be kept at positive pressure to ensure cleanliness. HEPA-filtered air diffusers will be provided above the operating table in operating theater. Air exchange rate in the operating theater will be 15 times/hour (outside air volume: 3 times/hour).

Operating theater will be provided with temperature, humidity and micromanometer, differential pressure gauge (to get differential pressure between operating room and non-operating general rooms).

Table 2-19 Design Conditions for Air-Conditioning System

Ambient Air Conditions

Temperature	8.9~25.5 °C
Humidity	16.1~19.7 %

Source : ASHRAE 2021 Weather Data Addis Ababa

Indoor Conditions

Rooms	Temperature Conditions	Humidity Conditions
Special Isolation Wards	24.0±2.0°C	Due Course
Offices	24.0±2.0°C	Due Course
Operating Theatre	19.0~24.0°C	40~60%
CT Equipment Room	24.0±2.0°C	Due Course
Server Room	24.0±2.0°C	Due Course

Source: JICA Survey Team

2) Ventilation System

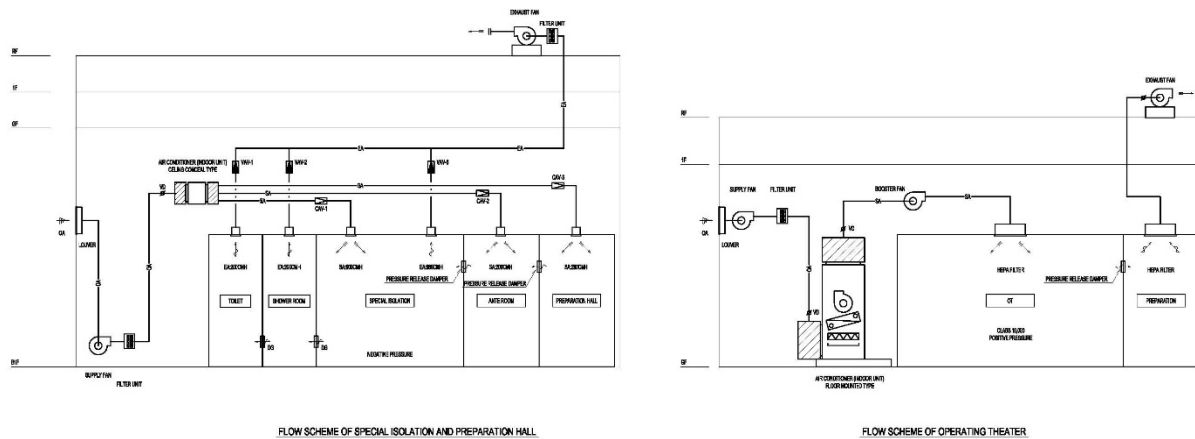
Mechanical ventilation system will be provided in the following rooms to remove odor, heat and moisture. Design criteria for the ventilation system to be applied in this case are given in Table 2-20, with reference to the Hospital Equipment Design Guidelines (Air Conditioning Equipment Edition, Japan Medical and Welfare Equipment Association Edition), ASHRAE Standards and the Design Standards of the Japanese Ministry of Land, Infrastructure and Transport.

Diagrams of the air-conditioning and ventilation system for the special isolation ward and operating room are shown in Figure 2-19.

Table 2-20 Design Conditions for Ventilation System

Room name	Ventilation type	Time / hour	Remarks
General wards	Exhaust fan	9 times / hour 12 times / hour	For general ventilation For infectious exhaust
Special isolation wards	All fresh air conditioner with supply fan and exhaust fan	10 times / hour	All fresh air conditioner (pre-filter with medium filter)
Storage	Exhaust fan	5 times / hour	
Toilet	Exhaust fan	10 times / hour	For odor removal
Corridor	Supply fan with filter box	none	

Source: JICA Survey Team



Source: JICA Survey Team

Figure 2-19 Schematic Diagram of Air Conditioning and Ventilation System

2-2-2-4 Building Materials Plan

(1) Structural Frame and Main Walls

- Ready-mixed concrete will be delivered from a ready-mixed concrete plant in Addis Ababa City and placed with a concrete pump truck that can be procured locally.
- The shutter panel shall be locally procured 12 mm thick plywood for formwork. From ties, separators, and steel shoring can also be procured locally.
- Rebar and binding wire shall be procured locally, and processing can be performed on-site using hydraulic electric cutting and bending machines owned by a local contractor.
- Hollow concrete blocks can be procured locally for exterior and interior walls. The thickness shall be 200 mm for exterior walls and 100 mm for interior walls.

(2) Roof and Exterior Finishes

- The rooftop shall have a flat concrete roof with a slope of approximately 2% and be waterproofed with a resin coating or exposed rubber asphalt (with topcoat). Eaves and balconies shall be similarly waterproofed.
- Waterproofing materials shall be procured in Japan, and the manufacturer's supervisor shall be dispatched to install the waterproofing with local labor. The warranty period for waterproofing shall be 10 years.
- The exterior shall be mortared and finished with locally procured resin stucco.

(3) Interior Finish

1) Floor Finish

The main rooms shall be finished with vitrified ceramic tiles over a mortar base and metal trowel finish. The entrance hall and staircase will be finished with natural stone. The

operating rooms and special isolation rooms will have self-leveling epoxy coated floors, and the IT server room shall be a free access floor.

2) Wall-Finish

Emulsion resin coating (EP), ceramic tiles, and resin coated wall materials will be used in the main rooms on a mortar base with a metal trowel finish. Operating rooms and special isolation rooms shall be covered with decorative calcium silicate boards (sealed joints) over LGS base.

3) Ceiling Finish

Major rooms shall be covered with emulsion resin coating (EP) on LGS base gypsum board cladding. Free-access ceilings (rock-cotton sound-absorbing board or perforated aluminum board) shall be used where there is frequent maintenance of equipment and piping in the ceiling.

4) Main Material Plan

The main material plan is shown below.

Table 2-21 Main Material Plan

Structure		Reinforced Concrete Construction				
Floor Height		4.0m				
External Finishing	roof	Resin coating waterproofing or rubber asphalt exposed waterproofing (with topcoat)				
	outer wall	Mortar trowel, resin stucco finish				
	window	Aluminum sash + pair glass				
	door	steel door				
Inside Finishing (of a house)	room name	general living room	hospital room	operating room special isolation room	corridor	toilet
	floor	Vitrified ceramic tile 600 x 600	Vitrified ceramic tile 600 x 600	Epoxy coated floor	Vitrified ceramic tile 600 x 600	Vitrified ceramic tile 300 x 300
	wall	Mortar + EP	Mortar + EP Partially resin coated wall	Decorative calcium silicate board	Mortar + EP	Vitrified ceramic tile 300 x 300
	ceiling	Gypsum board + EP	Gypsum board + EP	Decorative calcium silicate board	Free access ceiling	Free access ceiling (Perforated aluminum plate)
Ceiling Height		2.8 m	2.8 m	Operating room 3.2 m Special isolation 2.8 m	2.6 to 3.0 m	2.5 to 2.8 m

Source: JICA Survey Team

5) Furniture and Fixtures

- Build furniture (reception counter, sink, hanging cupboards, storage cabinets, etc.) on site.
- Procure commercial kitchen equipment and commercial laundry equipment locally.
- Purchase interlocking pass boxes (special isolation rooms) in Japan.
- Procure hospital furniture (floor tables, bulkhead screens, patient room furniture, waiting room chairs, dispensing tables, lockers, stainless steel shelving, etc.) locally.

2-2-2-5 Equipment Planning

(1) Overall Plan

SPSH requested the equipment needed to provide medical services in the newly established emergency room, radiology, surgery/sterilization, maternity, inpatient (special, ICU, HDU, and general hospital beds), and other departments (kitchen, laundry, mortuary, and medical waste room). The specifications of the equipment were to be the same as those used in the existing facilities, and the quantity of equipment was to be the number of units that each department could operate appropriately. The equipment of the laboratory will be installed in the existing facility, not in the new building, as it will be operated in cooperation with the existing facility. A draft equipment list was prepared based on the functions, size, and division of roles of the new facility with the existing facility, as well as the existing equipment, etc. As a result of discussions with Ethiopia, the planned equipment list and its priority were compiled as described below in the Minutes and Technical Notes.

(2) Equipment Planning

1) Equipment Selection

The above requested equipment list was evaluated based on the evaluation criteria shown in the table below.

Table 2-22 Equipment Evaluation Criteria

Items	Evaluation Criteria
Purpose of use	Consistent with the function, size/capacity, and role of the target hospital
Necessity / Urgency	Essential for the activities of the target hospital and for which no alternative means can be expected
Patient demand	Sufficient number of patients can be expected to benefit from the equipment.
Technical level	Compatibility with the technical level of doctors, technicians, nurses, etc.
Operating structure	Personnel to operate the equipment have been assigned or are expected to be assigned.
Maintenance and management structure	Whether the existing staff is sufficient to handle daily maintenance and management

Items	Evaluation Criteria
Service structure by distributors	Possibility to procure replacement parts, consumables, and provide maintenance and management services

Source: JICA Survey Team

2) Equipment Planning

The equipment plan developed based on the above evaluation criteria is shown in the table below. Equipment listed as Priority A will be procured by this project. Priority B and Priority C equipment will be procured by Ethiopia if determined not to be included in this project, taking into consideration the budget and ease of procurement in domestic Ethiopian market, including consumables. The equipment for the laboratory will be installed in the existing facility, not in the new building to be constructed this time, as it will be operated in cooperation with the existing facility. The quantity of equipment is determined such that each department can operate it appropriately. The number of spare patient beds should also be planned in case of outbreaks.

Table 2-23 Comparison List of Requested Equipment

No.	Equipment	Qty.	Priority	Purpose of use	Necessity / Urgency	Patient Demand	Technical level	Operating Structure	Maintenance and management structure	Service structure by distributors	Result
1	Examination table	2	A	○	○	○	○	○	○	○	○
	Examination light	5	C	○	△	○	○	○	△	○	×
	Desk	2	C	○	×	△	○	○	-	-	×
	Chair for doctor	2	C	○	×	△	○	○	-	-	×
	Chair for patient	2	C	○	×	△	○	○	-	-	×
	PC	2	C	○	×	△	○	○	-	△	×
2	Treatment table	3	A	○	○	○	○	○	○	○	○
3	Treatment cart	3	B	○	△	○	○	○	○	△	○
	IV stand	3	C	○	×	△	○	○	-	-	×
4	Ultrasound machine	2	A	○	○	○	○	○	○	○	○
5	ECG	1	A	○	○	○	○	○	○	○	○
6	CT	1	A	○	○	○	○	○	○	○	○
7	Mobile X-ray	3	A	○	○	○	○	○	○	○	○
8	Workstation /monitor	1	A	○	○	○	○	○	○	○	○
9	ICU bed	6	A	○	○	○	○	○	○	○	○
10	Ventilator	6	A	○	○	○	○	○	○	○	○
11	Patient monitor	15	A	○	○	○	○	○	○	○	○
12	Syringe pump	13	A	○	○	○	○	○	○	○	○
13	Infusion pump	13	A	○	○	○	○	○	○	○	○
14	Suction unit	7	A	○	○	○	○	○	○	○	○
15	Defibrillator	10	A	○	○	○	○	○	○	○	○
16	Emergency cart	8	B	○	○	○	○	○	○	○	○
17	Patient bed	34	A	○	○	○	○	○	○	○	○
18	Patient bed (extra)	20	B	○	△	○	○	○	○	○	○
	Food trolley	2	C	○	×	△	○	○	-	-	×
	Laundry cart	2	C	○	×	○	○	○	-	-	×

No.	Equipment	Qty.	Priority	Purpose of use	Necessity / Urgency	Patient Demand	Technical level	Operating Structure	Maintenance and management structure	Service structure by distributors	Result
19	Autoclave	4	A	○	○	○	○	○	○	○	○
	Water purifier	1	C	△	△	○	○	○	△	△	×
	Stretcher	4	C	○	×	○	○	○	-	-	×
	Body refrigerator	1	C	△	△	○	○	○	△	△	×
20	Operation table	1	A	○	○	○	○	○	○	○	○
21	Operation light	2	A	○	○	○	○	○	○	○	○
22	Delivery table	1	A	○	○	○	○	○	○	○	○
23	Electrosurgical unit	1	A	○	○	○	○	○	○	○	○
24	Baby incubator	1	A	○	○	○	○	○	○	○	○
25	Infant warmer	1	A	○	○	○	○	○	○	○	○
26	Fetal monitor	1	A	○	○	○	○	○	○	○	○
27	Anaesthesia machine	1	A	○	○	○	○	○	○	○	○
	Washing machine	1	A	Facility side planning							
	Drying machine	1	B	Facility side planning							
28	Autoclave (existing)	1	A	○	○	○	○	○	○	○	○
29	Hot air oven (dry oven)	1	A	○	○	○	○	○	○	○	○
30	Incubator	1	A	○	○	○	○	○	○	○	○
31	Laminar air flow	1	A	○	○	○	○	○	○	○	○
32	Water bath	1	A	○	○	○	○	○	○	○	○
33	Hotplate	1	B	○	△	○	○	○	○	○	○
34	Electronic balance	1	B	○	△	○	○	○	○	○	○
35	Colony counter	1	B	○	△	○	○	○	○	○	○
36	Vortex mixer	1	B	○	△	○	○	○	○	○	○
37	Homogenizer	1	B	○	△	○	○	○	○	○	○
38	pH meter	1	B	○	△	○	○	○	○	○	○
	Cultural machine	1	B	△	△	△	△	△	△	△	×
	Pipettes	1	C	○	×	○	○	○	-	-	×
	Petri dishes	1	C	○	×	○	○	○	-	-	×
	Water distiller	1	C	○	×	○	○	○	-	-	×
	Bunsen burner	1	C	○	×	○	○	○	-	-	×
	Test tubes	1	C	○	×	○	○	○	-	-	×

Source: JICA Survey Team

Table 2-24 Planned Equipment List

No.	Equipment	Quantity
1	CT Scan	1
2	Mobile X-ray	3
3	Ultrasound Machine	2
4	Anaesthesia Machine	1
5	Operation Light	1
6	Operation Light (Mobile)	1
7	Operation Table	1
8	Electrosurgical Unit	1
9	Defibrillator	10
10	ECG	1
11	Ventilator	6
12	Delivery Table	1
13	Fetal Monitor	1
14	Baby Incubator	1
15	Infant Warmer	1
16	Patient Monitor	15
17	Infusion Pump	13
18	Syringe Pump	13
19	Suction Unit	7
20	ICU Bed	6
21	Patient Bed	34
22	Patient Bed (Foldable)	20
23	Treatment Table	3
24	Examination Table	2
25	Emergency Cart	8
26	Treatment cart	3
27	Autoclave	5
28	Dry Oven	1
29	Incubator	1
30	Clean Bench	1
31	Water Bath	1
32	Colony Counter	1
33	Electronic Balance	1
34	Homogenizer	1
35	Hotplate	1
36	PH Meter	1
37	Vortex Mixer	1
TOTAL		171

Source: JICA Survey Team

3) Main Equipment and General Specifications

The table below shows the main equipment and its general specifications.

Table 2-25 Main Equipment and General Specifications

No.	Equipment	Main Specification and Configuration	Qty.	Purpose
1	CT Scan	1. Configuration Main unit, workstation, additional workstation, patient table, injector, UPS 2. Main specifications 1) Number of slices: 128 or more 2) X-ray tube: 7.0 MHU or higher 3) UPS - Capacity: 120kVA - Input/output: 3-phase 3-wire, 200V	1	X-ray images are taken from all directions in 360 degrees, and cross-sectional images of the radiographic area are created by computer processing.
2	Mobile X-ray	1. Configuration High voltage generator, X-ray tube, X-ray tube support, collimator, FPD, etc. 2. Main specifications 1) Maximum output: 32 kW or more 2) Tube voltage: 40 - 100kVA min. 3) Official current: 0.25~200 mAs min.	3	Used to check the condition of the lungs and bones by X-ray. It is mobile and can take X-rays outside the radiology department, such as in hospital wards and outpatient clinics.
3	Ultrasound Machine	1. Configuration Main unit, probe (linear, sector, convex), printer, etc. 2. Main specifications 1) Operation: 2D, Color Doppler 2) Display mode: B, M, color Doppler 3) Monitor: 13" or larger, color LED	2	Used to diagnose organs, body surface tissues, etc.
4	Anaesthesia Machine	1. Configuration Main unit, ventilator, isoflurane vaporiser, sevoflurane vaporiser, desflurane vaporiser, high-pressure tube for oxygen, high-pressure tube for compressed air 2. Main specifications 1) Flow meter safety device 2) Respiratory ventilation volume: more than 5 ml to 1400 ml, battery-powered 3) Breathing frequency: 5 to 60 breaths per minute	1	Administer oxygen and anaesthetics to the patient and perform intraoperative respiratory management.
5	Operation Light	1. Configuration Light head, auxiliary light head, light head handle, etc. 2. Main specifications 1) Type: Ceiling suspension type 2) Light source: LED 3) Illuminance: Approx. 150,000 LUX	1	Illumination lights used to illuminate the surgical field during surgery. Installed on the ceiling of the operating room.
6	Operation Light (Mobile)	1. Configuration Light head, movable arm, stand, etc. 2. Main specifications 1) Type: Mobile 2) Light source: LED 3) Illuminance: Approx. 130,000 LUX	1	Illumination light used to illuminate the surgical field during surgery. Mobile type with casters.
7	Operation Table	1. Configuration Operating table, mattress, screen frame, arm support, shoulder support, body support, etc. 2. Main specifications 1) Electro-hydraulic 2) Head up: 30°, down: 90 3) Back up: 85°, down: 25	1	Table used for surgery. Height and patient position can be adjusted.

No.	Equipment	Main Specification and Configuration	Qty.	Purpose
8	Electrosurgical Unit	1. Configuration Main unit, counter electrode plate, bipolar electrode, foot switch, cart, etc. 2. Main specifications 1) Mode: monopolar, bipolar 2) Output circuit: High frequency non-installed type (floating) 3) Output: Incision max. 400 W or more, coagulation max. 200 W or less, bipolar 100 W or more	1	Excise the tissue while incising and coagulating it.
9	Defibrillator	1. Configuration Main unit, paddles (adult and pediatric), ECG cable, ECG electrodes, cart 2. Main specifications 1) Maximum output : 270 J or more 2) Charge time to maximum output: within 10 seconds 3) AED mode available	11	Used to treat cardiac arrest and ventricular fibrillation.
11	Ventilator	1. Configuration Main unit, cart, pressurised tubing set, auxiliary arm for patient circuit, heated humidifier unit, breathing circuit, etc. 2. Main specifications 1) Respiratory modes: Volume Control, Pressure Control, VC-CMV / VC-AC, VC-SIMV, APRV, SBT, PRVC, PCV, etc. 2) Ventilation volume: 20 - 2000 ml or more 3) Respiratory rate: 4 - 80 breaths per minute	6	Used to artificially assist breathing as a means of maintaining proper blood gases and sustaining life.
12	Delivery Table	1. Configuration Main unit, mattress, IV pole, waste tray 2. Main specifications 1) Type: 3 sections 2) Back lift angle: 0 - 35° min. 3) Dimensions: 1850 x 850 mm ±10	1	Table used for delivery. Adjustable in height and patient position.
13	Fetal Monitor	1. Configuration Main unit, transducer, twin set, fetal transfer marker, cart, etc. 2. Main specifications 1) Measurement items: fetal heart rate, uterine contraction 2) Fetal heart rate - Measurement method: Pulse doppler 3) Uterine contraction measurement - Measurement method: External method	1	Used to check the vital signs of the pregnant woman and fetus during delivery and to monitor the labor interval.
14	Baby Incubator	1. Configuration Closed type incubator, trolley, battery, IV pole, etc. 2. Main specifications 1) Temperature control range inside incubator: 33 to 39 degrees Celsius 2) Temperature display range: 22 to 39 degrees Celsius	1	Accommodates low weight newborns and morbid newborns by maintaining constant temperature and humidity.
15	Infant Warmer	1. Configuration Main unit, mattress, temperature probe, etc. 2. Main specifications 1) Type: Open type 2) Temperature adjustment method: Servo or manual selectable	1	Open-type nursery treatment table that keeps newborns warm with heater.

Source: JICA Survey Team

4) Procurement Quantity of Consumables

For the replacement parts and consumables required for the initial operation of the planned equipment, approximately three months will be included in this project, taking into account the time difference between the equipment installation period and the time when the procurement budget is established.

5) Existing Equipment

Since the new hospital will specialize in infectious diseases, it is not anticipated that existing equipment will be utilized; however, the new hospital will collaborate with the existing laboratory department regarding testing.

(3) Initiatives Related to Gender and Persons with Disabilities

According to interview with a local Ethiopian construction company regarding gender and disability considerations during the implementation of the project, the aforementioned national standards include 3% points added to the recruitment examination when hiring women and 4% points added for people with disabilities. However, these standards are only for the recruitment of civil servants, and private companies are only obliged to make an effort to recruit women.

In addition, at the construction companies interviewed by the Survey Team, about 1/3 of the designers were women, and at construction sites, women accounted for up to 20% of the workforce, although the percentages varied. At construction sites, women were mainly engaged in process management and site management at the field office. Even if they were not able to do the same on-site work as men, they were also active in cleaning work at construction sites and clerical work at field offices. In terms of wages, there was no distinction between male and female workers.

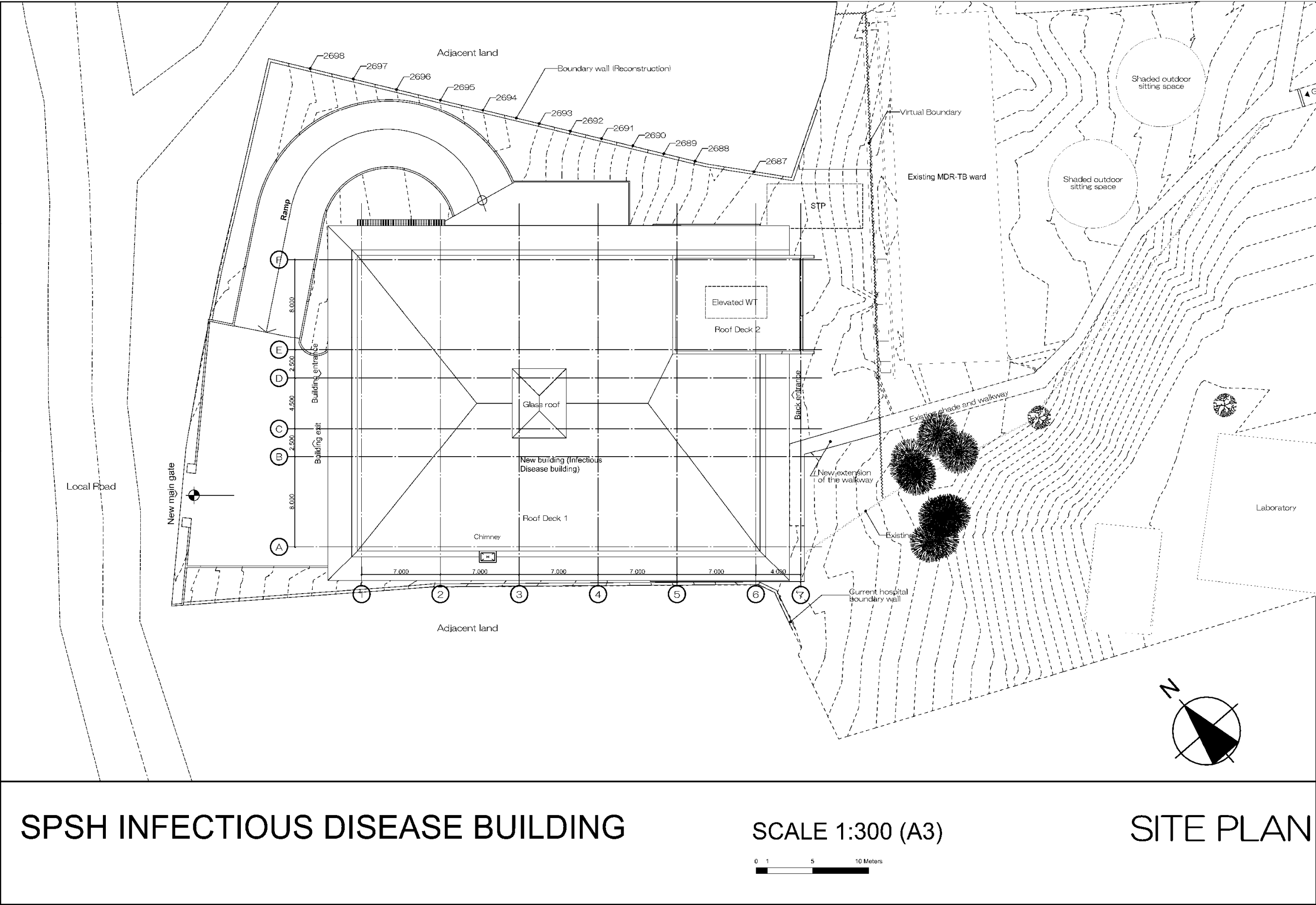


Figure 2-20 Site Plan

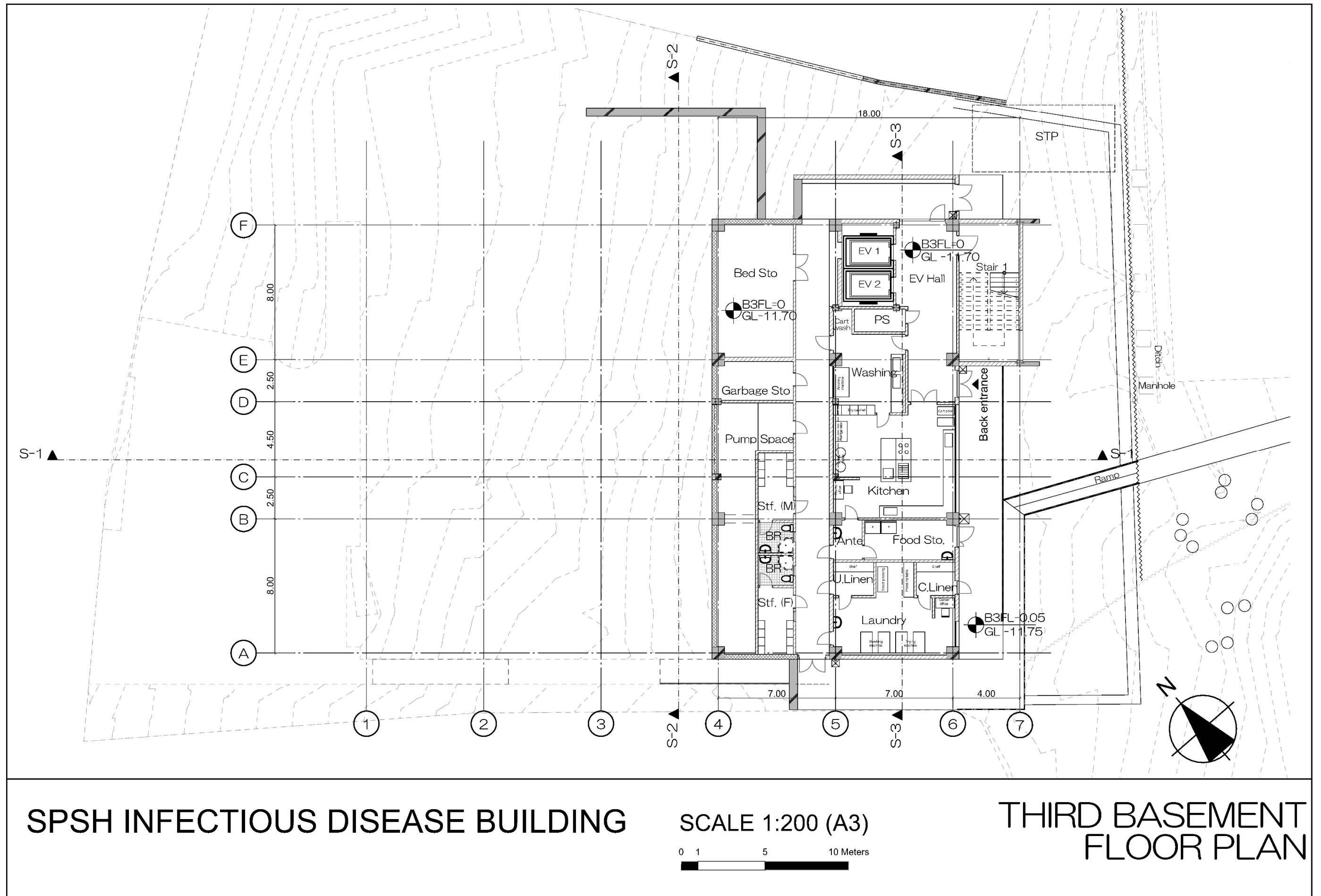


Figure 2-21 Floor Plan (3rd Basement)

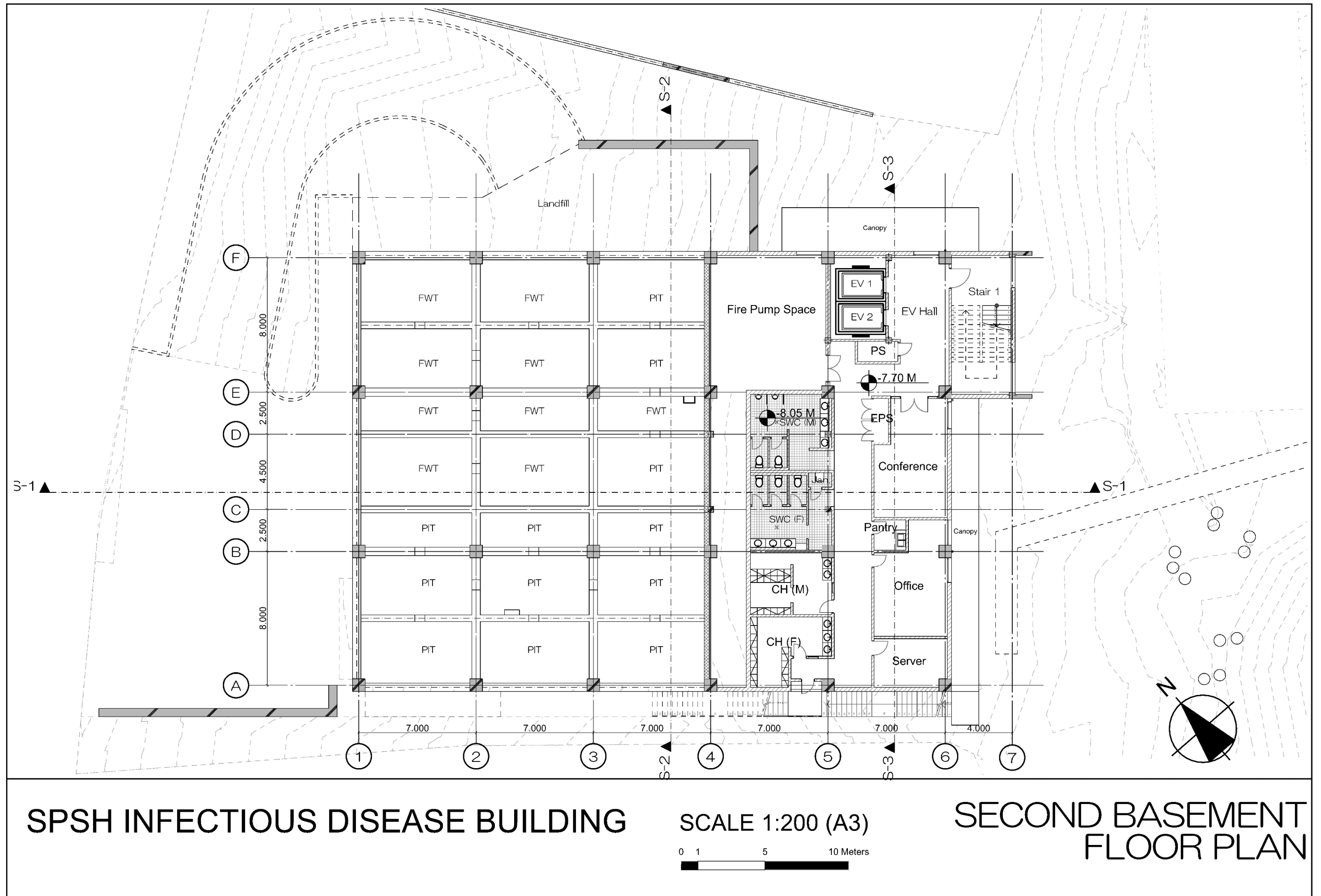


Figure 2-22 Floor Plan (2nd Basement)

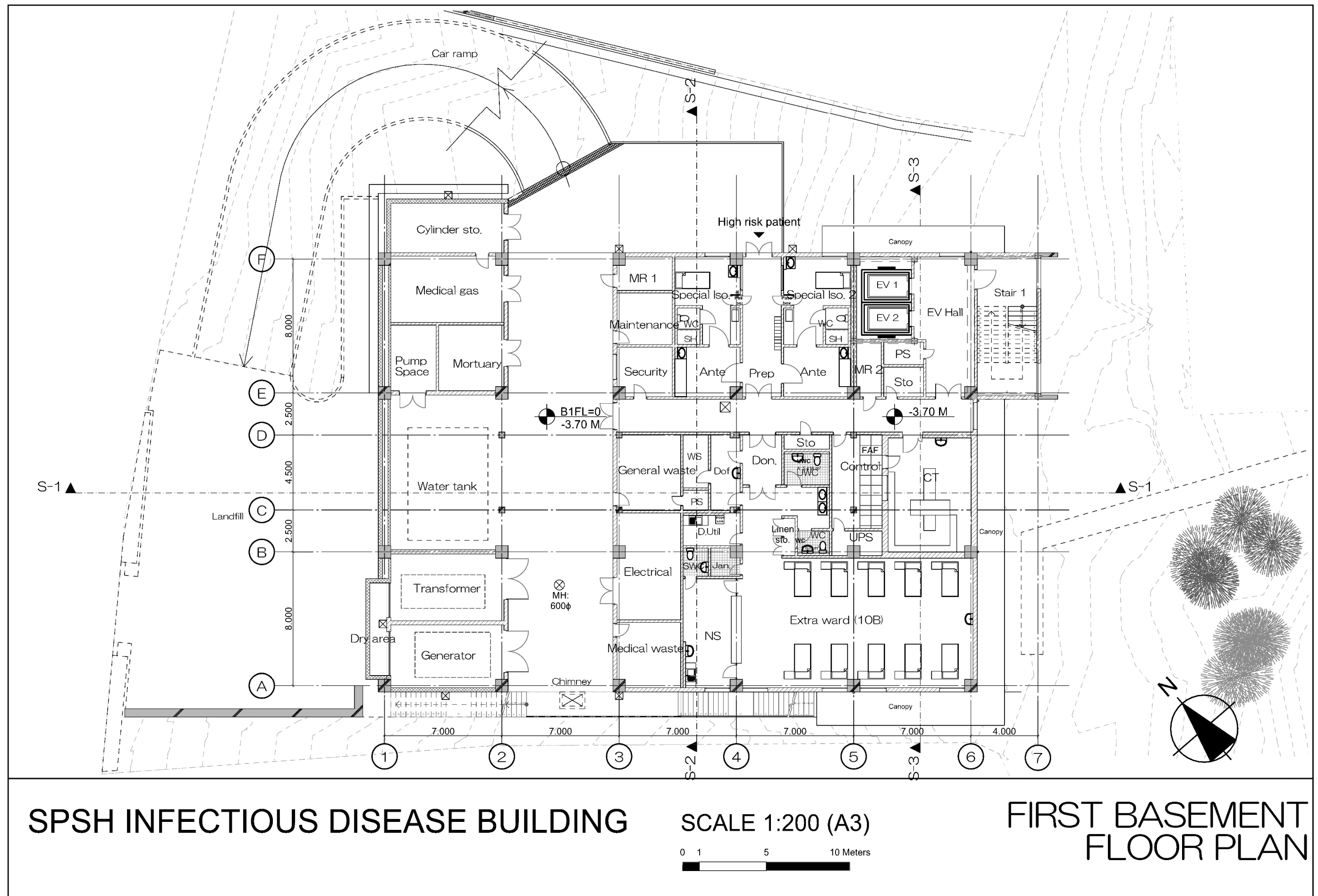


Figure 2-23 Floor Plan (1st Basement)

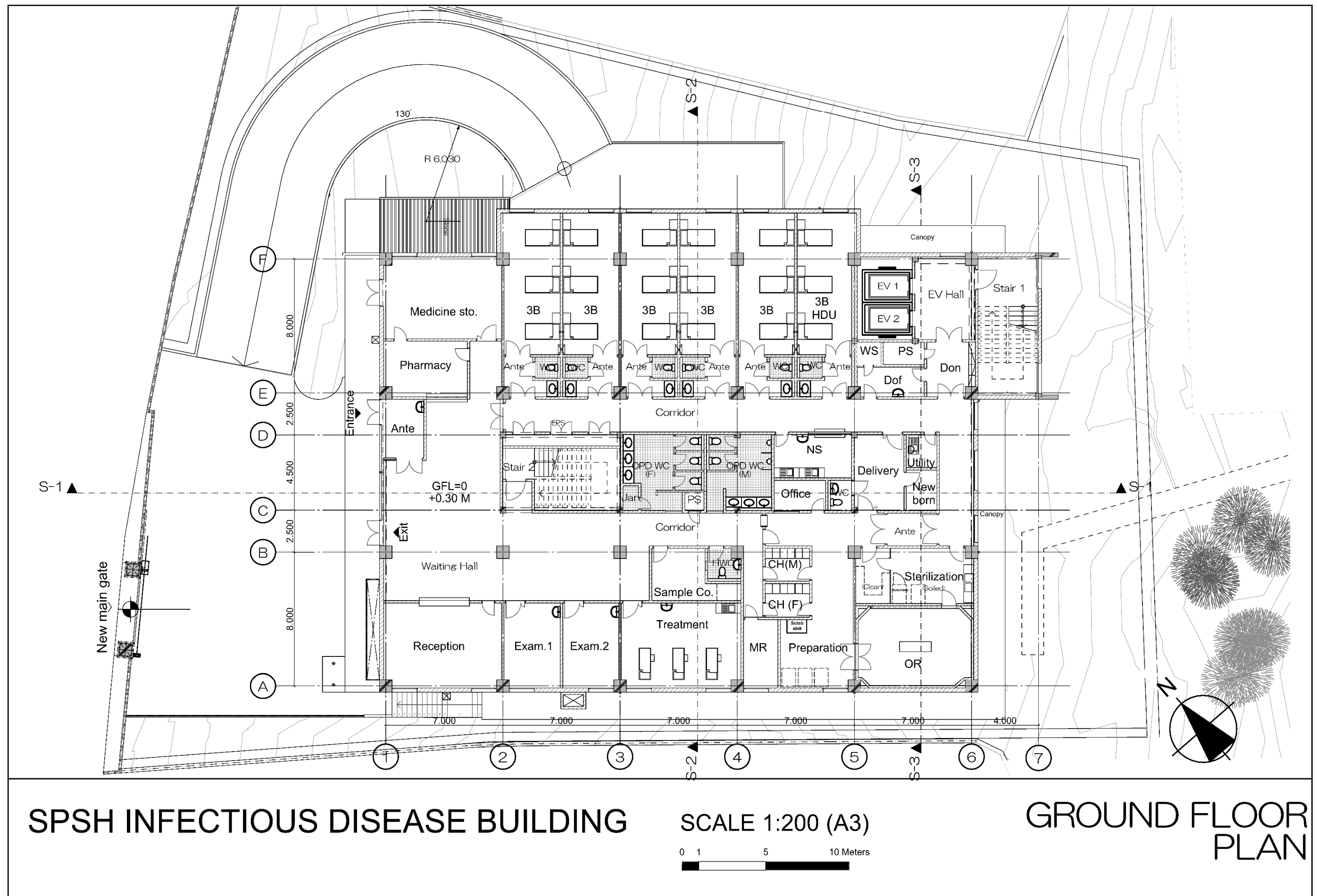


Figure 2-24 Floor Plan (Ground floor)

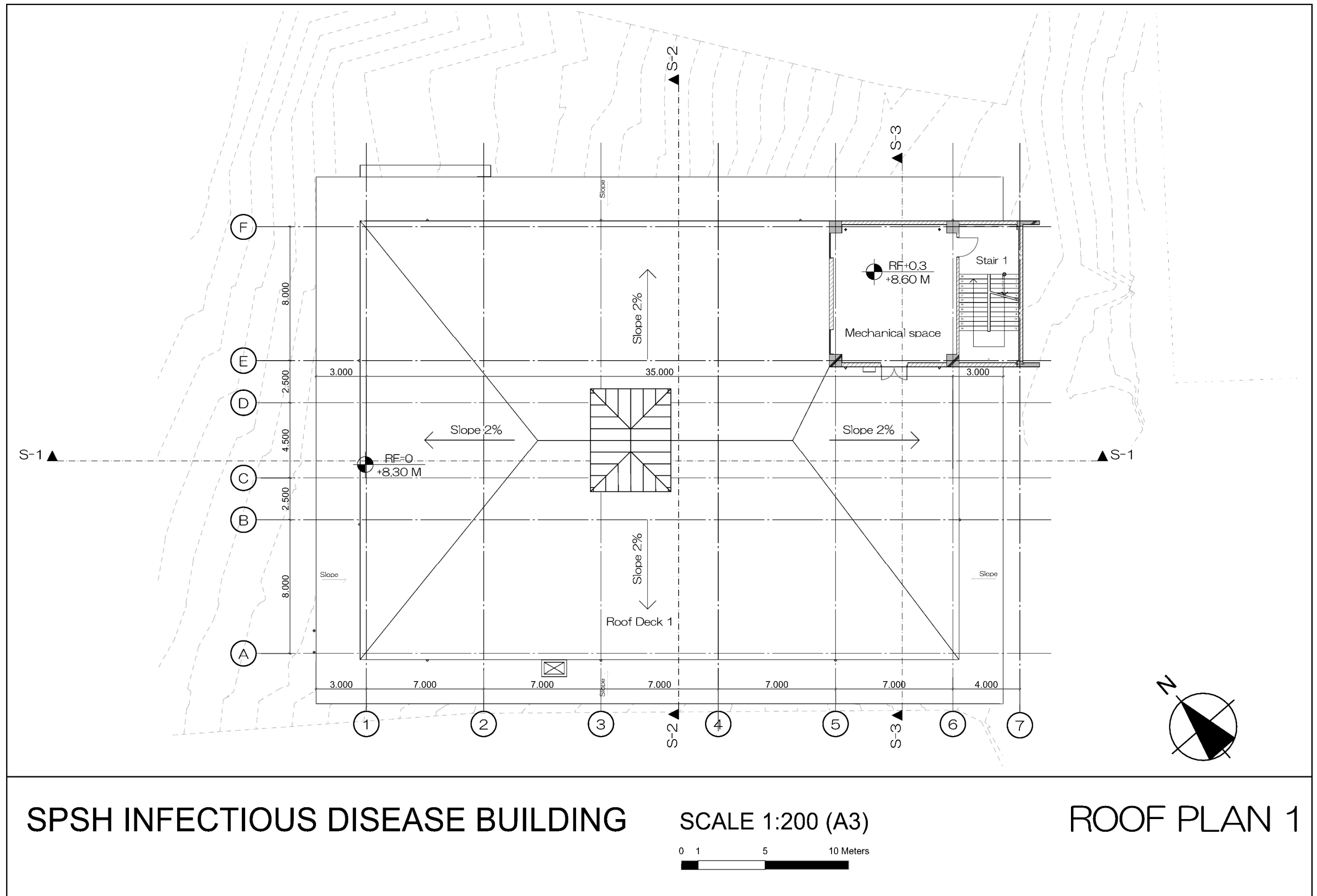
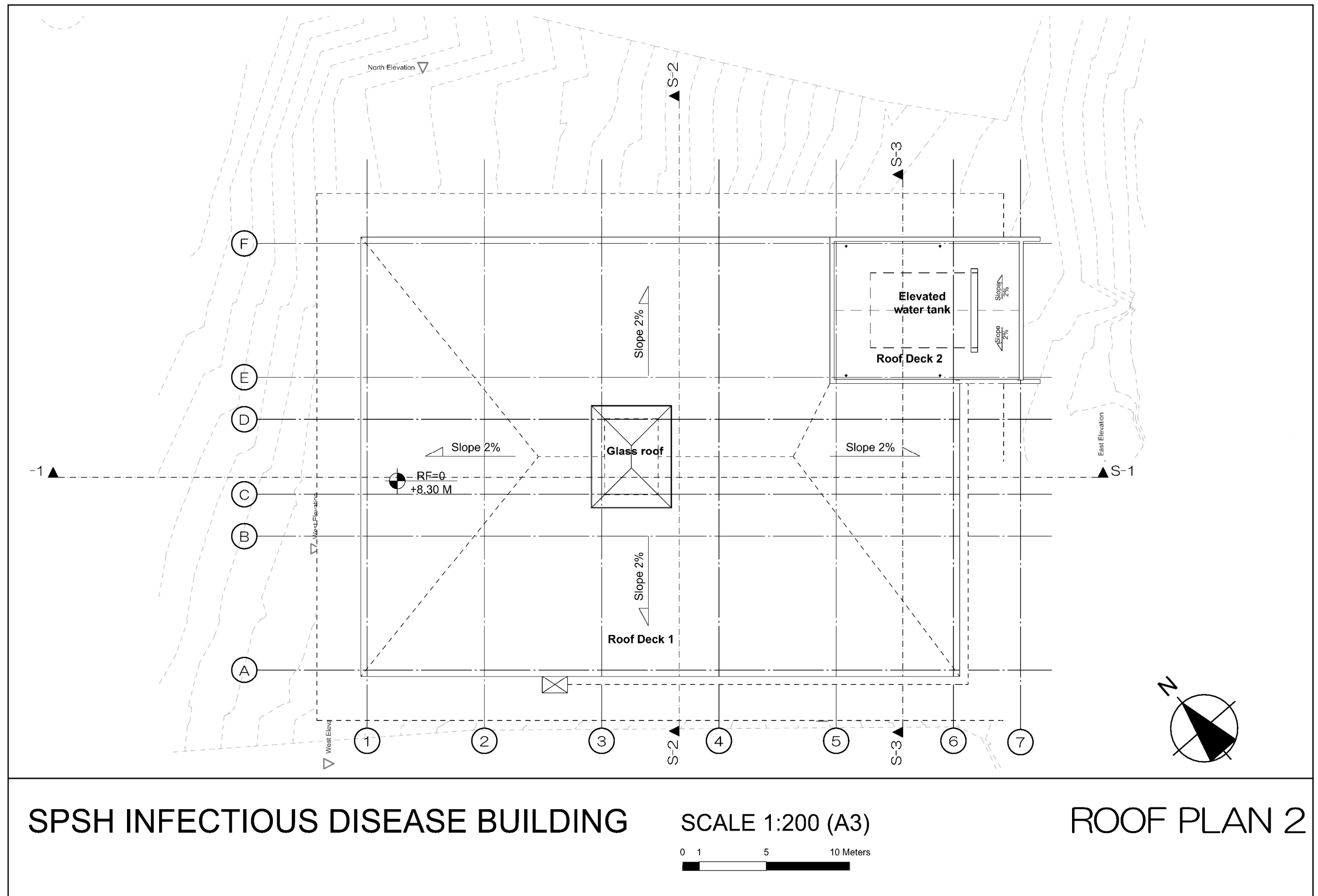


Figure 2-26 Roof Plan1

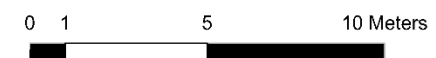




NORTH-WEST ELEVATION

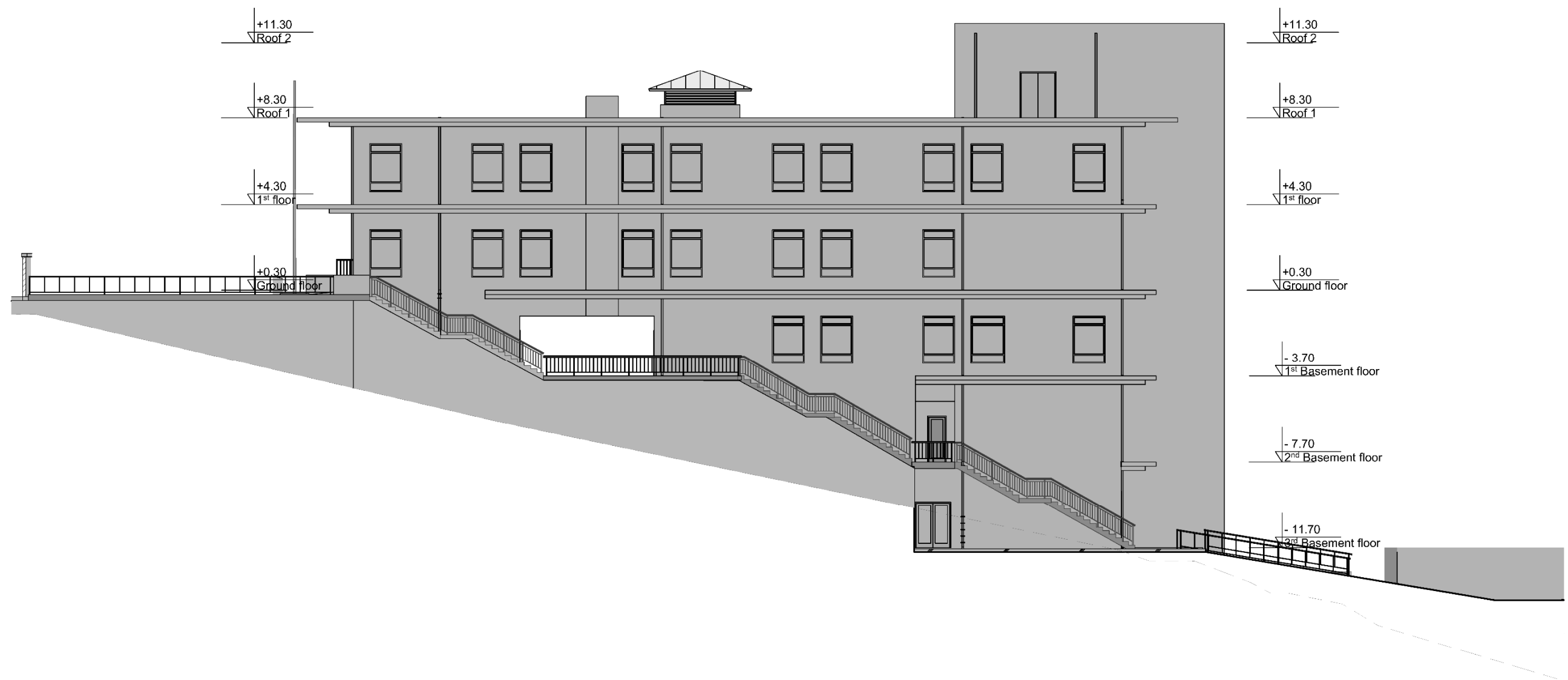
SPSH INFECTIOUS DISEASE BUILDING

SCALE 1:200 (A3)



ELEVATION 1

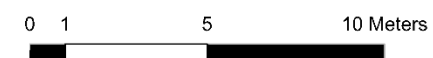
Figure 2-28 Elevation (North-West Side)



SOUTH-WEST ELEVATION

SPSH INFECTIOUS DISEASE BUILDING

SCALE 1:200 (A3)



ELEVATION 2

Figure 2-29 Elevation (South-West Side)



SOUTH-EAST ELEVATION

SPSH INFECTIOUS DISEASE BUILDING

SCALE 1:200 (A3)

0 1 5 10 Meters

ELEVATION 3

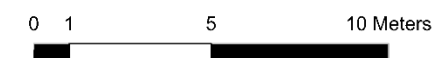
Figure 2-30 Elevation (South-East Side)



NORTH-EAST ELEVATION

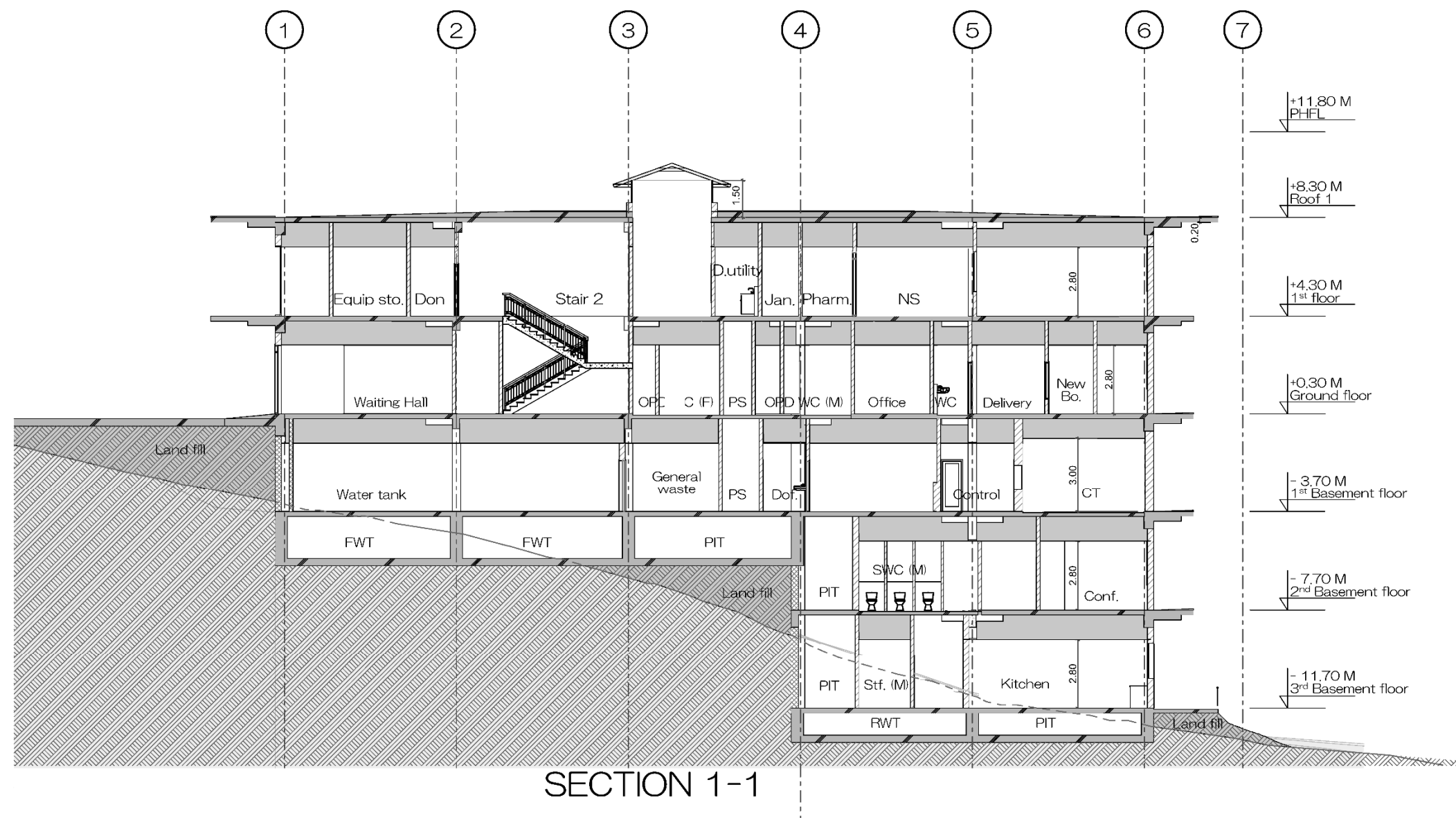
SPSH INFECTIOUS DISEASE BUILDING

SCALE 1:200 (A3)



ELEVATION 4

Figure 2-31 Elevation (North-East Side)



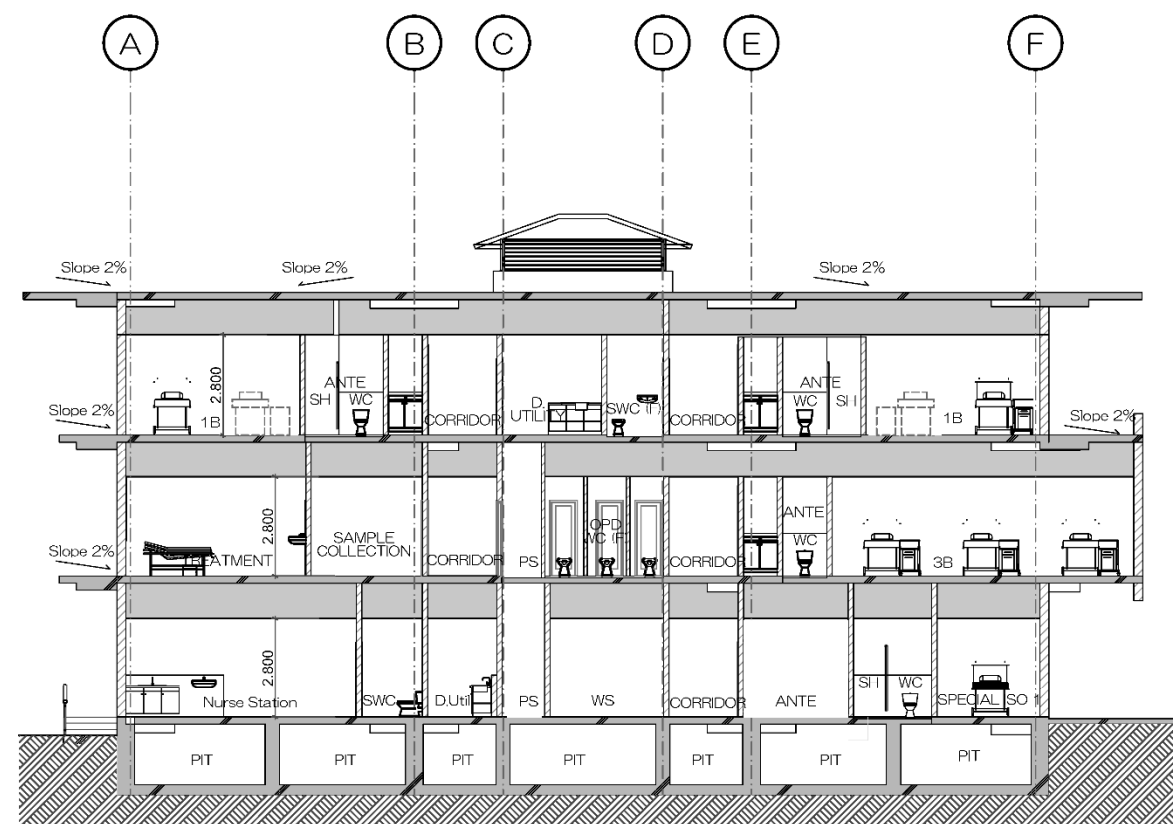
SPSH INFECTIOUS DISEASE BUILDING

SCALE 1:200 (A3)

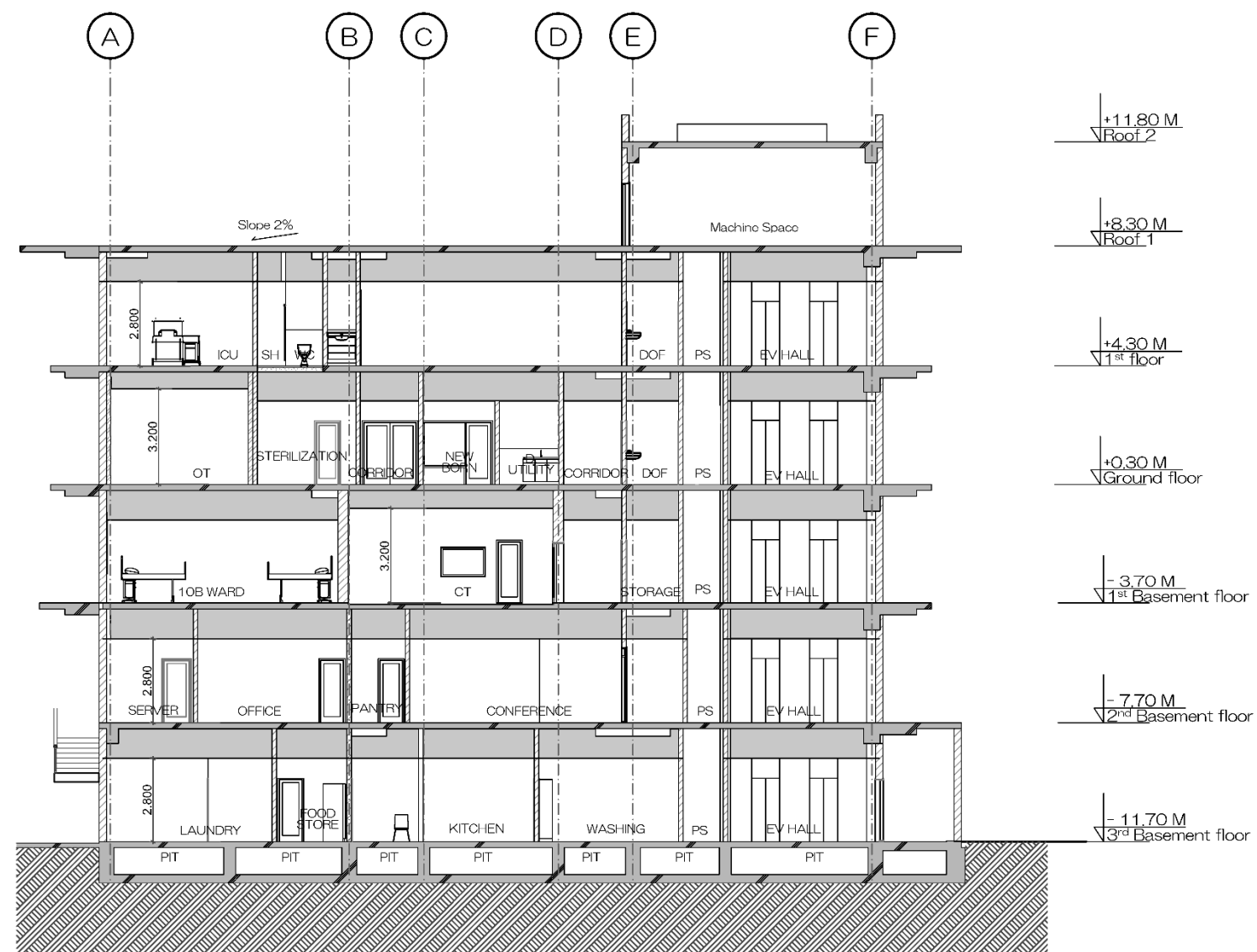
0 1 5 10 Meters

SECTION 1

Figure 2-32 Section 1



SECTION 2-2



SECTION 3-3

SPSH INFECTIOUS DISEASE BUILDING

SCALE 1:200 (A3)

0 1 5 10 Meters

SECTION 2

Figure 2-33 Section 2

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

(1) General

- 1) The Exchange of Notes (E/N) for the Grant Aid Project will be concluded between the Government of Japan and the Government of Ethiopia after the cabinet meeting and decision by the Government of Japan.
- 2) With signing the E/N, Grant Agreement (G/A) will be established between JICA and the recipient country. Based on the G/A, JICA will make payment to the recipient country as the project progresses.
- 3) The signing of E/N and G/A will signify Japan's official commitment to provide the aid and its practical implementation.
- 4) Following the conclusion of the G/A, consultants of Japanese nationality and the Government of Ethiopia will enter an execution design and supervision contract and immediately commence detailed design work.

(2) Detailed Design Stage

- 1) For the detailed design, full details of the facilities and equipment in the outline design should be thoroughly confirmed and discussed with the implementing agency.
- 2) The consultant must address technical issues through meetings with the relevant authorities in Japan and Ethiopia during the detailed design stage.

(3) Tender

- 1) Tendering will follow JICA's tendering guidelines.
- 2) Three possible methods for the tender, (a) using a Japanese construction company for facility construction and equipment, (b) employing a stand-alone method that separates facilities and equipment or (c) forming a consortium between Japanese construction companies and trading companies that combines facility construction. The evaluation will be conducted after carefully assessing the specifics of the project. Option (b) is considered advantageous and appropriate to ensure competitive tendering based on content and scale of the project.
- 3) The implementing agency will be responsible for executing the tender. However, consultants must provide sufficient cooperation and follow instructions from JICA.

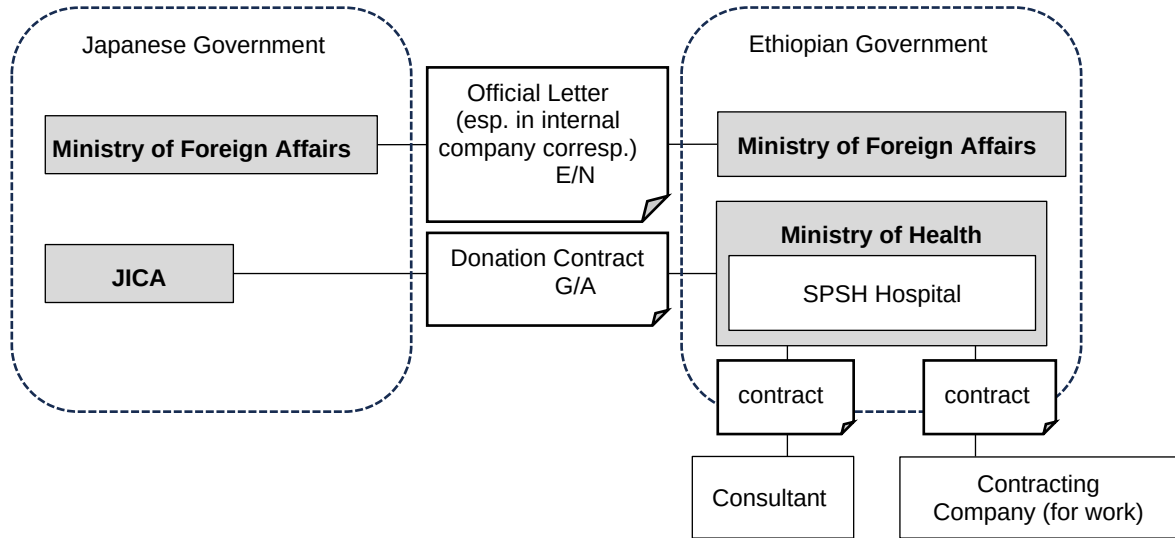
(4) Construction

- 1) Based on the results of the Preparatory Survey in Ethiopia, local building materials that meet acceptable quality standards and are readily available should be used for the project whenever possible. Ensuring and maintaining quality are crucial considerations.

- 2) The quality of skilled and semi-skilled workers from local contractors will be assessed during the planning for labor supply. It is essential for a Japanese contractor, as the prime contractor, to supervise and manage the local contractor and their labor to ensure the quality assurance required for the project.

2-2-4-2 Implementation Organization (Project Implementation Agent)

The implementation organization is MOH. The following diagram illustrates the relationship between the implementation organization, the Japanese consultant, and the contractor.



Source: JICA Survey Team

Figure 2-34 Implementation Organization

2-2-4-3 Implementation Conditions

(1) General

- 1) The rainy season in Addis Ababa extends from June to September. Therefore, developing a construction plan considering the rainy season is crucial.
- 2) Since the construction site is on a slope, the construction process should be planned to consider the necessary and sufficient construction plan and safety measures compared to flat land.
- 3) Construction standards and regulations will adhere to Ethiopian standards (ES EN) and Japanese standards depending on the local conditions.
- 4) Detailed coordination and adjustment are essential for contractors to effectively schedule construction works and equipment installation.
- 5) Since the construction will take place within the compound managed by SPSH, the following considerations for the surrounding environment must be addressed:

- a) Construction methods should minimize negative impacts on the existing SPSH facility. The construction plan must prevent pollution issues such as noise and accidents during construction.
- b) Proper measures must be taken to ensure safety and hygiene, manage traffic control for construction vehicles and pedestrians, and prevent damage to existing roads and surrounding areas.

(2) Gender-Related Initiatives

To promote gender equality and women's empowerment in the project, consideration will be given to ensuring equality in the workforce, creating a comfortable work environment, flexible work, and education through training during the construction and procurement phases.

2-2-4-4 Construction Category / Procurement and Installation Category

The responsibilities of the Japanese side and the Ethiopian side for the implementation of Japan's Grant Aid Project are shown in the table below.

Table 2-26 Demarcation of Works between the Japanese Government and the Recipient Country for the Grant Aid

Japanese side	Ethiopian side
(1) Building works Structure works, finishing works, external works, etc.	(1) Site preparation a) Site preparation (including demolition and removal of existing structures, and leveling the site) b) Temporary power and securing the water supply for the construction works
(2) Electrical works Electrical installation work within the electrical room, including piping and wiring beyond the main panel (inclusive of the panel itself), as well as the installation of lightning protection systems, lighting fixtures, outlet systems, and communication infrastructure.	(2) Basic works a) Water supply Preparation and installation from the city water to the connection point of planned facility b) Electrical power installation works Installation of power line from the commercial power line to the planned facility up to the boundary line. c) Telephone and network works Dedicated telephone lines and communication fiber-optic cables for the planned facility shall be drawn from the municipal network. The installation will include the laying of cables up to the specified connection points and ensuring readiness at the designated locations.
(3) Plumbing works a) Water supply works b) Drainage works Including the connecting point to the existing hospital drainage c) Waste water treatment system d) Water reservoir, elevated water tank e) Fire suppression system	
(4) External works in Project site Access road in the site	
(5) Equipment works a) Procurement b) Transportation c) Material on site and Installation d) Commissioning and training	(3) Other formalities Building permit procedures, environmental and social consideration procedures, application processes for the connection of various facilities, customs clearance procedures for construction materials and equipment, as well as tax exemption measures.
(6) Compliance of environmental management plan established by Ethiopian side	(4) Budget required for the maintenance, management, and operation of new facilities

Japanese side	Ethiopian side
(7) Basic training for maintenance of the facility, utility systems, and equipment	(5) Exemption from customs duties, internal taxes, and other charges for Japanese and third-country nationals involved in the work (6) Facilities and privileges of Japanese technicians during their entry and leave of Ethiopia (7) All works other than those supported by the Japanese side (1) Payment to the B/A (Banking Arrangement) and A/P (Authorization to Pay) (2) Tax exemption of equipment import (3) Participation in explaining instructions on the proper use of equipment (4) Assignment of maintenance staff and participation in technical supervision (5) Issuance of certificate of completion after approval of equipment

Source: JICA Survey Team

2-2-4-5 Consultant Supervision

(1) Basic Policy

A resident supervisor with construction expertise will be dispatched to oversee the entire construction process to ensure thorough quality control on-site for the contractor's work. Additionally, specialized supervisors will conduct spot checks at main stages of construction, such as framework and building construction. The project manager will also carry out on-site supervision and inspections at specified milestones, including the commencement of works, completion of concrete works and at the completion of the project.

Table 2-27 Plan of Personnel Necessary for Supervision

Name of supervisor (expertise)	Period (Ethiopia)
〈Building Facility〉	
Resident Construction Supervising Engineer	23.0 months
Non-resident Supervising Engineer	
• Project Manager/Construction Supervising Engineer 1 (Architecture)	1.50 months
• Construction Supervising Engineer 2 (Architecture)	0.53 month
• Construction Supervising Engineer 3 (Structure)	0.30 month
• Construction Supervising Engineer 4 (Electrical)	0.30 month
• Construction Supervising Engineer 5 (Mechanical)	0.63 month
〈Equipment Procurement Supervision〉	
Resident Procurement Supervising Engineer	1.07 months
Equipment Planning Engineer	0.33 month
Inspection Engineer1 (confirmation and verification of equipment drawings)	0.40 month
Inspection Engineer 2 (pre-shipment and pre-loading inspection)	0.55 month
Inspection Engineer 3 (maintenance verification)	0.69 month

Source: JICA Survey Team

A comprehensive process management plan will ensure that construction work is completed within the scheduled timeframe while maintaining high quality, meeting safety requirements and staying within budget. It will involve evaluating construction methods, securing labor and machinery, managing material orders and deliveries, and checking safety measures. If delays in the partner country's portion of the construction work impact the project timeline, efforts will be made to expedite the work as needed.

(2) Contents of Consultants Assignment

Resident Construction Supervising Engineer will be responsible for i) inspecting, confirming, and coordinating on-site progress for construction work and equipment procurement and installation, and ii) reviewing and approving construction documents such as plans and drawings. The JICA headquarters will be responsible for i) monitoring and supporting the on-site supervision, ii) reporting construction progress to JICA headquarters, and iii) attending the factory and pre-shipment inspections in Japan.

Resident Procurement Supervising Engineer will supervise transfer, unpacking, installation, procurement, trial operation, initial and subsequent operation training, supervise installation and check inspection reports, all works regarding the equipment procured by a trading company. Resident Procurement Supervising Engineer will also conduct a final check in the acceptance inspection on site and obtain an approval letter from the recipient. Inspection Engineers will check production drawings of the equipment submitted by the procurement company and will be in charge of inspection before expiration of manufacturer's warranty to be conducted within a year after delivery. Inspection Engineers will also check at each facility whether the conditions described in the special notes for the acceptance of equipment in facilities are satisfied. Inspection Engineers 1 and 2 will supervise product inspections and equipment verification inspection before shipping.

(3) Issuance of Certificates

Certificates related to the export of construction materials and equipment, payment for construction, practical completion, and final completion will be issued.

(4) Submission of Reports

Monthly progress reports, completion documents, and photos of the work from the contractor will be reviewed and approved, then submitted to the Government of Ethiopia and JICA. After project completion, a completion report will be prepared and submitted to JICA in accordance with the Grant Aid guidelines.

(5) Others

Monitoring and expediting the work schedule will be done as necessary to ensure the smooth execution of related tasks by the Government of Ethiopia.

2-2-4-6 Quality Control Plan

(1) Basic Policy

The detailed design drawings will be developed based on an analysis of the actual circumstances in Ethiopia, including maintenance cost, use of local materials, and local construction methods. Specification should comply with Japanese regulations such as Japanese Architectural Standard Specification (JASS), etc., to ensure the quality of buildings, utilities, and equipment.

The construction plan, implementation schedule, and shop drawings submitted by the contractor during construction will be reviewed and approved by the consultant.

(2) Quality Examination (Building Construction)

The Japanese Consultant shall examine the implementation plan submitted by the Contractor before the commencement of each stage of the works and approve it if the construction materials and the execution methods conform to the Specification. The Consultant should inspect necessary portions of work based on the implementation plan and Specifications. The key supervision items will be determined based on the implementation plan, and inspections will be carried out to ensure conformity.

In this Project, numerous materials are available for purchase locally. Even with existing manufacturers' warranties, quality assurance inspections shall be carried out to ensure product quality.

1) Earthwork

Based on the results of boring surveys conducted during the preparatory survey, it is assumed that the open cut method will be used for excavation of the basement and foundations.

A construction schedule and curing plan will be developed that takes into account groundwater levels and the rainy season. Attention will be paid to the disposal of excavated soil and the quality of the added soil.

2) Reinforcing Bar Work

The Mill-Sheet and so on, showing rebar content submitted by the Contractor, must be confirmed by the Consultant. Also, rebar quality and strength must pass inspection to match yield strength in the specification.

3) Concrete Work

Plans include using the ready-mixed concrete available in Addis Ababa. The main items for the supervision work (items for inspection and method of inspection) are as follows:

a) Items for inspection on concrete materials:

Material	Control item	Method of examination
Material	Items for inspection	Method of inspection
Cement	Hydration Heat	Dissolution Heat
Sand/ Gravel/ Crushed Stone	Grading	Sieve analysis
	Absolute dry specific gravity	Specific gravity & ratio of water absorption
	Alkali aggregate reaction	Alkali aggregate reaction test

b) Items for inspection on the mixing test:

Items for inspection	Method of inspection
Estimate test for structural concrete	Compression test machine
Slump	Slump cone
Concrete temperature	Thermometer
Air content	Manometer
Chloride volume	Measuring instrument for salt

c) Items for inspection on the concrete placing

Items for inspection	Method of inspection
Time from mixing to completion of concrete placing	Check time of completion of concrete placing (one hr. or less)
Slump	Slump cone
Concrete temperature	Thermometer
Air content	Manometer
Chloride volume	Measuring instrument for salt

d) Items for inspection on the progress schedule

Items for inspection	Method of inspection
Estimate test for structural concrete	Compression test machine
Accuracy for the openings of door & windows	Measurement
Accuracy for horizontal level of concrete slab	Spirit level & measurement
Status of Finishing	Visual inspection

(3) Quality Inspection (Equipment)

During the procurement of equipment and supervision of installation, detailed discussions will be held with the Ethiopian side and the procurer regarding the construction period, work content, layout plan, etc., and an optimal procurement plan will be developed for the project. Once the procured equipment and materials have been finalized, we will closely coordinate with the construction plan to ensure the smooth progress of the overall project. Points to be considered in procurement supervision are as follows.

- As soon as possible after signing the contract, the contents of the procured equipment, layout plan, country of manufacture, suppliers, and utilities shall be confirmed with the consultant's building and facilities staff, the Ethiopian facility staff, and the procurer.
- Under the supervision of the consultant, the procurer will conduct product (factory) inspections of large equipment at the manufacturer's fabrication facility and pre-shipment inspections prior to exporting packaging.
- For equipment shipped from Japan, a third-party organization shall be commissioned to perform a pre-shipment inspection under the supervision of the consultant.
- For the procurer's installation work, the consultant will dispatch a procurement supervisor to attend the site work and coordinate with the facilities and equipment based on the layout plan.
- In the final handover inspection, the number of contracted equipment, any discrepancies, required specifications/functions, and handling instructions are confirmed.

2-2-4-7 Procurement Plan

(1) Procurement Plan (Building)

The procurement policy for major construction materials is as stated in 2-2-1-7 Policies Related to Construction Methods/Procurement Methods and Construction Schedule. The procurement countries of major items are shown below.

Table 2-28 The procurement countries of major items

Name of material	Procurement country			Remarks
	Ethiopia	Japan	Third country	
[Materials]				
Portland Cement	○			
Sand	○			
Gravel	○			
Rebar	○			
Form	○			
Concrete Blocks	○			
Timber	○			
Metal Fittings	○			
Windows and Doors	○	○		
Glass	○			
Paint	○			
Waterproof material		○		
ODA Plaque		○		
Distribution Panel	○			
Wire, Cable	○			

Name of material	Procurement country			Remarks
	Ethiopia	Japan	Third country	
Wiring Devices (Switch, Outlets)	○			
Conduit Pipe	○			
Lighting Fixtures	○			
Air Conditioning Units	○			
Ventilating Fans	○			
Water reserving tank	○			
Pump	○			
Sanitary Fixtures	○			
Pipe	○			
Valve	○			

source : JICA Survey Team

(2) Countries of Procurement of Medical Equipment

In accordance with the framework of the Japanese government's grant aid program, Japanese and Ethiopian products will be procured in principle. However, since no Ethiopian products were identified in the equipment procured for this project, third-country products with domestic distributors will also be considered. In procuring third-country products, the Consultant will place emphasis on factors such as repair, after-sales service, and market penetration, and will strive to avoid selecting products only based on price. In addition, the Consultant will ensure the quality of equipment by setting restrictions such as limiting the location of the manufacturer's headquarters to OECD (Organization for Economic Cooperation and Development) or DAC (Development Assistance Committee) member countries.

Table 2-29 Main Equipment and Assumed Procuring Countries

No.	Equipment	Country of procurement	Country of origin
1	CT Scan	Japan	Japan
2	Mobile X-ray	Japan	Spain
3	Ultrasound Machine	Japan	Japan
4	Anaesthesia Machine	Japan	Japan
5	Operation Light	Ethiopia	Germany
6	Operation Light (Mobile)	Japan	Japan
7	Operation Table	Japan	Japan
8	Electrosurgical unit	Ethiopia	Germany
9	Defibrillator	Japan	Japan
11	Ventilator	Japan	USA
12	Delivery Table	Japan	Japan
13	Fetal Monitor	Japan	Japan
14	Baby Incubator	Japan	Japan
15	Infant Warmer	Japan	Japan
16	Patient Monitor	Ethiopia	Germany

No.	Equipment	Country of procurement	Country of origin
20	ICU Bed	Japan	China
25	Emergency Cart	Japan	Japan
27	Autoclave	Japan	Japan

Source: JICA Survey Team

2-2-4-8 Initial Operation Training Plan for Facility and Medical Equipment

(1) Initial Facility Operation Training

The contractor awards this project and the equipment manufacturers will prepare maintenance manuals for the building equipment. Based on these manuals, they will instruct the existing SPSH maintenance engineer on initial operation procedures, daily inspection tasks and how to record the results in the operation log.

(2) Initial Medical Equipment Operation Training

Initial operation instruction on the equipment shall be provided to users by engineers and technicians dispatched by the equipment supplier at the time of delivery and installation of the procured equipment. The instructions shall include operating methods, handling precautions, daily inspections, troubleshooting, and periodic maintenance. The user shall be fully instructed on the inspection details before and after use to ensure that the equipment is maintained in good condition for a long period of time.

2-2-4-9 Soft Component Plan

MoH has assigned full-time engineers in the fields of architecture, structure, electrical equipment, and mechanical equipment to the Infrastructure Department, which manages hospital facilities under MoH. This department is also responsible for the maintenance and management of SPSH. However, an access control system, negative pressure control of air conditioning, infection compartment control, etc. will be installed integrally for the first time in Ethiopia as a facility for a specialized infectious disease ward. Due to the lack of technical knowledge and experience in the maintenance and operation of these systems, the following soft components are planned.

① Strengthening Facility Management

Objective: To strengthen the facility maintenance management system

Target: Persons in charge of facility maintenance, hospital administrators, medical staff (doctor, nurse, etc.), cleaning and maintenance staff

Contents: Maintenance and management of rooms for special infectious diseases, maintenance and management of air conditioning systems, medical waste disposal, etc.

- Contents: Establishment of facility operation methods under normal circumstances and during outbreaks, on-the-job training, etc.

Implementation Schedule is shown as below.



Figure 2-35 Implementation Schedule (Draft)

Construction work will proceed while checking the on-site safety management system in accordance with the construction company's "Safety Measures Plan" and "Safe Construction Plan."

In addition, with regard to on-site occupational safety in grant aid projects, in addition to on-site self-management, safety patrols will be conducted twice during the construction period by the safety department of the Japanese construction company's head office or branch office, in order to raise awareness of construction safety and reduce the number of occupational accidents.

Security guards will be posted 24 hours a day to monitor safety management throughout the site during construction, prevent theft in equipment storage areas, and prevent occupational accidents associated with mechanical work such as cranes.

2-4 Outline of Recipient Country's Undertakings of the Project

For the recipient country's undertakings of the project, Ethiopia will be fully briefed on the items, schedule, etc., and understanding will be sought in order to ensure smooth implementation of the project.

MOH will provide the budget for the various preparations prior to the project implementation. For the project to proceed as planned, it is a prerequisite that the undertakings of the Ethiopian side will be implemented as planned, and the importance of this has been specifically explained by the Survey Team during the preparatory survey for cooperation. The Japanese side will monitor the progress on this matter.

The following gives the description of the major undertakings by the Ethiopian side for the project implementation.

2-4-1 Before the Project Implementation

- Site clearing will be required prior to the start of construction. The clearance works of the site will include the removal of existing water tanks and facilities on the site, in addition to the cutting and root removal of trees and levelling of the site. These items should be done prior to the bid announcement as a recipient country's undertaking.
- A temporary yard for construction works will be secured in proximity to the site.
- For construction permits, the design details will be discussed with the infrastructure department of the MOH and approved at the phase of detailed design.
- Provide support for visa acquisition procedures (issuance of invitation letter) for Japanese engineers of the consultant during the period of detailed design and bid assistance services.

2-4-2 During the Project Implementation

- Issue without delay the permits, licenses, etc. necessary for the implementation of the Project.
- Install at the project site the water supply pipes, power supply, and rain water drainages necessary to implement the project.

- Purchase and install the general furniture, curtains, carpets, etc. in the project facility as needed.
- Assist the Japanese and third-country engineers of consultants and construction/equipment contractors in visa acquisition procedures (issuance of invitation letters, etc.) during the construction period.
- MOH will conduct environmental and social assessment procedures.
- Take smooth procedures and measures regarding tax exemptions and tax refunds.

2-4-3 After the Project Implementation

- Establish an implementation organization for the maintenance, management, and operation of the facilities and equipment.
- Ensure the budget for maintenance, management, and operation of the facility and equipment.

2-5 Project Operation and Maintenance Plan

2-5-1 Personnel Placement

The operation and maintenance of the new facility will require the staffing shown in the table below. Physicians will basically be specialists from each of the existing hospitals. In addition, the maintenance and management of the facility and equipment will be handled by the existing personnel in charge of each department. The departments in the new facility can be handled by adjusting the work shifts of existing personnel, and no new employees are expected to be hired.

Table 2-30 Personnel Placement Plan

Department	Occupation
Emergency outpatient	2 nurses
Radiology department	1 radiology technician, 1 nurse
Surgical and sterilisation department	2 nurses, 1 clinical engineer, 1 sterilisation supervisor
Inpatient department (2 special beds, 4 ICU beds, 6 HDU beds, 28 general beds)	1 nurse on B1 (special beds), 4 nurses on 1F (HDU, general beds), 5 nurses on 2F (ICU, general beds)
Service department (kitchen, laundry, mortuary, medical waste room)	2 kitchen staff, 2 laundry staff
Pharmaceutical department	1 pharmacist, 1 clerk
Administrative department (reception, accounting, etc.)	2 clerks

Source: JICA Survey Team

2-5-2 Facility Operation and Maintenance Plan

2-5-2-1 Facility

The hospital's maintenance department is responsible for the operation and maintenance of SPSH, and it plans to establish a maintenance management system by hiring new operation and maintenance personnel for the new facility and by collaborating with relevant departments of the existing hospital. Therefore, the soft component will support the improvement of the required operation and maintenance management capacity.

Personnel especially needed in building maintenance are housekeeping cleaners. They need to learn and practice handling infectious waste and proper cleaning and disinfection methods, as well as understand zoning and flow lines during normal times and infectious disease outbreaks. In addition, since two elevators will be installed, periodic inspections and maintenance contracts are necessary.

With regard to operation and maintenance management of the facilities and mechanical and electrical system at SPSH, the Facilities Management Department will carry out routine inspections and repairs.

The new facility will be provided with emergency diesel generators, medical gas equipment, etc. However, as the existing facility has similar systems and equipment that are properly maintained and managed, no technical support or other assistance will be required to maintain the facility. Waste treatment facilities are excluded from the scope of the Project because a medical incinerator is already installed on the site.

2-5-2-2 Medical Equipment

(1) Equipment Maintenance Management System at SPSH

The Clinical Engineering Department of SPSH is managed by 9 Biomedical Engineers and 6 Technicians. Although staffing and simple repairs of medical equipment have been handled, there are cases where replacement parts cannot be procured due to budget shortfalls and other reasons. Appropriate budgetary measures are required in cooperation with the hospital administration department, but the necessary maintenance and management costs for this project have already been confirmed as a project shared by the partner country (after implementation of the project).

(2) Equipment Maintenance Plan

Initial operational guidance at the time of installation is provided by the supplier to the equipment maintenance technicians and end-user physicians, nurses, and technicians for operational guidance and daily inspections. In order to keep the equipment in good condition and prevent breakdowns, it is desirable to conduct inspections at the beginning and end of the workday, as well as periodic inspections, and guidance will be provided regarding equipment cleaning and

inspections. Furthermore, in order to ensure proper operation and maintenance of the equipment procured under this project, the following maintenance contracts will be considered for equipment for which after-sales service is deemed essential, such as expensive equipment and precision equipment.

(3) Consideration of Maintenance Contracts for Planned Equipment (Japanese side)

The equipment planned for this project is used in existing facilities, and SPSH Medical Equipment Maintenance Department can handle the daily operation and management of the equipment. However, a two-year maintenance contract will be included by the Japanese side for equipment that is expensive and requires after-sales service and maintenance by a local distributor. The equipment to be covered is given in the table below.

Table 2-31 Equipment Covered by Maintenance Contract

No	Equipment	Quantity
1	CT Scan	1
2	Mobile X-ray	3
3	Ultrasound Machine	2
4	Anaesthesia Machine	1
11	Ventilator	6

Source: JICA Survey Team

Normally, procured equipment comes with a one-year manufacturer's free warranty period, which includes free on-call service in case of malfunction. For the above equipment, in addition to the one-year warranty, the maintenance contract period will be extended for two years, for a total of three years of maintenance service.

【Maintenance details (second and third years, excluding the one-year manufacturer's warranty)】

- (1) Scheduled maintenance visits (twice a year for 2 years)
- (2) On-call emergency maintenance and repair service (up to 4 times a year for 2 years)
- (3) Supply of consumables and repair/replacement parts at the time of (1) and (2) above (excluding defects caused by users)

After the maintenance contract is completed, SPSH will secure the maintenance costs, and a maintenance contract will be signed between SPSH and the local distributor. Some expensive parts (CT tubes, etc.) and other costs not included in the above maintenance contract will be borne by the Ethiopian side.

2-6 Project Cost Estimation

2-6-1 Initial Cost Estimation

Regarding the project cost required to implement this cooperation target project, the breakdown amount of the project cost based on the burden classification was calculated as described in this

chapter. However, the calculation does not indicate the maximum amount of grant in the exchange official text.

2-6-1-1 Project Costs Borne by the Ethiopian Side

Table 2-32 Costs to be Borne by Ethiopian Side

Expenditure	Estimated Project Cost (USD)	Note
(1) Costs required for site preparation, etc.		
1) Ground preparation (dismantling and removal, ground preparation)	123,289	-
2) Relocation of water storage tanks	34,000	-
3) Water supply connection work	2,200	-
4) Electric utility installation	23,200	-
5) Telecommunications interconnection work	Existing use	Free installation at telecom company's expense
6) Internet connection work	Existing use	Free installation at telecom company's expense
(2) Various application procedures related to construction	0	MOH conducts the review.
(3) Environmental and social application process	0	MOH conducts the review.
(4) Furniture procurement and installation	225,803	-
(5) Charges for bank take-up.	15,418 409	Advising Commission Payment Commission
Total	424,319	Exchange Rate : USD1.0 = JPY154.20

Source: JICA Survey Team

2-6-1-2 Condition of Cost Estimation

Date of estimation: June, 2024

Exchange rate: Average three-month rate from 1st March, 2024 to 31st May, 2024

1 US\$ = 154.20 Japanese Yen

1 ETB = 2.7159 Japanese Yen

Construction Period: Refer to 2-2-4-10 Implementation Schedule

Other: The Project shall be implemented in compliance with Japanese Grant Aid Scheme.

2-6-2 Operation and Maintenance Costs

Annual operating and maintenance costs of the facilities and equipment procurement are estimated to be approximately USD 550,000, as shown in the table below. A breakdown of these costs is provided below.

Table 2-33 Assumed Annual Operation and Maintenance Costs

Items	Annual Fee (USD)
Utility Cost	
(1) Electricity Charges	34,910 USD/year
(2) Telephone and Information Charges	26,620 USD/year
(3) Water Supply Charges	32,440 USD/year
(4) Sewerage Charges	Not Required
(5) Fuel Charges for Generator	21,510 USD/year
Subtotal	115,480 USD/year
Facility Maintenance and Management Costs	
(1) Facility Repair Expenses	106,860 USD/year
(2) Maintenance Costs for Merged Septic Tanks	1,500 USD/year
(3) Maintenance Costs for Infectious Wastewater Treatment Systems.	12,000 USD/year
(4) Maintenance Costs for Medical Gas Equipment	1,450 USD/ year
(5) Elevator maintenance Costs	7,200 USD/year
(6) HEPA Filter Replacement Costs	6,500 USD/year
Subtotal	135,510 USD/year
Equipment Maintenance and Management Costs	
(1) Equipment Procurement Costs	90,450 USD/year
(2) Annual Maintenance Contract Cost	184,000 USD/year
Subtotal	274,450 USD/year
Total	525,440 USD/year

Source: JICA Survey Team

2-6-3 Utility Cost**2-6-3-1 Electricity Charges****Table 2-34 Conditions for Estimation**

Max. Power Demand	360 kW	$600\text{kVA} \times 0.6 \times (\text{Demand Rate}) = 360\text{kW}$
Load Factor	0.3	

Source: JICA Survey Team

Table 2-35 Ethiopian Electric Utility (EEU) General Tariff (15KV Connected)

Metered Charges	0.03675 USD/kwh	Exchange Rate : 1ETB= 0.0176 USD 2.124 ETB/kw = 0.03738 USD/kw
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Source: JICA Survey Team

Table 2-36 Monthly Electricity Charges

Metered Charges	$360\text{kW} \times 720 \text{ Hours/month} \times 0.3 \times 0.03738 \text{ USD/kWh}$	= 2,906.67 USD/month
Fixed Charge	64 ETB/month	2.392 USD /month
Total	2909 USD/month	⇒ 2,909 USD/month

Source: JICA Survey Team

Table 2-37 Annual Electricity Tariffs (Excluding Tax)

2,909 USD/month	×	12 Month/year	=	34,910 USD/year
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Source: JICA Survey Team

2-6-3-2 Telephone and Information Charges**Table 2-38 Communication Cost**

Communications Fee	2,218 USD×12months=26,620 (50% of the average 4-month bill of the existing SPSH is estimated as the rate for the new facility: 126,000 ETB/month)	26,620 USD/year
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Source: JICA Survey Team

2-6-3-3 Water Supply Charges**Table 2-39 Water Supply Charges**

Basic Rate	—	-
Metered Charges	33.0m ³ /day×75% (Percentage of water use for drinking and other purposes)×30 Day/month×3.64 USD/month (206.8ETB /m ³)	= 2,702.7 USD/month
Total	2,702.7 USD/month×12months = 32,432.4 USD/year	⇒ 32,440 USD/year

Source: JICA Survey Team

2-6-3-4 Sewage Charges

Not required. Combined septic tank is planned.

2-6-3-5 Fuel Charges for Generator**Table 2-40 Fuel Charges for Generator**

Generator Spec. Output capacity	500KVA×1 Unit, 3 phase, 4Wire, 415V 50HZ, Diesel Fuel) Output	
	Fuel Usage (at 75 per cent load)	80 ℓ/hour
Assumed Amount of Use	Assumed Monthly Operating Hours (4 Hour/day) ×4days	16 Hours/month
Unit Price of Diesel Fuel	79.75 ETB / ℓ	1.40 USD/ℓ
Annual Fuel Cost	80 ℓ /×16 hours/month×12 months/year ×1.40 USD/ℓ=21,504 USD/year	21,510 USD/year

Source: JICA Survey Team

2-6-3-6 Facility Maintenance and Management Costs

Maintenance and management costs of new facilities are estimated as described below.

2-6-3-7 Facility Repair Costs

Table 2-41 Maintenance and Repair Costs

	Monthly Repair Cost (USD)				Annual Repair Cost (USD/year)
	Spare Parts	Consumables	Inspection	Total	
Lighting Equipment	200	600	100	900	10,800 USD/year
A.C Equipment	100	500	500	1,100	13,200 USD/year
Plumbing Equipment	200	200	500	900	10,800 USD/year
Elevator Maintenance	5,250 USD/m ² /year×2=				10,500 USD/year
System Operation and Maintenance	5.00 USD/m ² /year × 3,240 m ² =				16,200 USD/year
Daily/Periodic Cleaning	7.33 USD/m ² /year × 3,240 m ² =				23,750 USD/year
Building Repair	6.67 USD/m ² /year × 3,240 m ² =				21,610 USD/year
Total					106,860 USD/year

Source: JICA Survey Team

2-6-3-8 Maintenance Costs for Combined Septic Tank

Table 2-42 Combined Septic Tank Cost

Management Fee (Sewage Disposal)	1,400 USD/year
Consumable Purchases	100 USD/year
Total	1,500 USD/year

Source: JICA Survey Team

2-6-3-9 Maintenance Costs for Infectious Wastewater Treatment Equipment

Table 2-43 Infectious Wastewater Treatment Equipment

Management Fee (Sewage Disposal)	— USD/year
Consumable Purchases	12,000 USD/year
Total	12,000 USD/year

Source: JICA Survey Team

2-6-3-10 Medical Gas Equipment Maintenance

Table 2-44 Medical Gas Equipment Maintenance Cost

Medical Gas Maintenance Fee (replaced every 4 years)	1,250(5,000USD/4year) USD/year
Consumable (O-rings, etc.) Replacement	200 USD/year
Total	1,450 USD/year

Source: JICA Survey Team

2-6-3-11 Elevator Maintenance

Table 2-45 Elevator Maintenance

Elevator annual maintenance cost	7,200 USD/year
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Source: JICA Survey Team

2-6-3-12 HEPA Filter Replacement

Table 2-46 HEPA Filter Replacement

HEPA Filter Replacement Cost (20% of the total number)	6,500 USD/year
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Source: JICA Survey Team

2-6-3-13 Equipment Maintenance and Management Costs

The annual procurement costs of consumables and replacement parts required for the proper use and maintenance of the equipment are approximately given as shown in the table below.

Table 2-47 Estimates of Necessary Expenses

No.	Equipment	Qty.	Replacements/ Consumables	Unit Price (JPY)	Annual Required Amount	Subtotal (JPY)
4	Anaesthesia Machine	1	Ventilator Circuit (Adult) (R)	16,920	10	169,200
			Ventilator Circuit (Child) (R)	19,980	4	79,920
			Silicon Mask (Adult) (R)	3,600	10	36,000
			Silicon Mask (Child) (R)	3,400	4	13,600
			Soda Lime 5L(C)	6,000	20	120,000
			Oxygen Sensor (C)	50,000	14	700,000
8	Electrosurgical Unit	1	Electrode Holder with Cable (R)	4,626(30 \$)	4	18,504
			Electrode Set (R)	6,168(40 \$)	4	24,672
			Bipolar Forceps Connection Cable (R)	10,023(65 \$)	4	40,092
9	Defibrillator	10	Battery (R)	25,200	4	1,008,000
			ECG electrode (150 pcs)(C)	13,200	40	5,280,000
			Gel (100gx2)(C)	1,820	30	546,000
			Recording Paper (10pcs)(C)	9,100	20	1,820,000
10	ECG	1	Chest Electrodes (6pcs) (R)	4,700	10	47,000
			Extremity Electrodes (4pcs) (R)	7,200	10	72,000
			Patient Cable (R)	20,700	10	207,000
			Battery (R)	20,800	1	20,800
			Cream (140g)(C)	860	8	6,880
			Recording Paper (C)	2,750	8	22,000
11	Ventilator	6	Heated Humidifier Filter (C)	210(1.36 \$)	40	50,400
			Bacteria Filter (C)	3,161(20.5 \$)	40	758,640
13	Fetal Monitor	1	Transducer Belt (R)	1,000	4	4,000
			Gel (C)	2,000	20	40,000

No.	Equipment	Qty.	Replacements/ Consumables	Unit Price (JPY)	Annual Required Amount	Subtotal (JPY)
14	Baby Incubator	1	Air Micro Filter (5pcs)	1,4000	12	168,000
			Access Port Cover (6pcs)	2,800	4	11,200
15	Infant Warmer	1	Body Temperature Probe	36,000	10	360,000
			Adhesive Pads (30pcs)	10,800	24	259,200
19	Suction Unit	7	Suction Cannula (20pcs)	1,730	28	339,080
			Suction Hose (2m)	2,800	28	548,800
			Bacteria Filter	4,800	32	1,075,200
27	Autoclave	5	Strip Indicator	4,000	5	100,000
					Total	13,946,188

Source: JICA Survey Team

Annual costs for equipment maintenance contracts are given below.

Table 2-48 Breakdown of Annual Maintenance Contract Costs

No.	Equipment	Qty.	Unit Price (JPY)	Subtotal (JPY)
1	CT Scan	1	¥14,571,900	¥14,571,900
2	Mobile X-ray	3	¥1,100,000	¥3,300,000
3	Ultrasound Machine	2	¥800,000	¥1,600,000
4	Anaesthesia Machine	1	¥500,000	¥500,000
11	Ventilator	6	¥1,400,000	¥8,400,000
			Total	¥28,371,900

Source: JICA Survey Team

Chapter 3 Project Evaluation

Chapter3 Project Evaluation

3-1 Prerequisites for Project Implementation

In implementing the project, it is necessary to ensure that the items listed under "Major Undertakings by the Government of Ethiopia" are implemented.

3-2 Items Necessary for the Recipient Country Undertaken to Achieve the Overall Project Plan

The inputs required from the Ethiopian side to achieve the overall project plan and to achieve and sustain the project effectiveness are as follows:

- Relocation and removal of existing facilities and site clearance at the project site
- Appropriate staffing
- Secure and implement the financial resources necessary for the maintenance and operation of facilities and equipment

3-3 External Conditions

The following external conditions must be met for the project to be effective and sustainable

- Continuation of the National Health Sector Strategic Plan
- No problems arise in the surrounding environment or infrastructure facilities of the subject facility, such as roads, water supply, electricity, etc.

3-4 Project Evaluation

3-4-1 Relevance

3-4-1-1 Beneficiaries of the project

The new ward to be constructed under the project will be the only ward in Ethiopia that can isolate patients under negative pressure. Therefore, the beneficiaries will not only be the residents of Addis Ababa, but also the entire population of Ethiopia. In January 2025, a case of Ebola hemorrhagic fever was confirmed in Uganda, a neighboring country. This will contribute greatly to the prevention of infectious diseases in the African region.

3-4-1-2 Consistency with the Ethiopian Development Plan

As mentioned above, the 10-Year Development Plan, the Second Health Sector Transformation Plan, and the National Specialty and Sub-Specialty Service Road Map 2020-2029 all set targets and indicators for infectious diseases. The development and improvement of facilities to deal with infectious diseases and the establishment of a referral system are key measures. The project is expected to improve the quality of medical services provided by SPSH and strengthen its ability

to respond to future health crises in Ethiopia by upgrading its facilities and equipment to fulfill its role as the country's top referral hospital specializing in infectious diseases.

3-4-1-3 Consistency with our country's aid policy

Japan's Country Assistance Policy for Ethiopia (April 2017), under Priority fields (4) Education and Health, “Japan supports the development of a health system and improvement of the quality of medical service based on the philosophy of Universal Health Coverage,” and this project is consistent with this policy.

3-4-2 Effectiveness

In order to evaluate the effectiveness of the project, indicators were established that would allow comparison of the current baseline and the situation after the opening of the new hospital ward. As a result of the field survey, it was found that although a hospital information system has been introduced in the current SPSH for patient statistics related to patients with infectious diseases, the actual operation is paper-based, and it is difficult to extract patient-only data related to infectious diseases from the hospital to be used as indicators. Therefore, operational and effect indicators that could be set as a baseline for the current situation were organized and set from quantitative and qualitative perspectives. Target values after the opening of the new ward were set in consultation with Dr. Wagene (Assistant to the CEO of SPSH).

Specific evaluation indicators and target values are as follows

Table 3-1 Evaluation Indicators

Quantitative Effect Indicators	Base Value (Actual results for 2023)	Target value (2031) (Three years after completion of the project)
Number of medical facilities staffed by healthcare professionals who have completed clinical training related to infectious diseases and passed an examination upon completion (cases)	0	30
Number of hospital-acquired infections among healthcare workers (persons)	N/A	0
Number of patients delivered/operated on at this facility who will have a new infection within 30 days after surgery (persons)	N/A	0
Qualitative Effect Indicators		
The safety of healthcare workers is ensured through the development of facilities that enable appropriate infection control, and the prevention of nosocomial infections to healthcare workers and between patients is thoroughly implemented.		
Appropriate collaboration with the Ethiopian Public Health Institute (EPHI), which conducts quarantine, will enable appropriate isolation of patients (including suspected patients) with serious infectious diseases from overseas at Bole International Airport (Addis Ababa) and other border crossings.		

Source: JICA Survey Team

Regarding clinical training related to infectious diseases, it was reported that a significant number of TB and Leprosy, TB/HIV, and MDR-TB cases are being treated every year, but no clinical

training is being provided for other infectious diseases. Therefore, in consultation with the hospital, following targets have been set for non-TB-related diseases: to increase the number of infectious disease specialists and to train at 10 secondary care facilities nationwide each year (about 6 doctors per facility, totaling 125 facilities).. As a result, 30 facilities will be trained in the first 3 years after the opening of the new facility. The selection of target diseases, curriculum, manuals, etc. will need to be developed in the future.

With the construction of the new facility, the hospital will be the only facility in the country that can isolate patients in their rooms under negative pressure. This will contribute to a drastic improvement of the situation in which appropriate negative-pressure isolation has not been available for tuberculosis patients and other diseases that cause airborne infection. Specifically, in addition to inpatient treatment for patients requiring negative pressure control in hospital rooms, deliveries, CT examinations, and surgeries will be able to be completed in the new ward, which will greatly reduce the spread of nosocomial infections. Therefore, the elimination of nosocomial infections to healthcare workers, which had been a problem even with the coronary disaster, was set as an effect indicator. In addition, the indicators are expected to be highly effective in preventing new infections among patients treated at the facility. The targets have been set to eliminate new infections in patients who have undergone delivery or surgery there.

In the early stages of the COVID-19 outbreak, many infection sources in Africa originated from other countries. To address this, EPHI, utilizing its BSL-3 mobile laboratory and other facilities, will isolate suspected cases identified at Bole International Airport in Addis Ababa, a major African hub, in a negative pressure room within the new hospital ward immediately upon detection. The hospital is expected to make a significant contribution to the development of a system for the prevention of infectious diseases in the African region.

Appendix

Appendix-1 Member List of the Survey Team

Name	Responsibility	Firm
Miwa ITO	Team Leader	JICA
Mitsuo ISONO	Technical Advisor	JICA
Yuki SHIMA	Program Coordinator	JICA
Kenichiro MATSUOKA	Chief Consultant/Facility Planning	Oriental Consultants Global Co.
Noboru NARA	Deputy Chief Consultant / Structural Planning	Oriental Consultants Global Co.
Koichi SUZUKI	Hospital Design	K.ITO Architects & Engineers Inc.
Mika OKAZAKI	Architectural Design	K.ITO Architects & Engineers Inc.
Masahiko SUZUKI	Utility Design	Oriental Consultants Global Co.
Haruhisa ISHIKAWA	Construction Planning / Cost Estimate (Facility)	Oriental Consultants Global Co.
Dai FUJITA	Equipment Planning /Operation and Maintenance Planning	International Total Engineering Corporation
Hikari OKABE	Equipment Procurement Planning /Cost Estimate	International Total Engineering Corporation
Hidenori MOCHIZUKI	Health Care Planning / Gender and Disability Considerations	International Total Engineering Corporation
Kazunori WATANABE	Site Conditions Survey /Facility Design Support	Oriental Consultants Global Co.

Source: JICA Survey Team

Appendix -2 Survey Schedule

The 1st Field Survey was conducted from Monday, 20th May to Saturday, 29th June, 2024.

	Date	JICA Official	Chief Consultant/Facility Planning	Deputy Chief Consultant / Structural Planning	Hospital Design	Utility Design	Construction Planning / Cost Estimate (Facility)	Equipment Planning / Operation and Maintenance Planning	Equipment Procurement Planning / Cost Estimate	Health Care Planning / Gender and Disability Considerations	Site Conditions Survey / Facility Design Support
			Kenichiro MATSUOKA	Noboru NARA	Koichi SUZUKI	Masahiko SUZUKI	Haruhisa SHIKAWA	Dai FUJITA	Hikari OKABE	Hidenori MOCHIZUKI	Kazunori WATANABE
1	20th May	Mon	Tokyo →		Tokyo →						
2	21st	Th	→Addis Ababa		→Addis Ababa						
3	22nd	Wed	Briefing to JICA Ethiopian office		Briefing to JICA Ethiopian office						
4	23rd	Thu	Explanation of ICIR and discussion to Ethiopian side		Explanation of ICIR and discussion to Ethiopian side						
5	24th	Fri	Project Site Visit		Project Site Visit						
6	25th	Sat	Discussion with Ministry of Health and Hospital		Discussion with Ministry of Health and Hospital						
7	26th	Sun	Internal Discussion		Internal Discussion						
8	27th	Mon	Internal Discussion		Internal Discussion						
9	28th	Th	Discussion with Ministry of Health and Hospital	Tokyo →	Discussion with Ministry of Health and Hospital			Tokyo →			Discussion with Ministry of Health and Hospital
10	29th	Wed	Survey of project site	→Addis Ababa	Survey of project site			→Addis Ababa			Survey of project site
11	30th	Thu	Discussion with CDC		Discussion with CDC			Discussion with Ministry of Health and Hospital			Discussion with Sub-Consultant
12	31st	Fri	Survey on Existing Facility/Equipment		Survey on Existing Facility/Equipment			Survey on Existing Facility/Equipment			Survey of project site
13	1st June	Sat	Internal Discussion		Internal Discussion			Internal Discussion			Internal Discussion
14	2nd	Sun	Internal Discussion		Internal Discussion			Internal Discussion			Internal Discussion
15	3rd	Mon	Discussion with Hospital		Discussion with Hospital	Tokyo →		Discussion with Hospital		Tokyo →	Discussion with Hospital
16	4th	Th	Survey on Facility/Equipment Planning		Survey on Facility/Equipment Planning			Survey on Facility/Equipment Planning		→Addis Ababa	Similar Project Visit
17	5th	Wed	Similar Project Visit		Similar Project Visit	→Addis Ababa		Similar Project Visit		→Addis Ababa	Similar Project Visit
18	6th	Thu	Discussion with Hospital	Discussion with Hospital	Study of Outline Design	Survey on Utility		Survey on Equipment Planning		Discussion with CDC	Study of Outline Design
19	7th	Fri	Survey on Facility/Equipment	Discussion with Hospital	Study of Outline Design	Study of Outline Design		Survey on Equipment Planning		Survey of Health care and gender / disability considerations	Study of Outline Design
20	8th	Sat	Discussion with Hospital	Discussion with Hospital	Study of Outline Design	Study of Outline Design		Survey on Equipment Planning		Survey of Health care and gender / disability considerations	Study of Outline Design
21	9th	Sun	Internal Discussion		Internal Discussion			Internal Discussion		Internal Discussion	Internal Discussion
22	10th	Mon	Tokyo →	Internal Discussion		Addis Ababa		Internal Discussion		Internal Discussion	Internal Discussion
23	11th	Th	→Addis Ababa	Same as JICA Officials			Tokyo →	Same as JICA Officials	Tokyo →	Survey of Health Care and Gender / Disability Considerations	Study of Outline Design
24	12th	Wed	Courtesy Visit to the Embassy				→Addis Ababa	Same as JICA Officials	→Addis Ababa	Survey of Health Care and Gender / Disability Considerations	Same as JICA Officials
25	13th	Thu	Discussion with Ministry of Health, Hospital and CDC	Same as JICA Officials			Survey on Procurement/Estimate	Same as JICA Officials	Survey on Procurement/Estimate	Survey of Health Care and Gender / Disability Considerations	Survey on Natural Condition
26	14th	Fri	Study of Outline Design	Same as JICA Officials			Survey on Procurement/Estimate	Survey on Equipment Planning	Survey on Procurement/Estimate	Survey of Health Care and Gender / Disability Considerations	Survey on Natural Condition
27	15th	Sat	→Tokyo	Study of Outline Design	Survey on Structural Planning	Survey on Hospital Design	Survey on Utility	Survey on Procurement/Estimate	Survey on Equipment Planning	Survey on Procurement/Estimate	Survey on Natural Condition
28	16th	Sun									
29	17th	Mon									
30	18th	Th									
31	19th	Wed									
32	20th	Thu									
33	21st	Fri									
34	22nd	Sat									
35	23rd	Sun									
36	24th	Mon									
37	25th	Th									
38	26th	Wed									
39	27th	Thu									
40	28th	Fri									
41	29th	Sat									

Source: JICA Survey Team

The 2nd Field Survey was conducted from Monday, 9th December to Saturday, 21st December, 2024.

Date			JICA Officials	Chief Consultant /Facility Planning	Equipment Planning /Operation and Maintenance Planning	Equipment Procurement Planning /Cost Estimate	Site Conditions Survey /Facility Design Support
December				Kenichiro MATSUOKA	Dai FUJITA	Hikari OKABE	Kazunori WATANABE
1	9th	Mon		Tokyo→			
2	10th	Tue		→Addis Ababa Meeting with JICA Ethiopian Office Project Site Visit			
3	11th	Wed		Project Outline Workshop for SPSH			
4	12th	Thu		Project Outline Workshop for SPSH		Workshop for SPSH Survey on Procurement/Estimate	Same as Chief Consultant
5	13th	Fri		Project Outline Explanation for Ministry of Health		Explanation for Ministry of Health Survey on Procurement/Estimate	Same as Chief Consultant
6	14th	Sat		Internal Discussion			
7	15th	Sun	Tokyo→	Internal Discussion			Addis Ababa→
8	16th	Mon	→Addis Ababa Discussion on Minutes of Discussions	Same as JICA Officials		Discussion with Related Authorities Survey on Procurement/Estimate	→Tokyo
9	17th	Tue	Discussion on Minutes of Discussions	Same as JICA Officials		Discussion with Related Authorities Survey on Procurement/Estimate	
10	18th	Wed	Discussion on Minutes of Discussions	Same as JICA Officials		Discussion with Related Authorities Survey on Procurement/Estimate	
11	19th	Thu	Discussion on Minutes of Discussions Meeting with JICA Ethiopian Office Report to Embassy of Japan Addis Ababa→	Same as JICA Officials		Discussion with Related Authorities Survey on Procurement/Estimate	
12	20th	Fri	→Tokyo	AM: Remaining Survey PM: Addis Ababa→			
13	21st	Sat		→Tokyo			

Source: JICA Survey Team

Appendix-3 List of the Person concerned in the Recipient Country

Name	Organization	Post
Dr. Abraham Eshetu	St. Peter's Specialized Hospital	CEO of Hospital
Dr. Wegene Ewnetu	St. Peter's Specialized Hospital	Assistant to CEO
Mr. Getamesay	St. Peter's Specialized Hospital	Campus infrastructure manager
Mr. Tsegay	St. Peter's Specialized Hospital	Director
Mr. Ayalew	St. Peter's Specialized Hospital	Finance Director
Dr. Abel Teklit	St. Peter's Specialized Hospital	
Dr. Freswot	St. Peter's Specialized Hospital	Inpatient Director
Dr. Fasil	St. Peter's Specialized Hospital	Outpatient Director
Dr. Mulogeta	St. Peter's Specialized Hospital	
Dr. Yohannis	St. Peter's Specialized Hospital	Medical Director
Dr. Assefa	St. Peter's Specialized Hospital	Quality Director
Dr. Moedof	St. Peter's Specialized Hospital	Internal Medical Department
Dr. Elubabor	MoH Medical Service LEO	CEO
Mr. Abiy	MoH Medical Service LEO	Desk Head
Sr. Etaferaw	MoH Medical Service LEO	Officer/ Focal Person
Eng. Tadesse	MoH Health Infrastructure LEO	CEO
Mr. Abel Tsejaw	MoH Health Infrastructure LEO	Architect
Mr. Shimels Asfaw	MoH Health Infrastructure LEO	Design Team Lead
Ms. Abnet	MoH Health Infrastructure LEO	Structural Engineer
Mr. Ahmeel	MoH Health Infrastructure LEO	Structural Engineer
Mr. Fitehaselasia	MoH Health Infrastructure LEO	Construction Case Team Coordinator
Mr. Samuel Kebede	MoH Health Infrastructure LEO	Senior Civil engineer
Mr. Anley Tadie	MoH Health Infrastructure LEO	Senior Sanitary engineer
Mr. Hailu Kebede	MoH Health Infrastructure LEO	Senior Electrical Engineer
Mr. Fiseiassie	MoH Health Infrastructure LEO	
Mrs. Hiwot	MoH Disease Prevention & Control LEO	CEO
Mr. Taye	MoH Disease Prevention & Control LEO	Officer
Mr. Yehenew Berhane	MoH Procurement office	Procurement Executive Officer for facility
Mr. Meadi	MoH Procurement office	Medical equipment procurement
Mr. Melkamu	Addis Ababa Health Bureau Medical Service LEO	CEO
Ms. Genet	Ministry of Urban Development	
Mr. Sileshi	Ministry of Women & Social Affairs Women Affairs	Disability Affairs
Mr. Asalif	Ministry of Women & Social Affairs Disability Affairs	Director
Mr. Degefa	EPHI	Bacteriology Reference Lab Head
Dr. Getachew Tollera	EPHI	Deputy Director
Dr. Geremew Tasew	EPHI	Bacterial, Parasitic, & Zoonotic Disease Research Directorate
Dr. Abdurezak	Black Lion Hospital	
Dr. Sisay	St.Paul Hospital	

Source: JICA Survey Team

Appendix-4 Minutes of Discussions

1st Field Survey(13th June 2024)

【OD 時 M/D 標準様式】

Minutes of Discussions
on the Preparatory Survey for the Project for
the Improvement of the Specialized Hospital for Communicable Diseases Treatment
in Addis Ababa

Based on the several preliminary discussions between the Government of Federal Democratic Republic of Ethiopia (hereinafter referred to as “Ethiopia”) and Japan International Cooperation Agency (hereinafter referred to as “JICA”), JICA dispatched the Preparatory Survey Team for the Outline Design (hereinafter referred to as “the Team”) of the Project for the Improvement of the Specialized Hospital for Communicable Diseases Treatment in Addis Ababa (hereinafter referred to as “the Project”) to Ethiopia. The Team held a series of discussions with the officials of the Government of Ethiopia and conducted a field survey. In the course of the discussions, both sides have confirmed the main items described in the attached sheets.

Addis Ababa, June 13th .2024



Ms. ITO Miwa

Leader

Preparatory Survey Team

Japan International Cooperation Agency

Japan



Dr. Ayele Teshome

State Minister

Health System and Capacity Building Wing

Ministry of Health

Ethiopia



ATTACHMENT

1. Objective of the Project

The objective of the Project is to strengthen the system for providing quality medical care and training at St. Peter's Specialized hospital by constructing facility and providing equipment for diagnosis and treatment of infectious diseases and for clinical training, thereby contributing to strengthen the infectious disease control.

2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as "the Preparatory Survey for the Project for the Improvement of the Specialized Hospital for Communicable Diseases Treatment in Addis Ababa".

3. Project site

Both sides confirmed that the site of the Project is on the grounds of St. Peter's Specialized Hospital, which is shown in Annex 1.

4. Responsible authority for the Project

Both sides confirmed the authorities responsible for the Project are as follows:

4-1. The executing agency is the Ministry of Health.

4-2. The implementing agency is St. Peter's Specialized Hospital. The implementing agency shall coordinate with all relevant agencies to ensure smooth implementation of the Project and ensure that the undertakings for the Project shall be managed by relevant authorities properly and on time. The organization charts are shown in Annex 2.

5. Items requested by the Government of Ethiopia

5-1. As a result of discussions, both sides confirmed that the items requested by the Government of Ethiopia are shown in Annex 3 and 4. Also, both sides agreed that the laboratory will not be included in the new facility to be constructed, but some equipment will be installed in the existing laboratory as listed.

5-2. JICA will assess the feasibility of the above requested items through the survey and will report the findings to the Government of Japan. The final scope of the Project will be decided by the Government of Japan.

5-3. The Government of Ethiopia shall submit an official request to the Government of



Japan through a diplomatic channel before October, 2024.

6. Procedures and Basic Principles of Japanese Grant

6-1. The Ethiopian side agreed that the procedures and basic principles of Japanese Grant (hereinafter referred to as “the Grant”) as described in Annex 5 shall be applied to the Project.

As for the monitoring of the implementation of the Project, JICA requires Ethiopian side to submit the Project Monitoring Report, the form of which is attached as Annex 6.

6-2. The Ethiopian side agreed to take the necessary measures, as described in Annex 7, for smooth implementation of the Project. The contents of the Annex 7 will be elaborated and refined during the Preparatory Survey and be agreed in the mission dispatched for explanation of the Draft Preparatory Survey Report.

The contents of Annex 7 will be updated as the Preparatory Survey progresses, and eventually, will be used as an attachment to the Grant Agreement.

7. Schedule of the Survey

7-1. The Team will proceed with further survey in Ethiopia until June 28.

7-2. An official request to the Government of Japan will be submitted before October, 2024.

7-3. JICA will prepare a draft Preparatory Survey Report in English and dispatch a mission to Ethiopia in order to explain its contents around December 2024.

7-4. If the contents of the draft Preparatory Survey Report is accepted and the undertakings for the Project are fully agreed by the Ethiopian side, JICA will finalize the Preparatory Survey Report and send it to Ethiopia around April 2025.

7-5. The above schedule is tentative and subject to change.

8. Environmental and Social Considerations

8-1. The Ethiopian side confirmed to give due environmental and social considerations during implementation, and after completion of the Project, in accordance with the JICA Guidelines for Environmental and Social Considerations (January, 2022).

8-2. The Project is categorized as “C” from the following considerations:

The project is likely to have minimal adverse impact on the environment under the JICA guidelines for environmental and social considerations (January, 2022).

8-3. The Ethiopian side agreed to confirm whether there are any necessary procedures from the perspective of Environmental and Social Considerations for implementing this Project, and if so, to share detailed information with the Japanese side by the

ml

end of June 2024.

9. Other Relevant Issues

9-1. Tax exemption

The Ethiopian side agreed that customs duties, internal taxes, and other fiscal levies which may be imposed in Ethiopia with respect to the purchase of the products and/or the services are exempted in accordance with Annex 7. The Ethiopian side also agreed to provide the Japanese side with detailed information on tax exemption procedures in Ethiopia by the end of July 2024. The Ethiopian side will coordinate with related authorities for the smooth implementation of the project.

9-2. Change of Scope

The project cost could increase depending on the foreign exchange rate being used for the cabinet approval in Japan. In such a case, both sides agreed that reduction options for facility and equipment would be considered.

9-3. Operation and Maintenance of Medical Equipment

a. Importance of Operation and Maintenance

The Team explained the importance of operation and maintenance of medical equipment to secure the life-span of medical equipment and to reduce its maintenance cost. The Ethiopian side agreed to secure and allocate enough budget necessary for appropriate operation and maintenance of medical equipment including any additional purchase of consumables and spare parts.

b. Maintenance Contracts of Medical Equipment

Both sides agreed the necessity of covering maintenance service contracts for 2 years to the major medical equipment within components of the Grant. The Ethiopian side agreed to take necessary measures after expiry of guarantee period of the medical equipment and maintenance contracts by the Grant.

c. Allocation of Human Resources

The Ethiopian side agreed to secure and allocate human resources (health service providers and any other personnel) necessary for the proper and sustainable operation and maintenance of the medical equipment provided by the Project, before the installation of the equipment.

9-4. Land Ownership Certificate

The implementing agency shall show the land ownership certificate for the project site by the end of June 2024.



9-5. Soft Components

The Ethiopian side took note of the importance of operational and management training for facility and equipment and requested to consider incorporating soft components into the Project. The team agreed to plan to include operational and management trainings as soft components and the Ethiopian side agreed to support these trainings. The concrete content will be considered continuously and explained as part of Draft Preparatory Survey Report.

9-6. Gender Mainstreaming

Both sides confirmed that following gender elements shall be duly reflected in the scope of Preparatory Survey.

- (a) Facility design that reflects gender-specific needs.
- (b) Selection of equipment that reflects gender-specific needs and ensure usability by women.
- (c) Implementation of soft-component activities that promote women's empowerment.

Annex 1 Project Site

Annex 2 Organization Chart

Annex 3 List of Facility requested by Ethiopian side

Annex 4 List of Equipment requested by Ethiopian side

Annex 5 Japanese Grant

Annex 6 Project Monitoring Report

Annex 7 Major Undertakings to be taken by the Government of Ethiopia



Annex 1 Project Site

Addis Ababa

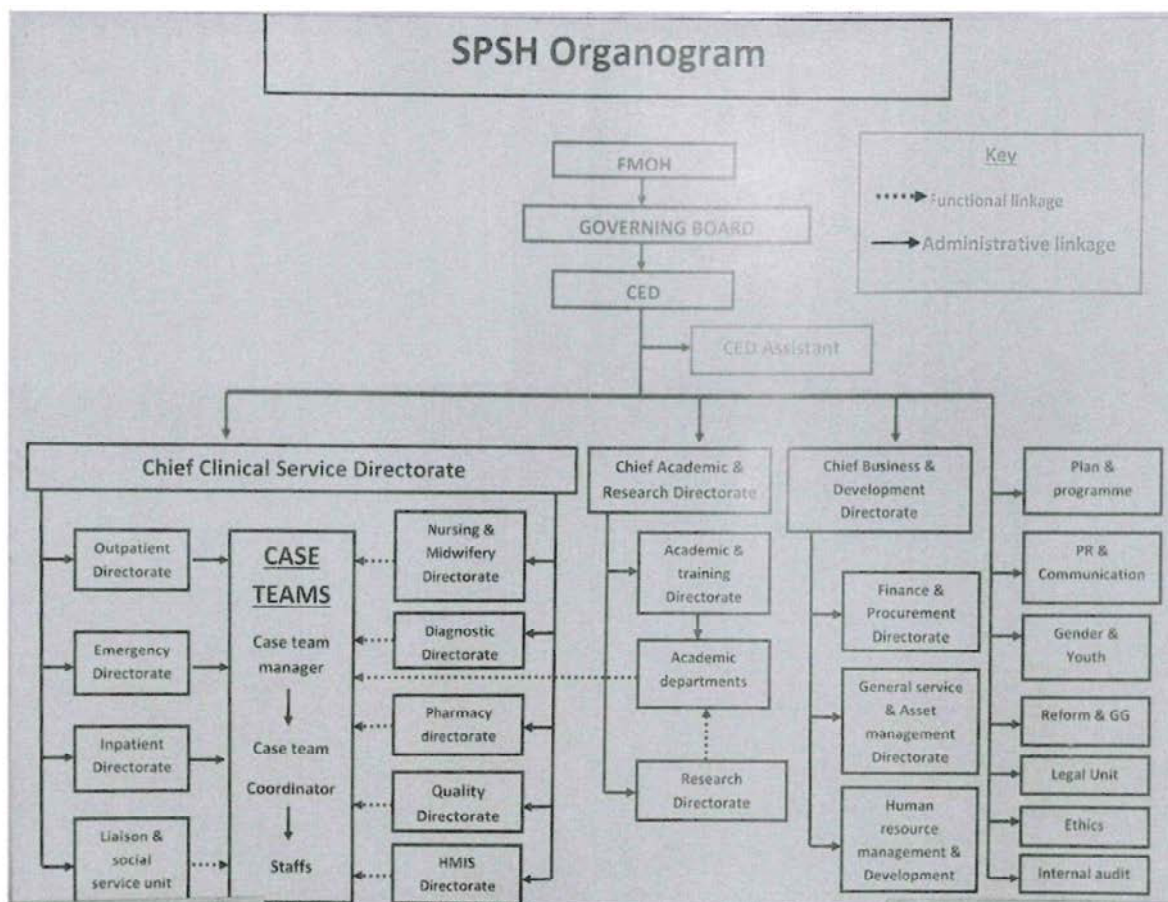


Project Site in St. Peter's Specialized Hospital



Annex 2. Organization Chart

St. Peter's Specialized Hospital



Requested Facility List

Department	Rooms / Facilities
Inpatient ward	40 beds (increasable up to 60 beds during outbreak time) including ICU 4 units, Special isolation 2 units
Emergency Outpatient	Reception, Examination rooms, Treatment room, Pharmacy
Diagnostic and Treatment	CT room, Operating room, Delivery room
Service	Kitchen, Laundry
Others	Staff utility, Changing room, Mortuary
Ancillary Facilities	Power substation, Stand-by generator, Water tank, Sewage treatment plant (STP), Solid waste disposal, Medical gas supply

Requested Equipment List

Department	Name of Equipment
Inpatient Ward (Special Ward, ICU, General Ward)	ICU Bed, Patient Bed, Ventilator, Patient Monitor, Infusion Pump, Syring Pump, Defibrillator
Emergency Outpatient	Examination Bed, Examination Light
Radiology	CT Scan, Mobile X-ray, Ultrasound
Operation	Operation Table, Operation Light, Anesthesia Machine, Patient Monitor, Electrosurgical Unit, Defibrillator
Delivery	Delivery Table, Operation Light, Fetal Monitor, Baby Incubator
Sterilization	Autoclave, Dry Oven
Service (Kitchen, Laundry, Medical storage)	Washing Machine, Drying Machine
Others (Office, Changing room, Mortuary)	Body Refrigerator
Existing Laboratory	PCR, Biosafety Cabinet, Incubator, Centrifuge, Refrigerator, Deep freezer, Microscope

JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as “the Recipient”) to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as “Project Grants”).

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See “PROCEDURES OF JAPANESE GRANT” for details):

(1) Preparation

- The Preparatory Survey (hereinafter referred to as “the Survey”) conducted by JICA

(2) Appraisal

- Appraisal by the government of Japan (hereinafter referred to as “GOJ”) and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

- The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as “the G/A”)

- Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as “the B/A”)

- Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as “the Bank”) to receive the grant

Construction works/procurement

- Implementation of the project (hereinafter referred to as “the Project”) on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

- Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of

relevant agencies of the Recipient necessary for the implementation of the Project.

- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA contracts with (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as “the E/N”) will be signed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the “General Terms and Conditions for Japanese Grant (January 2016).”

2) Banking Arrangements (B/A) (See “Financial Flow of Japanese Grant (A/P Type)” for details)

- a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.
- b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the “Meeting”) will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the

Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

- a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.
- b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

- 1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.
- 2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

2) Major undertakings to be taken by the Government of the Recipient

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Measures to ensure more efficient implementation of the Grant

- i) In the event that the E/N and the G/A concerning a project cannot be signed by the end of the following Japanese fiscal year of the cabinet decision concerned by the GOJ, the authorities concerned of the two Governments will discuss the cancellation of the project.

ii) In the event that the period, specified in the G/A, during which the grant is available expires before the completion of the disbursement, the authorities concerned of the GO J will thoroughly review the status, situation and perspective of the implementation of the project concerned before extending the said period. The authorities concerned of the two Governments will discuss the termination of the project including a refund, unless there are concrete prospects for its completion.

iii) Regardless of the period mentioned in ii) above, the authorities concerned of the two Governments will, in the event that five years have passed since the cabinet decision concerned by the GOJ before the completion of the disbursement, except as otherwise confirmed between them, discuss the termination of a project including a refund, unless there are concrete prospects for its completion.

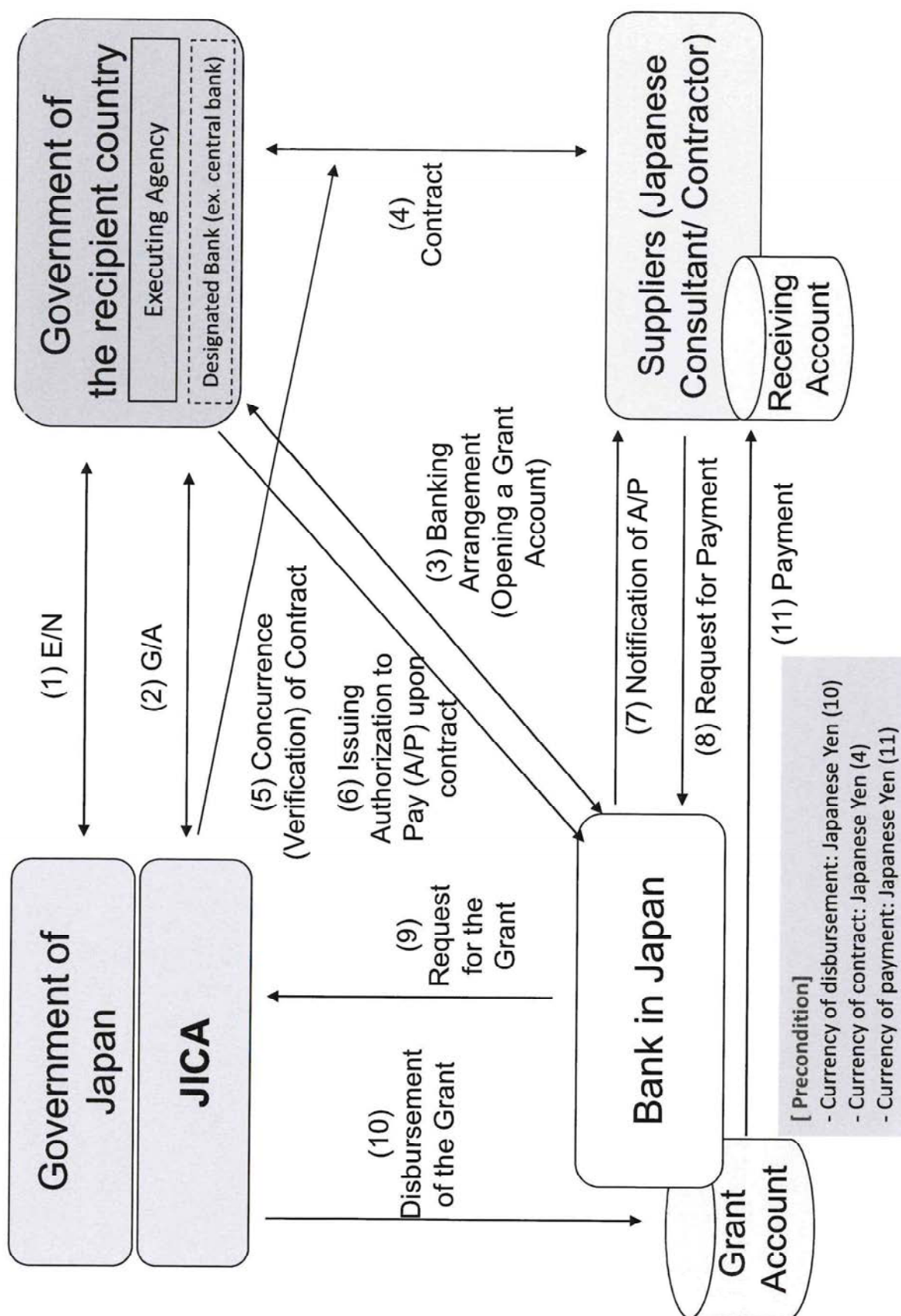
4) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

5) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

Financial Flow of Japanese Grant (A/P Type)



<u>Project Monitoring Report</u> on <u>Project Name</u> <u>Grant Agreement No. XXXXXXX</u> 20XX, Month

Organizational Information

Signer of the G/A (Recipient)	Person in Charge (Designation)
	Contacts Address: Phone/FAX: Email:
Executing Agency	Person in Charge (Designation)
	Contacts Address: Phone/FAX: Email:
Line Ministry	Person in Charge (Designation)
	Contacts Address: Phone/FAX: Email:

General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

1: Project Description

1-1 Project Objective

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1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

--

1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original (proposed in the outline design)	Actual
1.		

2-2 Scope of the work

Components	Original* (proposed in the outline design)	Actual*
1.		

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	(proposed in the outline design)	(at the time of signing the Grant Agreement)	

Reasons for any changes of the schedule, and their effects on the project (if any)

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original (proposed in the outline design)	Actual (in case of any modification)	Original ^{1),2)} (proposed in the outline design)	Actual
	1.			
Total				

Note: 1) Date of estimation:

2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original (proposed in the outline design)	Actual (in case of any modification)	Original ^{1),2)} (proposed in the outline design)	Actual
	1.			

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original (at the time of outline design)

name:

role:

financial situation:

institutional and organizational arrangement (organogram):

human resources (number and ability of staff):

Actual (PMR)

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original (at the time of outline design)

Actual (PMR)

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)

Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks *(at the time of outline design)*

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:

	Contingency Plan (if applicable):
Actual Situation and Countermeasures (PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

--

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

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5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

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Attachment

1. Project Location Map
2. Specific obligations of the Recipient which will not be funded with the Grant
3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
 - Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/Agreement and Schedule of Payment)
5. Environmental Monitoring Form / Social Monitoring Form
6. Monitoring sheet on price of specified materials (Quarterly)
7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final) only)
8. Pictures (by JPEG style by CD-R) (PMR (final) only)
9. Equipment List (PMR (final) only)
10. Drawing (PMR (final) only)
11. Report on RD (After project)
12. Report on the Management of Safety for Construction Works

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

	Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price $C=A \times B$	1% of Contract Price D	Condition of payment	
						Price (Decreased) $E=C-D$	Price (Increased) $F=C+D$
1	Item 1	●●t	●	●	●	●	●
2	Item 2	●●t	●	●	●		
3	Item 3						
4	Item 4						
5	Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

	Items of Specified Materials	1st month, 2015	2nd month, 2015	3rd month, 2015	4th	5th	6th
1	Item 1	●					
2	Item 2						
3	Item 3						
4	Item 4						
5	Item 5						

(3) Summary of Discussion with Contractor (if necessary)

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Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	

Report on the Management of Safety for Construction Works

Month/Year 2022 年 × 月	Cumulative number of labor 労働延人数	Cumulative number of public accident 公衆災害件数	Cumulative hours worked 延べ実労働時 間数	Number of deaths and injuries due to industrial accidents 労働災害による死傷者				Frequency rate 度数率	Severity rate 強度率
				Death and injuries 死傷者数	Aggregated number of calendar days absent 延べ休業日数	Aggregated number of work- days lost 延べ労働損失日数			
This Month 当月				Death 死者					
				More than 4 calendar days absent 休業 4 日以上					
				1 to 3 calendar days absent 休業 1～3 日					
				Total 計					
Total including this month 当月迄累計				Death 死者					
				More than 4 calendar days absent 休業 4 日以上					
				1 to 3 calendar days absent 休業 1～3 日					
				Total 計					
Note 注)		1. Frequency rate is the frequency of occurrence of industrial accidents. Frequency rate = (Number of deaths and injuries due to industrial accidents ÷ Cumulative hours worked) × 1,000,000 度数率 = (労働災害による死傷者数 ÷ 延べ実労働時間数) × 100 万時間 2. Severity rate is degree of seriousness of the industrial accident. Severity rate = (Aggregated number of work-days lost ÷ Cumulative hours worked) × 1,000 強度率 = (延べ労働損失日数 ÷ 延べ実労働時間数) 1000 時間 3. Aggregated number of work-days lost = Aggregated number of calendar days absent × (300 ÷ 365) Death (7,500 days) : death as a result of an industrial accident includes not only instantaneous death but also death as a result of occupational injury or disease. 延べ労働損失日数 = 延べ休業日数 × (300 ÷ 365) ・ ・ ・ 死亡 7500 日 (即死のほか負傷が原因で死亡したものを含む) 4. Frequency rate and severity rate are rounding off the third decimal place. 度数率・強度率は小数点第 3 位以下四捨五入							

Major Undertakings to be taken by the Government of Ethiopia

1. Specific obligations of the Government of Ethiopia which will not be funded with the Grant**(1) Before the Bidding**

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To sign the banking arrangement (B/A) with a bank in Japan (the Agent Bank) to open bank account for the Grant	within 1 month after the signing of the G/A	MoH		
2	To issue A/P to the Agent Bank for the payment to the consultant	within 1 month after the signing of the contract(s)	MoH		
3	To bear the following commissions to the Agent Bank for the banking services based upon B/A		MoH		
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)			
	2) Payment commission for A/P	every payment			
4	To secure the necessary budget and implement land acquisition and resettlement (including preparation of resettlement sites), and compensation with full replacement cost in accordance with RAP	before notice of the bidding documents	MoH/SPSH		
5	To obtain the planning, zoning, building permit	before notice of the bidding documents	MoH/SPSH		
6	To clear, level and reclaim the following site 1) project site (a sufficient area for the construction of building with a footprint of 1000 m2, ancillary facilities, and vehicular access) 2) temporary construction yard and stock yard near the project site 3) clearance of trees and plants and approval of forest clearance to government authority 4) relocation of existing water supply tank 5) removal of above and below ground obstructions	before notice of the bidding documents	SPSH		
7	To submit Project Monitoring Report (with the result of Detailed Design)	before preparation of the bidding documents	MoH		

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To issue A/P to the Agent Bank for the payment to the supplier and the contractor	within 1 month after the signing of the contract(s)	MoH/SPSH		
2	To bear the following commissions to the Agent Bank for the banking services based upon the B/A		MoH/SPSH		
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)		JPY	
	2) Payment commission for A/P	every payment		JPY	
3	To ensure prompt customs clearance and to assist the Supplier(s) with internal transportation in the country of the Recipient	during the Project	MoH/SPSH		
4	To accord Japanese physical persons and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	MoH		
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services be exempted.	during the Project	MoH		
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	MoH		
7	To notify JICA promptly of any incident or accident, which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers.	during the construction	MoH/SPSH		
8	1) To submit Project Monitoring Report	every month	MoH		
	2) To submit Project Monitoring Report (final) (including as-built drawings, equipment list, photographs, etc.)	within 1 month after issuance of Certificate of Completion for the works under the contract(s)	MoH		
9	To submit a notice concerning completion of the Project	within 6 months after completion of the Project	MoH		
10	To provide facilities for distribution of electricity for construction work	before start the construction	SPSH		
11	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site		SPSH		
	1) Electricity The distributing line to the site	before completion of the construction			
	2) Water Supply The portable water distribution main to the site	before completion of the construction			
	3) Drainage The storm water drainage main to the site	before completion of the construction			
12	To provide equipment, furniture, facilities necessary for the implementation of the Project in the site	before start of the construction	SPSH/MoH		

13	To ensure the safety of persons engaged in the implementation of the Project	during the Project	SPSH		
14	To implement EMP and EMoP (if necessary)	during the construction	MoH/SPSH		
15	To submit results of environmental monitoring to JICA, by using the monitoring form, on a quarterly basis as a part of Project Monitoring Report (if necessary)	during the construction	MoH/SPSH		

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To implement EMP and EMoP (if necessary)	for a period based on EMP and EMoP	MoH/SPSH		
2	To submit results of environmental monitoring to JICA, by using the monitoring form, semiannually (if necessary) - The period of environmental monitoring may be extended if any significant negative impacts on the environment are found. The extension of environmental monitoring will be decided based on the agreement between the Executing Agency and JICA.	for 3 years after the Project	MoH		
3	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid and are not used for military purposes. 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the construction	MoH/SPSH		

Appendix-4 Minutes of Discussions

2nd Field Survey(19th December 2024)

Minutes of Discussions
on the Preparatory Survey for the Project for
the Improvement of the Specialized Hospital for Communicable Diseases
Treatment in Addis Ababa
(Explanation on Draft Preparatory Survey Report)

With reference to the minutes of discussions signed between Ministry of Health and the Japan International Cooperation Agency (hereinafter referred to as "JICA") on 13th June, 2024 and in response to the request from the Government of Federal Democratic Republic of Ethiopia(hereinafter referred to as "Ethiopia") dated 16th October,2024, JICA dispatched the Preparatory Survey Team (hereinafter referred to as "the Team") for the explanation of Draft Preparatory Survey Report (hereinafter referred to as "the Draft Report") for the Project for the Improvement of the Specialized Hospital for Communicable Diseases Treatment in Addis Ababa (hereinafter referred to as "the Project"), at St. Peter's specialized hospital.

As a result of the discussions, all parties agreed on the main items described in the attached sheets.

Addis Ababa, December 19th. 2024



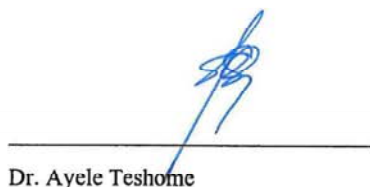
Ms. ITO Miwa

Leader

Preparatory Survey Team

Japan International Cooperation Agency

Japan



Dr. Ayele Teshome

State Minister

Health System and Capacity Building Wing

Ministry of Health

Ethiopia





Dr. Abraham Eshetu
Chief Executive Officer
St. Peter's Specialized Hospital
Ethiopia



ATTACHEMENT

1. Objective of the Project

The objective of the Project is to to strengthen the system for providing quality medical care and training at St. Peter's Specialized hospital by constructing facility and providing equipment for diagnosis and treatment of infectious diseases and for clinical training, thereby contributing to strengthen the infectious disease control.

2. Title of the Preparatory Survey

Both sides confirmed the title of the Preparatory Survey as "the Preparatory Survey for the Project for the Improvement of the Specialized Hospital for Communicable Diseases Treatment in Addis Ababa".

3. Project site

Both sides confirmed that the site of the Project is on the grounds of St. Peter's Specialized Hospital, which is shown in Annex 1.

St. Peter's Specialized Hospital shall show the land ownership certificate for the project site to the Team by January 17th 2025.

4. Responsible authority for the Project

Both sides confirmed the authorities responsible for the Project are as follows:

4-1. The executing agency is the Ministry of Health.

4-2. The implementing agency is St. Peter's Specialized Hospital. The implementing agency shall coordinate with all relevant agencies to ensure smooth implementation of the Project and ensure that the undertakings for the Project shall be managed by relevant authorities properly and on time. The organization charts for both agencies are shown in Annex 2.

5. Contents of the Draft Report

After the explanation of the contents of the Draft Report by the Team, the Ethiopianside agreed to its contents. JICA will finalize the Preparatory Survey Report based on the confirmed items. The report will be sent to the Ethiopian side around May 2025.

6. Cost estimate

Both sides confirmed that the cost estimate explained by the Team is provisional and



will be examined further by the Government of Japan for its approval.

Both sides confirmed that in case of the budget limitation, the medical equipment will be adjusted based on the priority.

Both sides confirmed that the cost estimate including the contingency explained by the Team is provisional and will be examined further by the Government of Japan for its approval. The contingency would cover the additional cost against natural disaster, unexpected natural conditions, etc.

7. Confidentiality of the cost estimate and technical specifications

Both sides confirmed that the cost estimate and technical specifications of the Project should never be disclosed to any third parties until all the contracts under the Project are concluded.

8. Procedures and Basic Principles of Japanese Grant

The Ethiopian side agreed that the procedures and basic principles of Japanese Grant (hereinafter referred to as “the Grant”) as described in Annex 3 shall be applied to the Project. In addition, the Ethiopian side agreed to take necessary measures according to the procedures.

9. Timeline for the project implementation

The Team explained to the Ethiopian side that the expected timeline for the project implementation is as attached in Annex 4.

Especially, the implementing agency will start the site clearance in August 2025. And the permission to prepare for temporary yard will be secured in August 2025.

10. Expected outcomes and indicators

Both sides agreed that key indicators for expected outcomes are as follows. The Ethiopian side will be responsible for the achievement of agreed key indicators targeted in year 2031 and shall monitor the progress for Ex-Post Evaluation based on those indicators.

[Quantitative indicators]

Quantitative Indicators	Baseline (2023)	Target value (2031) (3 years later of completion of the Project)
Number of physicians specializing in	2	4



infectious diseases		
Number of nurses who have attended infectious disease training (%)	28	70
Number of allied health professionals (midwives, labs, pharmacists) who have attended infectious disease training (%)	8	50
Number of clinical trainings related to infection excluding TB (case/year)	0	60
Number of CT examinations for respiratory tract infections, such as for the presence of pneumonia and testing for complications in patients with infections (case/year)	0	387
Number of times that outbreak response plans, such as increased beds and zoning settings, have been developed and drills have been conducted based on these plans (case/year)	0	1
Appropriate hospitalization for patients with infections requiring negative pressure control (%)	0	100
Delivery and surgical support for patients with infections requiring negative pressure management (%)	0	100

[Qualitative indicators]

1. The safety of healthcare workers is ensured through the development of facilities that enable appropriate infection control, and the prevention of nosocomial infections to healthcare workers and between patients is thoroughly implemented.
2. Appropriate coordination with EPHI can appropriately isolate patients with serious infectious diseases, including suspected patients from overseas at Addis Ababa Airport and other border crossings.

11. Ex-Post Evaluation

JICA will conduct ex-post evaluation after three (3) years from the project completion.



in principle, with respect to five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact, Sustainability). The result of the evaluation will be publicized. The Ethiopian side is required to provide necessary support for the data collection.

12. Technical assistance (“Soft Component” of the Project)

Considering the sustainable operation and maintenance of the products and services granted through the Project, following technical assistance is planned under the Project. The Ethiopian side confirmed to deploy necessary number of counterparts who are appropriate and competent in terms of its purpose of the technical assistance as described in the Draft Report.

- 1) Strengthen the facility maintenance management system for special infectious diseases, including air conditioning systems and medical waste disposal
- 2) Establish the facility operation methods under normal circumstances and during outbreaks.

13. Undertakings of the Project

- (1) Both sides confirmed the undertakings of the Project as described in Annex 5, which shall be used as an attachment of the G/A. With regard to exemption of customs duties, internal taxes and other fiscal levies as stipulated in 1(2)5 of Annex 5, both sides confirmed that such customs duties, internal taxes and other fiscal levies, which shall be clarified in the bid documents by Ministry of Health during the implementation stage of the Project.
- (2) Both sides confirmed that Corporate Income Tax, Custom Duty and Personal Income Tax shall be directly exempted, on the other hand Value added Tax(VAT) shall be exempted on the refundable basis for this Project. The executing agency and the implementing agency are responsible for securing budget for the refund at the appropriate time in collaboration with the Ministry of Finance. Further detailed procedures are to be discussed between the Ethiopian side and the Team and all the information shall be confirmed by the end of January 2025.
- (3) The Ethiopian side assured to take the necessary measures and coordination including allocation of the necessary budget which are preconditions of implementation of the Project. It is further agreed that the costs are indicative, i.e. at Outline Design level. More accurate costs will be calculated at the Detailed Design stage.

14. Monitoring during the implementation



The Project will be monitored by the Executing Agency and reported to JICA by using the form of Project Monitoring Report (PMR) attached as Annex 6. The timing of submission of the PMR is described in Annex 5.

15. Project completion

Both sides confirmed that the project completes when all the facilities constructed and equipment procured by the Grant are in operation. The completion of the Project will be reported to JICA promptly by the Executing Agency, but in any event not later than six months after completion of the Project.

16. Environmental and Social Considerations

16-1 General Issues

16-1-1 Environmental Guidelines and Environmental Category

The Team explained that 'JICA Guidelines for Environmental and Social Considerations (January 2022)' (hereinafter referred to as "the Guidelines") is applicable for the Project. The Project is categorized as C because the Project is likely to have minimal adverse impact on the environment under the Guidelines. The implementing agency will take responsibility including necessary expenses, if any domestic procedures for the environmental assesment are required in Ethiopia.

17. Other Relevant Issues

17-1. Disclosure of Information

Both sides confirmed that the Preparatory Survey Report from which project cost is excluded will be disclosed to the public after completion of the Preparatory Survey. The comprehensive report including the project cost will be disclosed to the public after all the contracts under the Project are concluded.

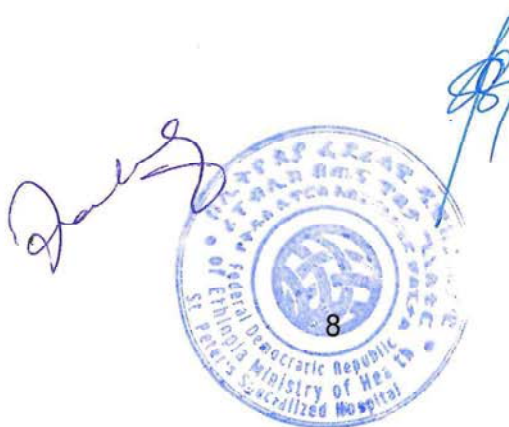
17-2. Gender Mainstreaming

Both sides confirmed that gender mainstreaming should be duly practiced for the Project implementation as the project is categorized as GIP (Gender Equality Project or Project Targeting Women), or GIS (Gender Integrated Project). In particular, Both sides agreed on the following gender elements to be integrated into the Project.

- (a) Facility design that reflects gender-specific needs.
- (b) Selection of equipment that reflects gender-specific needs and ensure usability by women.
- (c) Implementation of soft-component activities that promote women's empowerment.



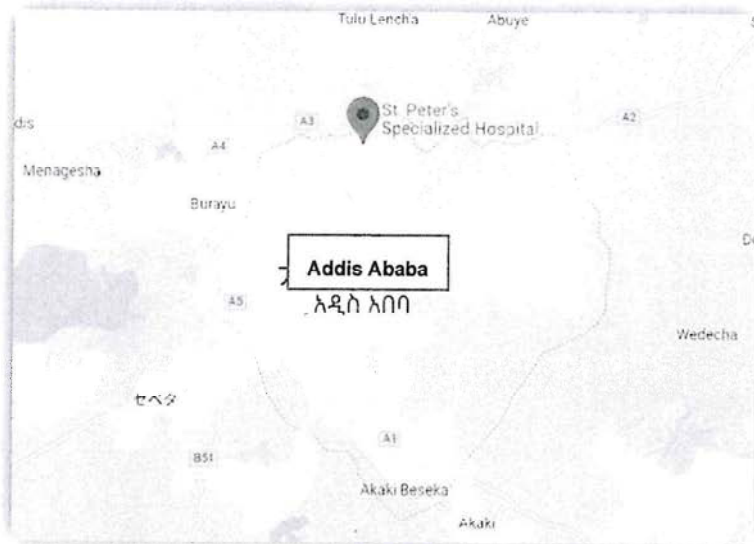
- Annex 1 Project Site
- Annex 2 Organization Charts
- Annex 3 Japanese Grant
- Annex 4 Project Implementation Schedule
- Annex 5 Major Undertakings to be taken by the Government of Ethiopia
- Annex 6 Project Monitoring Report (template)
- Annex 7. Facility component and Equipment list



Handwritten signature in black ink.

Annex 1 Project Site

Addis Ababa

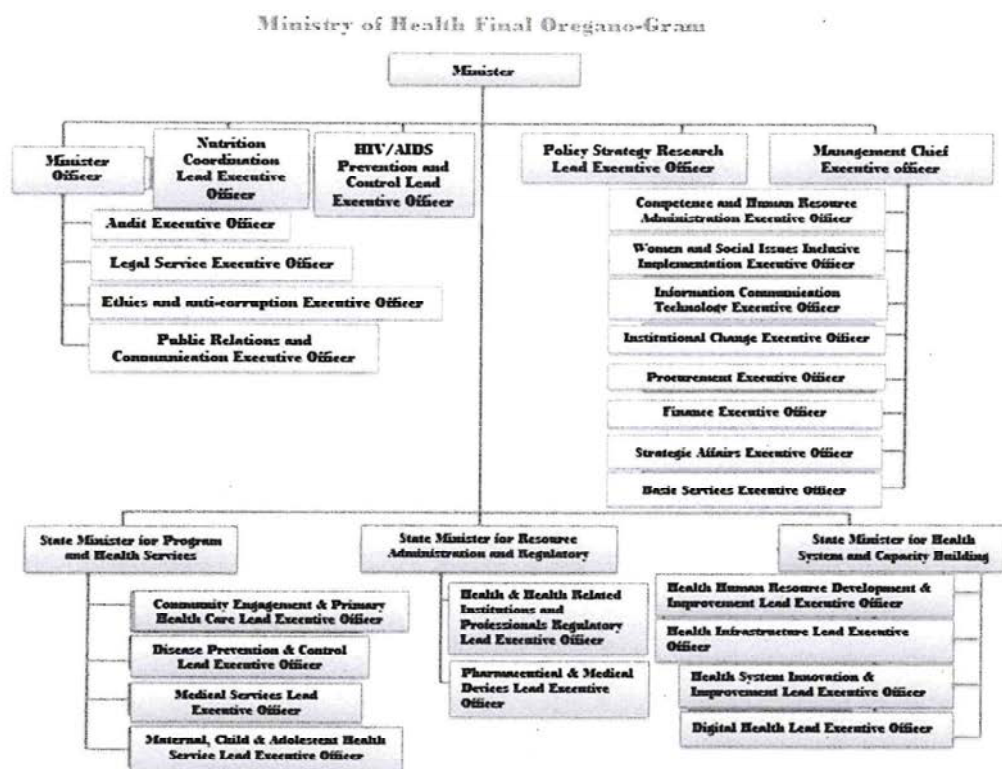


Project Site in St. Peter's Specialized Hospital

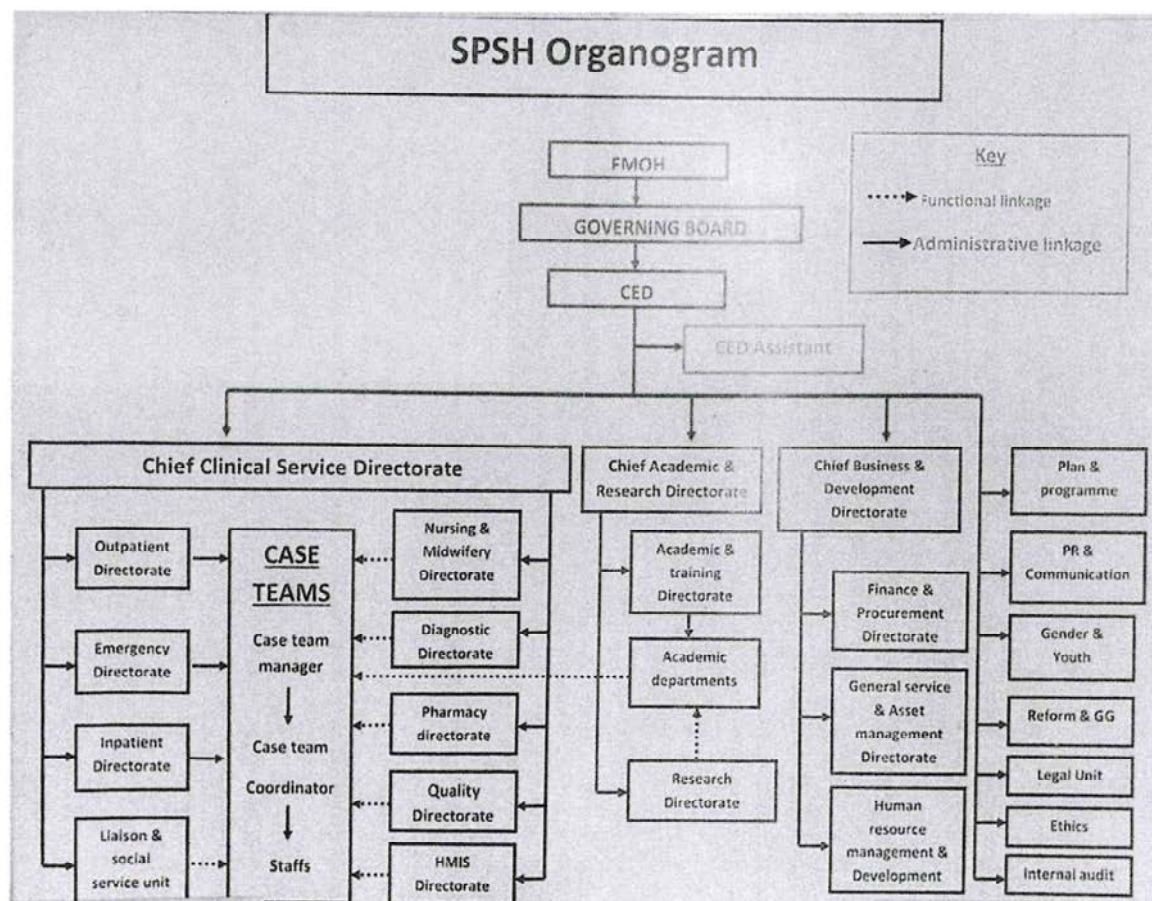


Annex 2. Organization Chart

Ministry of Health



St. Peter's Specialized Hospital



JAPANESE GRANT

The Japanese Grant is non-reimbursable fund provided to a recipient country (hereinafter referred to as “the Recipient”) to purchase the products and/or services (engineering services and transportation of the products, etc.) for its economic and social development in accordance with the relevant laws and regulations of Japan. Followings are the basic features of the project grants operated by JICA (hereinafter referred to as “Project Grants”).

1. Procedures of Project Grants

Project Grants are conducted through following procedures (See “PROCEDURES OF JAPANESE GRANT” for details):

(1) Preparation

- The Preparatory Survey (hereinafter referred to as “the Survey”) conducted by JICA

(2) Appraisal

- Appraisal by the government of Japan (hereinafter referred to as “GOJ”) and JICA, and Approval by the Japanese Cabinet

(3) Implementation

Exchange of Notes

- The Notes exchanged between the GOJ and the government of the Recipient

Grant Agreement (hereinafter referred to as “the G/A”)

- Agreement concluded between JICA and the Recipient

Banking Arrangement (hereinafter referred to as “the B/A”)

- Opening of bank account by the Recipient in a bank in Japan (hereinafter referred to as “the Bank”) to receive the grant

Construction works/procurement

- Implementation of the project (hereinafter referred to as “the Project”) on the basis of the G/A

(4) Ex-post Monitoring and Evaluation

- Monitoring and evaluation at post-implementation stage

2. Preparatory Survey

(1) Contents of the Survey

The aim of the Survey is to provide basic documents necessary for the appraisal of the the Project made by the GOJ and JICA. The contents of the Survey are as follows:

- Confirmation of the background, objectives, and benefits of the Project and also institutional capacity of

relevant agencies of the Recipient necessary for the implementation of the Project.

- Evaluation of the feasibility of the Project to be implemented under the Japanese Grant from a technical, financial, social and economic point of view.
- Confirmation of items agreed between both parties concerning the basic concept of the Project.
- Preparation of an outline design of the Project.
- Estimation of costs of the Project.
- Confirmation of Environmental and Social Considerations

The contents of the original request by the Recipient are not necessarily approved in their initial form. The Outline Design of the Project is confirmed based on the guidelines of the Japanese Grant.

JICA requests the Recipient to take measures necessary to achieve its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the executing agency of the Project. Therefore, the contents of the Project are confirmed by all relevant organizations of the Recipient based on the Minutes of Discussions.

(2) Selection of Consultants

For smooth implementation of the Survey, JICA contracts with (a) consulting firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms.

(3) Result of the Survey

JICA reviews the report on the results of the Survey and recommends the GOJ to appraise the implementation of the Project after confirming the feasibility of the Project.

3. Basic Principles of Project Grants

(1) Implementation Stage

1) The E/N and the G/A

After the Project is approved by the Cabinet of Japan, the Exchange of Notes (hereinafter referred to as “the E/N”) will be signed between the GOJ and the Government of the Recipient to make a pledge for assistance, which is followed by the conclusion of the G/A between JICA and the Recipient to define the necessary articles, in accordance with the E/N, to implement the Project, such as conditions of disbursement, responsibilities of the Recipient, and procurement conditions. The terms and conditions generally applicable to the Japanese Grant are stipulated in the “General Terms and Conditions for Japanese Grant (January 2016).”

2) Banking Arrangements (B/A) (See “Financial Flow of Japanese Grant (A/P Type)” for details)

- a) The Recipient shall open an account or shall cause its designated authority to open an account under the name of the Recipient in the Bank, in principle. JICA will disburse the Japanese Grant in Japanese yen for the Recipient to cover the obligations incurred by the Recipient under the verified contracts.
- b) The Japanese Grant will be disbursed when payment requests are submitted by the Bank to JICA under an Authorization to Pay (A/P) issued by the Recipient.

3) Procurement Procedure

The products and/or services necessary for the implementation of the Project shall be procured in accordance with JICA's procurement guidelines as stipulated in the G/A.

4) Selection of Consultants

In order to maintain technical consistency, the consulting firm(s) which conducted the Survey will be recommended by JICA to the Recipient to continue to work on the Project's implementation after the E/N and G/A.

5) Eligible source country

In using the Japanese Grant disbursed by JICA for the purchase of products and/or services, the eligible source countries of such products and/or services shall be Japan and/or the Recipient. The Japanese Grant may be used for the purchase of the products and/or services of a third country as eligible, if necessary, taking into account the quality, competitiveness and economic rationality of products and/or services necessary for achieving the objective of the Project. However, the prime contractors, namely, constructing and procurement firms, and the prime consulting firm, which enter into contracts with the Recipient, are limited to "Japanese nationals", in principle.

6) Contracts and Concurrence by JICA

The Recipient will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be concurred by JICA in order to be verified as eligible for using the Japanese Grant.

7) Monitoring

The Recipient is required to take their initiative to carefully monitor the progress of the Project in order to ensure its smooth implementation as part of their responsibility in the G/A, and to regularly report to JICA about its status by using the Project Monitoring Report (PMR).

8) Safety Measures

The Recipient must ensure that the safety is highly observed during the implementation of the Project.

9) Construction Quality Control Meeting

Construction Quality Control Meeting (hereinafter referred to as the “Meeting”) will be held for quality assurance and smooth implementation of the Works at each stage of the Works. The member of the Meeting will be composed by the

Recipient (or executing agency), the Consultant, the Contractor and JICA. The functions of the Meeting are as followings:

- a) Sharing information on the objective, concept and conditions of design from the Contractor, before start of construction.
- b) Discussing the issues affecting the Works such as modification of the design, test, inspection, safety control and the Client's obligation, during of construction.

(2) Ex-post Monitoring and Evaluation Stage

- 1) After the project completion, JICA will continue to keep in close contact with the Recipient in order to monitor that the outputs of the Project is used and maintained properly to attain its expected outcomes.
- 2) In principle, JICA will conduct ex-post evaluation of the Project after three years from the completion. It is required for the Recipient to furnish any necessary information as JICA may reasonably request.

(3) Others

1) Environmental and Social Considerations

The Recipient shall carefully consider environmental and social impacts by the Project and must comply with the environmental regulations of the Recipient and JICA Guidelines for Environmental and Social Considerations (April, 2010).

2) Major undertakings to be taken by the Government of the Recipient

For the smooth and proper implementation of the Project, the Recipient is required to undertake necessary measures including land acquisition, and bear an advising commission of the A/P and payment commissions paid to the Bank as agreed with the GOJ and/or JICA. The Government of the Recipient shall ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the Recipient with respect to the purchase of the Products and/or the Services be exempted or be borne by its designated authority without using the Grant and its accrued interest, since the grant fund comes from the Japanese taxpayers.

3) Measures to ensure more efficient implementation of the Grant

- i) In the event that the E/N and the G/A concerning a project cannot be signed by the end of the following Japanese fiscal year of the cabinet decision concerned by the GOJ, the authorities concerned of the two Governments will discuss the cancellation of the project.

ii) In the event that the period, specified in the G/A, during which the grant is available expires before the completion of the disbursement, the authorities concerned of the GO J will thoroughly review the status, situation and perspective of the implementation of the project concerned before extending the said period. The authorities concerned of the two Governments will discuss the termination of the project including a refund, unless there are concrete prospects for its completion.

iii) Regardless of the period mentioned in ii) above, the authorities concerned of the two Governments will, in the event that five years have passed since the cabinet decision concerned by the GOJ before the completion of the disbursement, except as otherwise confirmed between them, discuss the termination of a project including a refund, unless there are concrete prospects for its completion.

4) Proper Use

The Recipient is required to maintain and use properly and effectively the products and/or services under the Project (including the facilities constructed and the equipment purchased), to assign staff necessary for this operation and maintenance and to bear all the expenses other than those covered by the Japanese Grant.

5) Export and Re-export

The products purchased under the Japanese Grant should not be exported or re-exported from the Recipient.

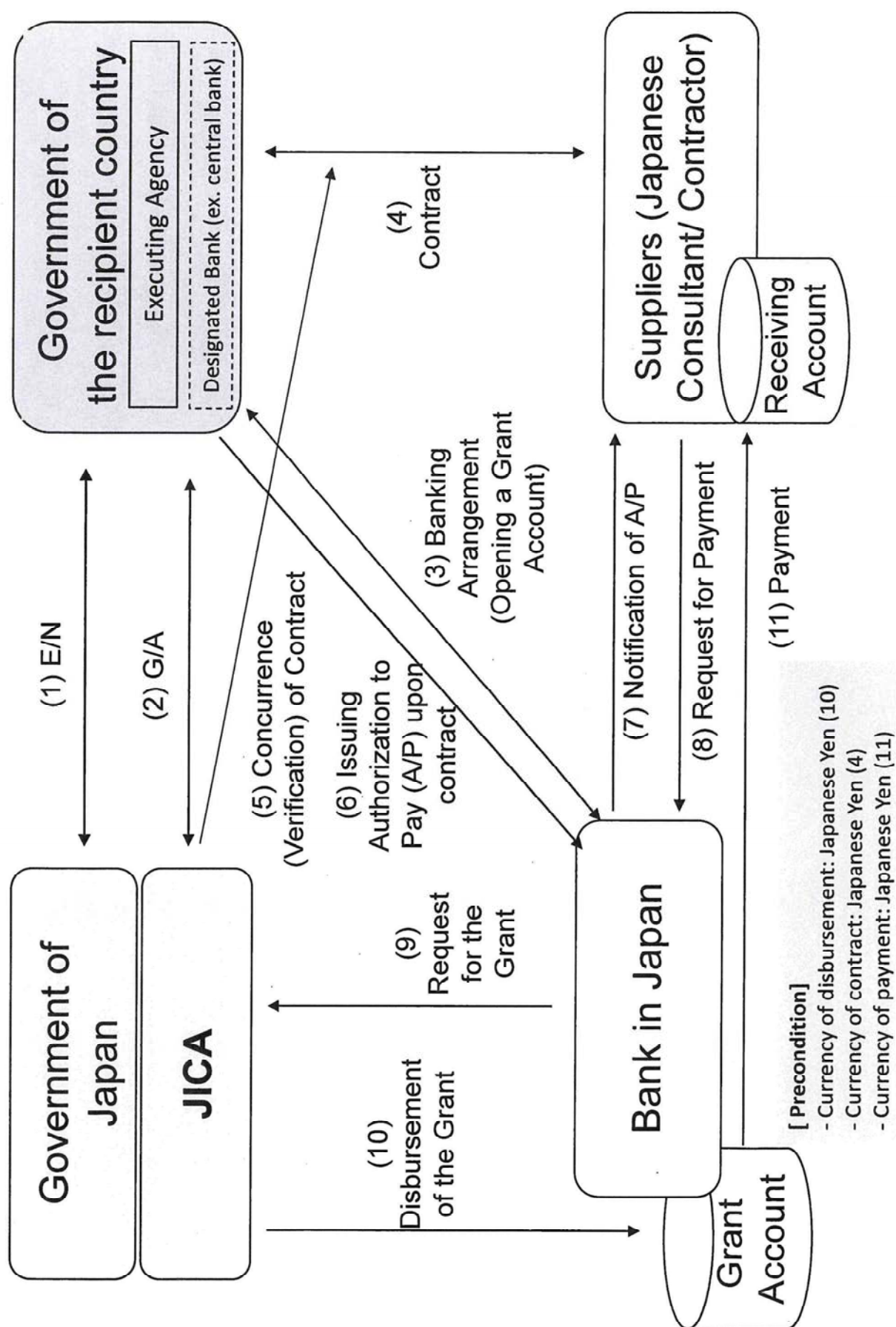
PROCEDURES OF JAPANESE GRANT

Stage	Procedures	Remarks	Recipient Government	Japanese Government	JICA	Consultants	Contractors	Agent Bank
Official Request	Request for grants through diplomatic channel	Request shall be submitted before appraisal stage.	x	x				
1. Preparation	(1) Preparatory Survey Preparation of outline design and cost estimate		x		x	x		
2. Appraisal	(2) Preparatory Survey Explanation of draft outline design, including cost estimate, undertakings, etc.		x		x	x		
	(3) Agreement on conditions for implementation	Conditions will be explained with the draft notes (E/N) and Grant Agreement (G/A) which will be signed before approval by Japanese government.	x	x (E/N)	x (G/A)			
	(4) Approval by the Japanese cabinet			x				
3. Implementation	(5) Exchange of Notes (E/N)		x	x				
	(6) Signing of Grant Agreement (G/A)		x		x			
	(7) Banking Arrangement (B/A)	Need to be informed to JICA	x					x
	(8) Contracting with consultant and issuance of Authorization to Pay (A/P)	Concurrence by JICA is required	x			x		x
	(9) Detail design (D/D)		x			x		
	(10) Preparation of bidding documents	Concurrence by JICA is required	x			x		
	(11) Bidding	Concurrence by JICA is required	x			x	x	
	(12) Contracting with contractor/supplier and issuance of A/P	Concurrence by JICA is required	x				x	x
	(13) Construction works/procurement	Concurrence by JICA is required for major modification of design and amendment of contracts.	x			x	x	
4. Ex-post monitoring & evaluation	(14) Completion certificate		x			x	x	
	(15) Ex-post monitoring	To be implemented generally after 1, 3, 10 years of completion, subject to change	x		x			
	(16) Ex-post evaluation	To be implemented basically after 3 years of completion	x		x			

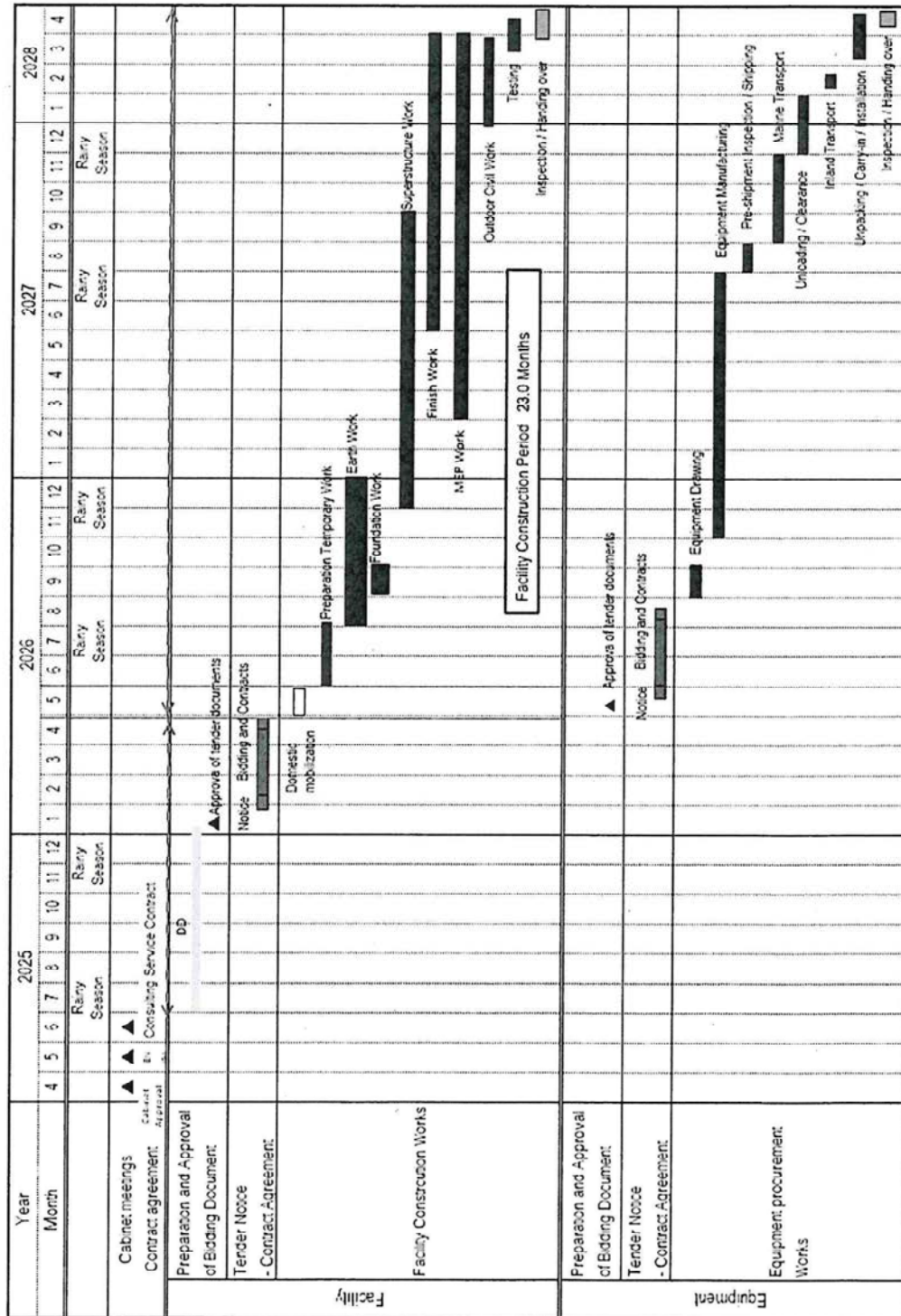
notes:

1. Project Monitoring Report and Report for Project Completion shall be submitted to JICA as agreed in the G/A.
2. Concurrence by JICA is required for allocation of grant for remaining amount and/or contingencies as agreed in the G/A.

Financial Flow of Japanese Grant (A/P Type)



Project Implementation Schedule



Major Undertakings to be taken by the Government of Ethiopia

1. Specific obligations of the Government of Ethiopia which will not be funded with the Grant

(1) Before the Bidding

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To sign the banking arrangement (B/A) with a bank in Japan (the Agent Bank) to open bank account for the Grant	within 1 month after the signing of the G/A	MoH	—	
2	To issue A/P to the Agent Bank for the payment to the consultant	within 1 month after the signing of the contract(s)	MoH	—	
3	To bear the following commissions to the Agent Bank for the banking services based upon B/A		MoH		
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)		1,971 USD	
	2) Payment commission for A/P	every payment		29 USD	
4	To secure the necessary budget and implement land acquisition and resettlement (including preparation of resettlement sites), and compensation with full replacement cost in accordance with RAP	before notice of the bidding documents	MoH/SPSH	—	
5	To obtain the planning, zoning, building permit	before notice of the bidding documents	MoH/SPSH	0 USD	
6	To clear, level and reclaim the project site and adjacent temporary yard 1) removal of existing exterior block fences 2) relocation of existing water supply system 3) remove all the trees and plants with its roots within the area, including surface stripping 4) demolish and remove the walkway 5) installation of metal-meshed temporary fence	before notice of the bidding documents	SPSH	157,289 USD	
7	To submit Project Monitoring Report (with the result of Detailed Design)	before preparation of the bidding documents	MoH	—	

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

(2) During the Project Implementation

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To issue A/P to the Agent Bank for the payment to the supplier and the contractor	within 1 month after the signing of the contract(s)	MoH/SPSH		
2	To bear the following commissions to the Agent Bank for the banking services based upon the B/A		MoH/SPSH		
	1) Advising commission of A/P	within 1 month after the signing of the contract(s)		13,470 USD	
	2) Payment commission for A/P	every payment		379 USD	
3	To ensure prompt customs clearance and to assist the Supplier(s) with internal transportation in the country of the Recipient	during the Project	MoH/SPSH	—	
4	To accord Japanese physical persons and/or physical persons of third countries whose services may be required in connection with the supply of the products and the services such facilities as may be necessary for their entry into the country of the Recipient and stay therein for the performance of their work	during the Project	MoH	—	
5	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the country of the Recipient with respect to the purchase of the products and/or the services are exempted.	during the Project	MoH	—	
6	To bear all the expenses, other than those covered by the Grant, necessary for the implementation of the Project	during the Project	MoH		
7	To notify JICA promptly of any incident or accident, which has, or is likely to have, a significant adverse effect on the environment, the affected communities, the public or workers.	during the construction	MoH/SPSH	—	
8	1) To submit Project Monitoring Report	every month	MoH	—	
	2) To submit Project Monitoring Report (final) (including as-built drawings, equipment list, photographs, etc.)	within 1 month after issuance of Certificate of Completion for the works under the contract(s)	MoH	—	
9	To submit a notice concerning completion of the Project	within 6 months after completion of the Project	MoH	—	
10	To provide facilities for distribution of electricity for construction work	before start the construction	SPSH		
11	To provide facilities for distribution of electricity, water supply and drainage and other incidental facilities necessary for the implementation of the Project outside the site		SPSH		
	1) Electricity The distributing line to the site	before completion of the construction		23,200 USD	
	2) Water Supply The portable water distribution main to the site	before completion of the construction		2,200 USD	
	3) Telecommunications interconnection work	before completion of the construction		Existing use	
	4) Internet connection work	before completion of the		Existing use	

		construction			
12	To provide equipment, furniture, necessary for the implementation of the Project in the site	before start of the construction	SPSH/ MoH	225,803 USD	
13	To ensure the safety of persons engaged in the implementation of the Project	during the Project	SPSH	—	
14	To implement EMP and EMoP (if necessary)	during the construction	MoH/ SPSH		
15	To submit results of environmental monitoring to JICA, by using the monitoring form, on a quarterly basis as a part of Project Monitoring Report (if necessary)	during the construction	MoH/ SPSH	—	

(3) After the Project

NO	Items	Deadline	In charge	Estimated Cost	Ref.
1	To implement EMP and EMoP (if necessary)	for a period based on EMP and EMoP	MoH/ SPSH		
2	To submit results of environmental monitoring to JICA, by using the monitoring form, semiannually (if necessary) - The period of environmental monitoring may be extended if any significant negative impacts on the environment are found. The extension of environmental monitoring will be decided based on the agreement between the Executing Agency and JICA.	for 3 years after the Project	MoH	—	
3	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid and are not used for military purposes. 1) Allocation of maintenance cost 2) Operation and maintenance structure 3) Routine check/Periodic inspection	After completion of the construction	MoH/ SPSH	525,440 USD/year	

<u>Project Monitoring Report</u> on <u>Project Name</u> Grant Agreement No. <u>XXXXXXXX</u> 20XX, Month
--

Organizational Information

Signer of the G/A (Recipient)	Person in Charge (Designation)
	Contacts Address: Phone/FAX: Email:
Executing Agency	Person in Charge (Designation)
	Contacts Address: Phone/FAX: Email:
Line Ministry	Person in Charge (Designation)
	Contacts Address: Phone/FAX: Email:

General Information:

Project Title	
E/N	Signed date: Duration:
G/A	Signed date: Duration:
Source of Finance	Government of Japan: Not exceeding JPY _____ mil. Government of (_____): _____

1: Project Description

1-1 Project Objective

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1-2 Project Rationale

- Higher-level objectives to which the project contributes (national/regional/sectoral policies and strategies)
- Situation of the target groups to which the project addresses

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1-3 Indicators for measurement of "Effectiveness"

Quantitative indicators to measure the attainment of project objectives		
Indicators	Original (Yr)	Target (Yr)
Qualitative indicators to measure the attainment of project objectives		

2: Details of the Project

2-1 Location

Components	Original (proposed in the outline design)	Actual
1.		

2-2 Scope of the work

Components	Original* (proposed in the outline design)	Actual*
1.		

Reasons for modification of scope (if any).

(PMR)

2-3 Implementation Schedule

Items	Original		Actual
	<i>(proposed in the outline design)</i>	<i>(at the time of signing the Grant Agreement)</i>	

Reasons for any changes of the schedule, and their effects on the project (if any)

--

2-4 Obligations by the Recipient

2-4-1 Progress of Specific Obligations

See Attachment 2.

2-4-2 Activities

See Attachment 3.

2-4-3 Report on RD

See Attachment 11.

2-5 Project Cost

2-5-1 Cost borne by the Grant(Confidential until the Bidding)

Components			Cost (Million Yen)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^{1),2)} <i>(proposed in the outline design)</i>	Actual
	1.			
Total				

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar = Yen

2-5-2 Cost borne by the Recipient

Components			Cost (1,000 Taka)	
	Original <i>(proposed in the outline design)</i>	Actual <i>(in case of any modification)</i>	Original ^{1),2)} <i>(proposed in the outline design)</i>	Actual
	1.			

Note: 1) Date of estimation:
2) Exchange rate: 1 US Dollar =

Reasons for the remarkable gaps between the original and actual cost, and the countermeasures (if any)

(PMR)

2-6 Executing Agency

- Organization's role, financial position, capacity, cost recovery etc,
- Organization Chart including the unit in charge of the implementation and number of employees.

Original (at the time of outline design)

name:

role:

financial situation:

institutional and organizational arrangement (organogram):

human resources (number and ability of staff):

Actual (PMR)

2-7 Environmental and Social Impacts

- The results of environmental monitoring based on Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- The results of social monitoring based on in Attachment 5 (in accordance with Schedule 4 of the Grant Agreement).
- Disclosed information related to results of environmental and social monitoring to local stakeholders (whenever applicable).

3: Operation and Maintenance (O&M)

3-1 Physical Arrangement

- Plan for O&M (number and skills of the staff in the responsible division or section, availability of manuals and guidelines, availability of spareparts, etc.)

Original (at the time of outline design)

Actual (PMR)

3-2 Budgetary Arrangement

- Required O&M cost and actual budget allocation for O&M

Original (at the time of outline design)

Actual (PMR)

4: Potential Risks and Mitigation Measures

- Potential risks which may affect the project implementation, attainment of objectives, sustainability
- Mitigation measures corresponding to the potential risks

Assessment of Potential Risks (at the time of outline design)

Potential Risks	Assessment
1. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
2. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:
3. (Description of Risk)	Probability: High/Moderate/Low
	Impact: High/Moderate/Low
	Analysis of Probability and Impact:
	Mitigation Measures:
	Action required during the implementation stage:

	Contingency Plan (if applicable):
Actual Situation and Countermeasures	
(PMR)	

5: Evaluation and Monitoring Plan (after the work completion)

5-1 Overall evaluation

Please describe your overall evaluation on the project.

--

5-2 Lessons Learnt and Recommendations

Please raise any lessons learned from the project experience, which might be valuable for the future assistance or similar type of projects, as well as any recommendations, which might be beneficial for better realization of the project effect, impact and assurance of sustainability.

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5-3 Monitoring Plan of the Indicators for Post-Evaluation

Please describe monitoring methods, section(s)/department(s) in charge of monitoring, frequency, the term to monitor the indicators stipulated in 1-3.

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Attachment

1. Project Location Map
 2. Specific obligations of the Recipient which will not be funded with the Grant
 3. Monthly Report submitted by the Consultant
- Appendix - Photocopy of Contractor's Progress Report (if any)
- Consultant Member List
 - Contractor's Main Staff List
4. Check list for the Contract (including Record of Amendment of the Contract/Agreement and Schedule of Payment)
 5. Environmental Monitoring Form / Social Monitoring Form
 6. Monitoring sheet on price of specified materials (Quarterly)
 7. Report on Proportion of Procurement (Recipient Country, Japan and Third Countries) (PMR (final) only)
 8. Pictures (by JPEG style by CD-R) (PMR (final) only)
 9. Equipment List (PMR (final) only)
 10. Drawing (PMR (final) only)
 11. Report on RD (After project)
 12. Report on the Management of Safety for Construction Works

Monitoring sheet on price of specified materials

1. Initial Conditions (Confirmed)

	Items of Specified Materials	Initial Volume A	Initial Unit Price (¥) B	Initial total Price $C=A \times B$	1% of Contract Price D	Condition of payment	
						Price (Decreased) $E=C-D$	Price (Increased) $F=C+D$
1	Item 1	●●t	●	●	●	●	●
2	Item 2	●●t	●	●	●		
3	Item 3						
4	Item 4						
5	Item 5						

2. Monitoring of the Unit Price of Specified Materials

(1) Method of Monitoring : ●●

(2) Result of the Monitoring Survey on Unit Price for each specified materials

	Items of Specified Materials	1st month, 2015	2nd month, 2015	3rd month, 2015	4th	5th	6th
1	Item 1	●	●	●			
2	Item 2						
3	Item 3						
4	Item 4						
5	Item 5						

(3) Summary of Discussion with Contractor (if necessary)

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Report on Proportion of Procurement (Recipient Country, Japan and Third Countries)
(Actual Expenditure by Construction and Equipment each)

	Domestic Procurement (Recipient Country) A	Foreign Procurement (Japan) B	Foreign Procurement (Third Countries) C	Total D
Construction Cost	(A/D%)	(B/D%)	(C/D%)	
Direct Construction Cost	(A/D%)	(B/D%)	(C/D%)	
others	(A/D%)	(B/D%)	(C/D%)	
Equipment Cost	(A/D%)	(B/D%)	(C/D%)	
Design and Supervision Cost	(A/D%)	(B/D%)	(C/D%)	
Total	(A/D%)	(B/D%)	(C/D%)	

Report on the Management of Safety for Construction Works

Month/Year 2022 年 × 月	Cumulative number of labor 労働延人数	Cumulative number of public accident 公衆災害件数	Cumulative hours worked 延べ実労働時 間数	Number of deaths and injuries due to industrial accidents 労働災害による死傷者				Frequency rate 度数率	Severity rate 強度率
				Death and injuries 死傷者数	Aggregated number of calendar days absent 延べ休業日数	Aggregated number of work- days lost 延べ労働損失日数			
This Month 当月				Death 死者					
				More than 4 calendar days absent 休業 4 日以上					
				1 to 3 calendar days absent 休業 1～3 日					
				Total 計					
Total including this month 当月迄累計				Death 死者					
				More than 4 calendar days absent 休業 4 日以上					
				1 to 3 calendar days absent 休業 1～3 日					
				Total 計					
1. Frequency rate is the frequency of occurrence of industrial accidents Frequency rate = (Number of deaths and injuries due to industrial accidents ÷ Cumulative hours worked) × 1,000,000 度数率 = (労働災害による死傷者数 ÷ 延べ実労働時間数) × 100 万時間 2. Severity rate is degree of seriousness of the industrial accident. Severity rate = (Aggregated number of work-days lost ÷ Cumulative hours worked) × 1,000 強度率 = (延べ労働損失日数 ÷ 延べ実労働時間数) 1000 時間 3. Aggregated number of work-days lost = Aggregated number of calendar days absent × (300 ÷ 365) Death (7,500 days) : death as a result of an industrial accident includes not only instantaneous death but also death as a result of occupational injury or disease. 延べ労働損失日数 = 延べ休業日数 × (300 ÷ 365) . . . 死亡 7500 日 (即死のほか、負傷が原因で死亡したものを含む) 4. Frequency rate and severity rate are rounding off the third decimal place. 度数率・強度率は小数点第 3 位以下四捨五入									

Date:

Ref. No.

JAPAN INTERNATIONAL COOPERATION AGENCY

JICA XXX OFFICE

[Address specified in the Article 5 of the Grant Agreement]

Attention: Chief Representative

Ladies and Gentlemen:

NOTICE CONCERNING PROGRESS OF PROJECT

Reference : Grant Agreement, dated 署名日(signed date of the G/A), for プロジェクト名(name of the Project)

In accordance to the Article 6 (3) of the Grant Agreement, we would like to report on the progress of the Project up to the following stages:

[Common]

- ☐ Preparation of bidding documents - result of detailed design
- ☐ Completion of final works under construction/procurement contract

[Construction]

- ☐ Monthly progress [Month/Year]

[Procurement of Equipment]

- ☐ Shipping/delivery, hand-over (take over) of equipment
- ☐ Installation works
- ☐ Operational training

- ☐ Other _____

Please see the details as per attached Project Monitoring Report (PMR).

Very truly yours,

[Signature]

[Name of the signer]

[Title of the signer]

[Name of the executing agency]

cc:
Director General
Financial Cooperation Implementation Department
Japan International Cooperation Agency
[Address specified in the Article 5 of the Grant Agreement]

Annex 7. Facility component and Equipment list

Composition of the Facility Component

Floor	Department	Main rooms
B3F	Kitchen	Cooking room, washing room, food storage, garbage storage
	Laundry	Laundry, used linen storage, clean linen storage
	Administration	Bed and material storage, changing rooms (for kitchen and laundry staffs)
B2F	Administration	Administrative office, conference room, changing rooms, server room
	Service	Firefighting water tank and pump space
B1F	Inpatient ward	Special isolation rooms (2), preparation room, AC machine rooms
		Temporary ward (10 beds during infectious disease outbreak), nurses' station, dirty utility
	Radiation diagnosis	CT room, control room
	Administration	Security Office, Maintenance staff room
	Service	General waste storage, medical waste storage, space for generator and substation equipment, space for water reservoir, electrical room, medical gas supply room, mortuary
GF	OPD	Reception office, examination rooms (2), treatment room, specimen collection room, pharmacy, patient toilets
	Surgery	Operating room, preparation room, changing rooms, sterile material supply room, AC machine rooms
	Delivery	Delivery room, neonatal room
	Inpatient ward	3-bed rooms (6), nurses' station, dirty utility
1F	Inpatient ward	One-bed rooms (8), two-bed rooms (4), ICU (4), nurses' station, ward pharmacy, staff rooms, duty room, physicians' room, dirty utility janitor's storage, equipment storage, linen closet
RF	Service	Elevated water tank yard, AC machine yard
Public Facilities		Hospital elevators (2), staircases (2), PPE (personal protective equipment) dressing rooms, corridors, toilets, pipe shafts, etc.

Planned Equipment List

No.	Equipment	Quantity	No.	Equipment	Quantity
1	CT Scan	1	20	ICU Bed	6
2	Mobile X-ray	3	21	Patient Bed	34
3	Ultrasound Machine	2	22	Patient Bed (Foldable)	20
4	Anesthesia Machine	1	23	Treatment Table	3
5	Operation Light	1	24	Examination Table	2
6	Operation Light (Mobile)	1	25	Emergency Cart	8
7	Operation Table	1	26	Treatment cart	3
8	Electrosurgical Unit	1	27	Autoclave	5
9	Defibrillator	10	28	Dry Oven	1
10	ECG	1	29	Incubator	1
11	Ventilator	6	30	Clean Bench	1
12	Delivery Table	1	31	Water Bath	1
13	Fetal Monitor	1	32	Colony Counter	1
14	Baby Incubator	1	33	Electronic Balance	1
15	Infant Warmer	1	34	Homogenizer	1
16	Patient Monitor	15	35	Hotplate	1
17	Infusion Pump	13	36	PH Meter	1
18	Syringe Pump	13	37	Vortex Mixer	1
19	Suction Unit	7			
Total					171

**Preparatory Survey for
the Project for the Improvement of
the Specialized Hospital for Communicable
Diseases Treatment in Addis Ababa**

Soft Component Plan

September 2024

Japan International Cooperation Agency

Oriental Consultants Global

K.ITO Architects & Engineers Inc.

International Total Engineering Corporation

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1. Background to planning soft components

St. Peter's Hospital (SPSH) in Addis Ababa, Federal Democratic Republic of Ethiopia (hereinafter "Ethiopia"), is the only hospital among the nine public tertiary medical facilities in the city that has been certified by the Ethiopian Higher Education Quality Council as a hospital that treats, educates, and researches multidrug-resistant tuberculosis. It is also a top referral hospital for infectious diseases that is positioned by the Ministry of Health as a core center for infectious diseases. However, due to a lack of hospital beds and equipment, it is not able to fulfill its role. In order to increase the survival rate of infectious disease patients in the country, it is essential to expand the facilities and improve the equipment of SPSH. In addition, the expansion of SPSH's facilities and equipment will strengthen clinical education for medical staff, improve the capacity of lower-level medical institutions and strengthen the referral system, and ultimately strengthen the infectious disease control function of the entire country. In light of this situation, this project aims to develop the facilities and equipment necessary for infectious disease treatment and training so that SPSH can fulfill its role as the top referral hospital for infectious diseases in the country.

While the Ministry of Health has detailed standards and manuals for hospital facilities, operations, staffing, hygiene management, waste management, infection control, etc., there are no facilities that can put them into practice, and they are ineffective. This project aims to optimize the prevention, diagnosis, and treatment of infectious diseases and promote correct operation by establishing facilities and equipment that meet the standards. In addition, it aims to build a human resource development center with the knowledge to respond flexibly to infectious disease outbreaks and contribute to strengthening infectious disease control in Ethiopia. The newly established facilities and equipment will be operated and maintained by the Ministry of Health, the implementing agency, to strengthen the testing, diagnosis, treatment, and training functions of infectious diseases in Ethiopia. It is also important that the Ministry of Health takes the initiative in formulating medical care, training plans, and basic human resource deployment and human resource development plans and provide support so that the necessary budgets and human resources calculated from these plans can be reliably allocated in the future.

Meanwhile, the Ministry of Health has assigned full-time engineers in the fields of architecture, structure, electrical equipment, and mechanical equipment to the Infrastructure Department, which manages the hospital facilities under its organization, and the maintenance department is responsible for facility maintenance at SPSH. However, while this project will be the first in Ethiopia to introduce an integrated system of access control, negative pressure air conditioning, infection zone management, etc. as equipment for the infectious disease specialist ward, there is insufficient technical knowledge and experience regarding the maintenance and operation of these systems.

Under these circumstances, the Ethiopian side requested technical assistance regarding the operation, maintenance, and upkeep of the facilities-related equipment specific to the infectious disease specialty hospital after construction.

In order to promote the appropriate and effective use of the facilities and equipment provided under this project, it is considered extremely effective to carry out the following soft component activities:

① Strengthening facility management

Objective: Strengthening the facility maintenance and management system

Target: Facility managers, hospital administrators, medical staff, cleaning and maintenance staff

Contents: Maintenance of special infectious disease rooms, maintenance of air conditioning equipment, medical waste disposal, etc.

- ② Establishment of a facility operation system in normal times and in the event of an infectious disease outbreak

Objective: Strengthening infectious disease response

Target: Infectious disease control committee (hospital director, department heads (doctors, nurses), facility and equipment management personnel)

Content: Developing facility operation methods during normal times and in the event of infectious disease outbreak, and on-site training, etc.

2. Soft Component Goals

It is expected that the implementation of the soft component will achieve the following objectives:

- I. Strengthening facility management
 - (1) Ensure the operation and maintenance of air conditioning and ventilation systems in special isolation rooms and operating rooms, as well as the maintenance and disinfection of HEPA filter units.
 - (2) Acquire systematic knowledge on facility zoning, pressure control, access management, and patient isolation from the perspective of hospital infection prevention, and ensure appropriate implementation.
 - (3) Ensure the proper operation and maintenance of infectious wastewater treatment facilities from the perspective of environmental pollution prevention.
 - (4) Enhance understanding and dissemination of infection prevention protocols by implementing cleaning, washing, waste disposal, disinfection, and sterilization procedures based on established manuals.
- II. Establishment of facility operation systems in normal times and during infectious disease outbreaks
 - (1) Strengthen routine activities based on standard precautions (e.g., hand hygiene, changing clothes, personal protective equipment usage, and medical waste management) by organizing an infection control committee or similar body.
 - (2) Develop zoning, movement flow, and operational procedures based on the spread of infection to ensure rapid response in emergency situations.
 - (3) Strengthen response capabilities by conducting field training based on scenarios of infectious disease outbreaks.

3. Soft Component Results

The direct outcomes expected from the implementation of the soft component are as follows:

- (1) The air conditioning and ventilation equipment in special isolation rooms and operating rooms are operated and maintained properly.
 - (a) Technical instruction manuals and other documents for the operation and maintenance of air conditioning and ventilation equipment are prepared.

- (b) Operation and maintenance personnel acquire basic knowledge and skills related to operation and maintenance inspection.
- (2) Infectious wastewater and waste treatment facilities are operated and maintained appropriately.
 - (a) "Technical instruction manuals" are prepared for the operation and maintenance of infectious wastewater and waste treatment facilities.
 - (b) Operation and maintenance personnel acquire basic knowledge and skills related to operation and maintenance inspection.
- (3) A facility operation system is established for both normal times and infectious disease outbreaks.
 - (a) "Standard operating procedures" are prepared for both normal times and outbreaks of infectious diseases.
 - (b) Zoning, entry and exit management, donning of PPE, transporting patients, switching of air conditioning equipment, etc. according to the situation are carried out correctly and safely.

4. Methods for Assessing Achievement Levels

The outcomes of this soft component and the methods for verifying these outcomes are as follows: The achievement of the following outcomes (1) to (3) will be deemed to have improved the capabilities of operation and maintenance personnel.

the goal	Results		Check items for achievement level	How to check
	Field	Results		
I. Strengthening facility management	(1) To operate and maintain the air conditioning and ventilation equipment in special isolation rooms and operating rooms, and maintain and disinfect HEPA filter units, etc.	(a) Technical instruction manuals and other documents for the operation and maintenance of air conditioning and ventilation equipment are prepared.	- "Technical instructions" (explanations of the inspection content and methods to be performed by operation and maintenance personnel), "manuals", "checklists" (lists of inspection items and procedures to be performed by operation and maintenance personnel by equipment), "ledgers" (records and history of inspections, repairs, etc. by equipment), and "documents" (records of inspections, repairs, etc. by inspection item) are created regarding the system overview, airflow management, negative pressure management overview, facilities and equipment, PPE, etc. -The hospital establishes a system for updating information.	Soft component experts will review the contents of the "Technical Guidance Manual," "Manual," "Checklist," "Ledger" (records and history of inspections, repairs, etc. by equipment), and "Documents" (record sheets of inspections, repairs, etc. by inspection item and their contents and results).
		(b) Operation and maintenance personnel acquire basic knowledge and skills related to operation and	The maintenance staff - Received technical training through lectures and practical training and understood the contents. - Understand the overview, planning and proposal (including budget formulation) related to	By soft component experts - Practical check of operation and maintenance inspection work based on "Technical Instruction Manual", "Checklist", "Documents", and "Ledger" (time required, accuracy), and confirmation of

		maintenance inspection.	facility systems and their operation and maintenance. - Understand operation and maintenance practices (items, procedures, methods). - Understand the content of the actual equipment.	understanding (test and commentary). - Use of checklists, reports, and ledgers, practical check of recording work, and confirmation of understanding (tests and comments). - Confirmation of the contents of the "Operation and Maintenance Plan", and confirmation and analysis of the improvement of understanding (tests and comments).
	(2) Infectious wastewater and waste treatment facilities are operated and maintained appropriately.	(a) "Technical instruction manuals" are prepared for the operation and maintenance of infectious wastewater and waste treatment facilities .	- "Technical instruction manual" (explanations of the inspection content and method to be performed by operation and maintenance inspection personnel), "checklist" (a list of inspection items and procedures to be performed by operation and maintenance inspection personnel), "documents" (record sheets for the content and results of inspections, repairs, etc. by inspection item), and "ledger" (a record and history of inspections, repairs, etc.) are created for infectious wastewater and waste treatment equipment. - The hospital establishes a system for updating information.	The soft component expert will review the contents of the "Technical Guidance Manual," "Checklist," "Documents" (record sheets for the contents and results of inspections and repairs by inspection item), and "Ledger" (records and history of inspections, repairs, etc. by equipment).
		(b) Operation and maintenance personnel acquire basic knowledge and skills related to operation and maintenance inspection.	The maintenance staff - Received technical training through lectures and practical training and understood the contents. - Understand planning and proposals (including budget formulation) related to operation and maintenance. - Understand operation and maintenance practices (items, procedures, methods).	By soft component experts - Practical check of operation and maintenance inspection work based on "Technical Instruction Manual", "Checklist", "Documents" and "Ledger" (time required, accuracy), confirmation and analysis of improvement in understanding (test and commentary). - Use of checklists, forms, and ledgers, practical check of recording work, and confirmation and analysis of improvement in understanding (tests and comments). - Confirm the contents of the "Operation and Maintenance Plan" and check and analyze the improvement of understanding.

II. Establishment of facility operation systems in normal times and during infectious disease outbreaks	(3) A facility operation system is established for both normal times and infectious disease outbreaks.	(a) "Standard operating procedures" are prepared for both normal times and outbreaks of infectious diseases.	- "Standard operating procedures" (procedures for the tasks performed by each operation, maintenance, and inspection staff) and "checklists" (lists of tasks for each staff member) are created during normal times and in the event of an infectious disease outbreak. - The hospital establishes a system for updating information.	The soft component expert will review the contents of the "Standard Operating Procedures" and "Checklist."
		(b) Zoning, entry and exit management, donning of PPE, transporting patients, switching of air conditioning equipment, etc. according to the situation are carried out correctly and safely.	Infection control committee members - Received technical training through lectures and practical training and understood the contents. - Understand planning and drafting (including budgeting) related to facility management in the event of an infectious disease outbreak. - Understand the work content (task items, procedures, and methods) of facility management during normal times and during outbreaks of infectious diseases.	By soft component experts - Practical checks (time required, accuracy) on switching facility operations during normal times and in the event of an outbreak based on the "Standard Operating Procedures" and "Checklist," as well as confirmation and analysis of improvement in understanding (tests and comments). - Use of the checklist, practical check of recording work, confirmation and analysis of improvement in understanding (tests and comments). - Confirm the contents of the "Standard Operating Procedures" and check and analyze the improvement of understanding (tests and comments).

5. Soft Component Activities (Input Plan)

The activities (input plan) for achieving each output are as follows: The soft component covers the following points that are not covered in the initial operation training of facilities and equipment implemented by Japanese construction companies and equipment procurement trading companies.

Strengthening facility management:

- Guidance on the design of air conditioning and ventilation equipment in isolation wards and high-level isolation wards, and infectious wastewater and waste treatment equipment (system overview, design conditions , etc.)
- Guidance on the assumed operating environment of the equipment (air flow, air pressure, etc., settings and adjustment methods, etc.)
- Guidance on planning and formulating operation and maintenance management of the facility (daily and regular inspections, budget planning, use of personal protective equipment, etc.)

Establishment of facility operation systems in normal times and during infectious disease outbreaks:

- Guidance on standard precautions in normal times (hand washing, changing clothes, wearing personal protective equipment, medical waste management, etc.)
- Guidance on changing facility operations in the event of an infectious disease outbreak (zoning, traffic flow, patient transport, operation methods, etc.)
- Guidance on personnel allocation, supplies, and budget management for facility operation changeover in the event of an infectious disease outbreak

The departments targeted for strengthening facility management are as follows: for air conditioning and ventilation systems, the SPSH facility maintenance department; for infectious wastewater and waste treatment, the SPSH hospital administrators, medical staff, cleaning and maintenance personnel, etc.; and for the establishment of facility operation systems during both normal times and infectious disease outbreaks, the SPSH infection control committee (comprising the hospital director, department heads such as physicians and nurses, and facility and equipment maintenance personnel). Technical guidance will be provided for practical operations.

(1) Action Plan

Action plan for each outcome item

Results		Activities	Target category
Field	Results		
(1) To operate and maintain the air conditioning and ventilation equipment in special isolation rooms and operating rooms, and maintain and disinfect HEPA filter units, etc.	(a) Technical instruction manuals and other documents for the operation and maintenance of air conditioning and ventilation equipment are prepared.	• Organize the operation, maintenance, inspection, and upkeep items and contents to be described in the technical instruction manual (system overview, airflow management, negative pressure management overview, equipment, PPE, etc.) • Soft component experts will prepare drafts of technical instruction manuals, manuals, checklists, ledgers, forms, etc. , and will then formulate training plans based on these. • Based on the training plan, the technical instruction manual will be explained through classroom lectures and finalized together with the soft component recipients. • Discussions will be held to establish a system for updating information at the hospital.	• SPSH facility maintenance department manager

	(b) Operation and maintenance personnel acquires basic knowledge and skills related to operation and maintenance inspection.	- Using technical instructions, etc. - Overview, planning and proposal (including budget calculation) related to facility systems and operation and maintenance management - Specific operation and maintenance practices (items, procedures, methods) - Operational details during normal times/pandemic - Lectures and practical training will be conducted on the following topics: - Regarding airflow and negative pressure management, the details of the trial operation and adjustment work confirmed by the consultant (target equipment, purpose, work items, adjustment values, etc.) will be recorded and documented, standard operating procedures will be organized, and lectures and practical training (using actual equipment) will be conducted.	SPSH facility maintenance department manager
(2) Infectious wastewater and waste treatment facilities are operated and maintained appropriately.	(a) "Technical instruction manuals" are prepared for the operation and maintenance of infectious wastewater and waste treatment facilities.	- Organize the operation, maintenance, inspection, and upkeep items and contents to be described in the technical instruction manual. - Outline, plan and proposal (including budget calculation) for infectious wastewater and waste treatment facilities - Soft component experts will prepare drafts of technical guidance documents, manuals, checklists, ledgers, forms, etc., and will draw up training plans based on them. - Explain the technical instruction manual and training plan, and finalize them together with the soft component recipients through classroom learning. - Discuss establishing a system for updating information at the hospital.	SPSH hospital administrators, medical staff, cleaning and maintenance staff, etc.
	(b) Operation and maintenance personnel acquires basic knowledge and skills related to operation and maintenance inspection.	- Using technical instructions: - Overview, planning and proposal (including budget calculation) regarding operation and maintenance of wastewater and waste treatment facilities. - Specific operation and maintenance practices (items, procedures, methods) - Operational details during normal times/pandemic - Lectures and practical training will be conducted on the following topics: - Regarding chemical injection management for wastewater and waste treatment facilities, the consultant will record and document the details of the test run and adjustment work confirmed by the consultant (target equipment, purpose, work items, adjustment values, etc.), organize standard operating procedures, and provide classroom and	SPSH hospital administrators, medical staff, cleaning and maintenance staff, etc.

		practical setting guidance (using actual equipment).	
(3) A facility operation system is established for both normal times and infectious disease outbreaks.	(a) "Standard operating procedures" are prepared for both normal times and outbreaks of infectious diseases.	- Organize the work content to be recorded in the standard operating procedures. - Standard precautions in normal times - Switching facility operations in the event of an infectious disease outbreak - Soft component experts will prepare drafts of standard operating procedures, checklists, etc., and will develop training plans based on them. - Explain the standard operating procedures and training plans and finalize them together with the soft component recipients. - Discuss establishing a system for updating information at the hospital.	Members of SPSH's Infectious Disease Control Committee (Hospital Director, department heads (doctors, nurses), facility and equipment maintenance staff)
	(b) Zoning, entry and exit management, donning of PPE, transporting patients, switching of air conditioning equipment, etc. according to the situation are carried out correctly and safely.	- Using standard operating procedures: - Standard precautions in normal times - Switching facility operations in the event of an infectious disease outbreak - Personnel, material and budget management plan in the event of an infectious disease outbreak - Specific operations for switching facility operations between normal times and when an infectious disease outbreak occurs (items, personnel in charge, procedures, methods, etc.) - Organize standard operating procedures regarding standard preventive measures in normal times and how to switch facility operations in the event of an infectious disease outbreak, and provide instruction in setting them up through classroom learning and practical training. - Discuss establishing a system for updating information at the hospital.	Members of the Infectious Disease Control Committee (Hospital Director, Heads of Each Department (Doctors, Nurses), Facility and Equipment Maintenance Managers)

Since the scope includes design overview and operational maintenance, the first dispatch of experts is expected to take place after trial operation adjustments, but before the commencement of facility use during the inspection and handover period. The second dispatch is planned to be conducted approximately three months after the facility becomes operational.

Activity plan by dispatch period

	(1) To operate and maintain the air conditioning and ventilation equipment in special isolation rooms and operating rooms, and maintain and disinfect HEPA filter units, etc.	(2) Infectious wastewater and waste treatment facilities are operated and maintained appropriately.	(3) A facility operation system is established both in normal times and in the event of an infectious disease outbreak.
Domestic (1) 5 days (2) 5 days (3) 5 days	Organize the operation, maintenance, inspection, and upkeep items and contents to be described in	Organize the operation, maintenance, inspection, and upkeep items and contents to be described	Organize the work items and contents to be recorded in the standard operating procedures.

	- the technical instruction manual. - Preparation of technical instructions, checklists, ledgers, and reports, and preparation of draft training plans. - the Japanese contractor during construction (target equipment, purpose, work items, adjustment values, etc.) will be recorded and documented. - Provision of advance information to other participants	- in the technical instruction manual. - Preparation of technical instructions, checklists, ledgers, and reports, and preparation of draft training plans. - the Japanese contractor during construction (target equipment, purpose, work items, adjustment values, etc.) will be recorded and documented. - Provision of advance information to other participants	- Preparation of standard operating procedures, checklists, and draft training plans. - Provision of advance information to other participants
First on-site Dispatch Period (1) 15 days (2) 15 days (3) 15 days	- Explain the drafted technical instruction manual and training plan and gain understanding. - The following lectures will be held using technical instruction manuals, etc. - Overview, planning and proposal of facility systems and operation and maintenance management - The details of the trial operation and adjustment work carried out by the Japanese contractor (target equipment, purpose, work items, adjustment values, etc.) will be recorded and documented in the standard operating procedures, which will then be taught in a classroom setting and checked on the actual equipment. - Receive confirmation of the results from the other party	- Explain the drafted technical instruction manual and training plan and gain understanding. - The following lectures will be held using technical instruction manuals, etc. - Overview, planning and proposal of facility systems and operation and maintenance management - The details of the trial operation and adjustment work carried out by the Japanese contractor (target equipment, purpose, work items, adjustment values, etc.) will be recorded and documented in the standard operating procedures, which will then be taught in a classroom setting and checked on the actual equipment. - Receive confirmation of the results from the other party.	- Explain the drafted standard operating procedures and training plans and gain understanding. - The following lectures will be held using standard operating procedures etc. - Standard precautions in normal times - Switching facility operations in the event of an infectious disease outbreak - Receive confirmation of the results from the other party.
2nd On-site Dispatch Period (1) 15 days (2) 15 days (3) 15 days	- Follow up on the classroom lectures held during the first dispatch and consider areas for improvement. - This course will provide lectures on facility system maintenance management plans (including budget formulation). - Practical training will be conducted using technical instruction manuals,	- Follow up on the classroom lectures held during the first dispatch and consider areas for improvement. - This course will provide lectures on facility system maintenance management plans (including budget formulation). - Practical training will be conducted using	- Follow up on the classroom lectures held during the first dispatch and consider areas for improvement. - Participants will receive lectures on planning for personnel deployment, supplies, and budget management in preparation for an infectious disease outbreak. - Using standard operating procedures and checklists, practical training (rehearsals)

	checklists, ledgers, forms, etc. (using actual equipment). · Discussions will be held to establish a system for updating information at the hospital.	technical instruction manuals, checklists, ledgers, forms, etc. (using actual equipment). · Discussions will be held to establish a system for updating information at the hospital.	for standard preventive measures under normal circumstances and switching facility operations in the event of an infectious disease outbreak) will be conducted. · Discussions will be held to establish a system for updating information at the hospital.
Domestic (1) Three days (2) Three days (3) 3 days	· Summary of on-site work results · Preparation of soft component completion report		

(2) Deployment Plan

The following experts will be deployed to carry out the above activities. The work schedule of each expert during the local dispatch period is shown in the table below.

Furthermore, the experts will work closely with the Japanese consulting engineers (business manager, air conditioning and ventilation equipment, etc.) who are scheduled to be dispatched to the site during the separate detailed design and construction supervision period, and will be mindful to ensure that activities such as technical guidance can be carried out more effectively by appropriately checking and encouraging the establishment of an operation and maintenance system and the organization of an infectious disease control committee (including new hires) on the recipient side, which will be the subject of the soft component.

- (1) 1 expert in the operation and maintenance of air conditioning and ventilation equipment
- (2) 1 expert in the operation and maintenance of infectious wastewater and waste treatment facilities
- (3) 1 facility management expert

Schedule for the first on-site dispatch period

Day	(1) Expert in operation and maintenance of air conditioning and ventilation equipment management	(2) Expert in operation and maintenance of infectious wastewater and waste treatment facilities	(3) Facility management Expert
1	Travel day		
2	Travel day		
3	· Explanation and discussion of the draft technical instruction manual and training plan	· Explanation and discussion of the draft technical instruction manual and training plan	· Explanation and discussion of the proposed standard operating procedures and training plans
4	· Creating instruction and training plans · Creating technical instruction manuals, standard operating procedures, checklists, ledgers, forms, etc.	· Creating instruction and training plans · Creating technical instruction manuals, standard operating procedures, checklists, ledgers, forms, etc.	· Creating training plans · Creating standard operating procedures, checklists, etc.
5	· Creating instruction and training plans · Creating technical	· Creating instruction and training plans · Creating technical	· Creating training plans · Creating standard operating procedures, checklists, etc.

	instruction manuals, standard operating procedures, checklists, ledgers, forms, etc.	instruction manuals, standard operating procedures, checklists, ledgers, forms, etc.	
6	▪ Classroom lectures (system, maintenance overview, biosafety overview)	▪ Classroom lectures (system, maintenance overview, biosafety and security overview)	▪ Classroom lectures (Standard precautions in normal times①)
7	▪ Classroom lecture (Air conditioning and ventilation ①)	▪ Classroom lectures (Wastewater ①)	▪ Classroom lectures (Standard precautions in normal times②)
8	▪ Preparing for lectures and organizing materials	▪ Preparing for lectures and organizing materials	▪ Preparing for lectures and organizing materials
9	▪ Preparing for lectures and organizing materials	▪ Preparing for lectures and organizing materials	▪ Preparing for lectures and organizing materials
10	▪ Classroom lectures (Air conditioning and ventilation ②)	▪ Classroom lessons (Wastewater ②, Waste ①)	▪ Classroom lecture (Switching facility operations during infectious disease outbreaks ①)
11	▪ Classroom lessons (negative pressure, airflow, filters)	▪ Classroom lectures (Waste ②)	▪ Classroom lecture (Switching facility operations during infectious disease outbreaks ②)
12	▪ Comprehension test	▪ Comprehension test	▪ Comprehension test
13	▪ Creating action plans, wrapping up, reporting to the office, etc.	▪ Creating action plans, wrapping up, reporting to the office, etc.	▪ Creating action plans, wrapping up, reporting to the office, etc.
14	Travel day		
15	Travel day		

2nd Dispatch Period Work Schedule

Day	(1) Expert in operation and maintenance of air conditioning and ventilation equipment management	(2) Expert in operation and maintenance of infectious wastewater and waste treatment facilities	(3) Facility management Expert
1	Travel day		
2	Travel day		
3	▪ Review of the first dispatch, follow-up, explanation and discussion of the second training plan, etc.	▪ Review of the first dispatch, follow-up, explanation and discussion of the second training plan, etc.	▪ Review of the first dispatch, follow-up, explanation and discussion of the second training plan, etc.
4	▪ Classroom lectures (maintenance management plan ①)	▪ Classroom lectures (maintenance management plan ①)	Lecture (Plan for managing personnel, supplies, and budgets in preparation for an infectious disease outbreak①)
5	▪ Classroom lectures (Maintenance management plan ②)	▪ Classroom lectures (Maintenance management plan ②)	Lecture (Plan for managing personnel, supplies, and budgets in preparation for an infectious disease outbreak ②)

6	▪ Practical training (Air conditioning and ventilation ①)	▪ Practical training (Wastewater ①)	▪ Practice (standard precautions in normal times)
7	▪ Practical training (Air conditioning and ventilation ②)	▪ Practical training (Wastewater ②)	▪ Practical training (Switching facility operations during infectious disease outbreaks ①)
8	▪ Preparing for training, organizing materials	▪ Preparing for training, organizing materials	▪ Preparing for training, organizing materials
9	▪ Preparing for training, organizing materials	▪ Preparing for training, organizing materials	▪ Preparing for training, organizing materials
10	▪ Practice (negative pressure/airflow ①)	▪ Practical training (Waste ①)	▪ Practical training (Switching facility operations during infectious disease outbreaks ②)
11	▪ Practice (negative pressure/airflow ②)	▪ Practical training (Waste ②)	▪ Practical training (Switching facility operations during infectious disease outbreaks ③)
12	▪ Comprehension test	▪ Comprehension test	▪ Comprehension test
13	Creating action plans, wrap-ups, office reports, etc.	Creating action plans, wrap-ups, office reports, etc.	Creating action plans, wrap-ups, office reports, etc.
14	Travel day		
15	Travel day		

6. How to procure human resources for implementing the soft component

For the implementation of this soft component, Japanese experts in various fields will be dispatched by the consultant to provide guidance on-site. Since air conditioning and ventilation systems, as well as infectious wastewater and waste treatment facilities, require instruction based on an understanding of their design philosophy, the implementation will be carried out in collaboration with the Japanese experts who designed these facilities. Furthermore, for facility management, guidance will be provided by Japanese experts who are well-versed in the operation of medical facilities in Japan during both normal times and infectious disease outbreaks.

7. Soft component implementation schedule

Year		2026												2027												2028												2029				2030			2031		rainy season(6~9month)			
Months		5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12					
Sum Months		12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56		57	58	
Construction schedule	Domestic Preparations																																																	
	Preparation and temporary construction																																																	
	Earthworks																																																	
	Groundwork construction																																																	
	Foundation and structure construction																																																	
	Finishing work																																																	
	Facilities (electricity, water supply and drainage, air conditioning and ventilation) construction																																																	
	Exterior construction																																																	
	Trial run adjustment																																																	
	Inspection and delivery																																																	
Defect inspection work																																																		
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8. Soft component deliverables

The soft component deliverables are as follows:

- ① Soft Component Completion Report (Japanese, English)
- ② Technical Instruction Manual (English)
- ③ Standard Operating Procedures (English)
- ④ Maintenance Contract Guidelines (English)
- ⑤ Checklist (English)
- ⑥ Ledgers and documents (English)

9. Responsibilities of the implementing agency of the recipient country

SPSH is required to select personnel, including new hires, who will be the recipients of the soft component and appoint them at least 90 days before project implementation. These individuals must participate in activities such as technical training. Additionally, with a reliable and sufficient maintenance budget, SPSH must continue to properly manage and update the new facilities and equipment provided by this project, utilizing the 'Technical Instruction Manual,' 'Standard Operating Procedures,' 'Checklists,' 'Maintenance Contract Guidelines,' 'Ledger,' and 'Documents' obtained as project outcomes, as well as the 'Manufacturer's Manual' provided by the manufacturer. To support this, the hospital director and Ministry of Health officials will participate as necessary and commit to contributing to and disseminating the deliverables. Furthermore, it is expected that the results will be leveraged to provide maintenance guidance for equipment and systems introduced to other hospital facilities in the future, ensuring horizontal expansion.

Appendix-6 Confirmation on Tax Treatment Summary

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Ministry of Health-Ethiopia
Healthier Citizens for Prosperous Nation!

ቀን 14 FEB 2025

Date

ቁጥር

Ref.No

Japan International Cooperation Agency (JICA)

Addis Ababa

Subject: Confirmation on Tax Treatment Summary

Reference is made to the Minutes of Meeting signed between Ministry of Health, JICA and St Peter Specialized Hospital for "The Project for the Improvement of St. Peter Specialized Hospital for Communicable Diseases Treatment in Addis Ababa."

As per the Japan International Cooperation Agency (JICA) Ethiopia Office request on confirmation on Tax Treatment Summary, the Ministry of Health (MoH) hereby confirm the two pages Tax Treatment Summary as attached here with this letter.

Therefore, please proceed with the next step to facilitate the project.

With best regards,

Muluken Argaw Hailu
Strategic Affairs
Executive Officer



Cc:

- Strategic Affairs Executive Office
MOH
- St. Peter Specialized Hospital
- Ministry of Finance
Addis Ababa



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In Reply please Refer to Our Ref. No.

Facebook: Ministry Of Health , Ethiopia
Twitter: @FMoHealth

Tax Treatment Summary for “ the Project for the Improvement of St. Peter Specialized Hospital for Communicable Diseases Treatment in Addis Ababa” (the Project))

No.	Category	Items	Description of taxes (Eligible bodies & persons)	Tax Rate % as of June 2022	Application of Exemption, Reimbursement, or Direct payment borne by SREB	Procedure needs to be followed by Japanese Companies	Duration for tax management	Responsible organization
1	Direct Tax	Corporate Income Tax	Corporate Income Tax imposed on Japanese Companies (*1)	30	Exemption by MoF to Japanese Companies, but Japanese Companies are required to make a tax declaration to MoR.	1. Japanese Companies shall prepare and submit the declaration form to MoR/Tax-Office every fiscal year by its due date. 2. Upon declaration, the agreement by MoF on tax exemption treatment (agreed upon E/N signing) shall also be submitted.	N/A	MoF, MoR
2		Personal Income Tax	Personal Income Tax imposed on physical persons (except for nationals of Ethiopia) employed by Japanese Companies	0-35 (varies depending on income amount)	Exemption by MoF to Japanese Companies, but Japanese Companies are required to make a tax declaration to MoR.	1. Japanese Companies submit declaration documents for Personal Income Tax to MoR/Tax-Office every month. Upon declaration, the Japanese Companies shall clarify the amount imposed on foreign staff and the amount imposed on local staff respectively. 2. Upon declaration, the agreement by MoF on tax exemption treatment (agreed upon E/N signing) shall also be submitted. 3. MoR/Tax-Office makes in-advance exemption of Personal Income Tax for Japanese and third country nationals(*2).	N/A	MoF, MoR
3	Indirect Tax	Input Value Added Tax (Input VAT)	Paid Value Added Tax imposed with respect to the purchase of goods and/or services to implement the Project	15	Reimbursement from MoR/Tax-Office to Japanese Companies.	1. Japanese Companies pay Input VAT to suppliers of the goods and/or services upon purchase. 2. Japanese Companies request MoR/Tax-Office for reimbursement with submission of necessary documents, based on the receipt of payment.	Approximately 3 months, depending on the budget availability of MoH	MoR/Tax-Office
4		Output Value Added Tax (Output VAT)	Received Value Added Tax imposed on the sale of goods and/or services to implement the Project (each of the partial payments of the contract from MoH to Japanese Companies)	15	Direct Payment by MoH to MoR. (The contract between MoH and Japanese Companies should exclude Output VAT.)	1. Japanese Companies inform MoH about the estimated amount to be required for Output VAT in advance (The estimated amount may be computed as per the payment terms of the contract between MoH and Japanese Companies). 2. MoH requests MoF to allocate budget as necessary and reserves the necessary budget. 3. Japanese Companies communicate with MoH about the progress of the Project to confirm the time of Direct Payment. 4. Japanese Companies request MoH to settle the payment by the due date. 5. MoH pays the tax to the designated MoR/Tax-Office, based on the request from Japanese Companies.	Approximately 1 month, depending on the budget availability of MoH	MoH *MoF and MoR are also responsible in terms of finance allocation and tax treatment, based on requests & coordination initiated by MoH.
5		Reverse Value Added Tax (Reverse VAT)	Reverse Value Added Tax imposed on a service and/or goods that Japanese Companies receive from a non- resident supplier	15	Direct payment by MoH to MoR. (The contract between MoH and Japanese Companies should exclude Reverse VAT.)	1. Japanese Companies inform MoH about the estimated amount to be required for Reverse VAT in advance. 2. MoH requests MoF to allocate budget as necessary and reserves the necessary budget. 3. Japanese Companies communicate with MoH and confirm the amount that actually needs to be paid. 4. Japanese Companies request MoH to settle the payment by the due date. 5. MoH pays the tax to the designated MoR/Tax-Office, based on the request from Japanese Companies.	Approximately 1 month, depending on the budget availability of MoH	MoH *MoF and MoR are also responsible in terms of finance allocation and tax treatment, based on requests & coordination initiated by MoH.
6		Technical Service Tax	Technical Service Tax imposed on a technical service that Japanese Companies provide in the Project	15	Exemption by MoR to Japanese Companies or Direct payment by MoH to MoR. (The contract between MoH and Japanese Companies should exclude Technical Service Tax.)	MoH reports the amount of technical service included in the total contract amount to MoR/Tax-Office within 30 days after the contract agreement or the start of consultant's stay. Upon reporting, MoH will submit the agreement by MoF on tax exemption treatment to MoR.	N/A	MoH *MoF and MoR are also responsible in terms of finance allocation and tax treatment, based on requests & coordination initiated by MoH.
7		Stamp Duty	Stamp Duty is the tax levied on documents listed in the stamp duty proclamation such as memorandums, articles of association, awards, bonds, warehouse bonds, contracts and agreements, notarial acts, power of attorney, and documents of title to property. The tax rate varies depending on the document.	0.5-2 (varies depending on document)	Reimbursement from MoH to Japanese Companies	1. Japanese Companies inform MoH about the estimated amount to be required for Stamp Duty in advance. 2. MoH requests MoF to allocate budget as necessary and reserves the necessary budget. 3. Japanese Companies pay Stamp Duty. 4. Japanese Companies communicate with MoH and confirm the amount that actually needs to be paid. 5. Japanese Companies request MoH for reimbursement, based on the receipt of payment.	Approximately 3 months, depending on the budget availability of MoH	MoH *MoF is also responsible in terms of finance allocation, based on requests & coordination initiated by MoR.



No.	Category	Items	Description of taxes (Eligible bodies & persons)	Tax Rate % as of June 2022	Application of Exemption, Reimbursement, or Direct payment borne by SREB	Procedure needs to be followed by Japanese Companies	Duration for tax management	Responsible organization
8		Customs Duty (for permanently imported or exported goods) consisting of VAT, Withholding Tax, Sure Tax, and Excise Tax.	Customs Duty imposed on import or export of the goods which are permanently used in or out of Ethiopia, respectively, by Japanese Companies and/or juridical person of a third country. The tax rate varies depending on the goods.	18-563 in total (varies depending on goods)	Exemption by MoF to Japanese Companies	1. Japanese Companies, who are consignees for import or shippers for export of the goods, request MoF to issue a support letter for duty free along with submission of transport documents. 2. MoF issues the support letter which requests MoF to exempt the duty for the goods. 3. MoF obtains the acceptance of duty free from MoF/Customs Office and issues a letter of Customs Duty exemption to Japanese Companies. 4. Japanese Companies conduct customs clearance with the MoF letter and transport documents for the goods.	N/A	MoF, MoR, MoH
9		Insurance Customs Bond is the bond applied to temporarily imported goods which are planned to be exported after the use in Ethiopia.	Insurance Customs Bond is the bond applied to temporarily imported goods which are planned to be exported after the use in Ethiopia.	Same rate as Customs Duty	Reimbursement from MoH to Japanese Companies for the case that export of the goods is cancelled	Depends on how the goods are handled after import as follows: 1. In case that the goods are exported as planned, Japanese Companies applies to Customs Office for release of the Bond. 2. In case that the planned export of the goods is cancelled by reason, Japanese Companies request MoF in advance to secure the necessary budget for reimbursement of the cost for the Bond from MoF, and then claim to MoH for reimbursement with submission of necessary documents.	Approximately 3 months, depending on the budget availability of MoH	MoH *MoF is also responsible in terms of finance allocation, coordination initiated by MoH.
10		Registration fee, License fee, and Permits and approval	Depend on the charges imposed.	Depend on the charges imposed.	Reimbursement from MoH to Japanese Companies	1. Japanese Companies pay the charges. 2. Japanese Companies request MoH for reimbursement, based on the receipt of payment.	Approximately 3 months, depending on the budget availability of MoH	MoH *MoF is also responsible in terms of finance allocation, based on requests & coordination initiated by MoH.
11	Others	Other internal taxes and fiscal levies	Depend on the taxes and levies imposed.	Depend on the taxes and levies imposed.	Depend on the taxes and levies imposed.	Procedure depends on the taxes and levies and should be discussed with MoF through MoH and EoI for Direct Tax and MoH for Indirect Tax.	N/A	Either MoF or MoH, depends on taxes and levies
12		Penalty and interests imposed on tax payment	Depend on the penalty and interests imposed.	Depend on the penalty and interests imposed.	Depend on the situation.	1. In case that the penalty and interests are imposed due to an unavoidable reason and Japanese Companies have no clear responsibility for the cause of the delay, MoF will convince MoR not to impose the penalty and interests. 2. Otherwise, Japanese Companies and MoH will discuss and decide the appropriate measures.	N/A	Either MoF or MoH, depends on penalty and interests imposed. *Including coordination with relevant Revenue authority.

(MoF: Ministry of Finance, MoH: Ministry of Health, MoR: Ministry of Revenue, EoI: Embassy of Japan, JICA: Japan International Cooperation Agency)

(*1) "Japanese Companies" means Japanese juridical persons controlled by Japanese physical persons and/or juridical persons and/or sub-contractors of third countries controlled by Japanese Companies. The term "juridical person of a third country" means a juridical person controlled by Japanese physical persons and/or physical persons of the third country and registered in the third country, which is engaged in the implementation of the Project as a subcontractor of the Project.

(*2) "Third country national's employees" means physical persons and/or juridical persons and/or sub-contractors of third countries controlled by Japanese Companies. The term "juridical person of a third country" means a juridical person controlled by Japanese physical persons and/or physical persons of the third country and registered in the third country, which is engaged in the implementation of the Project as a subcontractor of the Project.



Appendix-7 Land Certificate

አዲስ አበባ ከተማ አስተዳደር የመሬት ይዞታ ማዘጋጀትና መረጃ አገልግሎት
Addis Ababa City Administration Land Holding Registration And Information Agency

የመሬት ይዞታ ምዝገባ እና መረጃ አገልግሎት
ጉልሌ ከተማ ት/ቦ/ቤት
Land Holding Registration And Information Agency gulele Branch Office

የቅየላ ውጤት ማሳዎቂያ ቅጽ (Survey Result Notification Format)

1. የባለይዘታው ስም: ቅዱስ ጳውሎስ ቲቢ ቤቴሃለይዝ ይዘታ

2. የይዘታው ልዩ መለያ ቁጥር: AA000100102707

3. የይዘታው አድራሻ ከ/ከተማ: ጉልሌ ወረዳ: 01 ቀበሌ: 02
ሰፈር: ሳንባ ነቀርሳ በሰውነት: 02 የመንገድ ቁጥር: የቦታው የቅየላ ኮከብ

4. የቅየላው አይነት
4.1. የምድር ቅየላ -Yes----
መሳሪያው የታሰረበት ንጥል (GCP)
የኋላ ትይንት ንጥል (BS GCP)
4.2. በፎቶግራፊካል ቅየላ ----No-----

5. በቅየላ የተገኘው የቦታ ስፋት በ ካ.ሜ 52825.513 ካ.ሜ

6. በስነ-ምግባር የተገኘው የቦታ ስፋት በ ካ.ሜ 49038 ካ.ሜ

point	x	y
1	473402.5209	1002785.2478
2	473417.008	1002931.336
3	473397.8255	1002924.852
4	473382.8473	1002922.8018
5	473366.1785	1002940.9787
6	473368.237	1002945.9273
7	473350.4083	1002962.6846
8	473348.9906	1002965.0817
9	473343.2756	1002984.608
10	473340.215	1003002.195
11	473322.0278	1003001.7421
12	473321.0099	1003006.6811
13	473320.185	1003010.684
14	473315.4053	1003024.9944
15	473312.626	1003029.8769
16	473309.5218	1003036.0322
17	473308.6768	1003036.8145
18	473305.0338	1003042.1394
19	473301.0913	1003047.1665
20	473289.9237	1003049.5511
21	473280.777	1003050.011
22	473255.8942	1003049.5849
23	473252.499	1003046.003
24	473250.508	1003043.771
25	473241.5218	1003033.3442
26	473239.0177	1003031.9474
27	473234.6788	1003027.8199
28	473231.0217	1003024.9099
29	473213.1385	1003028.89
30	473204.5837	1003030.6279
31	473189.156	1003033.608
32	473165.8008	1003031.187
33	473184.372	1003029.5589
34	473177.0982	1003019.8539
35	473169.9544	1003006.6247
36	473169.8327	1003006.234
37	473129.2158	1003030.0898
38	473122.99	1003020.794
39	473118.443	1003013.126
40	473111.425	1003000.443
41	473105.408	1002985.362
42	473122.0541	1002981.6827
43	473131.74	1002978.836

የባለ መብት አስተያየት: አጥሮ ቢኖሩት መሰረት የተቀረበ::

የመሰረታዊ ካርታው መስፈርት
Scale of base map
0 0.020 0.4 0.08 0.12 0.16 Kilometers

Coordinate System: Adindan UTM Zone 37N
Projection: Transverse Mercator
Datum: Adindan
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: 39.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000

የተሰጠው ባለሙያ ስም: ወንድ ማርያም ማረጋገጫ: ጉልሌ ከተማ ት/ቦ/ቤት ቀን: 5/6/2017