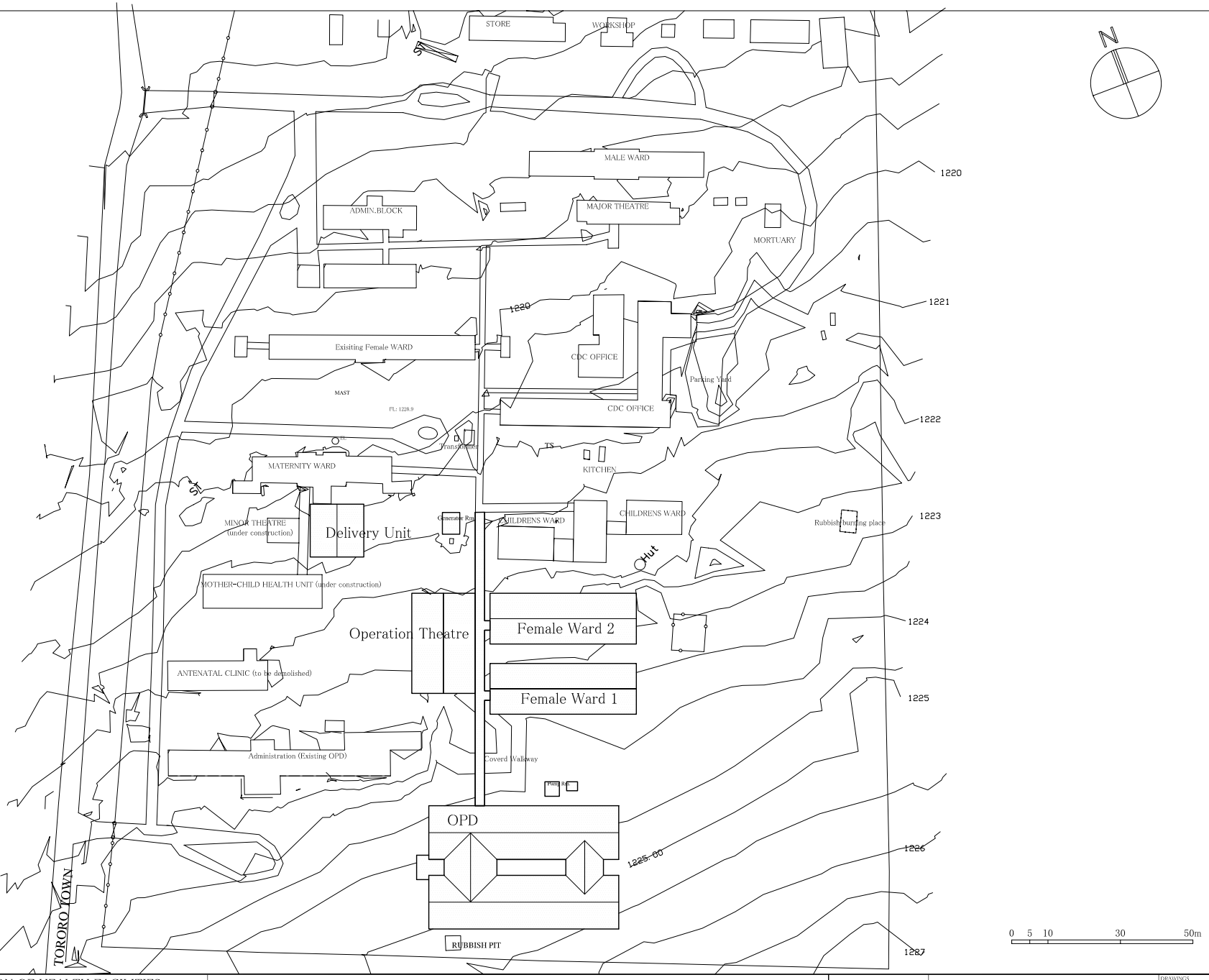


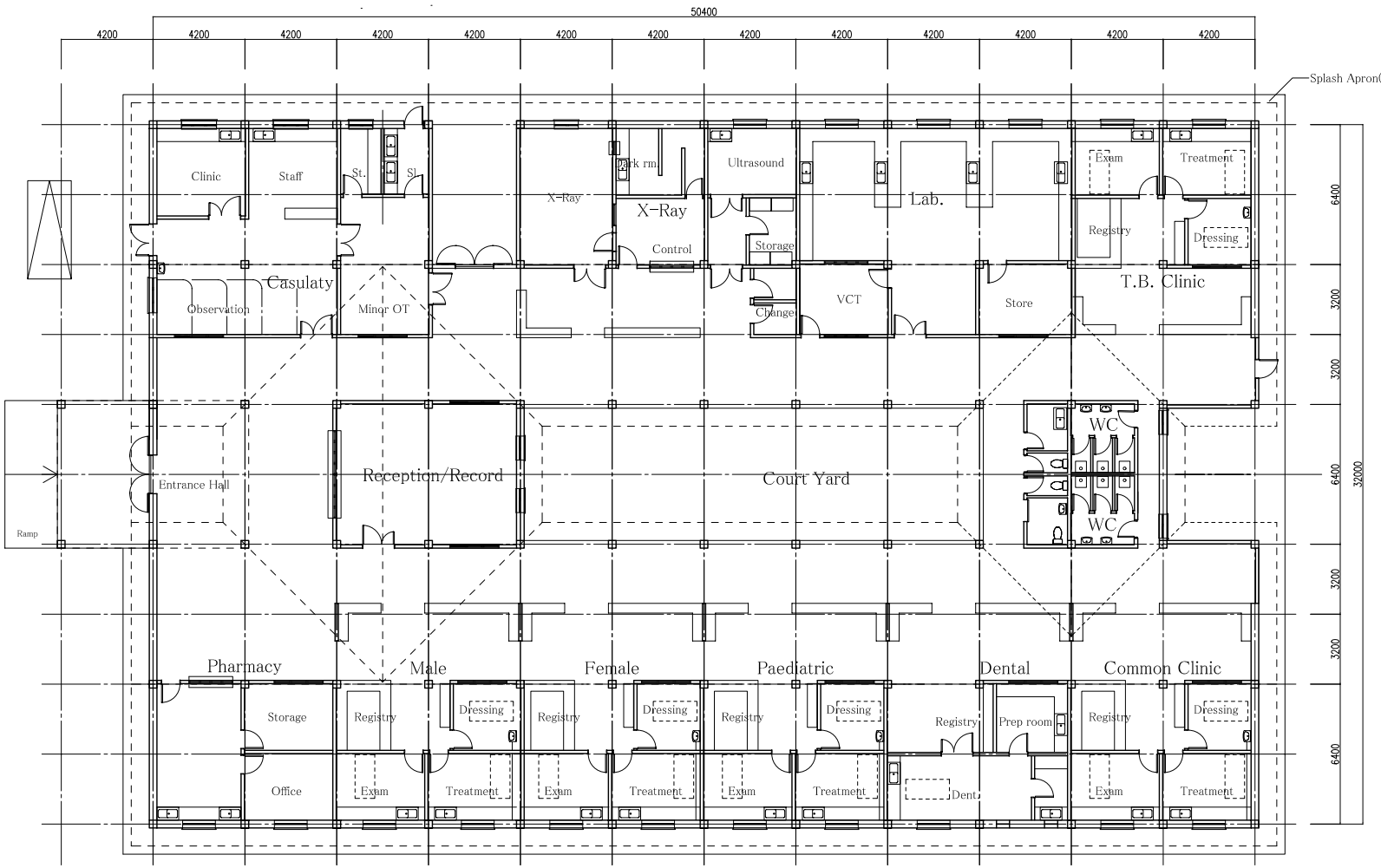
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA

Tororo GH

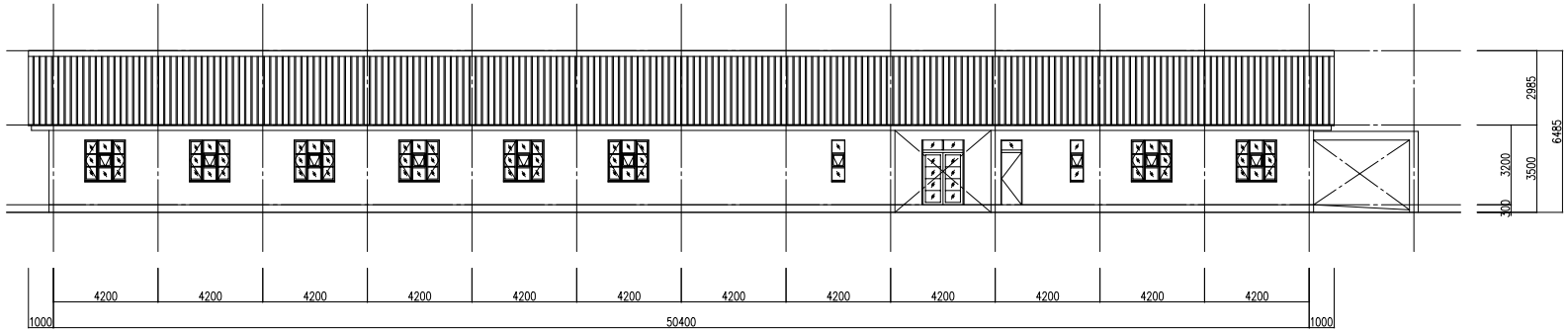
Site Plan

DRAWINGS 12

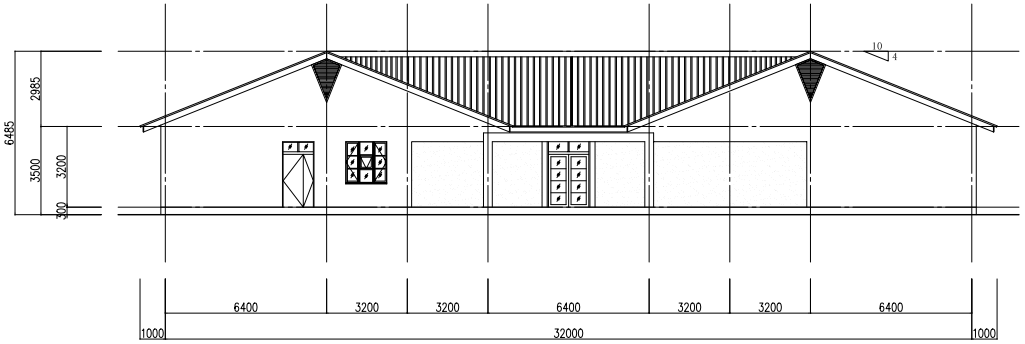
SCALE 1:1500



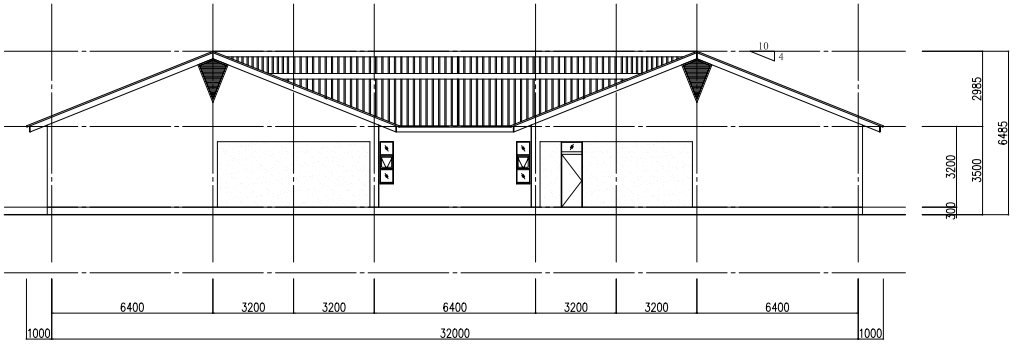
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	OPD, Tororo GH		Plan	DRAWINGS 13
			SCALE 1:300	



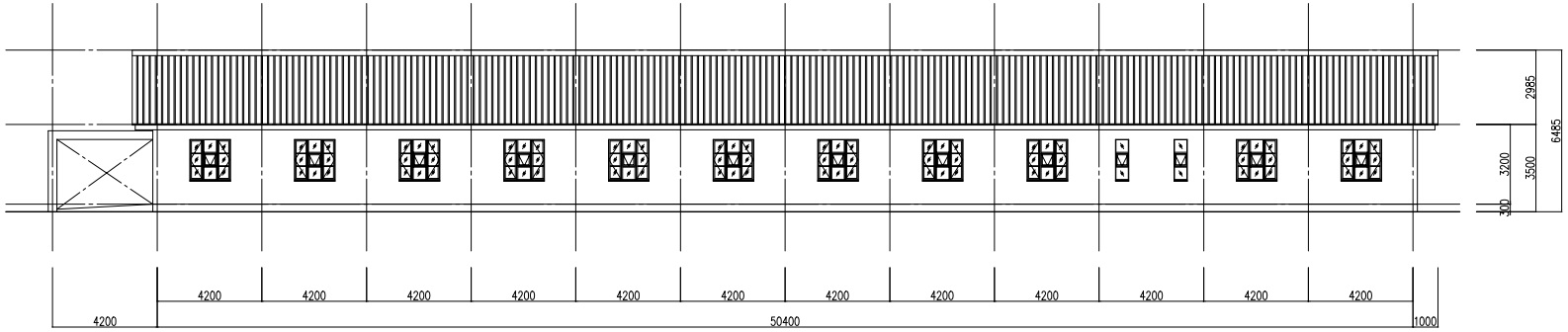
A Elevation



D Elevation

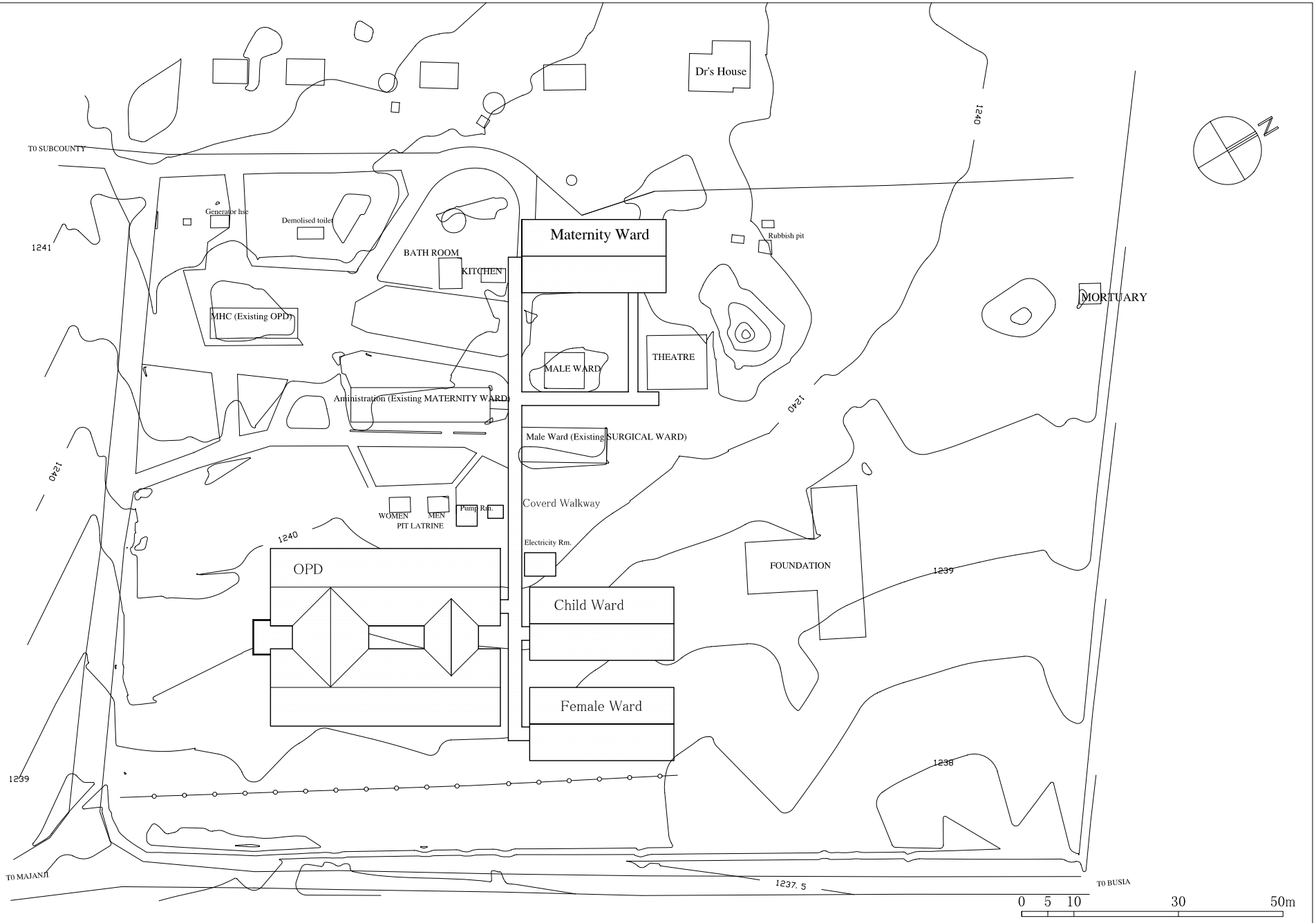


B Elevation

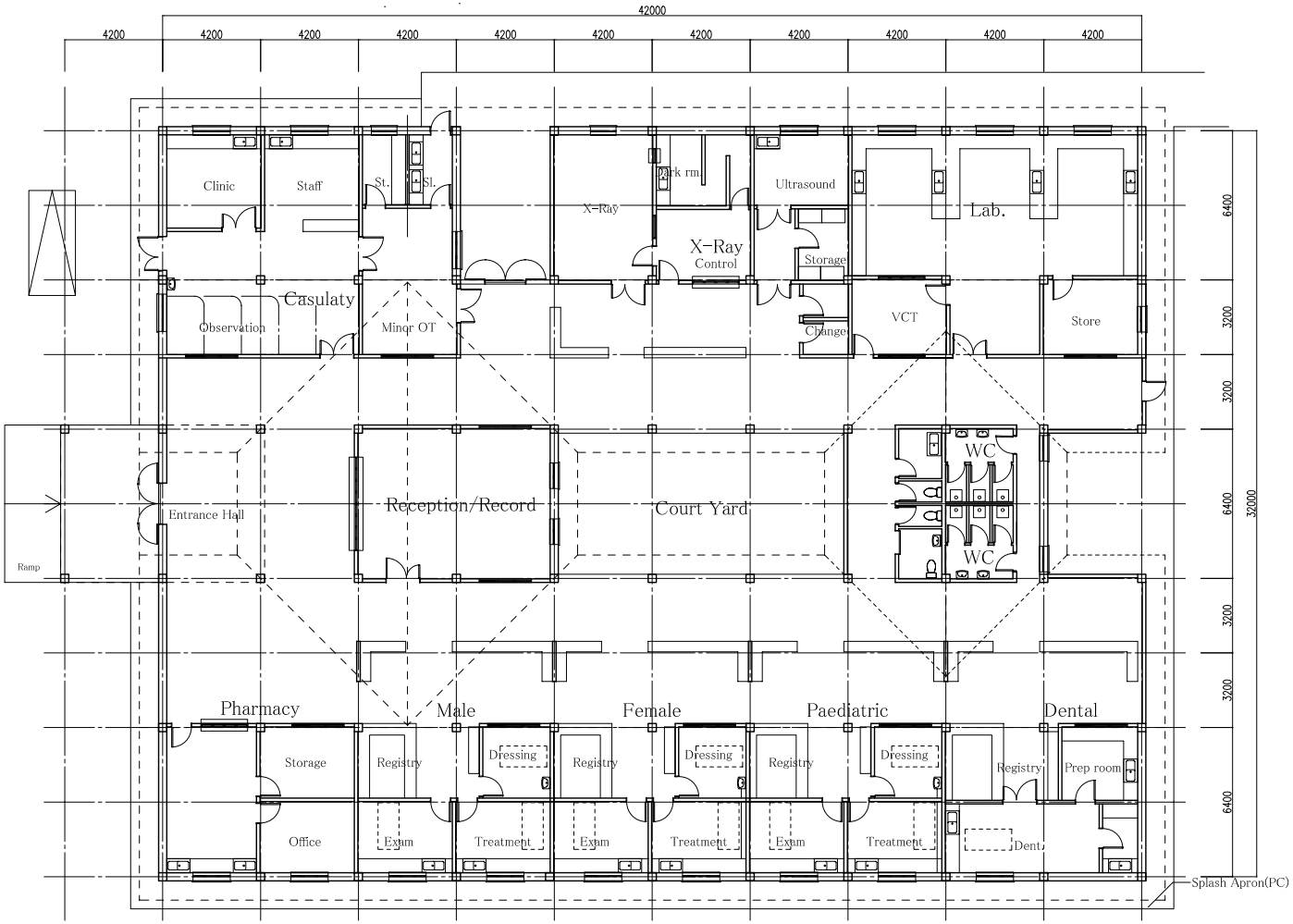


C Elevation

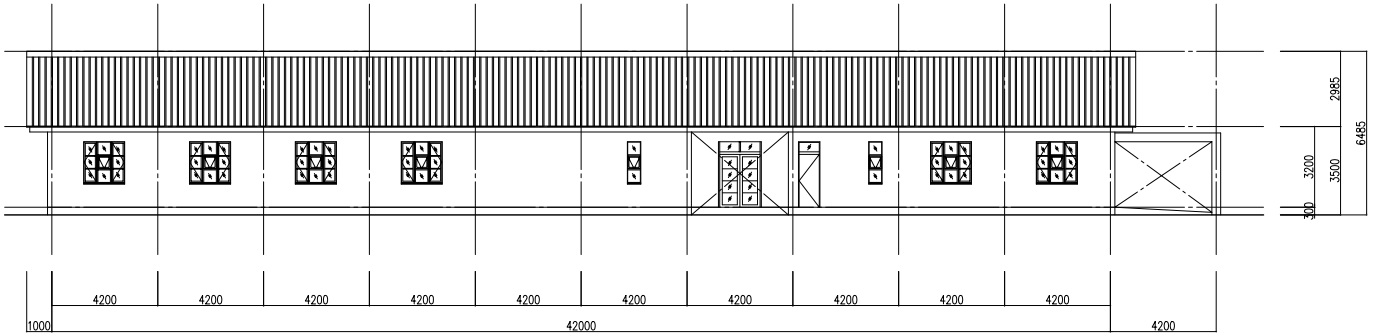
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	OPD, Tororo GH		Elevation SCALE 1:300
			DRAWINGS 14



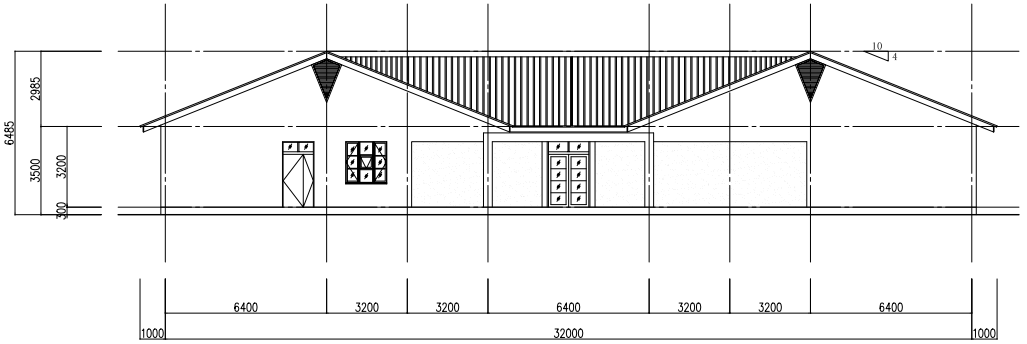
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	Masafu GH		Site Plan DRAWINGS 15 SCALE 1:1000



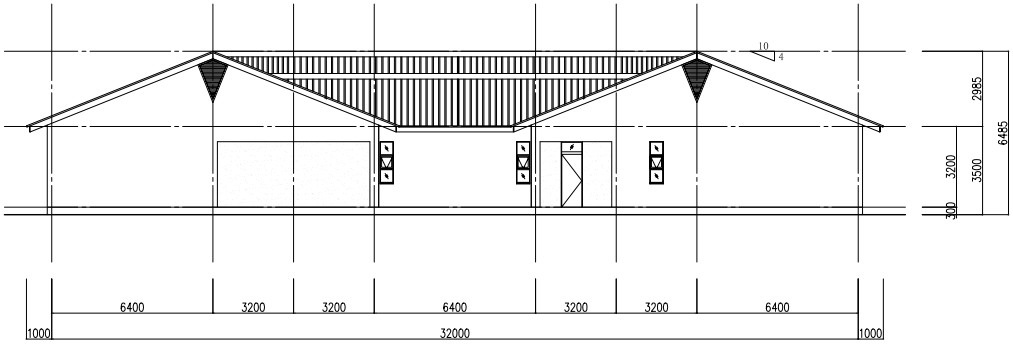
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	OPD, Masafu GH		Plan SCALE 1:300 DRAWINGS 16



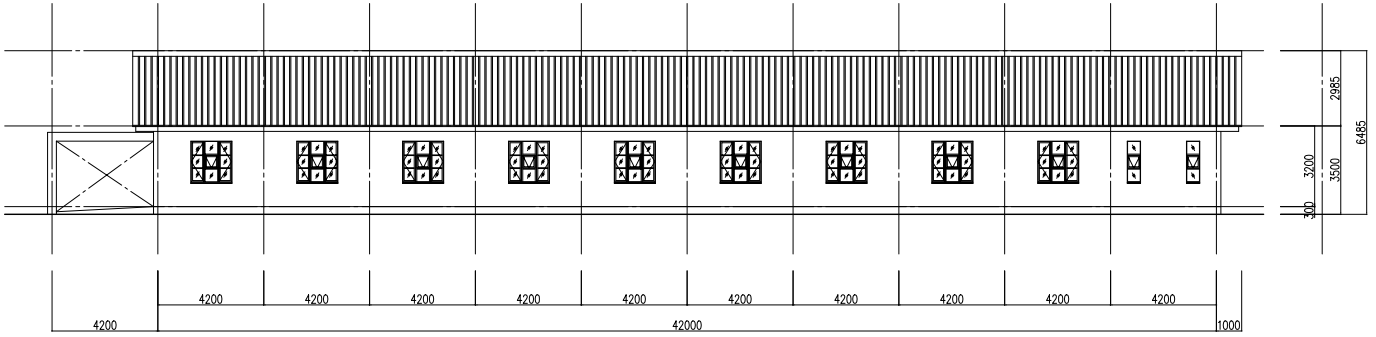
A Elevation



D Elevation

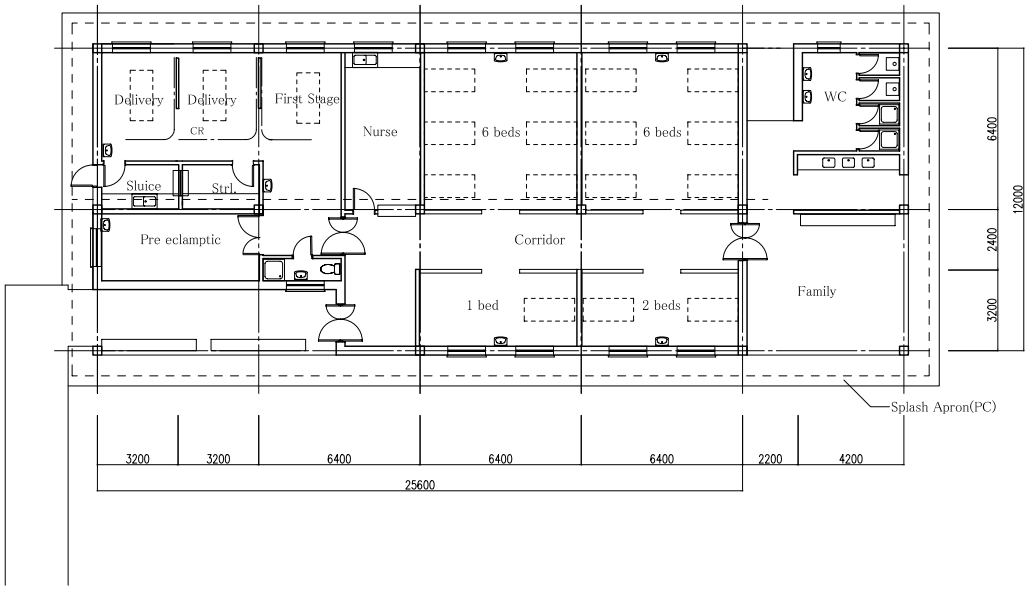


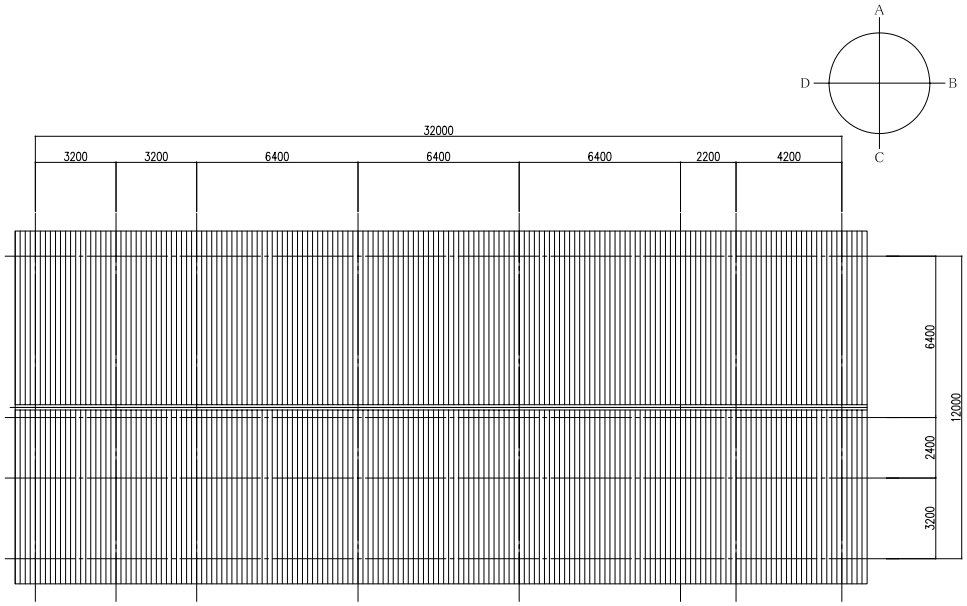
B Elevation

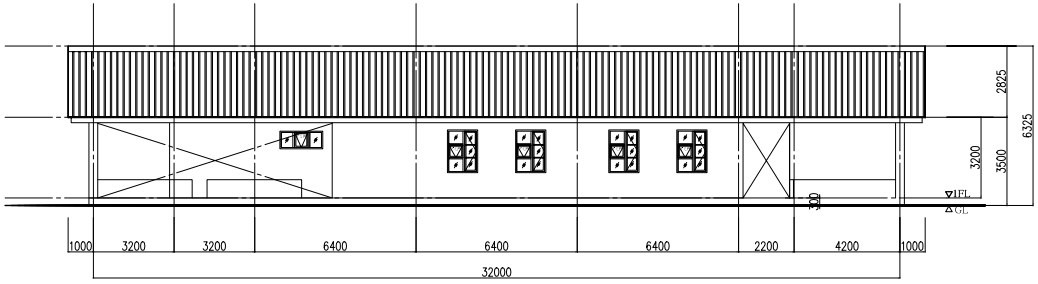


C Elevation

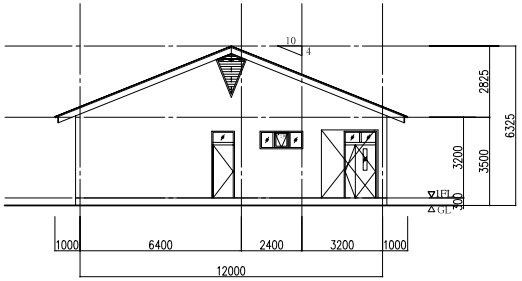
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	OPD, Masafu GH		Elevation SCALE 1:300
			DRAWINGS 17





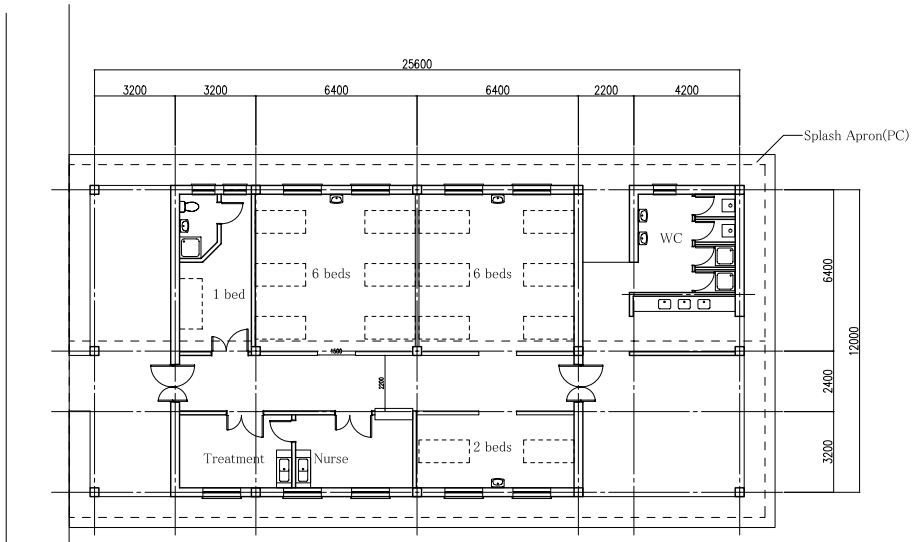


C Elevation

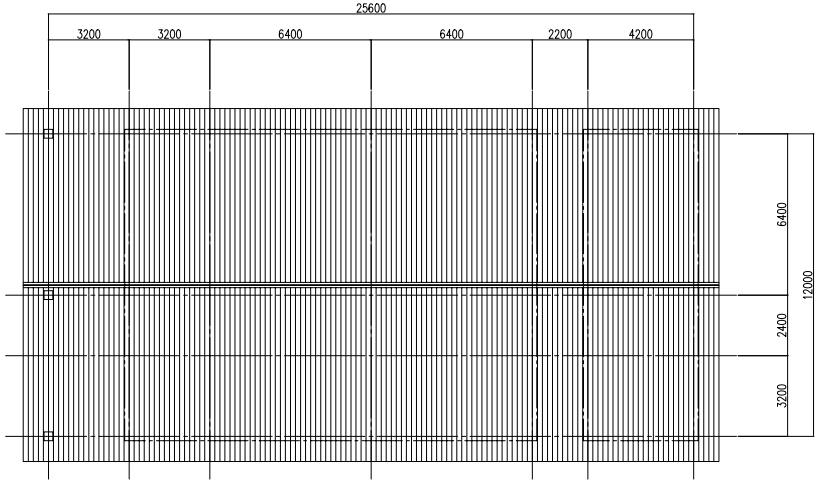


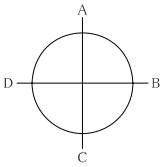
D Elevation

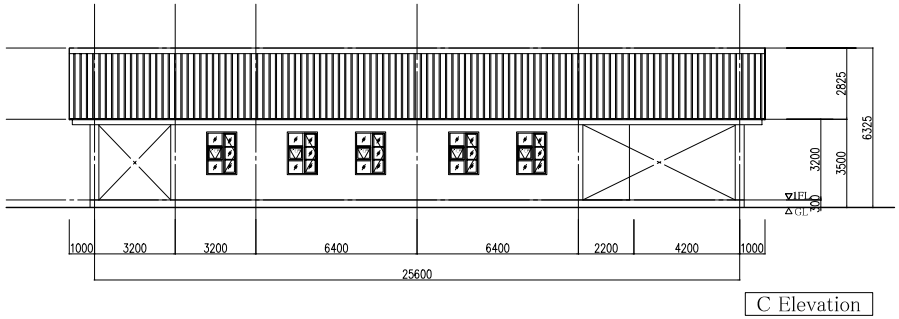
THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	Maternity Ward, Masafu GH		Plan & Elevation	DRAWINGS 18
			SCALE 1:300	



Corridor







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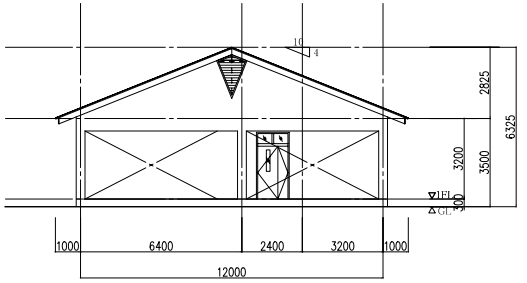
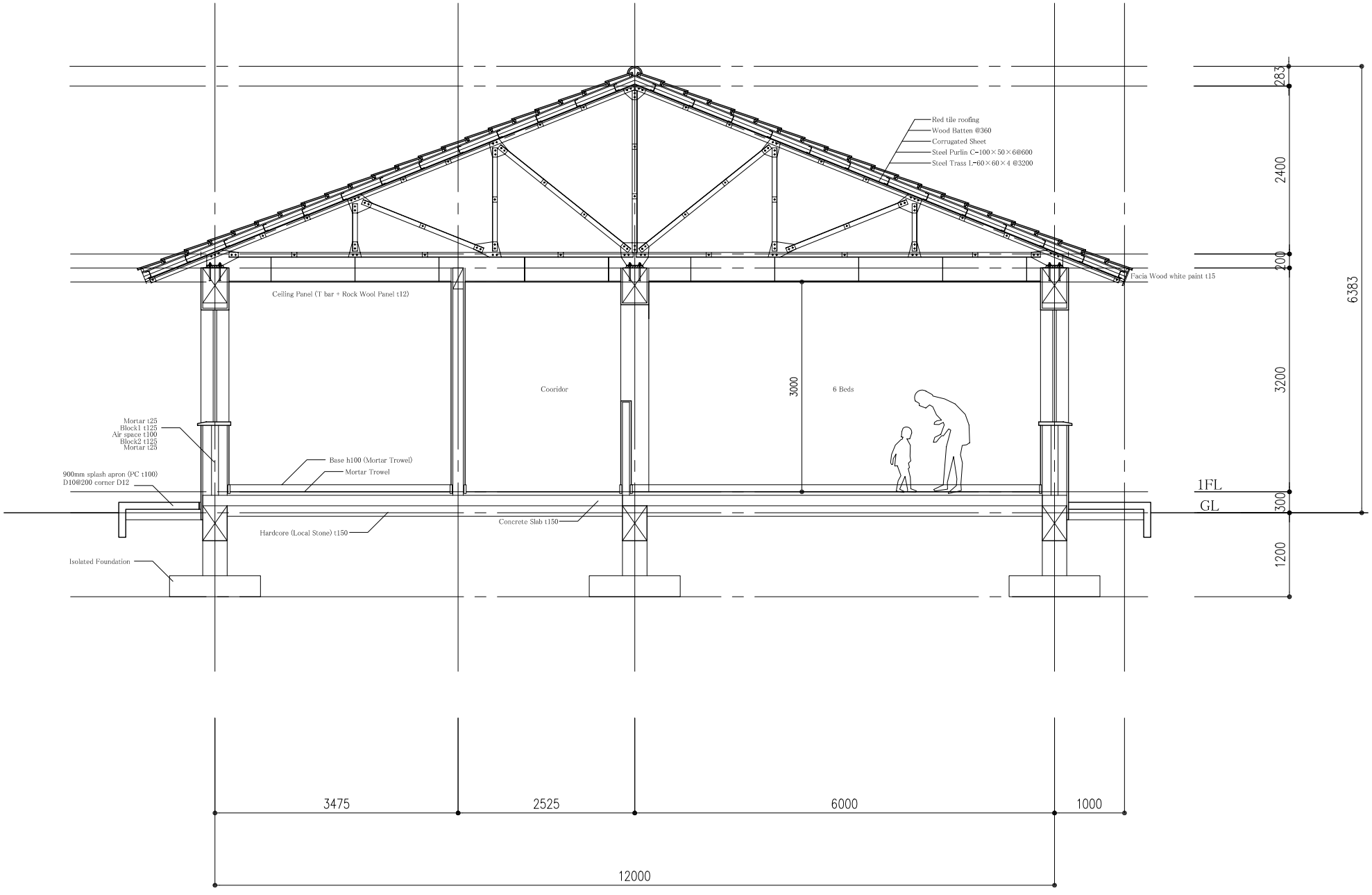


D Elevation

THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	Female, Child Ward, Masafu GH		Plan & Elevation	DRAWINGS 19
			SCALE 1:300	



THE PROJECT FOR REHABILITATION OF HEALTH FACILITIES AND SUPPLY OF MEDICAL EQUIPMENT IN MBALE, TORORO, BUGIRI AND BUSIA DISTRICTS IN THE REPUBLIC OF UGANDA	Standard Section		DRAWINGS 20 SCALE 1:75

2-2-3-2 Equipment List

Table 2-24 List of Planned Equipment

Equipment	Mbale RRH								Bududa GH							Tororo GH							Busolwe GH					Bugiri GH					Masafu GH							**Total**
	OPD	OP Theatre	X-ray	Maternity Ward	Obstetric OPT	Ward	Transport.	**Sub Total**	OPD	OP Theatre	Maternity Ward	Delivery	Ward	Transport.	**Sub Total**	OPD	OP Theatre	Maternity Ward	Delivery	Female Ward	Transport.	**Sub Total**	OPD	Block B	Ward･OPT	Transport.	**Sub Total**	OPD	Block B	Ward･OPT	Transport.	**Sub Total**	OPD	OP Theatre	Maternity Ward	Ward	Transport.	**Sub Total**	HC Ⅳ	HC Ⅲ	
Ambulance							1	**1**						1	**1**						1	**1**				1	**1**				1	**1**					1	**1**			**6**
Anaesthesia Unit		2						**2**		2					**2**		2					**2**			1		**1**			1		**1**		1				**1**			**9**
Table Top Autoclave									2			1			**3**	2			1			**3**	1	1	1		**3**	1	1	1		**3**	2					**2**			**14**
Vertical Autoclave		1			1			**2**		1					**1**		1					**1**			1		**1**			1		**1**							3		**9**
Baby Incubator				2				**2**			2				**2**			2				**2**			2		**2**			2		**2**			2					**12**
Balance Semi Analytical									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Electric Centrifuge									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Colorimeter									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Delivery Bed				6				**6**				3			**3**				6			**6**			2		**2**			2		**2**			2				8	**29**
Dental Unit Complete	1							**1**	1						**1**	1						**1**		1			**1**		1			**1**	1					**1**			**6**
Dental X-ray Unit	1							**1**	1						**1**	1						**1**		1			**1**		1			**1**	1					**1**			**6**
Dental Film Processor			1					**1**	1						**1**	1						**1**		1			**1**		1			**1**	1					**1**			**6**
Diagnostic Equipment Set for CO									4				2		**6**	4				1		**5**	1		3		**4**	1		3		**4**	3			2		**5**			**24**
ECG									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Electro Surgical Unit		2						**2**		2					**2**		2					**2**			1		**1**			1		**1**		1				**1**			**9**
Examination Light									4						**4**	4						**4**	1				**1**	1				**1**	3					**3**			**13**
Film Processor			1					**1**																																	**1**
Hot Air Oven									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Infant Warmer				2				**2**			2				**2**			2				**2**			2		**2**			2		**2**			1			**1**			**11**
Instrument Cupboard		2			1			**3**																																	**3**
Caesarean Instrument Set					1			**1**		1					**1**		1					**1**			1		**1**			1		**1**		1				**1**	3		**9**
Delivery Instrument Set				1				**1**				2			**2**				2			**2**			2		**2**			2		**2**			2				8	**19**
Dressing Instrument Set									4				2		**6**	4				1		**5**	1		3		**4**	1		3		**4**	3			2		**5**			**24**
General Surgery Instrument Set		1						**1**		1					**1**		1					**1**			1		**1**			1		**1**		1				**1**			**6**
Gyn. & Obstetrics Instrument Set					1			**1**		1					**1**		1					**1**			1		**1**			1		**1**		1				**1**			**6**
Orthopaedic Instrument Set		1						**1**		1					**1**		1					**1**			1		**1**			1		**1**		1				**1**			**6**
Binocular Microscope									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Fixed Operation Light		2			1			**3**		2					**2**		2					**2**			1		**1**			1		**1**									**9**
Mobile Operation Light	1							**1**	1						**1**	1						**1**	1				**1**	1				**1**	1					**1**	3		**9**
Operation Table	1	1			1			**3**	1	2					**3**	1	2					**3**	1		1		**2**	1		1		**2**	1					**1**	3		**17**
Orthopaedic Operation Table		1						**1**																																	**1**
Patient Monitor		2						**2**		1					**1**		1					**1**			1		**1**			1		**1**		1				**1**			**7**
Patient Stretcher	1	2						**3**	1		1		2		**4**	1		1		1		**3**	1		3		**4**	1		3		**4**	1		1	2		**4**	3		**25**
Refrigerator									2						**2**	2						**2**	2				**2**	2				**2**	2					**2**			**10**
Gas Refrigerator																																							3		**3**
Solar Electric System																																						3	23	**26**

Equipment	Mbale RRH								Bududa GH							Tororo GH							Busolwe GH					Bugiri GH					Masafu GH						HC IV	HC III	**Total**
	OPD	OP Theatre	X-ray	Maternity Ward	Obsteric OPT	Ward	Transport.	**Sub Total**	OPD	OP Theatre	Maternity Ward	Delivery	Ward	Transport.	**Sub Total**	OPD	OP Theatre	Maternity Ward	Delivery	Female Ward	Transport.	**Sub Total**	OPD	Block B	Ward•OPT	Transport.	**Sub Total**	OPD	Block B	Ward•OPT	Transport.	**Sub Total**	OPD	OP Theatre	Maternity Ward	Ward	Transport.	**Sub Total**			
Electric Suction Apparatus	1	2						**3**	1	2					**3**	1	2					**3**	1		1		**2**	1		1		**2**	1					**1**	3		**17**
Traction Bed						3		**3**					2		**2**					2		**2**			2		**2**			2		**2**									**11**
Instruments Tray	1	2						**3**		2					**2**		2					**2**			1		**1**			1		**1**		1				**1**	3	8	**21**
Instruments Trolley	1	4						**5**		2					**2**		2					**2**			1		**1**			1		**1**		1				**1**	3	8	**23**
Ultrasound Scanner			1					**1**																																	**1**
Portable Ultrasound Scanner				1				**1**	1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**6**
Vacuum Extractor					1			**1**				1			**1**				1			**1**			1		**1**			1		**1**			1			**1**			**6**
Water Distiller									1						**1**	1						**1**	1				**1**	1				**1**	1					**1**			**5**
Adult Weighing Scale											1				**1**			1				**1**			1		**1**			1		**1**			1			**1**		8	**13**
Neonate & Paediatric Weighing Scale											1	1			**2**			1	1			**2**			2		**2**			2		**2**			1			**1**		8	**17**
Wheel Chair													2		**2**					1		**1**			3		**3**			3		**3**			1	2		**3**			**12**
X-ray Cassettes Set			1					**1**	1						**1**	1						**1**		1			**1**		1			**1**	1					**1**			**6**
X-ray Film Viewer			2					**2**	1				2		**3**	1				1		**2**		1	3		**4**		1	3		**4**	1			2		**3**			**18**
X-ray Protective Clothing Set			1					**1**	1						**1**	1						**1**		1			**1**		1			**1**	1					**1**			**6**
Basic Bucky System X-ray Unit			1					**1**	1						**1**									1			**1**						1					**1**			**4**
C-arm X-ray Unit		1						**1**																																	**1**
Fluoroscopy X-ray Unit			1					**1**																																	**1**
Mobile X-ray Unit	1							**1**																																	**1**

Table 2-25 Specifications of planned Equipment

No.	Description	Specification or component	Total Quantity
1	Ambulance	4WD, Station wagon type, Stretcher equipped	6
2	Anaesthesia unit	Vaporizer：Halothane type, Gas supply：by cylinder, Equipped with Flow meter, Ventilator	9
3	Table Top Autoclave	Table top type, Capacity：20L or more	14
4	Vertical Autoclave	Vertical type, Dry function equipped、capacity：50L or more	9
5	Baby Incubator	Temp. setting ：Servo ＆ Manual , No. of Access port ：5 or more	12
6	Balance Semi Analytical	Measuring Range：300g or more, Sensitivity : 1mg or less	5
7	Electric Centrifuge	Table top type, Angle rotor, Max. RPM：4000rpm or more	5
8	Colorimeter	Measuring wave Range：400-700nm or wider, Test tube shall be used	5
9	Delivery Bed	Back rest port movable, Width：500mm or more	29
10	Dental Unit Complete	Treatment chair unit, instrument tray equipped	6
11	Dental X-ray Unit	Floor mount type, Patient chair equipped	6
12	Dental film processor	Manual type Processor	6
13	Diagnostic Equipment Set for CO	Diagnostic instrument set include Ophthalmoscope and Otoscope	24
14	ECG	3ch or more, thermal head printer type, AC/DC operation	5
15	Electro Surgical unit	Out put：Cut, Coagulation, Mix., both Bi-polar and mono polar electrode shall be used	9
16	Examination Light	Stand type, Lux.：30,000lux or more	13
17	Table Top Film Processor	Automatic table tope type, dark room model	1
18	Hot Air Oven	Capacity ：90L or more	5
19	Infant Warmer	Equipped with treatment table, Open model	11
20	Instrument Cupboard	For surgical instrument storage, No. of compartment：2 or more	3
21	Caesarean Instrument Set	Caesarean section surgery instrument	9
22	Delivery Instrument Set	Delivery instrument	19
23	Dressing Instrument set	Simle surgical treatment instrument	24
24	General Surgery Instrument set	Surgical instrument for General Surgery	6
25	Gyn ＆ Obstetrics Instrument set	Surgical instrument for Gynaecological and Obstetrical surgery	6
26	Orthopaedic Instrument set	Surgical instrument for Orthopaedic surgery	6
27	Binocular Microscope	Electrical light source and Mirror, Objective lens：4kinds or more	5
28	Fixed Operation Light	Combination type, Ceiling mount model	9
29	Mobile Operation Light	Floor stand type, 5,000 LUX or more	9
30	Operation Table	General purpose model, Vertical and Tilting movement of table top ：adjustable	17

		by oil hydraulic	
31	Orthopaedic Operation Table	Electrical oil hydraulic type, equipped with Traction unit	1
32	Patient Monitor	Parameter：ECG/Pulse/Respiration etc. , Monitor size：6inch or more	7
33	Patient Stretcher	Height adjustable model, equipped with IV pole, Side rail	25
34	Refrigerator	Capacity：290L or more	10
35	Gas Refrigerator	LP gas drive model, capacity：170L or more	3
36	Solar Electric System	Solar panel out put：75W or more, Battery：200AH,12VDC or bigger	26
37	Electric Suction Apparatus	equipped with caster, Suction bottle capacity：2 litres x 2pcs. or more	17
38	Traction bed	2 crank model, equipped with Traction instrument and Thomas sprint set	11
39	Instruments Tray	Made by stainless steel, No. of instrument tray：3pcs. or more, Caster equipped	21
40	Instruments Trolley	Made by stainless steel, No. of shelf：2pcs. or more, Caster equipped	23
41	Ultrasound Scanner	Application：Fetal, general abdominal, scan system：Electronic convex, linier, Type of Probe：abdomen and surface, Monitor size：Black and white, 10inch or more	1
42	Portable Ultrasound Scanner	Application：Fetal, general abdominal, scan system：Electronic convex, Type of Probe：abdomen and surface, Monitor size：Black and white, 10inch or more	6
43	Vacuum Extractor	vacuum pressure：-700mmHg or more、Suction bottle: 2bottles type	6
44	Water Distiller	Barnsted type, capacity：5L/hr or more	5
45	Adult Weighing Scale	Digital type、max. weighing capacity：100Kg or more	13
46	Neonate & Paediatric Weighing Scale	Digital type, equipped with basket for infant	17
47	Wheel Chair	Folding type, equipped with footrest and break	12
48	X-ray Cassettes Set	shall accommodate 30x35cm and 35x43cm size film	6
49	X-ray Film Viewer	table top type, capacity：2pc. of 35x43cm size film	18
50	X-ray Protective Clothing Set	3 kinds of apron size、Pb equivalent：0.25mmPb	6
51	Basic Bucky System X-ray Unit	Bucky stand, Buckey table, Tube current：500mA 、Tube Voltage：150kV	4
52	C-arm X-ray Unit	C-arm type, tube current：110 k or more（inverter type）, Image intensifier：9inch、Monitor：16inch;(2monitores)	1
53	Fluoroscopy X-ray Unit	Composition：Fluoroscopy table, TV monitor（with cart）, Local controller, Monitor（17 inch or more）, tube current：500mA or more, tube voltage：150kV or more	1
54	Mobile X-ray Unit	Manual drive model 、tube current (Max.)：125kV Tube movement ：possible both vertical and horizontal movement	1

2-2-4 Implementation Plan

2-2-4-1 Implementation Policy

(1) Principals

1) Contracts for Implementation

The Government of Japan and the Government of the Republic of Uganda sign the Exchange of Notes (E/N), following a cabinet approval by the Government of Japan. After that, the project shall be carried out in accordance with the framework of the grant aid scheme.

The Government of the Republic of Uganda will conclude a consultant services agreement with a Japanese consultant to proceed to the detailed design stage of the facilities and equipment. After the completion of the detailed design drawings and tender documents, a Japanese contractor and a Japanese equipment supplier, both of which are selected by tender, will conduct the construction work and the equipment procurement/installation respectively. The contracts with the consultant, contractor and equipment supplier will only become valid after their verification by the Government of Japan.

2) Duration of Construction work

The Project comprises construction work of total floor area of 8,511.9 m^2 (including connecting passageway) and supply of medical equipment. In consideration of the contents, scale of the Project and also dispersion of the project sites, it is considered appropriate to implement it over two phases and each phase will 10.5 months.

3) Selection of contractor and supplier

Considering the contents and the cost of the project, it is appropriate to separate the contract of construction work and that of equipment supply work. The Contractor and the Equipment Supplier for the Project will be selected from among Japanese companies with certain qualifications through an open tender. In principle, the tenderer with the lowest tender price will be declared the successful tenderer and will conclude a construction (or equipment supply and installation) contract with the project implementation agency on the Ugandan side.

(2) Project Implementation

1) Project Implementation Agency

The responsible organization for the implementation of the Project on the Republic of Uganda side will be the Ministry of Health and the actual project implementation agency will be Mbale RRH and each office of District Director of Health Services of four districts (Mbale, Tororo, Bugiri and Busia). During the construction work, monthly meeting will be held and attended by person in charge of the Ministry of Health and also commissioners from the Ministry of Works, Housing and Communications. They will confirm the progress and the quality of executed construction work. The diagram of the implementation is shown in Figure 2-4.

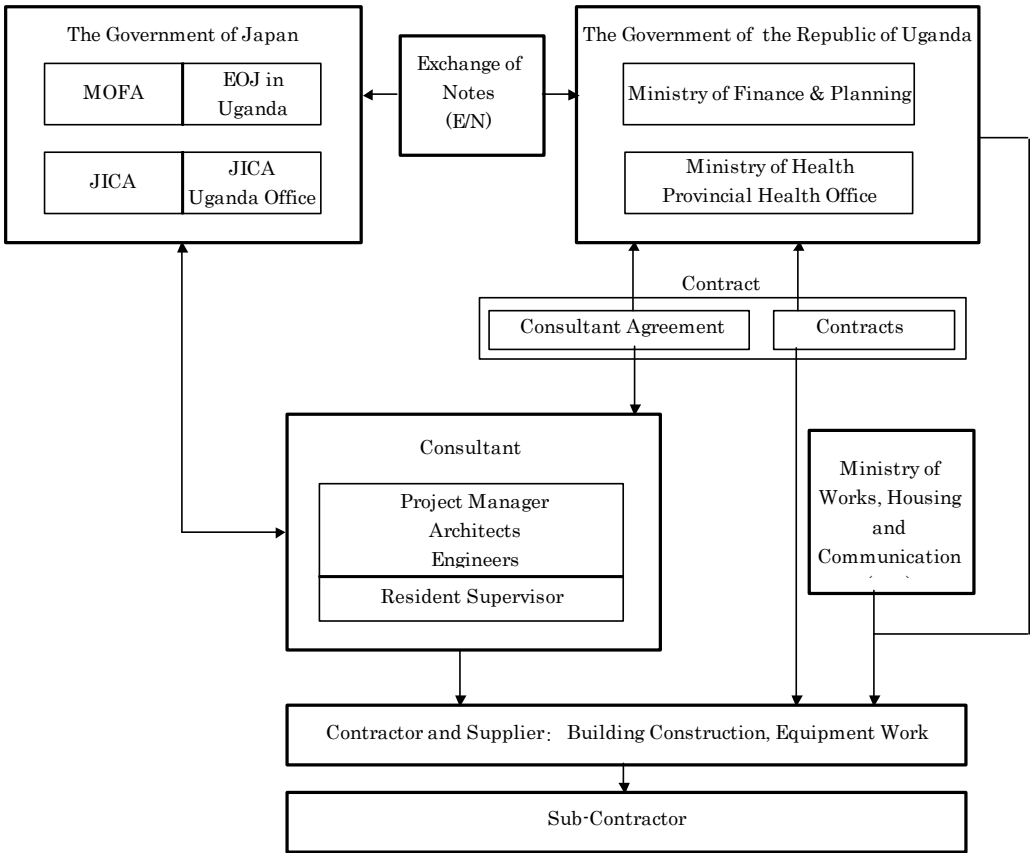


Figure 2-4 Organization of Implementation

It will be necessary for the scope of work for the Japanese side and the Republic of Uganda side to be clearly determined and the timing and method to conduct the work assigned to each side must be confirmed so that the work in question can be smoothly conducted in accordance with the implementation schedule specified in the Basic Design Study Report. For the Project, it will be necessary for the Republic of Uganda side to complete the levelling work at the site and to demolish three existing facilities (X-ray unit at Mbale RRH, Administration and Operation Theatre at Bududa GH) prior to the commencement of the construction work.

2) Consultant

After the signing of the E/N, the project implementation agency will conclude a consultant services agreement for the detailed design and supervision with the Japanese Consultant in accordance with the set procedure of Japan's grant aid scheme and this contract must be verified by the Government of Japan. After verification of the agreement, the Consultant will prepare the detailed design drawings and tender documents in accordance with the present Basic Design Study Report and in consultation with the Ministry of Health and will have them approved by the Government of the Republic of Uganda. At the tender and construction stages, the Consultant will conduct the work to assist the tender and construction supervision based on these drawings and documents. The Consultant will also conduct supervisory service for the procurement and installation of the equipment from the equipment tender stage to the installation, test operation and handing over of the equipment.

a) Detailed Design

The detailed design means the decision on the details of the building plan and review of the equipment plan based on the findings of the present Basic Design Study and also the preparation of tender documents consisting of design drawings, specifications, general tender conditions and draft contracts for the construction work and equipment procurement/installation. It also includes estimates of the construction cost and equipment procurement/installation cost.

b) Assistance for Tender

This means that the Consultant witnesses the selection of the contractor and equipment supplier by the project implementation agency by means of tender and provides assistance for the administrative procedure required for the concluding of contracts, reporting to the Government of Japan and other necessary work to proceed with the Project.

c) Supervision

This means that the Consultant checks the compliance of the work by the contractor and equipment supplier with the relevant contracts in order to verify the proper execution of the contracts. It also involves the provision of advice and guidance for the project-related bodies and the coordination of such bodies in a fair manner to facilitate the implementation of the Project. The types of work expected of the Consultant in this regard are listed below.

- Checking and approval of the construction plan, work drawings, equipment specifications and other documents submitted by the contractor and the equipment supplier
- Pre-shipment inspection and approval of the quality and performance of the construction materials and equipment to be delivered to the site
- Confirmation of the delivery, installation and proper explanation of use of the building service equipment and other equipment
- Assessment of and reporting on the work progress
- Witnessing of the handing over of the completed building and installed equipment, etc.

In addition to the above types of work, the Consultant will report on the progress of the Project, payment procedure and handing over on completion, etc. to the project-related government organizations in Japan.

3) Contractor and Equipment Supplier

The Contractor and the Equipment Supplier for the Project will be selected from among Japanese companies with certain qualifications through an open tender. In principle, the tenderer with the lowest tender price will be declared the successful one and will conclude a construction or equipment supply and installation contract with the project implementation agency on the Republic of Uganda side. The Contractor and Equipment Supplier

awarded the respective contract will conduct the construction of the facilities and the procurement, transport and installation of the equipment in accordance with the respective contract. They will also provide technical guidance on the operation and maintenance of the building service systems and equipment. After the handing over of such systems and equipment, they will provide support together with the equipment manufacturers and local agents so that the hospitals can receive a supply of spare parts and consumables for the major equipment and technical guidance at cost.

4) Japan International Cooperation Agency (JICA)

JICA will provide the necessary guidance for the Consultant, the Contractor and the Equipment Supplier so that the Project is properly implemented in accordance with the grant aid scheme of the Government of Japan. When necessary, it will consult with the project implementation agency to facilitate the implementation of the Project.

2-2-4-2 Implementation Conditions/Procurement Conditions

(1) Important Matters for the Implementation

1) Securing the Safety for Third Persons and Minimizing Impact on Medical Care Activities

Since all construction sites in this project are existing hospitals or health centre, securing of safety for medical staff, outpatients, inpatients and their families will be the most important task. At hospitals in Uganda, most patients, including seniors and children and their families, spend time outside the building. Therefore, a safety plan should be formulated by taking into consideration the many regional characteristics and create signs that can be easily understood by everyone. In addition, since the construction work will be conducted while hospitals are in operation, steps to minimize its impact on medical care activities should also be taken. In concrete terms, coordination among the parties concerned from the implementing agency on the Ugandan side, the Consultant and contractors and equipment suppliers should be taken on the following matters.

- Temporary construction plan (temporary enclosure, location of site huts, storage space for construction equipment, securing of safe passage for pedestrians)
- Coming and going of construction vehicles and workers
- Dust and noise control during construction work

2) Considerations during the Rainy Season

In the eastern part of Uganda where the sites are located the rainy season occurs from April to May during which time the monthly rainfall exceeds 200mm. Since continuous rainfall usually last only for one (1) to three (3) hours, interruption of construction work will not be so long. Nonetheless, sufficient examination and steps should be taken on the following two (2) matters.

- Impact of transporting on deteriorating road conditions at three (3) sites where access roads have not yet been paved (Bududa GH, Busolwe GH, Masafu GH).
- Measures to be taken for soil-related construction for foundation work during the rainy season.

3) Technical Capability of Local Builders and Workers

Most leading builders in Uganda are managed by Indians or through foreign capital. Due to the weak vitality of a privately managed economy, large-scale construction projects are often in the form of public work or aid projects. Since technical competency in the said country is still in the developing stage, it is vital that Japanese contractor provide adequate supervision and guidance as the primary (general) contractor in order to ensure quality of the construction. It is therefore necessary to proceed with the construction work through appropriate personnel assignment and implementation scheme. Although working conditions are relatively favourable, technical capacity remains low, so based on the work descriptions a shortage in skilled workers is anticipated. It is therefore necessary to examine any input from foremen or supervisors from third countries.

(2) Important Matters for the Procurement

In some instances it will be necessary to coordinate equipment installation and construction work. Specifically speaking, coordination between the consultant, supplier and contractor is essential when installing operating lights and cable pits for X-ray equipment. In addition, since the transfer and removal of some facilities is included at this time, the coordination of removal and transfer of existing equipment should be taken together with the Ugandan Side.

2-2-4-3 Scope of Works

The Project will be implemented through cooperation by Japan and the Republic of Uganda. In the case of the Project's implementation with grant aid scheme provided by the Government of Japan, it is appropriate to decide the following scope of work for each side.

Table 2-26 Extent of Works

Japanese Side		Ugandan Side	
(1)	Consultant Services Preparation of the detailed design documents and general conditions for the tender for the subject facilities and equipment of the Project Cooperation for the selection of the Contractor and the Equipment Supplier (procurement and installation) for the Project and also for the signing of the contracts with them Supervision of the facility construction work and the delivery, installation and guidance on the operation and maintenance of the equipment	(1)	Site Preparation Site preparation work, such as demolishing existing facilities and removing obstacles, ground preparation works. Relocation of existing electricity cable and water pipes in the Project site
2)	Construction of Facilities and Procurement/Installation of Equipment Construction of the subject facilities Procurement, transportation of the subject equipment/systems Installation, Test operation and adjustment of the subject equipment/systems Explanation of and guidance on the operation and maintenance methods for the subject equipment/systems	(2)	Providing power and water supply or connection with sewage line for the construction, if necessary
		(3)	External Works Pavement and other works, which are not included in Japanese side.
		(4)	Necessary Renovation Work
		(5)	Construction of Staff Houses
		(6)	Other Procedures Procedures of the permission and approval to Ugandan Government Building permission application procedures, all service line connection application procedures, duty free procedures and customs clearance procedures Commission to A/P Smooth entry, re-entry and departure from Republic of Uganda for the Japanese technical staff
		(7)	Expenses for the maintenance, administration, and management
		(8)	All the expenses, other than those to be borne by Japan's Grant Aid within the scope of the Project

2-2-4-4 Consultant Supervision

During the Project, building sites will be dispersed over two (2) locations in Phase I and four (4) locations in Phase II. Consequently, one (1) full-time supervisor (who should be specialized in architecture) will be posted for the operations of building, quality control and coordination of the overall construction work. At the same time, a local consultant will assist the said supervisor in the Phase II, when the project sites are more dispersed. In addition, persons in charge of design will provide support to the fulltime supervisor at important times during the construction process (such as frame work and building utility work).

Specific supervising operations of the Consultant during the construction period are described below.

(1) Check and Approval of the Construction Plans and Drawings

Checking and approving of the construction plans, construction schedules, working drawings, shop drawings, etc. submitted by the Contractor.

(2) Management of the Construction Schedule

Giving instructions to the contractor and reviewing the progress reports submitted by the Contractor in order to complete the construction work as scheduled. In the event that the construction work being carried out by Ugandan Government is found to be delayed, the Consultant may urge to expedite the schedule for the construction work in order to catch-up for the loss time because the E/N cannot be extended beyond the agreed deadline. Construction should be finished before the contract expires.

(3) Quality Control, Checking of the Finished Product

Checking and giving approval for the quality and quantity of materials and construction works in accordance with the specifications. However, the materials which are imported from Japan or other third countries will be checked by architects and engineers in the head office or branch offices of the Consultant.

(4) Security

Giving instructions to the contractor concerning the security of workers, third persons, if necessary.

(5) Assistance of Payment and Issuance of Certificates

Assisting with the procedures of checking bills, etc., relating to the payment of construction expenditure and issuance of certificates such as the certificate of practical completion, the completion certificate, etc., as necessary.

(6) Check and Submission of Monthly Progress Reports

Checking and approving monthly progress, completion documents and photos of works from the contractor and reporting the progress of the construction work to the satisfaction of the Government of Uganda and JICA.

The Consultant shall also prepare and submit to the Japanese Government the completion report in accordance with JICA criteria and requirements.

2-2-4-5 Procurement Plan

(1) Construction Materials Procurement Plan

The following policies will be applied for the procurement of construction materials.

- Since this project consists of construction of medical facilities, the first selection criteria should be easy maintenance, cleaning and durability.
- As standard for material, British Standards (BS), which are commonly used in Uganda is applied in principle. In addition, Ugandan standards and Japanese Standards are applied at need.
- For easy repair and maintenance of facilities after the completion of construction, construction materials requiring replacement or repair should be locally procured as much as possible. Even imported construction materials which are freely obtained on the Ugandan market (products normally available on the market without special importation procedures) will be treated as local products.
- Construction materials which are difficult to procure locally, those that do not satisfy the required level of quality, and those judged to be unstable with regards to supply will be imported from Japan or a third country. In such a case, contractor is required to follow various procedures for customs clearance by contacting the related organisations of the Government of Uganda.
- Since Uganda is a landlocked country, after docking at the Port of Mombassa in Kenya, transportation is generally taken overland and customs clearance is made in Tororo or Busia. In the case of air routes, customs clearance is carried out after arriving at Entebbe Airport. The route is illustrated in the following figure. With respect to construction materials to be procured from Japan, approximately seven (7) weeks in total will be necessary for five (5) weeks for docking at the Port of Mombassa in Kenya by marine transport, two (2) weeks for unloading, overland transportation to Tororo, and customs clearance.

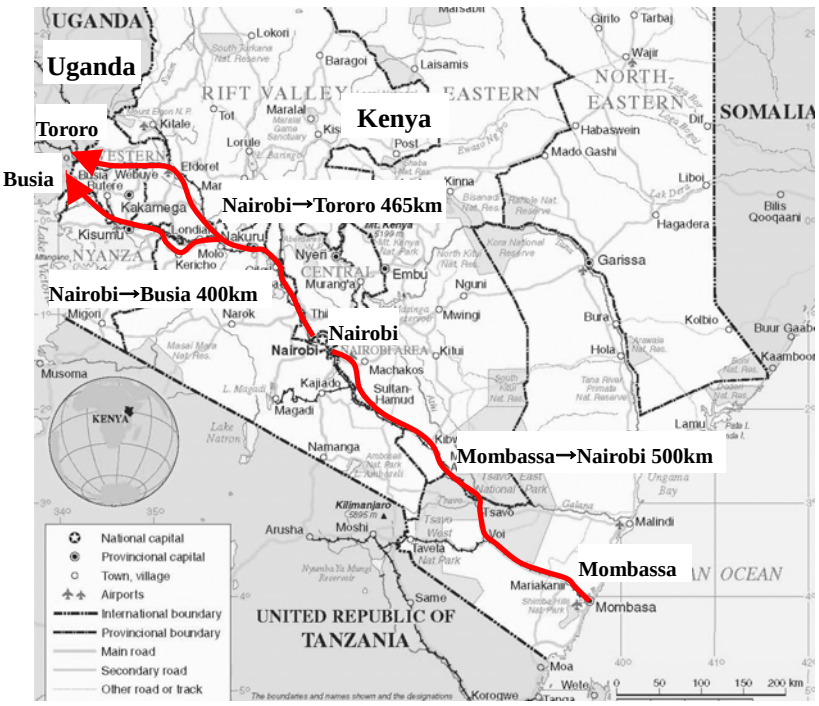


Figure 2-5 Transportation Route from Mombassa, Kenya to the Sites

Major construction materials to be procured are classified as those to be locally procured, those to be procured from a third country, and those to be procured from Japan, and are compiled in the following table.

Table 2-27 Procurement of major material

Work	Item	Procurement			
		Uganda	Japan	Third Country	Remarks
Structural Work	Cement			○	Product of BS standard from Kenya
	Re-bar			○	Product of BS standard from Egypt
	Aggregate	○			From quarries near sites
	Concrete	○			Mixed at site
	Formwork	○		○	Metal form from Uganda Plywood from Singapore
	Steel Frame			○	Product of BS From Singapore
Finishing Work	Bricks	○			From Uganda (factory Products)
	Ceramic Tile	○			Uganda (Imported ones)
	Wood	○			From Uganda
	Roofing Clay Tile	○			From Uganda (factory Products)
	Plaster	○		○	Cement from Kenya and Aggregates from Uganda
	Wooden door	○			From Uganda
	Aluminium Window	○			From Uganda
	Steel door			○	From Thailand
	Hardware		○		From Japan
	Glass		○	○	From Japan
	Paint	○			From Uganda
	Ceiling board			○	From Kenya (European Products)
Mechanical Work	Piping Material				From Thailand
	Sanitary fixture		○		Japanese products will be imported
	Tank		○		Japanese products will be imported.
	Electric water heater			○	From Thailand
	Pump		○		Japanese products will be imported.
	Fan			○	From Thailand
	Hose reel	○			From Uganda
Electrical Work	Wiring material			○	From Singapore.
	Generator		○		Japanese products will be imported.
	Lighting Fixture			○	From Thailand
	Distribution Panel Board			○	From Thailand
	Fire alarm apparatus			○	From Singapore.

(2) Equipment Procurement Plan

1) Agent of Manufacturer

Since the following equipment to be procured will require consumables, acquisition of spare parts and technical services such as repair work, products whose manufacturer has an agent in Uganda or Kenya should be procured.

Table 2-28 Equipment which need Agents in Uganda or Kenya

Ambulance	Anaesthesia Unit	Vertical Autoclave
Baby Incubator	Dental Unit Complete	Dental X-ray Unit
ECG	Film Processor	Fixed Operation Light
Mobile Operation Light	Patient Monitor	Solar Electric System
Ultrasound Scanner	Portable Ultrasound Scanner	Basic Bucky System X-ray Unit
C-arm X-ray Unit	Fluoroscopy X-ray Unit	Mobile X-ray Unit

2) Feasibility of Procurement of Products from Third Countries

Based on a survey of local medical equipment agents, less than three (3) Japanese manufacturers of the following equipment are present, therefore procurement from third countries has to be considered.

Table 2-29 Equipment which need consideration of procurement from third countries

Ambulance	Anaesthesia Unit	Table Top Autoclave	Vertical Autoclave
Baby Incubator	Balance Semi Analytical	Colorimeter	Delivery Bed
Dental Unit Complete	Dental X-ray Unit	Dental Film Processor	ECG
Electro Surgical Unit	Examination Light	Hot Air Oven	Film Processor
Infant Warmer	Caesarean Instrument Set	Delivery Instrument Set	General Surgery Instrument Set
Gyn. & Obstetrics Instrument Set	Orthopaedic Instrument Set	Binocular Microscope	Fixed Operation Light
Mobile Operation Light	Operation Table	Orthopaedic Operation Table	Patient Monitor
Patient Stretcher	Refrigerator	Gas Refrigerator	Solar Electric System
Traction Bed	Ultrasound Scanner	Portable Ultrasound Scanner	Water Distiller
Adult Weighing Scale	X-ray Cassettes Set	X-ray Film Viewer	X-ray Protective Clothing Set
Basic Bucky System X-ray Unit	C-arm X-ray Unit	Fluoroscopy X-ray Unit	Mobile X-ray Unit

2-2-4-6 Quality Control Plan

(1) Basic Policy

- Based on the contents of the Basic Design, a detailed design will be prepared after a thorough examination of local construction conditions, settlement (final stage) and construction method. In due consideration of conditions unique to the Project, specifications will be prepared based on Japanese architectural work standard specifications, Japanese Industrial Standards (JIS), British Standards (BS) and local standards, etc.
- After commencement of construction work, construction plan, progress schedule and shop drawings submitted by a contractor conform to the contract and specifications will be checked and approval will be made.
- Whether or not the quality of construction materials and execution of work conform to the specifications will be examined at need and approval will be made.
- In addition to confirmation through a written guarantee by manufacturers of materials to be procured, quality will be secured through appropriate floating inspections.
- In order to check the quality, strength tests of concrete and reinforcement bars will be carried out in either of the Central Materials Laboratory in Kireka or Mbale Regional Laboratory whenever necessary.

(2) Ground Preparation Work

As a result of a boring survey implemented at the time of the Basic Design Study, ground at the construction sites under the Project is generally favourable. Still quality control with construction plan will be necessary which includes methods of earth retaining (shoring) and dewatering (un-watering), especially for the rainy season.

(3) Concrete Work

British Standards (BS) will be applied during the mixing plan. Concrete will be mixed using a mixer within the construction site.

(4) Reinforcement Work and Iron Frame Work

Mill sheets, etc. submitted by contractors will be examined for quality of materials. At the same time, its reliability will be tested through tension testing during floating inspections. With respect to fabrication of steel frames, a source inspection will be carried out by a structural engineer at Singapore, where steel frames will be fabricated.

(5) Plastering Work

Since plastering work serves as main finish, sufficient attention has to be paid for a quality control so that problems, such as a crack, may not occur. For the sand, river sand, sand from the Victoria Lake, and crushed sand

from a quarry will be used. Especially as for river sand, the impure element such as mud could be contained under the influence of rainfall. Therefore, the content of impurities has to be always checked, and sand has to be washed whenever necessary. In addition, emphasis will be put on the following points, such as storage condition of cement, correct mixing, appropriate interval between lower coating and final coating, and suitable coating thickness, etc.

The quality control program of main construction work is described in the following table.

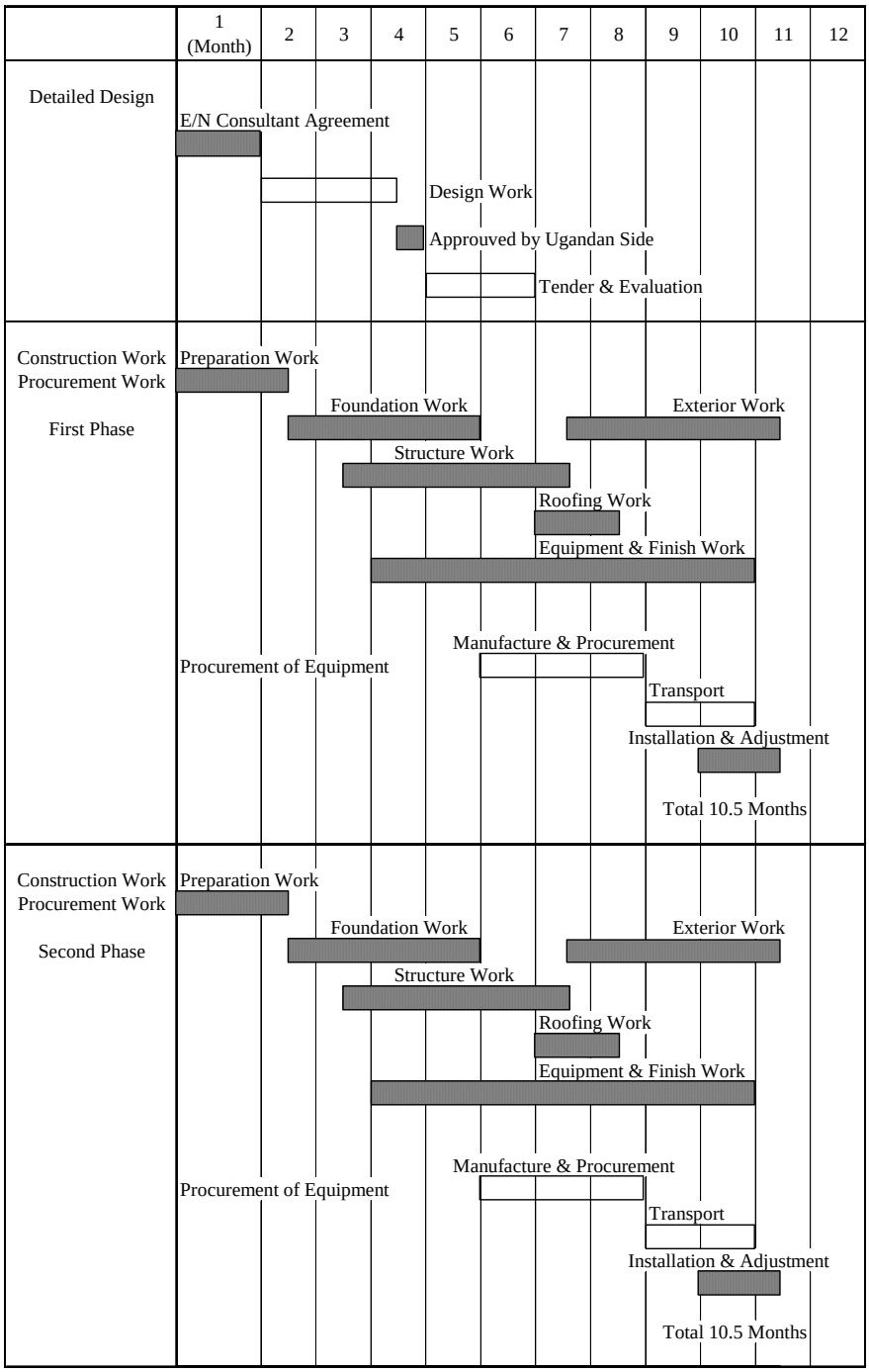
Table 2-37 Quality Control Plan

Work	Work Type	Control Item	Method	Remarks
Structural Work	Concrete work	Fresh concrete	Slump, Chloride test, Temperature	
		Concrete strength	Comprehensive strength test	Strength test at public test institution
	Reinforcing Bars work	Reinforcing bars	Tensile test, mill sheet check	Strength test at public test institution
		Arrangement	Bar arrangement check	
	Steel Structure work	Structural steel	Mill sheet, delivery note check	
			Analysis of ingredient	Pieces will be sent to Japan for analysis.
			Fabricator inspection report check	
Finishing Work	Roof work	Workmanship, leakage	Visual inspection, water spray or filling test	
	Tile work	Workmanship	Visual inspection, inspection by hammer	
	Plastering work	Workmanship	Visual inspection, inspection by hammer	
	Door & window work	Products	Factory inspection sheet check	
		Installation accuracy	Visual inspection, dimension check	
	Painting work	Workmanship	Visual inspection	
	Interior work	Products, workmanship	Visual inspection	
Electrical Work	Power Receiving & Transforming	Performance, operation installation check	Factory inspection sheet check; withstand voltage, meger, operation, Visual inspection	
	Conduit Work	Bending, support check	Visual inspection, dimension	
	Wiring and Cable Work	Sheath damage, loose connection check	Performance sheet check, cleaning before laying, marking after bolt fixing	
	Lightning Work	Resistance, conductor support pitch check	Resistance measuring, visual inspection, dimension	
	Lighting Work	Performance, operation, installation check	Performance sheet check, illumination measurement, visual inspection	
Mechanical Work	Water Piping Work	Support pitch, leakage	Visual inspection, leakage, water pressure test	
	Drainage Piping	Slope, support pitch, leakage	Visual inspection, leakage, water flow test	
	Pump Installation	Performance, operation, installation check	Performance sheet check, flow rate test	
	Water Tank	Leakage	Water filling test	
	Sanitary Fixture	Operation, installation, leakage check	Visual inspection, flow test	

2-2-4-7 Implementation Schedule

The Project implementation schedule (draft) in the case of carrying out a detailed design, facility construction, equipment and materials procurement in the most rational manner is described below.

Figure 2-6 Tentative Schedule



Originally it was preferable to formulate a progress scheduling to conduct ground and foundation work by avoiding the rainy season (between April and May). However, after taking various conditions into account, unavoidably the construction work will reach into the rainy season. Therefore, measures will be examined in detail

during the construction planning. In addition, with regards to construction planning for each work, special care should be given in order to prevent problems from occurring such as mortar cracks due to insufficient curing.

2-3 Obligations of Recipient Country

In the case of implementing the Project in accordance with the grant aid scheme of the Government of Japan, items to be borne by the Government of Uganda are described below.

2-3-1 Procedures to be taken by the Recipient Country

(1) Tax Exemption

- To secure prompt tax exemption pertaining to equipment and materials to be purchased for the Project in accordance with the grant aid scheme, customs clearance and domestic transportation.
- To exempt customs duties, internal taxes and other fiscal levies to be imposed on Japanese nationals concerned in the project implementation in Uganda in accordance with the verified contract.

(2) Conveniences

- To provide necessary conveniences for Japanese nationals involved in the Project to enter into, depart from and stay in Uganda in accordance with a verified contract.

(3) Acquisition of Permits and Approvals

- Since the Ministry of Works, Housing and Communications (MOWHC) has complete control over the planning for governmental facilities in Uganda, the said ministry will be required to carry out an examination during the basic design stage of the Project.
- To acquire a building certification from each local government during the detailed design stage.
- To take procedures for approval of matters necessary for other permits.

(4) Banking Arrangement (B/A) and Issuance of Authorization to Pay (A/P)

- To take procedures for banking arrangements (B/A) pertaining to contract-related payments and to issue authorizations to pay (P/A).

2-3-2 Undertakings to be borne by the Recipient Country

- Undertakings to be taken by the Ugandan side in the implementation of the Project are described below.

(1) Before the Implementation of the Project

- To transfer or remove existing buildings, structures, utility piping and trees, etc. which may become a hindrance prior to the commencement of construction work.
- To secure buildings at temporary transfer places, if necessary.
- To level ground at scheduled construction sites.
- To secure land for temporary construction and storage buildings for equipment and materials, etc.

(2) During the Implementation of the Project

- To upgrade electric transformer, connect electricity and water supplies up to the lot, if necessary.
- To conduct landscaping and planting within the lot, if necessary.
- To purchase office furniture and curtains, etc. within the facilities and to conduct installation work, if necessary.
- To issue permits necessary for the implementation of the Project without delay.
- To provide a place for temporary storage of equipment within the site.

(3) After the Implementation of the Project

- To secure budget and personnel necessary for appropriate and efficient operation and maintenance of facilities and equipment to be provided under the grant aid scheme.
- To secure the budget necessary for facility and equipment maintenance and to procure consumables and spare parts.
- To promptly remove abandoned facilities or those difficult to utilize continuously after the completion of construction of new buildings.

2-3-3 Preparatory Work and Principal Work by Site

The Project will extend over a plural number of targeted facilities. Hereinafter, the undertakings to be taken by the Ugandan side concerning facility preparatory work, lot preparatory work and principal work for new facilities are described.

Table 2-30 Preparatory Works & Infrastructure Works by Ugandan Side

Hospital	Necessary Before Construction Work	Necessary Before Inauguration
Mbale RRH	Demolition of X-ray Building	Upgrading of Transformer
	Leveling of the ground before Construction works	
Bududa GH	Demolition of Administration, Operation Theatre	Upgrading of Transformer
	Leveling of the ground before construction works	Demolition of OPD
		Exterior Work
Tororo GH	Leveling of the ground before construction works	Upgrading of Transformer
Busolwe GH		Upgrading of Transformer
Bugiri GH		Upgrading of Transformer
Masafu GH	Leveling of the ground before construction works	Supply of therr phases electricity Installation of Transformer
	Water supply	

The budget necessary for above-mentioned works is scheduled to be included in the 2006/07 and 2006/07 budgets of the Ministry of Health and those of the relevant health departments. Schedule of the project was prepared assuming that these Ugandan side works are implemented as scheduled. Although the importance of measures to be taken by the Ugandan side has been fully understood, the Japanese side should also monitor the progress.

Also, it is preferable to carry out the items shown below from the point of view of perfection of rehabilitation work for each hospital.

Table 2-31 Items by Ugandan Side (preferable)

Hospital	Items
Mbale RRH	Partial Renovation of Existing Orthopaedic Operation Theatre
	Renovation of Existing Maternity Ward
Bududa GH	Renovation of roof (whole area)
	Renovation of Existing MCH (New Admin.)
	Renovation of WC of Wards (4)
	Renovation of Existing Delivery Space (New Maternity Consultation Space)
	Renovation of Existing K/L

	Extension of Staff Houses
Tororo GH	Renovation of Existing Facilities (OPD, X-ray) (New Admin.)
	Demolition of Existing Female Ward
	Construction of new Male Wards
	Extension of Laundry
	Extension of Staff Houses
Busolwe GH	Renovation of WC of Wards (4)
	Reparation of Elevated Water Tank
	Renovation of Roof and Ceiling
Bugiri GH	Renovation of WC of Wards (4)
	Renovation of Roof and Ceiling
	Pump for Rain water evacuation and arrangement of drainage line
Masafu HC4	Renovation of Existing Maternity Ward (New Admin.)
	Renovation of Existing OPD (New Antenatal Clinic)
	Renovation of Existing Male Ward (New Kitchen, Laundry)
	Extension of Staff Houses

2-4 Project Operation Plan

The implementing agency for the Project will be the Ministry of Health; whereas, each medical institution (hospital and Health Centre) will operate and maintain the facilities. The outlay will be included in the budget of the Ministry of Health for Regional Referral Hospital (RRH) and the budgets of Offices of District Director of Health Services for General Hospitals and Health Centres.

2-4-1 Personnel Plan

The number of present staffs at targeted six (6) hospitals is less than the standard staff number for each post determined by the Ministry of Health. Although all hospitals are currently managed somehow, it would be necessary to reinforce personnel in order to improve the quality of medical care services.

The Ministry of Health recruits medical staff by district each year, and intends to reinforce personnel at the target facilities. Due to the difference in medical care activities at each hospital, the number standardized by the Ministry of Health is not always applicable, after taking the current conditions of each hospital into account, ongoing efforts should be taken for appropriate personnel assignment in order to ameliorate medical care activities.

2-4-2 Facility Maintenance

(1) Facility Maintenance

In maintaining the facilities, two points are important; such as 1) Practice of daily cleaning, 2) Periodical inspections, repair and replacement. Practice of daily cleaning is vital in order to ensure a sanitary environment for patients and medical staff. At the same time, this will contribute toward early detection of any breakdowns and breakage. In General, details on periodical inspections and repair work for the life of the building will be submitted by the contractor as a “Maintenance Manual” when the facilities are handed over. General inspection points are shown in the following table. Building life will be prolonged when these items are carried out properly.

Table 2-32 Outline of Regular Inspection for Facility

	Type of Maintenance Work	Frequency
Exterior	Repair and repainting of external walls	Repair: every five years,
	Inspection and repair of roofing materials	Repaint: every 15 years
	Regular cleaning of drainage system	Inspection: every year Repair: every five years
	Inspection and repair of sealing of external windows and doors	Monthly Repair Every year
	Regular inspection and cleaning of ditches and manholes	Every year
	Regular inspection and cleaning of Septic Tanks and removal of sludge	Several times a year
Interior	Renewal of interior finishing	As required
	Repair and repainting of partition walls	As required
	Renewal of ceiling materials	As required
	Adjustment of window and door fitting	Every year
	Replacement of hardware	As required

(2) Equipment Maintenance

Practice of regular cleaning, inspections, adjustments, replacement and repairs is expected to drastically increase the life of equipment. The service life of major equipment is described in the following table. Accordingly, in the case of breakdown or stoppage, by separating the building frame from the equipment system special consideration should be given so as not to affect others as much as possible.

Table 2-33 Life Expectancy of Building Services Equipment

	Type of Building Service Equipment	Life Expectancy
Electrical System	Distribution panels	20 – 30 years
	Fluorescent lamps	5,000 – 10,000 hours
	Incandescent lamps	1,000 – 1,500 hours
Water Supply and Drainage Systems	Pumps, pipes and valves	15 years
	Tanks	20 years
	Sanitary fixture	25 – 30years
Air-Conditioning System	Pipes	15 years
	Exhaust fans	20 years

2-4-3 Equipment Maintenance Plan

Equipment maintenance system in Uganda is composed of the Central Workshop in Wabigaro of Kampala and other Regional Workshops at each RRH. In this system, Hospitals and the Office of District Director of Health Services pay a prescribed annual maintenance fee to the workshop, regarded to be an activity fee, and repairs are made through patrol and on-call services. Mbale workshop (workshop at Mbale RRH) is responsible for the east of Uganda including the four (4) target districts. The Office of District Director of Health Services (DDHS) of four districts also pay an annual maintenance fee [one million shillings annually per health sub-district (HSD)] to the Mbale workshop for maintenance of essential equipment. Appropriate maintenance of equipment to be procured under the Project should be carried out through this system.

Furthermore, special medical equipment such as X-ray unit is difficult to repair without help of engineers or agents from the manufacturer, and if reparation is made without their assistance, it cannot be guaranteed. For such medical equipment, in response to the requests of medical institutions, the workshop will act as an intermediary between the medical institutions and the manufacturers' agents in Kampala or Nairobi. The Ministry of Health, DDHS and hospitals in each district should conclude a maintenance contract with manufactures' agents through budgetary measures. In addition, a system should be created, under which each hospital can allocate individuals responsible for maintenance and ensure collaboration with the workshop, manufacturers' agents.

2-4-4 Operation and Maintenance Cost

The incremental portion of annual maintenance cost at each facility after the completion of the buildings under the Project is provisionally estimated to be as follows.

2-4-4-1 Facility Maintenance Cost

(1) Electricity Charges

Based on current electricity rates set by the Ugandan Electricity Distribution Company Ltd. (UEDCL) and the electricity demand at each facility, the annual increase in charges at each targeted facility can be provisionally calculated as follows.

Fixed monthly Service Charge: 10,000Ush/month

Meter rate: 164.8Ush/kWh Charge as of March 2005 at the UEDCL

Usage of electricity: 12 hours per day and 25 days per month

Loading factor of Lighting 60 %, Demand factor of outlet sockets 25 %

Table 2-34 Estimate of Increase of Electricity cost

Hospital	Power demand (kWh/day)	days/month	Meter Rate (Ush/kWh)	Monthly Electricity Cost (Ush)	Annual Electricity Cost (Ush)
Mbale RRH	84	25	164.8	325,630	3,907,560
Bududa GH	192	25	164.8	731,440	8,777,280
Tororo GH	240	25	164.8	911,800	10,941,600
Masafu GH	168	25	164.8	641,260	7,695,120

(2) Generator Fuel Cost

Under the present conditions, most generators at the targeted hospitals have either broken down or of very low capacity so that an operating time is extremely limited. Consequently, the cost required for operating generators to be newly installed will be applied in increments. The following assumptions were applied for calculation.

- Operation of 2 hours per day, 180 days/year (One power failure per two days)
- Fuel consumption per hour of 50kVA(s) and 37kVA generator is 15 and 11 L/hour, respectively.
- Unit price of light oil is set at 1,400 Ush/L (the standard unit price at the time of the Basic Design Study).

The results of calculations are shown in the following table.

Table 2-35 Estimate of Cost for Fuel Consumption of Generators

Hospital	Capacity	Consumption (L/h)	hour/day	Days/ year	Annual Consumption (L)	Annual Cost (Ush)
Mbale RRH	50kw	15	2	180	5,400	7,560,000
Bududa GH	37kw	11	2	180	3,960	5,544,000
Tororo GH	37kw	11	2	180	3,960	5,544,000

(3) Water Charges

Only the following two (2) hospitals utilize city water; whereas other hospitals utilize water from wells or rivers. At these hospitals, there are no water charges. The water rate (revised in July 2004) prescribed by the National Water and Sewerage Corporation (NWSC) (governmental facility) is 993Ush/m^3. Based on this, the results of a provisional calculation of charges are shown in the following table.

At the same time, at Mbale RRH where drainage will be connected to the municipal sewerage system, 100% of water consumption will be charged as effluent charge. The charge is similar to the water rate of 993Ush/m^3.

Table 2-36 Estimate of Cost for Water Consumption

Hospital	Unit price (Ush)	Daily Consumption (m3)	Monthly Consumption (m3)	Annual Cost (Ush)	Sewage Cost (Ush)	Total Cost (Ush)
Mbale RRH	993	9.1	227.5	2,710,890	2,710,890	5,421,780
Tororo GH	993	10.8	270.0	3,217,320	0	3,217,320

2-4-4-2 Equipment Maintenance Cost

The increase in maintenance cost at each facility for equipment to be newly procured under the Project is estimated by provisionally calculating the operating cost and maintenance cost as follows.

(1) Equipment Consumables

X-ray film and chemical reagents used in clinical laboratories are necessary consumables commonly utilized. An estimate of the annual cost per unit of equipment is shown in the following table.

Table 2-37 Estimate of Annual Cost for Equipment Consumables

Equipment	Consumables	Unit Price (Ush)	Estimated Annual Consumption		Cost (Ush)	Annual Cost (Ush)
Basic Bucky System X-ray Unit	Film	900/Sheet	2,000 Sheets	2,000 Sheets	1,800,00	1,828,800
	Developer & Fixative	2,400/Set	Monthly Exchange Total 12 Sheets	12 Sets	28,800	
Fluoroscopy X-ray Unit	Film	900/Sheet	2,000 Sheets	2,000 Sheets	1,800,00	1,828,800
	Developer and Fixative	2,400/Set	Monthly Exchange Total 12 Sheets	12 Sets	28,800	
Dental X-ray Unit	Film	420/Sheet	500 Cases	500 Sheets	210,000	210,000
Colorimeter	Reagent kit	290/kit	100/month 1,200/year	1,200	348,000	348,000
Patient Monitor	Disposable electrode	1,800/Pcs	3Pcs/patient x 500cases	1,500 Pcs	2,700,000	2,700,000
Baby Incubator	Filter	180/Sheet	Monthly Exchange Total 12 Sheets	12 Pcs	2,160	2,160
Ultrasound Scanner	Gel	35/g	5g/Patient x 300 Scans	1,500 g	52,500	66,900
	Recording paper	4,800/Roll	2Sheet/Patient x 300 Scans ＝600Sheet			
			600Sheet÷200Sheet/1Roll ＝3Rolls	3 Rolls	14,400	
Portable Ultrasound Scanner	Gel	35/g	5g/Patient x 300 Scans	1,500g	52,500	66,900
	Recording paper	4,800/Roll	2Sheet/Patient x 300 Scans ＝600Sheet			
			600Sheet÷200Sheet/1Roll ＝3Roll	3Roll	14,400	
Anaesthesia Unit	Halothane	40,500/250ml	50ml/Patient x 30 cases	1,500ml	243,000	663,000
	Circuits	140,000/ Pcs	1Pcs per 10 cases	3Pcs	420,000	
Ambulance	Fuel	1,700/L	2,000Km/Month 24,000Km/Year （Fuel Consumption 10Km/L）	2,400L	4,080,000	4,137,500
	Oil	1,700/L	5L / 5,000Km 5L/ 5times	25Pcs	42,500	
	Filter	5,000/ Pcs	3 times a year	3Pcs	15,000	

For the calculation, the following conditions were applied.

- The annual consumption of each consumable was set based upon data on the number of patients and number of examinations at targeted hospitals.
- Sales prices of the National Medial Store (NMS: state-managed pharmaceutical company) and the Joint Medical Store (JMS: mission-type NGO pharmaceutical company) were utilized as unit cost.
- The Government of Uganda is planning to switch gradually from ether anaesthesia to halothane anaesthesia. Therefore, considering the example of Jinja RRH where halothane has already been adopted, the number of halothane anaesthesia cases at each hospital was estimated to be 30 annually (of a total number of approximately 400).
- Based upon the operating conditions of existing ambulances, the monthly mileage was regarded to be 2,000Km.
- With respect to X-ray files, approximately 2,000 cases were estimated assuming 250 days operation annually at eight (8) persons per day.

(2) Parts Periodically Replaced

Spare parts during the continuous usage of equipment deemed necessary will include bulbs for X-ray units, patient cables for patient monitors, cuffs for automatic manometers, operating lights, medical examination lights, ray treatment equipment, and bulbs for *Schaukasten* (film viewers). The estimated annual cost for these parts per unit of equipment is shown in the following table. The set unit costs are sale prices for consumables and the frequency of replacement is the value generally recommended by the manufacturer.

Table 2-38 Estimate of Annual Cost for Spare Parts

Equipment	Spare Parts and Unit Price (Ush)		Frequency	Annual Cost (Ush)		Total (Ush)
Basic Bucky System X-ray Unit	Bulb	13,000,000/Pcs	Every 5 years	1/5Pcs	2,600,000	2,600,000
Fluoroscopy X-ray Unit	Bulb	13,000,000/Pcs	Every 5 years	1/5Pcs	2,600,000	2,600,000
C-arm X-ray Unit	Bulb	13,000,000/Pcs	Every 5 years	1/5Pcs	2,600,000	2,600,000
Patient Monitor	Patient Cable	80,000/Set	Every year	1Pcs	80,000	96,000
	NIBP Cuff	16,000/Roll	Every year	1Pcs	16,000	
Fixed Operation Light	Halogen lamp	35,000/Pcs	Every year, 4pcs/ unit	4Pcs	140,000	140,000
Mobile Operation Light	Halogen lamp	35,000/Pcs	Every year, 4pcs/ unit	4Pcs	140,000	140,000
Examination Light	Lamp	3,500/Pcs	Every year, 1pcs/ unit	1Pcs	3,500	3,500
Infant Warmer	Lamp	3,500/Pcs	Every year, 4pcs/ unit	4Pcs	14,000	14,000
X-ray Film Viewer	Lamp	3,500/Pcs	Every year, 5pcs/ unit	5Pcs	17,500	17,500
Solar Electric System	Battery	735,000/Pcs	Every 10 years	1/10Pcs	73,500	87,500
	Lamp	3,500/Pcs	Every year, 4pcs/ unit	4Pcs	14,000	

The following table shows the amount of total annual costs for equipment.

Table 2-39 Total Annual Cost for Each Equipment

Equipment	Consumables Cost	Spare Parts	Total (Ush)
Basic Bucky System X-ray Unit	1,828,800	2,600,000	4,428,800
Fluoroscopy X-ray Unit	1,828,800	2,600,000	4,428,800
Dental X-ray Unit	210,000		210,000
C-arm X-ray Unit		2,600,000	2,600,000
Colorimeter	348,000		348,000
Patient Monitor	2,700,000	96,000	2,796,000
Fixed Operation Light		140,000	140,000
Mobile Operation Light		140,000	140,000
Examination Light		3,500	3,500
Infant Warmer		14,000	14,000
Baby Incubator	2,160		2,160
X-ray Film Viewer		17,500	17,500
Ultrasound Scanner	66,900		66,900
Portable Ultrasound Scanner	66,900		66,900
Anaesthesia Unit	663,000		663,000
Ambulance	4,137,500		4,137,500
Solar Electric System		87,500	87,500

(3) Increment of Operation and Maintenance Expenses

Based on the above-mentioned (1) and (2), the increment of operation and maintenance cost for equipment to be newly procured under the Project can be estimated respectively as follows.

Table 2-40 Annual Cost for Maintenance of Equipment at Each Hospital

Equipment	Unit Price	Mbale RRH		Bududa GH		Tororo GH		Busolwe GH		Bugiri GH		Masafu GH	
		Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost	Nos.	Cost
Basic Bucky System X-ray Unit	4,428,800	1	4,428,800	1	4,428,800			1	4,428,800		0	1	4,428,800
Mobile X-ray Unit	4,428,800	1	4,428,800										
Fluoroscopy X-ray Unit	4,428,800	1	4,428,800										
Dental X-ray Unit	210,000	1	210,000	1	210,000	1	210,000	1	210,000	1	210,000	1	210,000
C-arm X-ray Unit	2,600,000	1	2,600,000										
Colorimeter	348,000			1	348,000	1	348,000	1	348,000	1	348,000	1	348,000

Patient Monitor	2,796,000	2	5,592,000										
Fixed Operation Light	140,000	3	420,000	2	280,000	2	280,000	1	140,000	2	280,000		
Mobile Operation Light	140,000	1	140,000	1	140,000	1	140,000	1	140,000	1	140,000	1	140,000
Examination Light	3,500			4	14,000	4	14,000	1	3,500	1	3,500	3	10,500
Infant Warmer	14,000	2	28,000	2	28,000	2	28,000	2	28,000	2	28,000	2	14,000
Baby Incubator	2,160	2	4,320	2	4,320	2	4,320	2	4,320	2	4,320	2	4,320
X-ray Film Viewer	17,500	2	35,000	3	52,500	2	35,000	4	70,000	4	70,000	3	52,500
Ultrasound Scanner	66,900	1	66,900										
Portable Ultrasound Scanner	66,900	1	66,900	1	66,900	1	66,900	1	66,900	1	66,900	1	66,900
Anaesthesia Unit	663,000	2	1,326,000	1	663,000	1	663,000	1	663,000	1	663,000	1	663,000
Ambulance	4,137,500	1	4,137,500	1	4,137,500	1	4,137,500	1	4,137,500	1	4,137,500	1	4,137,500
Total			27,913,020		10,373,020		5,926,720		10,240,020		5,951,220		10,075,520

On the other hand, the increment of maintenance cost for equipment to be procured at Health Centres III and IV in Mbale, Tororo, Bugiri and Busia districts can be estimated as follows (when completing construction work by the Ministry of Health and procuring equipment at all target facilities).

Table 2-41 Estimate of Cost Increment of Spare Parts for HCs at Each District

Equipment	Annual Cost for Spare parts	Mbale District		Tororo District		Bugiri District		Busia District	
		Nos.	Total	Nos.	Total	Nos.	Total	Nos.	Total
Mobile Operation Light	140,000	1	140,000	1	140,000	1	140,000	1	140,000
Solar Electric System	87,500	6	525,000	4	350,000	8	700,000	6	525,000
Total			665,000		490,000		840,000		665,000

2-4-4-3 Summary on Increment of Annual Maintenance Cost

The increments of maintenance cost in the case of realizing the Project are summarized in the following table based on the above-mentioned 2-2-4-1 and 2-2-4-2. Together with this, the current maintenance cost at each hospital is shown. Although other maintenance costs are included, the increment of maintenance cost is approximately 10 to 30% of the present cost, sufficient budget increase are indispensable at each facility.

Table 2-42 Estimate of Increase of Operational and Maintenance Cost

(1,000Ush)

Designation	Mbale RRH	Bududa GH	Tororo GH	Busolwe GH	Bugiri GH	Masafu GH
1) Electricity	3,908	8,777	10,942			7,695
2) Generator	7,560	5,544	5,544			
3) Water Supply	5,422		3,217			
Total of Facility Operation	16,890	14,321	19,703			7,695
Total of Equipment Operation	27,913	10,373	5,927	10,240	5,951	10,076
Total	44,803	24,694	25,630	10,240	5,951	17,771
Total Maintenance Cost in the budget of 2005/06	209,000	72,050	165,346	58,488	103,958	4,900
Percentage of Increment	21%	34%	16%	18%	6%	363%
Total budget of 2005/06	686,900	292,270	624,956	265,158	348,341	40,466

In line with upgrading of Masafu GH, there will be need for sufficient increase of its budget. In order to roughly estimate the necessary budget allocation for Masafu GH, we will calculate firstly the average of the budgets of other three general hospitals (Bududa, Busolwe, Bugiri GH), which is 301,923,000Ush. Here, Tororo GH was excluded since its budget is quite bigger than those of others. Considering that Masafu GH is being planned with 60 % bed capacity of other General Hospitals, we will multiply it by 0.6. The result is 181,154,000Ush, which is around 4.5 times of the current budget of Masafu GH (2005/06 fiscal year). As shown in the above table, if the whole budget will be augmented at this rate, necessary maintenance budget could be also affordable. Since the overall budget of the Ministry of Health is steadily increasing at the rate of around 10% every year, it is deemed amply possible that the necessary budget allocations will be provided to Masafu GH. As for the increase of the maintenance cost for the health centres, as shown in the Table 2-41, they are very little (approximately 0.1~0.2 % of the operational expenditure of each office of District Director of Health Services). Thus there will be no difficulty for budget allocation for them.

2-5 Estimated Project Cost

2-5-1 Estimated Costs for Cooperation Project

The estimated cost of the project is approximately 1,766 million Japanese Yen (some 1,658 million Japanese Yen from Japan and Uganda will shoulder the remaining 108 million Japanese Yen.). The breakdown is shown in the Table 2-43 and Table 2-44. This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant.

(1) Japanese side Share

Table 2-43 Japanese side Share

Classification		Cost (million Yen)		
Construction Work	Mbale RRH	227	1,179	1,502
	Bududa GH	274		
	Tororo GH	372		
	Busolwe GH	14		
	Bugiri GH	15		
	Masafu GH	277		
Equipment Work		323		
Detailed Design and Supervision		156		
Total		1,658		

(2) Ugandan Side Share

Table 2-44 Ugandan Side Share

Approx. 108 million Yen

Classification	Item	Uganda Shilling
1)Construction Work	(1) Demolition of Existing Building	110,000,000
	(2) Ground Levelling	40,000,000
	(3) Electricity Connection & Transformer	140,000,000
	(4) Water Supply	110,000,000
	(5) Renovation of Existing Buildings	405,000,000
	(6) Exterior Work	50,000,000
	(7) Staff Houses	850,000,000
2) Others	(1) Banking Arrangement, Authorization to pay, etc.	26,448,000
	Total	1,731,448,000

Conditions of Estimate

- Date of estimate: April 2005
- Exchange rate: 1Ush = 0.0625 Japanese Yen, 1US$ =107.99 Japanese Yen
- Construction period: 20 months
- Other Conditions: The Project shall be implemented according to the Japan's Grant Aid Scheme
  No force majeure is anticipated.

Chapter 3
Project Evaluation and Recommendations

3 Project Evaluation and Recommendations

3-1 Project Effect

The following effects can be anticipated from implementation of the Project in the four eastern districts of Uganda.

3-1-1 Direct Effects

1) Improvement of hospital functions at Regional Referral Hospitals and General Hospitals

It is anticipated that declining hospital functions will be restored and improved at Mbale RRH and the other General Hospitals. Specifically speaking, the following items apply.

- As a result of constructing new facilities, renovating equipment and installing basic diagnostic instruments ((X-ray units, ultrasound scanners, etc.) at each hospital, more basic inspections (X-ray inspections, ultrasound scans, ECG scans, etc.) will become possible.
- Operation departments will be strengthened and more operations will be made possible as a result of the construction and renovation of operation theatres and supply of operating equipment.
- The obstetrics setup including the response to emergency situations will be bolstered and more deliveries and caesarean sections will be made possible as a result of the construction and renovation of obstetrics facilities (maternity wards, delivery units and obstetric operation theatres) and supply of obstetrics equipment.
- The overall number of outpatient treatments will increase in line with the strengthening of examination, inspection and treatment functions.
- The number of inpatients at Masafu GH will increase as a result of extension of the inpatient wards.

2) Improvement of health and medical care services on the level of Health Centres

- Health and medical care services will be improved at the level of Health Centres. In particular, by procuring solar electric lighting systems and delivery equipment, the quality of delivery services including nighttime deliveries will be improved.

3) Securing of emergency means of transport in target areas

- Through providing ambulances to Regional Referral Hospital and General Hospitals, means for transferring emergency patients to agencies both inside and outside of target areas will be secured.

4) Strengthening of the referral setup

- As a result of the effects described in 1) through 3) above, the referral setup in the four eastern districts will be strengthened.

3-1-2 Indirect Effects

1) Improvement in regional medical care indicators

As a result of strengthening the functions of each health and medical care agency including means of transferring patients, it is anticipated this will lead to improvement in indicators of regional medical care, in particular reduction of maternity mortality rate, in the four target districts.

3-2 Recommendations

In order to link equipment and facilities improvements at the six hospitals and Health Centres under the Project to effective improvement in the quality of health and medical care services in the target area, it will be necessary to simultaneously strengthen the operation and maintenance systems of each agency. In specific terms, it will be necessary for the Uganda side to take the following measures.

3-2-1 Strengthening of Agencies on the Personnel and Operating Fronts

(1) Securing of sufficient human resources

The number of personnel at many health and medical agencies are currently less than the standard numbers designated by the Ministry of Health, and this is one of the reasons behind the declining quality of services. Accordingly, it is necessary to increase numbers of personnel at each agency with a view to securing standard numbers.

Generally speaking, health and medical care workers tend to be reluctant to work in regional facilities, and regional hospitals and Health Centres are frequently unable to secure the staff they require. In order to improve this situation, it will be necessary to take measures to promote appointments in rural areas by introducing incentives such as regional allowances and employee housing, etc. in unison with the improvement and provision of facilities and equipment at regional health and medical care agencies under the Project.

At the same time, from the viewpoint of raising the quality of regional medical care services; it will be essential to provide opportunities for regional health workers to hone their skills by offering regular retraining.

(2) Implementation of appropriate facilities and equipment maintenance

The decline in functions at General Hospitals arising from deterioration of facilities is conspicuous all over the country. The main reason for this is that these facilities have not received appropriate maintenance since they were first constructed around 1970. Accordingly, it will be essential to implement appropriate maintenance in future.

(3) Strengthening of coordination between each facility

Rather than functioning as individual units, each hospital and Health Centre should complement each other as parts of the regional health and medical care network. It will be important to strengthen coordination between each agency under the guidance of the Ministry of Health and each Office of District Director of Health Services.

(4) Collection of appropriate health and medical care data

Currently, even though health and medical care data are collected at each target facility, there is still a lack of unification and verification of data collection methods. It is difficult to plan future measures without having an accurate grasp of current conditions. In order to accurately gauge the actual state of medical care activities within each agency, it is desirable for the Ministry of Health to implement regular monitoring.

3-2-2 Possibility of Linkage with Technical Cooperation Projects, etc.

Japan previously dispatched individual experts to the Health Services Department of the Ministry of Health, and also plans to implement a new technical cooperation project following completion of this Project. So far no concrete plans have been fixed for the technical cooperation project, but it is expected that basic system building for equipment maintenance will be implemented targeting Ministry of Health workshops. By providing multi-faceted and comprehensive support covering the hospitals and Health Centres on the frontline of the medical care sector, the Ministry of Health responsible for formulating policies and plans, and the workshops responsible for implementing maintenance behind the scenes, this could be highly effective for strengthening and improving the medical care system not only in the target area but the whole of Uganda.

3-2-3 Possibility of Linkage with Other Donors

There are no assistance activities directly overlapping with the Project. As was mentioned previously, donors from various countries have implemented assistance in the health and medical care sector in Uganda. Donors have basically adopted the wide sector approach to assistance and many activities have focused on either soft side assistance or equipment provision. Accordingly, if soft side assistance such as training, etc. could be implemented to coincide with and augment the Project activities at each agency, an even larger Project effect could be anticipated.

Moreover, various donors are providing support (PHC reinforcement activities) on the level of Health Centres throughout the country. These activities are taking place on either the same or lower level than that intended by the Project. The Ministry of Health aims to continue constructing facilities and providing equipment to Health Centres that are lacking and, if the Project can be effectively combined with assistance to Health Centres by other donors, it is anticipated that the health and medical care system in the four eastern districts will function even more effectively.

3-3 Project Validity

Validity of the Project as a grant aid undertaking is confirmed through the following points.

- The Project aims to construct facilities and supply equipment at Regional Referral Hospital, General Hospitals and Health Centres IV and III, which form the heart of the regional medical care system in providing health services to citizens in the target areas. These objectives comply with the urgent goals of HSSP I and II to "develop infrastructure" and "enhance facilities." Moreover, since the target agencies are unable to fully conduct their required functions due to the deterioration of facilities and lack of necessary equipment, there is a high degree of urgency surrounding the Project.
- In addition to support from Japan, efforts by the Government of Uganda to bolster human resources and secure funds will help ensure that citizens in the target areas will be able to receive proper health services. This directly contributes to the "effective provision of UNMHCP" as primarily aimed for under HSSP I and II.
- Through strengthening the functions of General Hospitals and Health Centres IV, which deal with caesarean sections and complicated deliveries, this will be effective in reducing mortality from complications related to pregnancy or childbirth, which are the primary cause of mortality in Uganda. As a natural consequence, Japan's assistance can effectively contribute to the HSSP I and II development goals of "reducing incidence of and morality from major diseases."
- The targeted four districts in the east of the country are typical regional farming areas that have underdeveloped infrastructure. The strengthening of the regional medical care setup and provision of higher quality medical care services to local citizens through implementation of Japan's assistance will make an important contribution to the HSSP I and II development target of "Reducing regional differentials" and the primary PEAP strategy of "Improving the health of people living in poverty."
- Rather than greatly expanding the scale of facilities, the Project aims to improve the deteriorating health and medical care environment, and the intended facilities and equipment comprise only basic items. Accordingly, no major burden or problems will be placed on the Ugandan side regarding operation and maintenance.

3-4 Conclusion

It can thus be seen that the Project greatly contributes to the "Improvement of health and medical care services in regional areas," which has been raised as an important issue by the Ugandan government in the PEAP and HSSP. It also contributes to realizing the goals contained in the long-term development plan of the Government of Uganda. Accordingly, it may be concluded that implementing the Project under Japan's Grant Aid Scheme is extremely significant, valid and necessary. In particular, giving priority to improvements on the level of General Hospitals, which until now had been overlooked in assistance from other donors, will strengthen core agencies in

the regional referral system and, combined with enhancement of means of referral transfer and supply of equipment on the level of Health Centres III and IV, will greatly contribute to improving health and medical care services in the target areas.

Concerning operation and maintenance of the Project facilities and equipment, the present setup on the Ugandan side is thought to contain no major problems, however, in order to effectively improve the quality of health and medical care services, it will be necessary to effectively and appropriately use and operate facilities and equipment following construction and supply. Therefore, as was mentioned in section 3-2, from the viewpoint of ensuring sufficient direct and indirect effects from the Project, it will be essential for the Government of Uganda to sustain the efforts it has so far made in terms of budgetary, personnel and institutional improvements.

Appendices

Member List (Basic Design Study)

Name	Position	Assignment
Mr. Jiro INAMURA	Leader	Deputy Resident Representative, JICA Kenya Office
Dr. SEIYA KATO	Technical Advisor	Associate Professor Department of Emergency and Critical Care Medicine, Jichi Medical School
Mr. Takuya OTSUKA	Project Coordinator	Second Project Management Division, Grant Aid Management Department
Mr. Hiroyuki TSUCHIYA	Project Manager	Kume Sekkei Co., Ltd.
Mr. Shigeru ENOMOTO	Architecture & Facility Planner	Kume Sekkei Co., Ltd.
Mr. Shigetaka TOJO	Equipment Planner 1	International Techno Center Co., Ltd.
Mr. Syuichi MURASHITA	Equipment Planner 2	International Techno Center Co., Ltd.
Mr. Tetsuya SUZUKI	Construction & Cost Planner	Kume Sekkei Co., Ltd.
Ms. Sakie NAITO	Procurement & Cost Planner	International Techno Center Co., Ltd.
Mr. Tetsuro NISHIMURA	Reinforcement	Kume Sekkei Co., Ltd.

Member List (Explanation on the Draft Final Report Mission)

氏名 Name	Position	Assignment
Mr. Takehiro SUSAKI	Leader	Resident Representative, JICA Uganda Office
Dr. SEIYA KATO	Technical Advisor	Associate Professor Department of Emergency and Critical Care Medicine, Jichi Medical School
Mr. Takuya OTSUKA	Project Coordinator	Second Project Management Division, Grant Aid Management Department
Mr. Shigeru ENOMOTO	Project Manager	Kume Sekkei Co., Ltd.
Mr. Shigetaka TOJO	Equipment Planner 1	International Techno Center Co., Ltd.
Mr. Tetsuya SUZUKI	Construction & Cost Planner	Kume Sekkei Co., Ltd.

Schedule of Basic Design Study（Jan. 23 to Feb 26 2005 ：35days）

	Date		Official			Consultants					
			Team leader	Technical Advisor	Project Coordinator	Project Manager	Architecture Equipment Design	Equipment 1	Equipment 2	Procurement Planner/Cost Estimator (Facilities)	Procurement Planner/Cost Estimator (Equipment)
			J. INAMURA	Dr. KATO	T.OTSUKA	H. TSUCHIYA	S. ENOMOTO	S. TOJO	S. MURASHITA	T. SUZUKI	S. NAITO
1	23-Jan	Sun				Lev. Kansai Airport by EK 317 (23:20)					
2	24	Mon				→ Dubai (05:15) Lev. Dubai by EK723 (08:10) → Entebbe (14:30)					
3	25	Tue				Courtesy Call to the Embassy of Japan Courtesy Visit to MOH, Explanations and Discussions of I/R w/MOH				Distribution Cost Survey Questionnaire	
4	26	Wed				(National Holiday) Observation of Kawolo GH					
5	27	Thu				Move to Tororo, Discussion w/Bugiri DDHS, visit to Bugiri GH Discussion w/Tororo DDHS, visit to Tororo GH				Survey of Building Code, Regulations	
6	28	Fri				Discussion w/Mbale DDHS, visit to Mbale RRH, Bududa GH, Busolwe GH				Survey of Building Material	Lev. Kansai Airport by EK 317 (23:20)
7	29	Sat				Discussion w/Busia DDHS, visit to Masafu HC				Survey of Local Contractors	→ Dubai (05:15) Lev. Dubai by EK723 (14:30) → Entebbe (20:45)
8	30	Sun				Analysis of survey details Team meeting				Move to Mbale Team meeting	
9	31	Mon				Survey of Masafu HC			Survey of HCs	Survey of Masafu HC	
10	1-Feb	Tue				Survey of Bududa GH			Survey of HCs	Survey of Bududa GH	
11	2	Wed				Survey of Mbale RRH			Survey of HCs	Survey of Mbale RRH	
12	3	Thu				Survey of Tororo GH			Survey of HCs	Survey of Tororo GH	
13	4	Fri				Survey of Busolwe GH			Survey of HCs	Survey of Busolwe GH	
14	5	Sat				Survey of Busolwegiri GH			Survey of HCs	Survey of Busolwe GH	
15	6	Sun		Lev. Japan		Survey of Bugiri GH			Survey of HCs	Survey of Bugiri GH	
16	7	Mon		Arrival at Entebbe (08:50) Visit Masaf HC Move to Tororo	Lev. London by BA63	Join Team Leader, Team meeting	Survey of Hospitals Team meeting	Survey of HCs Team meeting	Survey of HCs Team meeting	Survey of Hospitals Team meeting	Move to Kampala Survey of Equipment Agents
17	8	Tue		Visit Tororo DDHS, Tororo GH/ Bududa GH	Arrival at Entebbe (08:50) Move to Tororo	Same as Team Leader	Survey of Hospitals Planning of facilities	Survey of HCs	Survey of HCs	Survey of Hospitals Planning of facilities	Survey of Equipment Agents
18	9	Wed		Visit Mbale DDHS, MbaleRRH/ Bsolwe GH/ Kisoko HC3			Survey of Hospitals Planning of facilities	Survey of HCs	Survey of HCs	Survey of Hospitals Planning of facilities	Survey of Equipment Agents
19	10	Thu		Move to Kampala Visit Bugiri GH			Survey of Hospitals Planning of facilities	Survey of HCs Move to Kampala	Survey of HCs	Survey of Hospitals Planning of facilities	Survey of Equipment Agents
20	11	Fri		Courtesy Call to the Embassy of Japan Discussions on MD			Survey of Hospitals Planning of facilities	Same as Team Leader	Survey of HCs	Survey of Hospitals Planning of facilities	Survey of Equipment Agents
21	12	Sat		Analysis of survey details Team meeting		Analysis of survey details Team meeting	Move to Kampala Team meeting	Analysis of survey details Team meeting	Move to Kampala Team meeting	Move to Kampala Collection of Cost survey Questionnaires	Survey of Equipment Agents
22	13	Sun	Nairobi → Entebbe Team meeting	Analysis of survey details Team meeting		Analysis of survey details Team meeting					
23	14	Mon	Discussion on MD w/MOH Signing MD			Same as Team Leader	Supplementary Survey of Building Code, Regulations	Same as Team Leader	Survey of Situation of the Health Sector	Lev Entebbe by KQ411(9:15) → Nairobi(10：20)	
24	15	Tue	Courtesy Call to the Embassy of Japan Lev Entebbe by KQ415 (21:00)			Courtesy Call to the Embassy of Japan Survey of other donors	Supplementary Survey of Building Code, Regulations	Courtesy Call to the Embassy of Japan Survey of other donors	Survey of other donors	Survey in Nairobi	Survey in Nairobi
25	16	Wed		Nairobi→London→		Survey of other donors	Survey for Water, Electricity supply	Survey of other donors	Supplementary Survey for Equipemtn Procurement	Survey in Nairobi	Survey in Nairobi
26	17	Thu		Arrival at Japan		Move to Mbale Supplementary Survey of Facilities		Move to Mbale Supplementary Survey of Equipment		Survey in Nairobi Lev Nairobi by EK724 (18:20)	
27	18	Fri				Supplementary Survey of Facilities		Supplementary Survey of Equipment		→Dubai (00:15) Lev Dubai by EK316 (02:30)→Kansai (17:00)	
28	19	Sat				Supplementary Survey of Facilities		Supplementary Survey of Equipment			
29	20	Sun				Team Meeting					
30	21	Mon				Discussion w/DDHS on plan of facilities and equipment					
31	22	Tue				Discussion w/DDHS on plan of facilities and equipment Move to Kampala					
32	23	Wed				Discussion w/MOH on plan of facilities and equipment Courtesy Call to the Embassy of Japan					
33	24	Thu				Lev Entebbe by KQ411 (9:15)→Nairobi(10：20) Report to JICA in Nairobi					
34	25	Fri				Lev Nairobi by EK724 (18:20) →					
35	26	Sat				→Dubai (00:15) Lev Dubai by EK316 (02:30) → Kansai (17:00)					

Schedule of Explanation on the Draft Final Report（May. 24 to Jun 6 2005：14days）

Date			Official			Consultant		
			Team leader	Technical Advisor	Project Coordinator	Project Manager	Equipment 1	Procurement Planner/Cost Estimator (Facilities)
			T.SUSAKI	Dr. KATO	T.OTSUKA	S. ENOMOTO	S. TOJO	T.SUZUKI
1	22-May	Sun			NARITA 1140→（NH201） →LONDON1555 LONDON 2000→（KQ101）			
2	23-May	Mon			→NAIROBI 0635 (Mission in Kenya)			
3	24-May	Tue			(Mission in Kenya)	KANSAI 2315→（EK317）		
4	25-May	Wed	Meeting at JICA Office Courtesy Visit to EOJ		(Mission in Kenya)	→Dubai 0510 Dubai 0810→（EK723）→Entebbe 1425 Meeting at JICA Office Courtesy Visit to EOJ		
5	26-May	Thu			(Mission in Kenya)	Courtesy Visit to MOH（Explanation on the Draft Final Report）		
6	27-May	Fri			NAIROBI 0800→（KQ410） →Entebbe 0905 Kampala→ Discussion with DHS Team Meeting	Kampala→ Discussion with DHS		
7	28-May	Sat			Discussion with DHS Site visit			
8	29-May	Sun			Team Meeting			
9	30-May	Mon		NARITA 1140→（NH201） LONDON 1555 LONDON 2000→（KQ101）	Discussion with DHS Site visit →Kampala			
10	31-May	Tue	Team Meeting Discussion with MOH（DF Report）	→NAIROBI 0635 NAIROBI 0800→（KQ410） →Entebbe 0905 Team Meeting Discussion with MOH（DF Report）	Discussion with MOH（DF Report） Team Meeting			
11	1-Jun	Wed	Discussion with MOH(Discussion MD)					
12	2-Jun	Thu	Discussion with MOH(Discussion MD Signing of MD Report to EOJ					
13	3-Jun	Fri		Entebbe 1955→（KQ415）		Supplementary Study		Entebbe 1510→（KQ413）→NAIROBI1610 NAIROBI1820→（EK720）Dubai 0020
14	4-Jun	Sat		→LONDON 0520 LONDON 1935→（NH202）		Supplementary Study		Dubai 0250→（EK316） →KANSAI 1720
15	5-Jun	Sun		→NARITA 1510		Entebbe 1510→（KQ413）→NAIROBI1610 NAIROBI1820→（EK720）Dubai 0020		
16	6-Jun	Mon				Dubai 0250→（EK316） →KANSAI 1720		

List of Parties Concerned in the Recipient Country

1. Embassy of Japan

His Excellency, Ryuzo Kikuchi	Ambassador extraordinary and plenipotentiary
Mr. Yoshitaka Kitazawa	Charge d'affaires a.i.
Mr. Katsuki Morihara	Second Secretary

2. JICA Uganda Office

Ms. Nobuko Nakamura	Project Formulation Advisor
Ms. Masako Kawamura	Project Formulation Advisor
Mr. Hiroshi Furukawa	JOCV Coordinator
Mr. Kazuhiro Nagai	JOCV Coordinator

3. Ministry of Health

Hon. Capt. G. Mike Mukula Minister of State for Health

Department of Clinical and Community Health Service

Dr. Sam Zaramba	Director of Health Service -Clinical and Community

Department of Clinical Service

Dr. Amandua Jacinto	Commissioner Clinical Services
Dr. Mujabi Fred	PMO/IC Clinical Services

Department of Planning

Dr. Runumi Francis	Commissioner Health Services (Planning)

Dirvision of Health Infrastructure

Eng. S.S.B Wanda	Assistant Commissioner
Eng. Paul Kaliba	Civil Engineer
Eng. Peter Wabwire	Mechanical/Electrical Engineer

4. Kawolo District Hospital

Dr. J..M.. Zziwa	Medical Superintendent
Dr. Richard Bbosa	Deputy Medical Superintendent
Mr. Bisaso Paul	Hospital Administrator

5. Tororo District Director of Health Services

Mr. Okallany F. K.	District Health Inspector
Mr. Omalla Samuel	District Inspector of Drugs
Mr. Walimbwa Wilson	HMIS focal Person

6. Tororo District Hospital

Dr. Obonyo John H.	Medical Superintendent
Mr. Oboke Amos	Hospital Administrator
Mr. Kawere Ezekiel	Artisan

7. Busolwe District Hospital)

Dr. Mweru K.H.	Medical Superintendent
Mr. Higenyi Julsus	Record Assistant
Mr. Kisabagire Simon	Hospital Administrator
Ms. Nambafu E.R.	Senior Nursing Officer
Ms. Kwaga Agnes	Nursing Officer Maternity Ward
Mr. Aklsoys Steven	Health Assistant
Ms. Mutonyi Carolyn	Records Assistant
Mr. Kiangera S. K.	Artisan

8. Bugiri District Director of Health Services

Mr. Balidawa Misaki	District Health Educator, Bugiri Local Government
Mr. Nsubuga Beatrice	DNO, Bugiri Local Government
Mr. Bwamiki Michael	DCCA Bugiri Local Government

9. Bugiri District Hospital

Dr. Namboro Sarah	Medical Superintendent
Dr. Abanga Oimda	For Medical Superintendent
Mr. Nabulime Sarah	Hospital Administrator
Mr. Mulumba M.	Plumber
Mr.Nabeta Noah	Electrician
Mr. Balidawa M.	District Health Educator

10. Mbale District Director of Health Services

Dr. Francis Abwaimo	DDHS
Mr. Masaba Godfrey	SEC Health
Mr. Stephen Ouma	CAO Mbale District
Mr. Murrawba Kitoto	Secretary for Finance

11. Mbale Regional Referential Hospital

Dr. Makoba Gerald I.	Medical Superintendent
Mr. Olaunah Emmanuel	Hospital Administrator
Mr. Tuunde Steohen	Surgeon

12. Bududa General Hospital

Dr. Wamasebu Gideon Simiyu	Medical Superintendent
Mr. Wabuteya Steven	Technician
Ms. Sr. Omoding Emily	Senior Nurse Officer
Mr. Wafula Kenrth	Hospital Administrator

13. Busia District Director of Health Services

Mr. Steven Wanyama	District Chairperson
Mr. Oradi Patrick	Vice Chairperson Secretary for Health
Mrs. Adongo Roseline	Deputy Chief Administrative Office
Dr. G.B. Oundo	DDHS
Dr. G. Odoobo	Deputy DDHS

14. Masafu Health Centre Ⅳ

Mr. Eriya S. Wanyama	Chairperson Medical Unite
Mr. Ocen Wilbert	Public Health Dental Officer
Dr. Wamala Joseph	Medical Officer
Ms. Namutala Janet	Medical Clinical Officer
Mr. Wanyama Bonface	Record Assistant

15. Ministry of Works, Housing and Communications)

Mr. Duncan Kaoogi	Principal Architect,Architecture Division,Building Dept.
Mr. Henry Lubega	Senior Structural Engineer, Civil/Structure Division,Building Dept.

16. Central Materials Laboratory, Ministry of Works, Housing and Communications

Mr. Wilfred Okello	Principal Executive Engineer

17. Mbale Materials Laboratory, Ministry of Works, Housing and Communications

Mr. Kasule Charles	Laboratory Technicien

18. Uganda NationalBureau of Standard

Mr. John Okumu	Standard Officer (Standard Development Engineer)

19. Uganda Revenue Authorithy

Mr. Masuko	Tariff Office

20. Ministry of Water, Lands and Environment

Mr. Bakayana Musoke	Meteorologist, Department of Meteorology

21. Uganda Electric Regulatory Authority

Mr.Emmanuel Jjunju	Project Manager, ERA Kampala Head Office

22. National Water & Sewerage Corporation, Mbale office

Mr. Nyanga Eric	Senior Water Supply Superintendent