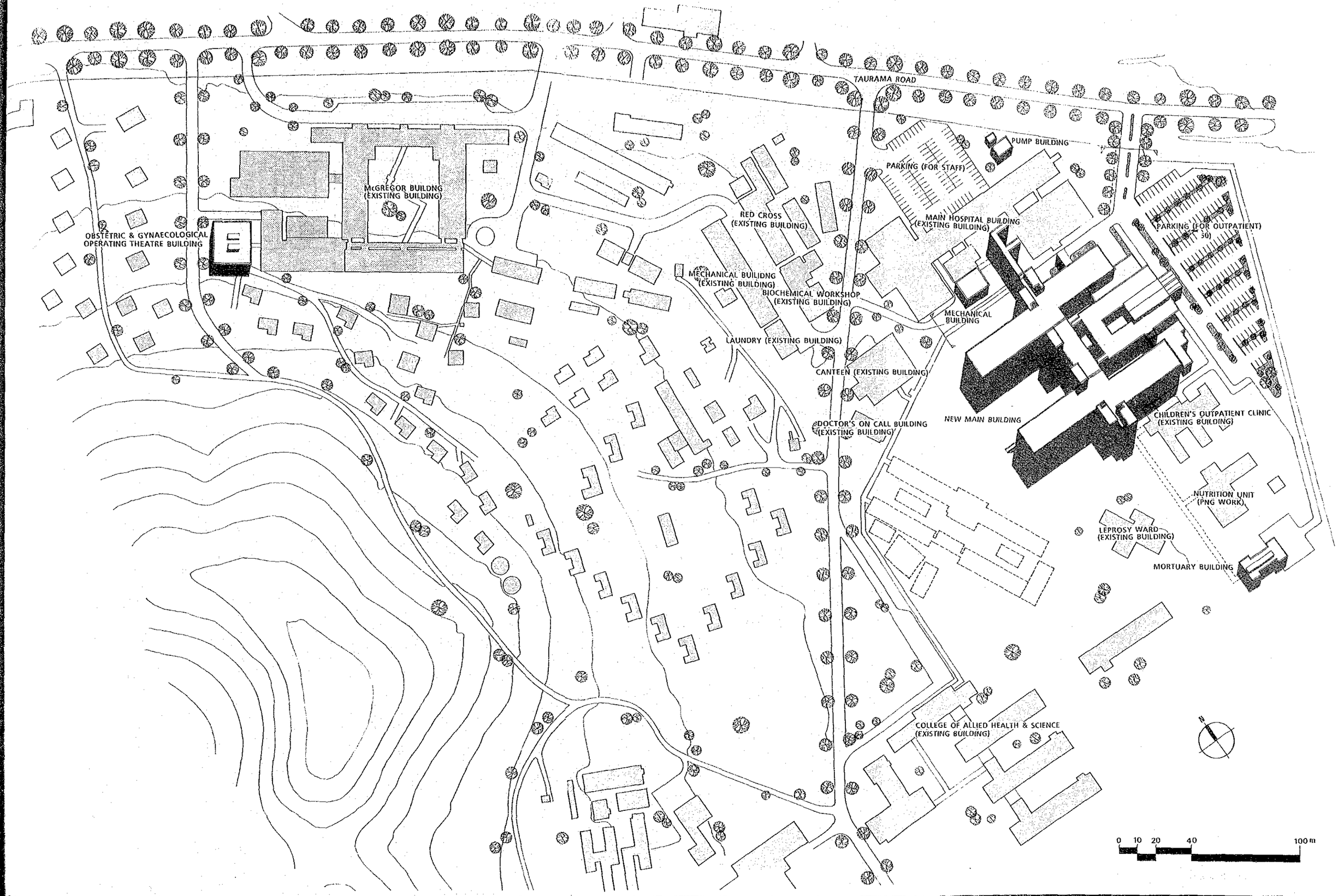
4-3-8 Basic Design Drawings

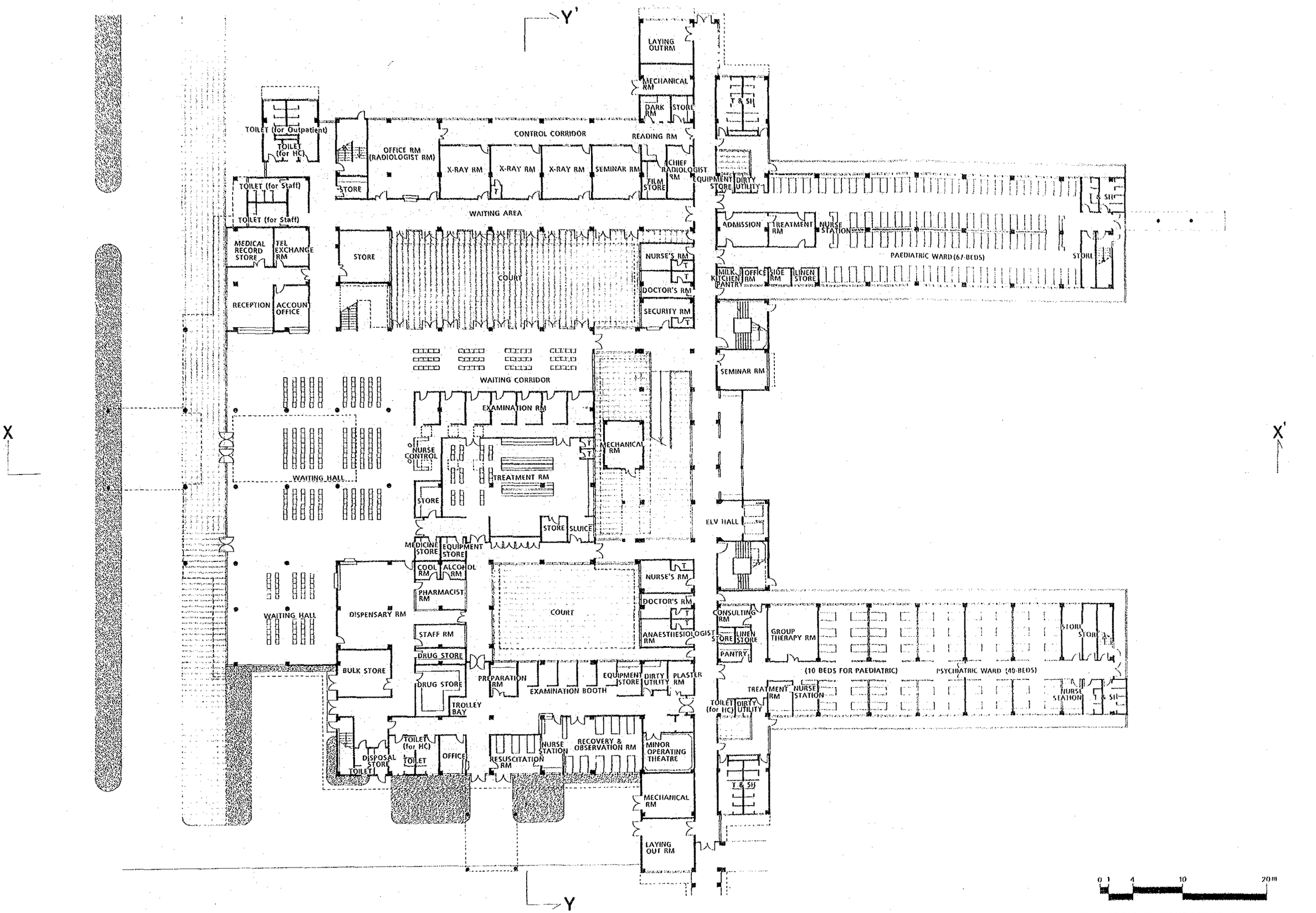
List of drawings.

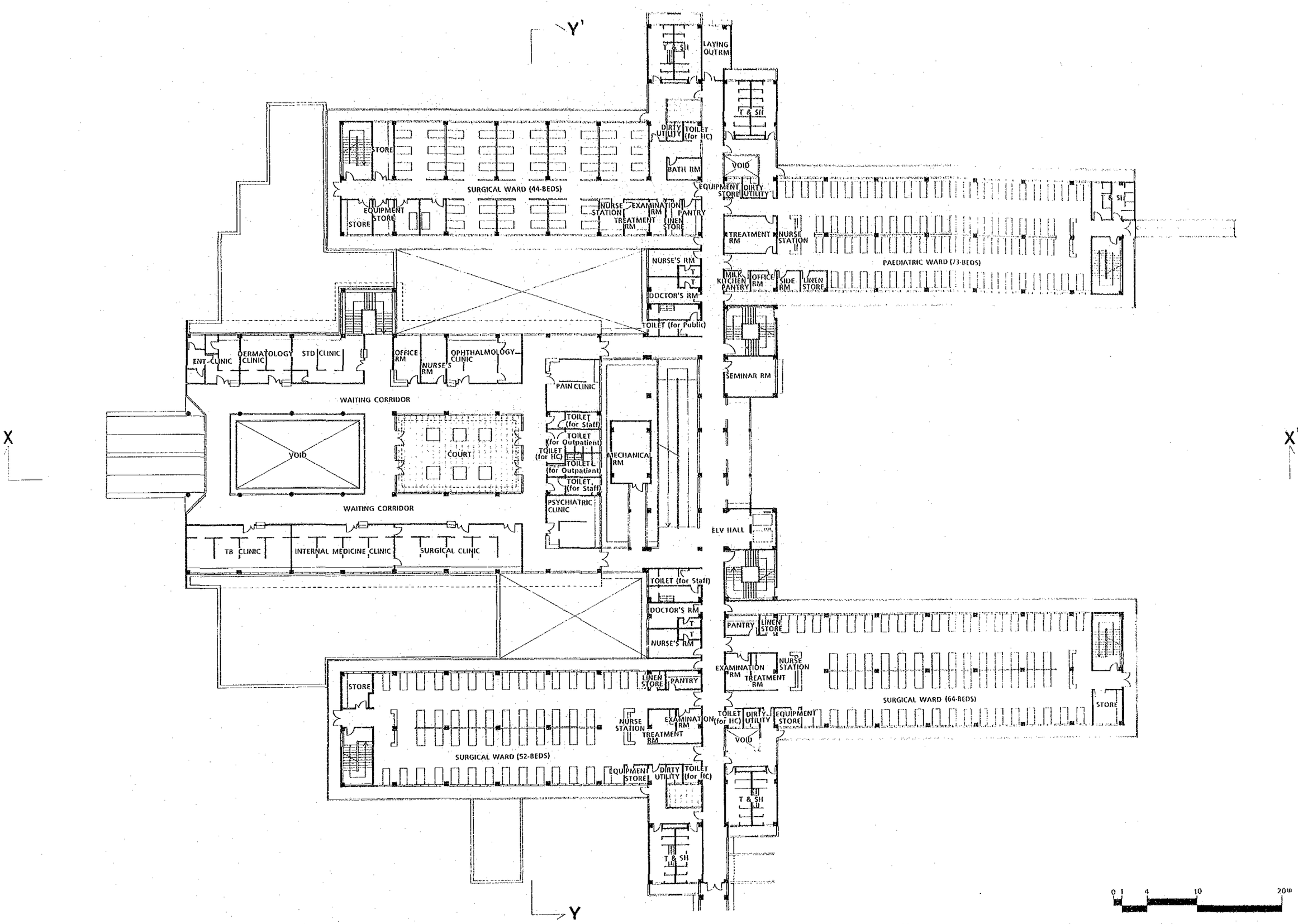
01	Site Plan	
02	New Main Building	GFL Plan
03	New Main Building	1FL Plan
04	New Main Building	2FL Plan
05	New Main Building	Elevation -1
06	New Main Building	Elevation -2
07	New Main Building	Section
08	Mortuary Building, Obstetric & Gynaecological Operating Theatre Building	

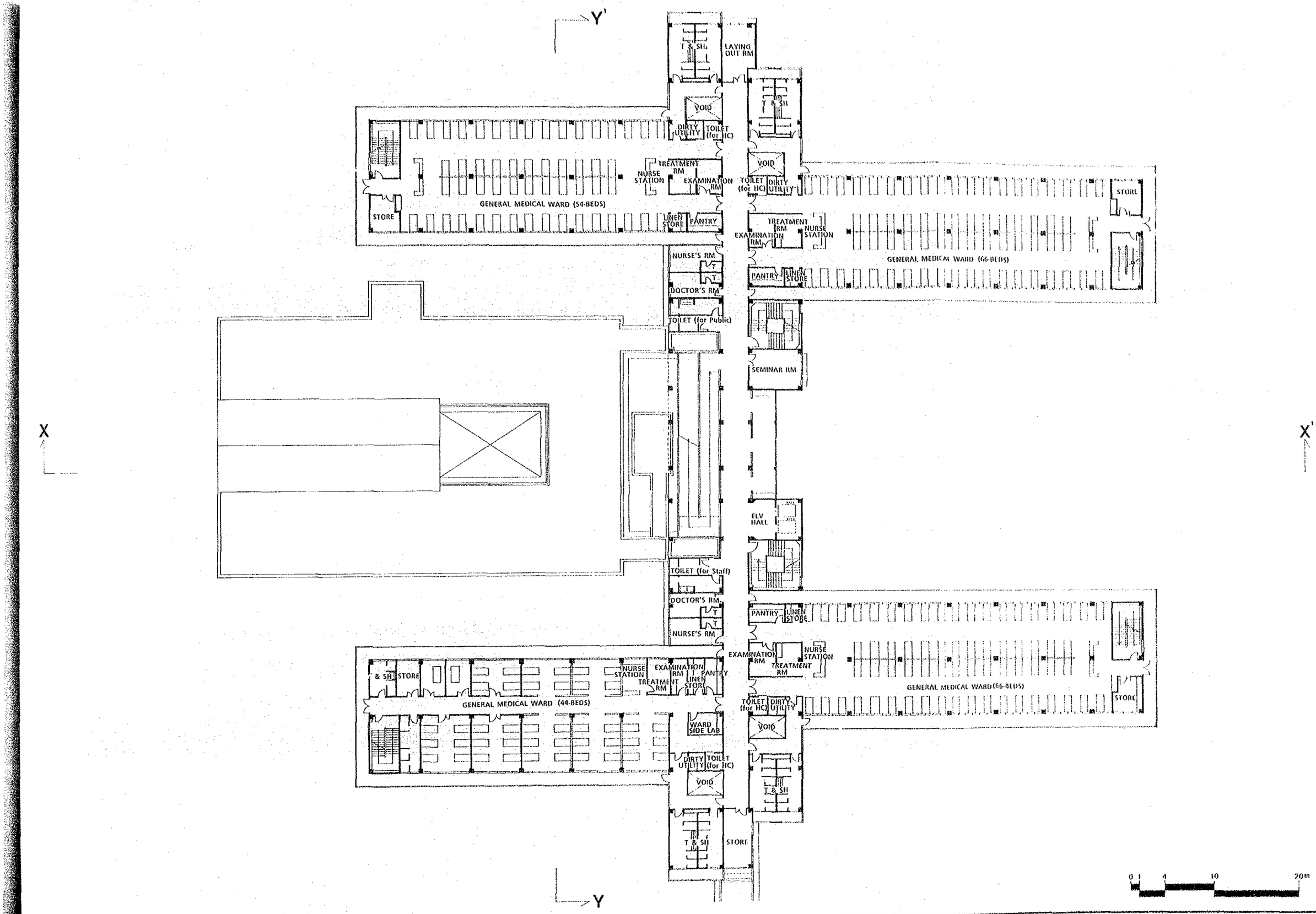


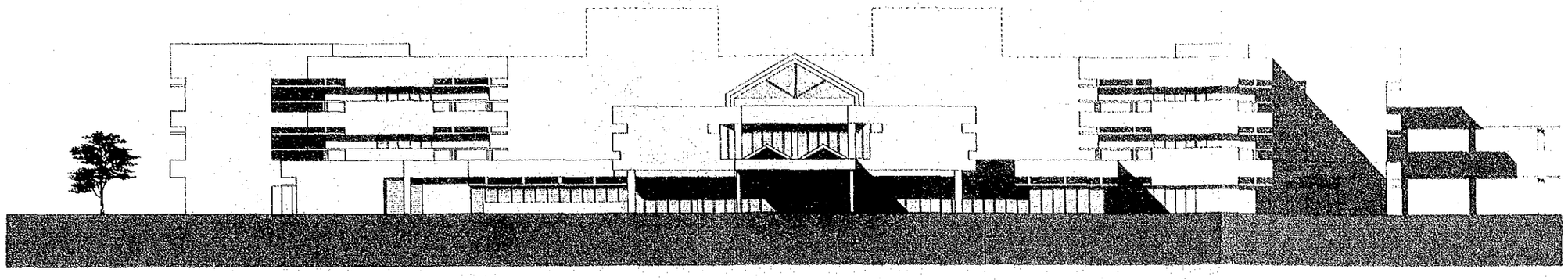
THE PROJECT FOR THE REDEVELOPMENT OF PORT MORESBY GENERAL HOSPITAL

SITE PLAN 01

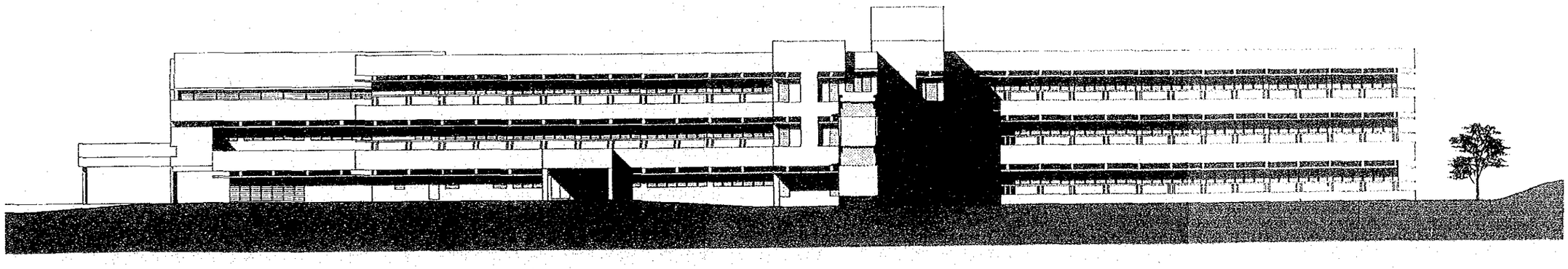

Y'
X
X'
Y
LAYING OUT RM
MECHANICAL RM
DARK RM
STORE
T & SH
TOILET (for Outpatient)
TOILET (for HC)
CONTROL CORRIDOR
READING RM
OFFICE RM (RADIOLOGIST RM)
X-RAY RM
X-RAY RM
X-RAY RM
SEMINAR RM
CHIEF RADIOLOGIST RM
FILM STORE
EQUIPMENT STORE
DIRTY UTILITY
TOILET (for Staff)
TOILET (for Staff)
WAITING AREA
ADMISSION
TREATMENT RM
NURSE STATION
PAEDIATRIC WARD (67-BEDS)
SH
MEDICAL RECORD STORE
TEL EXCHANGE RM
STORE
COURT
NURSE'S RM
DOCTOR'S RM
SECURITY RM
MILK KITCHEN PANTRY
OFFICE RM
SIDE RM
LINEN STORE
RECEPTION
ACCOUN OFFICE
SEMINAR RM
WAITING CORRIDOR
EXAMINATION RM
NURSE CONTROL
MECHANICAL RM
TREATMENT RM
WAITING HALL
STORE
STORE
SLUICE
ELV HALL
MEDICINE STORE
EQUIPMENT STORE
COOL RM
ALCOHOL RM
PHARMACIST RM
NURSE'S RM
DOCTOR'S RM
WAITING HALL
DISPENSARY RM
COURT
CONSULTING RM
STORE
LINEN STORE
GROUP THERAPY RM
STORE
STORE
ANAESTHESIOLOGIST RM
PANTRY
STAFF RM
DRUG STORE
BULK STORE
(10 BEDS FOR PAEDIATRIC)
PSYCHIATRIC WARD (49-BEDS)
PREPARATION RM
EXAMINATION BOOTH
EQUIPMENT STORE
DIRTY UTILITY
PLASTER RM
DRUG STORE
TREATMENT RM
NURSE STATION
NURSE STATION
T & SH
TROLLEY BAY
TOILET (for HC)
DIRTY UTILITY
TOILET (for HC)
TOILET
DISPOSAL STORE
TOILET
OFFICE
NURSE STATION
RECOVERY & OBSERVATION RM
MINOR OPERATING THEATRE
RESUSCITATION RM
T & SH
MECHANICAL RM
LAYING OUT RM
0 1 4 10 20m


Y'
X
X'
Y
T & SH
LAYING OUTRM
DIRTY UTILITY
TOILET (for HC)
BATH RM
VOID
EQUIPMENT STORE
DIRTY UTILITY
STORE
SURGICAL WARD (44-BEDS)
EQUIPMENT STORE
STORE
NURSE STATION
EXAMINATION RM
PANTRY
TREATMENT RM
LINEN STORE
NURSE'S RM
DOCTOR'S RM
TOILET (for Public)
TREATMENT RM
NURSE STATION
PAEDIATRIC WARD (73-BEDS)
MILK KITCHEN PANTRY
OFFICE RM
SIDE RM
LINEN STORE
SEMINAR RM
ENT-CLINIC
DERMATOLOGY CLINIC
STD CLINIC
OFFICE RM
NURSE'S RM
OPHTHALMOLOGY CLINIC
WAITING CORRIDOR
VOID
COURT
WAITING CORRIDOR
TB CLINIC
INTERNAL MEDICINE CLINIC
SURGICAL CLINIC
PAIN CLINIC
TOILET (for Staff)
TOILET (for Outpatient)
TOILET (for HC)
TOILET (for Outpatient)
TOILET (for Staff)
PSYCHIATRIC CLINIC
MECHANICAL RM
ELV HALL
TOILET (for Staff)
DOCTOR'S RM
NURSE'S RM
PANTRY
LINEN STORE
EXAMINATION RM
NURSE STATION
TREATMENT RM
SURGICAL WARD (64-BEDS)
STORE
STORE
LINEN STORE
PANTRY
NURSE STATION
EXAMINATION RM
TREATMENT RM
TOILET (for HC)
DIRTY UTILITY
EQUIPMENT STORE
SURGICAL WARD (52-BEDS)
VOID
EQUIPMENT STORE
DIRTY UTILITY
TOILET (for HC)
T & SH
T & SH
0 1 4 10 20m


Y'
X
X'
Y
T & SH.
LAYING OUT RM
VOID
DIRTY UTILITY
TOILET (for HC)
NURSE STATION
TREATMENT RM
EXAMINATION RM
GENERAL MEDICAL WARD (54-BEDS)
STORE
LINEN STORE
PANTRY
NURSE'S RM
DOCTOR'S RM
TOILET (for Public)
SEMINAR RM
ELV HALL
TOILET (for Staff)
GENERAL MEDICAL WARD (66-BEDS)
GENERAL MEDICAL WARD (44-BEDS)
WARD SIDE LAB
0 1 4 10 20m

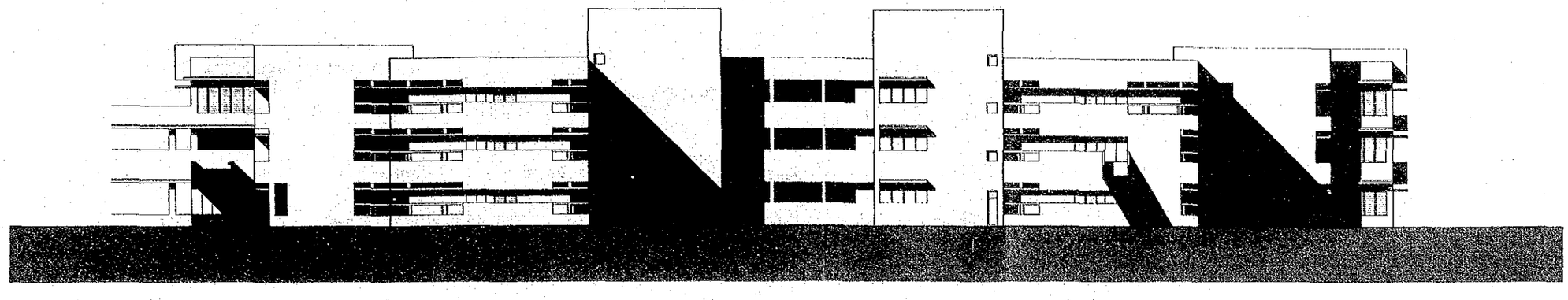


EAST ELEVATION

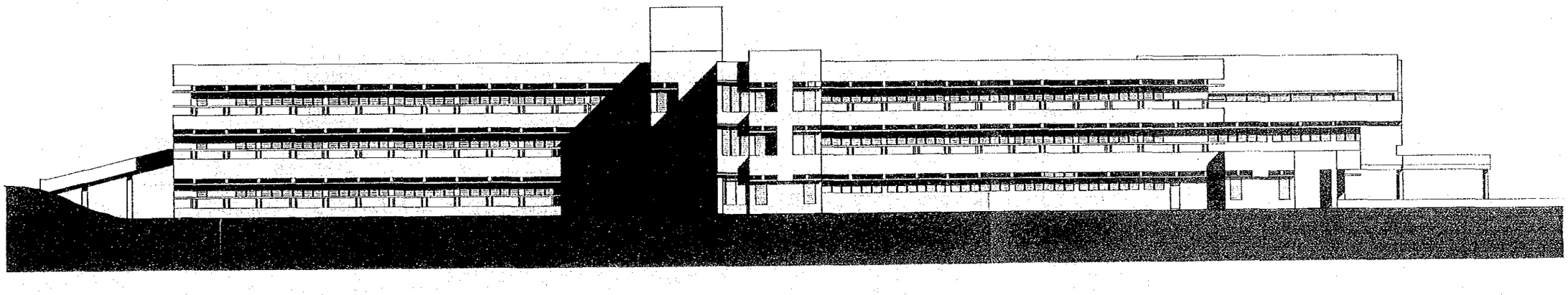


NORTH ELEVATION

0 1 4 10 20m

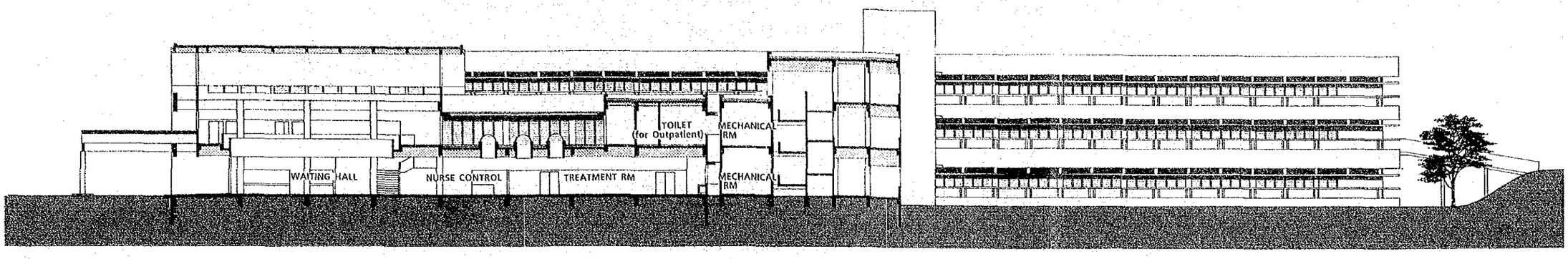


WEST ELEVATION

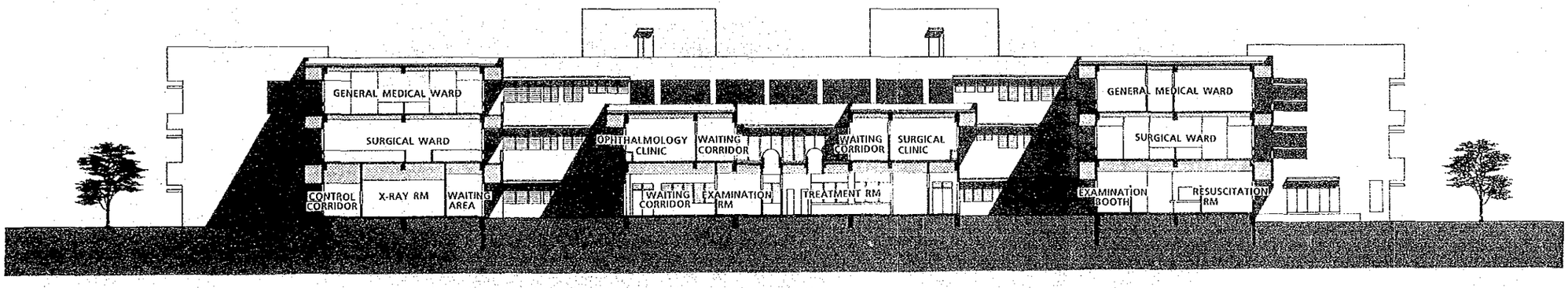


SOUTH ELEVATION

0 1 4 10 20m



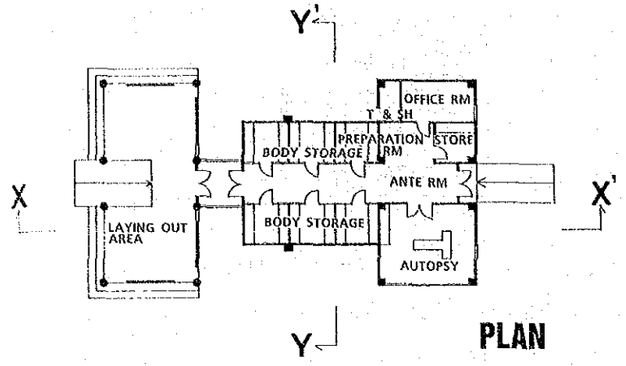
SECTION X-X'



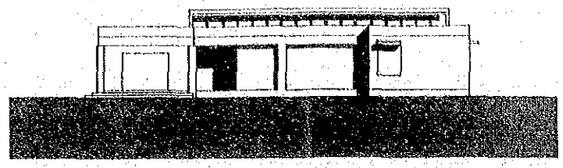
SECTION Y-Y'

0 1 4 10 20m

MORTUARY BUILDING



PLAN



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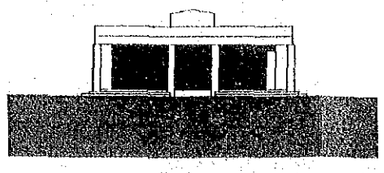
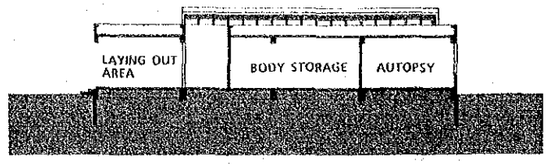


EAST ELEVATION



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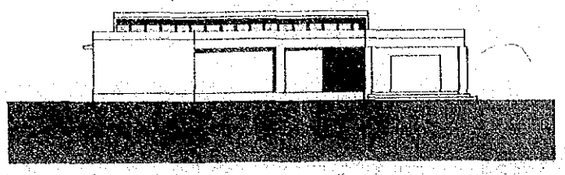

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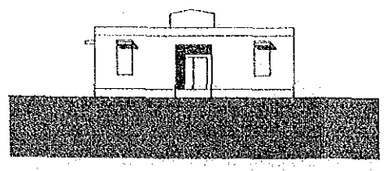

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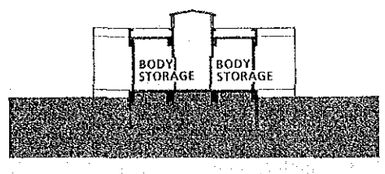
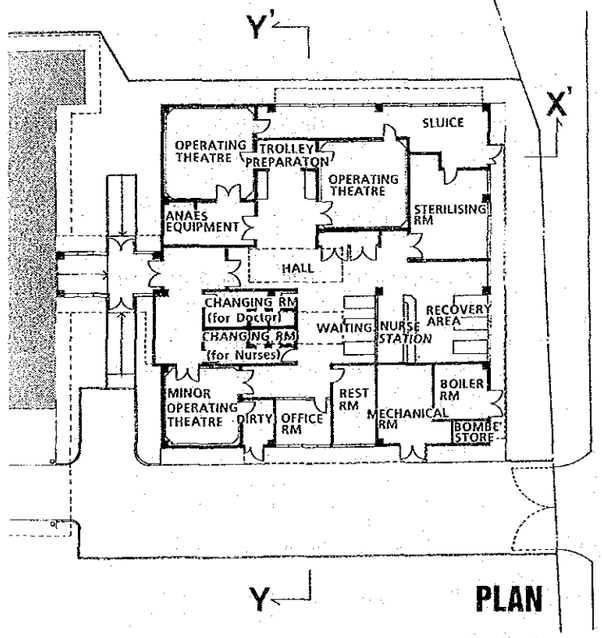
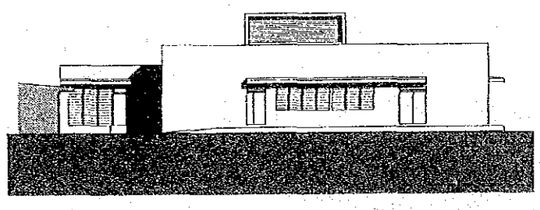


SECTION Y-Y'

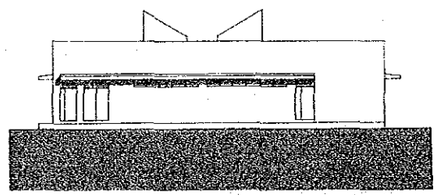
OBSTETRIC & GYNAECOLOGICAL OPERATING THEATRE BUILDING



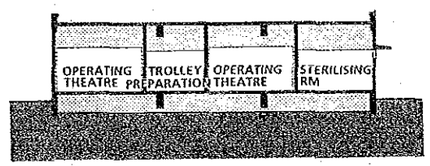
PLAN



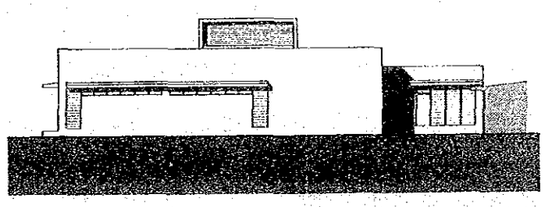
NORTH ELEVATION



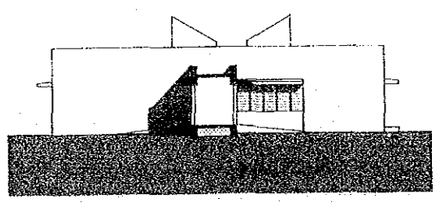
WEST ELEVATION



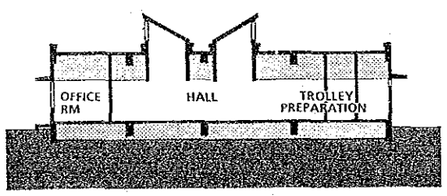
SECTION X-X'



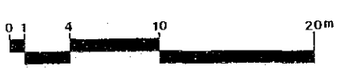
SOUTH ELEVATION



EAST ELEVATION



SECTION Y-Y'



4-4 Basic Design of the Medical Equipment

4-4-1 Medical Equipment Plan

In the medical equipment plan, the contents and functions of the rooms of each clinical department, their layouts and scales and functional relationship with other rooms, as well as the overall facility composition and functions of the hospital will be examined. Moreover, minute care will be taken to make sure that all pieces of equipment are arranged systematically in relation to the trends of the most prevalent diseases, the scale and technical level of the medical personnel. Existing equipment which is in good condition and which can be moved to the new facilities will continue to be used.

(1) New Main Building

1) General Outpatient

As equipment for covering the 7 medical examination rooms, dressing, medication, injection and plastic cast treatment rooms, existing equipment will be used.

2) Casualty

The equipment for this department covers a wide variety of activities and facilities, including a preparation room, 5 diagnosis and treatment booths, an emergency operating room, an observation room, other preparation rooms, dirty utility and the nurse station. In the preparation room, a suction unit and a nebuliser will be used. In the emergency operating room, as in the central operating room, two operating beds (one is the existing operating table) and related equipment will be installed. The preparation room will have a scrub up unit and other related equipment. The nurse station will have an

electrocardiograph. Existing stretchers and irrigator stands in this department will be used in the new department.

3) Specialist Clinic

The main equipment to be installed in the ENT Department includes one ENT treatment unit and treatment chair for the examination room. The Ophthalmology Department will have an examination room and dark room, in which a slit lamp and a synoptophore will be installed.

Since the Psychiatric Department will employ diagnosis and treatment centered around interviews, no special equipment need be installed so that patients may undergo diagnosis and treatment in a relaxed atmosphere.

In other departments, existing equipment will be used.

4) Pharmacy

The scope of services provided by the Pharmacy is very broad and therefore a wide variety of goods, from medicines to sanitary supplies, are handled there. The Pharmacy usually has 500,000 tablets and capsules, 2,400 liters of syrup, 29,000 ampoules of injection and 1,500 bags of blood for transfusions. Also it has more than 5,900 packs of gauze and bandages. Since formulation is not conducted very often, emphasis should be placed on drug inventory control and related operations. The electronic scale can continue to be used in the new building.

5) X-ray Department

A new X-ray machine and the two existing X-ray machines from the existing Casualty Department (installed in 1983) and X-ray Department will be installed. This equipment will be used to conduct testing requested by all other departments, except for the Obstetric and

Gynaecology Department. However, careful examination of the existing equipment which is to be moved to the new building should be made as there will be many problems involved in moving it to the new building.

6) Paediatric Ward

Two nursing units will constitute this ward (150 beds). The nurse station will be equipped with an ice maker and a bed pan steriliser will be installed in the dirty utility.

7) Surgical Ward

Two nursing units will constitute this ward (160 beds). The nurse station will be equipped with an ice maker. The beds will be ordinary ones, but the orthopaedic beds will be equipped with a tractor (10 beds), and the acute patient's beds will be one-crank gatch beds (20 beds).

8) General Medical Ward

Two nursing units will constitute this ward (230 beds). The nurse station will be equipped with an ice maker and the dirty utility will be equipped with a bed pan steriliser. The beds will be similar to those to be installed in the Surgical Ward. There will also be one-crank gatch beds (40 beds).

9) Psychiatric Ward

One nursing unit will constitute this ward (40 beds) including a secure ward. Since in principle all the patients are receiving medical care for a short time, most of them receive work treatment or rehabilitation. As the work treatment is done in the facilities of the Rehabilitation Department, no special equipment will be installed in this facility. As special equipment like the electric shock

treatment unit is dangerous and some question its effectiveness, this type of equipment is not included in the list.

In the wards, 250 new beds (including 60 one-crank gatch beds and 10 orthopaedic and fracture beds) will be installed, and the other 330 beds will be the existing ones.

(2) Mortuary Building

The prospective mortuary is very large, with accommodation for 50 corpses at a time. So this can be considered as a sort of building work.

(3) Obstetric and Gynaecological Operating Theatre Building

1) Operating Theatre

After completion of this project, obstetric and gynaecology operations which are currently performed at separate locations will be performed at an integrated operating room. Since the existing equipment of this department is still in good condition, the additional equipment should be for an additional room. The types of equipment which can be moved to the new building include, suction units, operating tables, anaesthetic equipment, movable operating lights and autoclaves and stretchers. The equipment to be procured for the new facility includes equipment related to the central piping, operating lights and an autoclave.

2) X-ray Room

Although this facility is not included in this project, some necessary measures will have to be taken in relation to the transfer of the existing X-ray diagnosis equipment.

4-4-2 List of Equipment

No.	Equipment	Q'ty	Unit
A01	Electrocardiograph	1	No
A02	Suction Unit	2	Nos
A03	Nebuliser	2	Nos
A04	Autoclave	1	No
A05	Operating table	1	No
A06	Operating light	1	No
A07	Bed pan steriliser	1	No
A08	Scrub up unit	1	No
B01	ENT treatment unit	1	No
B02	ENT treatment chair	1	No
C01	Slit lamp	1	No
C02	Synoptophore	1	No
D01	Binocular microscope	1	No
E01	Distilled water apparatus	1	No
E02	Dispensing table	1	Set
F01	Fluoroscopy X-ray machine	1	Set
F02	Automatic processor	1	No
F03	Developing tank	1	No
F04	Casette pass box	1	No
G01	Ice making machine	2	Nos
G02	Bed pan steriliser	2	Nos
H01	Ice making machine	2	Nos
H02	Bed pan steriliser	2	Nos
I01	Ice making machine	2	Nos
I02	Bed pan steriliser	2	Nos
J01	Ice making machine	1	No
J02	Bed pan steriliser	1	No
K01	Operating table	1	No
K02	Operating light	3	Nos
K03	Diathermy machine	1	No
K04	Autoclave (floor type)	1	No

No.	Equipment	Q'ty	Unit
K05	Ultrasonic cleaner	1	Set
K06	Working table	2	Nos
K07	Operating glove dryer	1	No
K08	System sink	1	No
K09	Scrub up unit	2	Nos
L01	Stainless steel instrument set	1	Set
L02	Spare parts	1	No
L03	Consumables	1	No
L04	Oxygen flow meter	1	No
L05	Vacuum trap bottle (wall hang type)	1	No
L06	One-crank gatch bed	60	Nos
L07	Orthopaedic and fracture bed	10	Nos
L08	Bed	180	Nos
M01	Diagnostic instrument set	1	No

CHAPTER 5 PROJECT IMPLEMENTATION PLAN

CHAPTER 5 PROJECT IMPLEMENTATION PLAN

5-1 Project Implementation System

The project will be implemented within the framework of a grant aid to be provided by the Government of Japan. The grant aid for this project will be started formally after its approval in a cabinet meeting of the Government of Japan and signing of the Exchange of Notes (E/N) between the Government of Papua New Guinea and the Government of Japan.

The Secondary Health Services Division of the Department of Health of Papua New Guinea will be responsible for implementation of this project.

After the signing of the Exchange of Note, the Government of Papua New Guinea will conclude a contract on design and supervision of the facilities and equipment with a Japanese consultant firm and commission the Japanese consultant firm to draw up detail design, to conduct tender for selection of contractors and to supervise the prospective construction work. As to the construction work and procurement and installation work of the medical equipment, Japanese contractors will be selected by tender. Transfer of the contract money will be conducted through a bank designated as a result of the banking arrangement (B/A).

Construction of the facilities covered by this project will be executed in two phases, Phase 1 to be started in March 1989 and Phase 2 in September 1989. A contractor responsible for Phase 1 will be selected by tender, and for Phase 2 the contractor selected for Phase 1 and the Government of Papua New Guinea may conclude the contract by negotiation.

5-2 Scope of Works

The Project is to be implemented with the cooperation of both Governments in accordance with the Japanese grant aid cooperation system and the scope of work of each side is as follows:

5-2-1 Scope of Works by the Government of Japan

(1) Facilities

- Construction of buildings and facilities which are indicated in the Basic Design Study Report.

(2) Medical Equipment

- Procurement and installation of medical equipment which are listed in the medical equipment list in the Basic Design Study Report.

(3) Exterior Works

- Construction of external structures such as roads, footways, courtyards, drainage facilities and lighting within the site as indicated in the Basic Design Study Report. (excluding planting)

(4) Related Procedures

- Packing, loading, marine transportation, unloading, and inland transportation of construction materials and medical equipment, including payment of damage insurance premiums to cover them.

5-2-2 Scope of Works by the Government of Papua New Guinea

(1) Site and Exterior Work

- Securing the site for this project
- Removal of the existing buildings, trees and other obstacles on the site and site preparation including banking and leveling of the site
- Construction of fences
- Planting

(2) Infrastructure

- Securing electric power, telephone, and water both for construction and permanent use.

(3) Preparatory Work for the Construction Work

- Securing of spaces for a temporary site office, workshops and stocking materials

(4) Utensils, Fixtures, Furnishings and Furniture

- Utensils, fixtures, furnishings and furniture which are outside the scope of works by the Government of Japan

(5) Applications and Expenses necessary for the Project

- Payment in connection with Banking Arrangement (B/A)
- Expenses necessary for tax exemption
- Prompt measures concerning customs clearance and inland transport
- Following the procedures for exemption of custom duties, government taxes, rates and other fiscal surcharges imposed in Papua New Guinea on the Japanese personnel engaged in the implementation of this project under the verified contracts
- According convenience necessary for Japanese personnel's entry

- Maintenance of the facilities and their functions for the sound and effective operation after completion of this project
- Necessary expenses in filing applications for architectural approval and permission

5-3 Execution Plan

5-3-1 Execution Guideline

This project is aimed at integrating various functions of the existing facilities of the hospital by constructing the facilities of such clinical departments as outpatient, pharmacy and X-ray departments and the ward division on the site located between the existing main hospital building and children's outpatient clinic. It should be noted that the mortuary building will be built on the southern side of the children's outpatient clinic, away from the wards, for more efficient operation and management of the entire hospital facilities.

In addition, an operating theatre building with an obstetric and gynaecological X-ray room will be built on the parking lot for the current obstetric and gynaecological wing (McGregor Wing). This is located on the northwestern side of the project site across the road, to which the existing X-ray equipment will be moved during the construction period. Also, procurement and installation work of equipment necessary for this project is incorporated in this project. This project will be implemented in two phases -- Phase 1 (scheduled to be implemented from March 1989 to March 1990) and Phase 2 (scheduled to be implemented from September 1989 to November 1990). Procurement and installation work of the medical equipment will be contracted out during Phase 2.

The whole construction work and procurement and installation work will be implemented without disturbing routine works at PMGH. The path of flow of outpatients and services to the children's outpatient clinic will be kept intact throughout the project implementation period.

More than adequate attention will be paid to the safety and security during the construction procurement and installation work, with utmost

stress placed on prevention of fires and safety of patients, hospital staff and all workers engaged in the project.

5-3-2 Points to Note in Carrying out the Construction Work, and Procurement and Installation Work

1. Of the works by the Papua New Guinean side, site preparation, temporary supply of water, electricity, telephone and the formal procedures for starting the construction work must be undertaken before the commencement of construction work.

2. In Port Moresby it rains heavily in December and January. For this reason, it is essential to work out and implement a systematic work schedule so that the foundation work may be completed before this season and the roof construction work may be carried out during a period other than this season.

3. It is the intention of the Japanese side to procure building materials in Papua New Guinea wherever possible. However, those which are not available locally or those which are too expensive compare to Japanese standards will have to be imported from Japan. It is essential that the works by the Papua New Guinean side, including the procedures for clearing these imported materials through the customs, be carried out smoothly and steadily.

4. Inspection of the construction work will be based on Papua New Guinean legal requirements currently in force. Therefore, careful attention should be paid to the quality and performance of materials imported from Japan.

5-3-3 Supervision of the Construction Work, and Procurement and Installation Work

In accordance with the Japanese grant aid cooperation system, the Japanese consulting firm will be selected for the detail design and supervision of the project by the Government of Papua New Guinea and engage in supervision of the construction work and procurement and installation work of medical equipment under the contract. The objective of the supervision of the construction work and procurement and installation work is to see if the work is being implemented in compliance with the drawings and specifications and secure the desired quality of the project by providing instructions, advice and coordination from a fair standpoint in consultation with the Government of Papua New Guinea. The consultant's activities include the following.

(1) Assist the Tender Procedure and Contracting

For the purpose of selecting a Japanese contractor for the construction work and procurement and installation work of the medical equipment, the consultant will prepare documents necessary for inviting tenderers and draft contracts, implement the invitation of tenders, and give advice on contracting.

(2) Instructions, Advice and Coordination for the Contractors

The consultant will examine the construction schedule, the construction plan, the equipment procurement plan and so on, and also provide instructions, advice and coordination to the contractors.

(3) Examination and Approval of Shop Drawings and Manufacturing Drawings and Other Documents

The consultant will examine and approve the shop drawings and manufacturing drawings and other documents submitted by the contractors.

(4) Confirmation and Approval of Construction Machines, Materials and Equipment

The consultant will confirm the consistency of data on construction machines, materials and equipment with the drawings and specifications and approve their use.

(5) Reporting on the Progress

The consultant will report to the both governments on the progress of the construction work, and procurement and installation work based on its understanding of the construction schedule and the actual situation of the construction site.

(6) Inspection

The consultant, as occasion demands, will inspect all processes of the construction work, and procurement and installation work, from start of the works to completion, to secure the desired quality and functions of the facilities.

The consultant will dispatch a resident engineer to the site to supervise the work through the whole period of the work.
In addition, the consultant will send necessary engineers to the site to have them perform inspection, advice, and coordination, according to the progress of the work.
The consultant will report progress, disbursement, completion, handing over, etc. of the Project to the Government of Japan authorities concerned.

5-3-4 Procurement Plan

(1) Building Materials

Types of building materials which are currently manufactured locally are very limited -- only lumber, paints and some others. All other machines and materials are imported mainly from Australia. And most of the imported machines and materials are sold by Papua New Guinean sales agents. It is also possible to import them directly from Australia. Accordingly, materials to be used in this project will be procured locally, in general.

Some materials not to be procured locally will be imported from Japan. As regards their procurement from a third country, whether or not to do this will be decided after detailed study of the technical level of the providing country and the quoted prices, subject to approval by the governments of both countries.

In light of the above factors, the procurement plan for this project should be as follows:

1) Materials to be imported

Reinforcing bars

2) Materials to be procured locally

Locally manufactured materials	Lumber, plywood, concrete, concrete products, paints, PVC pipes, PVC waterproofing
Locally processed materials	Steel wires, steel plates
Imported materials	Other

5-4 Project Implementation Schedule

This project will be implemented in two phases -- Phase 1 (part of the buildings) and Phase 2 (buildings and equipment). Phase 1 will be started after the Exchange of Note is signed by both governments. After that the Government of Papua New Guinea will select a Japanese consulting firm and then a consultant contract will be concluded between the Government of Papua New Guinea and the Japanese consulting firm.

The implementation schedule will be divided into three stages -- detailed design, invitation of tenders and construction. The construction work in Phase 2 will be contracted out to the contractor responsible for Phase 1 after the signing of the Exchange of Notes concerning the construction work in Phase 2. A contractor responsible for procurement and installation work of the medical equipment will be selected through tender.

(1) Detail Design

After the Government of Japan verifies the consultant contract, the detail design will be started. In the stage of detail design, a set of tender documents including detail design drawings, specifications and tender requirement will be prepared. Meanwhile, the Japanese consulting firm will conduct consultations with the Papua New Guinean side on the contents of the facilities and equipment and will obtain the Papua New Guinean side's final approval of the drawings and specifications. This process should be completed in about two and a half months.

(2) Tenders for the Construction Work in Phase 1

A contractor (a Japanese construction firm) for the construction work will be selected by tender. Tender will be carried out in the order of public announcement of the tender, prequalification, invitation of tenders, evaluation of the tender, appointment of the contractor and signing of a

construction contract. This process should be completed in about two months.

(3) Construction

After the signing of the construction contract, the construction work will be started when the Government of Japan verifies the contract. Since the construction work is contracted out in two phases, it will take about 21 months to complete the entire construction work. It should be noted, however, that the construction work in Phase 2 will be contracted out to the contractor responsible for the construction work in Phase 1 by the Government of Papua New Guinea on a negotiation basis, without going through a process of inviting tenderers after the signing of the Exchange of Notes for the Phase 2 construction work.

(4) Tender for the Work to Procure and Install the Medical Equipment

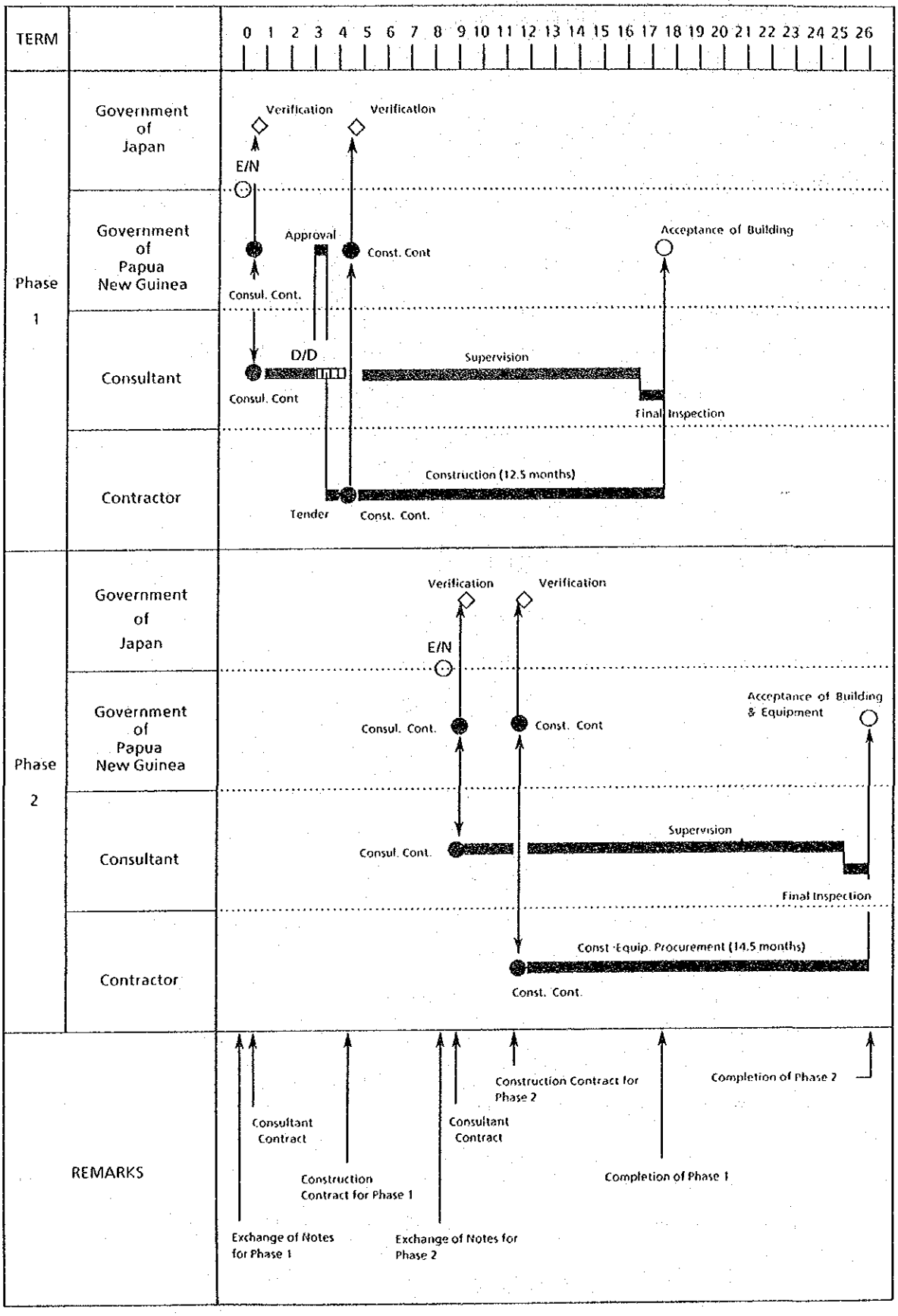
A contractor for the procurement and installation work of medical equipment will be selected by tender after the signing of the Exchange of Notes for the Phase 2. The tender will be carried out in the order of public announcement of the tender, invitation of tenders, evaluation of the tender, appointment of the contractor and signing of a procurement and installation work contract. This process should be completed in about a month.

(5) Procurement and Installation Work of the Medical Equipment

After the signing of the procurement and installation work contract, the work will be started when the Government of Japan verifies the contract. This work should be completed in about 8 months.

The overall implementation schedule worked out after examining the above-mentioned factors is as shown in Table 5-1.

Table 5-1 Implementation Schedule



5-5 Estimated Costs of the Project To Be Defrayed by the Government of Papua New Guinea

The estimated total costs of the project to be defrayed by the Government of Papua New Guinea can be broken down as follows.

(1) Site preparation ..... 101,000 Kina

(2) Infrastructure ..... 0 Kina

1. Electricity : (The existing facilities will be used)
2. Telephone : (The existing facilities will be used)

(3) Construction ..... 720,000 Kina

1.	Nutritional treatment wing	340,000 Kina
2.	Rehabilitation wing	380,000 Kina

(4) Exterior Works ..... 178,000 Kina

1.	Fences and gates (along leprosy ward)	9,000 Kina
2.	Planting	82,000 Kina
3.	Demolishing (the rest of Walter Strong Wing)	87,000 Kina

(5) Equipment Work ..... 0 Kina

1. Furniture : (The Furniture in the existing building will be used)
2. Equipment : (The Equipment in the existing building will be used)

Total 999,000 Kina

It should be noted that the above estimated total cost of the project to be defrayed by the Government of Papua New Guinea does not include taxes, customs clearance charges and personnel expenses.

It is desirable that the Government of Papua New Guinea prepare the budget for this project, conduct design, carry out the construction with proper timing so that entire project can be implemented smoothly and the facilities constructed may be utilised effectively.

CHAPTER 6 MAINTENANCE AND MANAGEMENT PLAN

CHAPTER 6 MAINTENANCE AND MANAGEMENT PLAN

(1) Maintenance and Management System

The new main building, Mortuary Building, and Obstetric and Gynaecological Operating Theatre Building will be operated as an integral part of the existing hospital's facilities.

The objective of the maintenance and management system is to operate all hospital facilities, including the new facilities, at the present maintenance and management cost level through rationalisation and improvement of the functions of the hospital.

(2) Maintenance and Management Plan

The total floor space of the new facilities is to be about 15,000m^2. As part of the existing wooden ward building, the X-ray unit and obstetric and gynaecological operating unit (total floor area: about 7,800m^2) will be demolished and removed, and the net increased in total floor space will be about 7,200m^2. Thus the total floor space of the hospital's facilities after completion of this project will be 33,100m^2.

An additional 580 beds will be installed, and 467 of the beds installed in the facilities to be demolished and removed will be discarded. Thus the net increased in the number of beds will be 113. As part of this project, the number of nursing units will be increased by 1. As a result of this, it will be necessary to increase the number of nursing officers and nurse aides by 10.

On the other hand, it is possible to reduce the number of nurses working at the existing Tuberculosis and STD Outpatient from 13 to 3 by integrating the Outpatient Departments. The number of outpatients and the number of persons receiving secondary health services in 1995 are

estimated at 557,000 and 430,000 respectively. It is estimated that there will been increases of 49 percent and 27 percent respectively in the values for the two categories. But it will be possible to cope with this by integrating and increasing the efficiency of the Outpatient Departments without expanding the present number of personnel.

Although the increase in total floor space is likely to result in an increase in the maintenance and management costs, measures to minimise the cost are incorporated in the architectural, equipment and building materials plans so that the maintenance and management costs will settle back down to the present level in the long run.

The table below shows a comparison of the present situation of the facilities and that after completion of this project.

Table 6-1 Total Area of the Facilities

	at present (May, 1988)	after completion of project	
Total floor area	25,900 m²	33,100 m²	+ 7,200 m²
Floor area of existing part	16,400 m²	16,400 m²	—
Floor area of remodelled part	1,700 m²	1,700 m²	—
Floor area of demolished part	7,800 m²	—	▲ 7,800 m²
Floor area of construction part	—	15,000 m²	+ 15,000 m²
Number of beds	798 beds	911 beds	+ 113 beds
Nursing unit	16	17	+ 1
Number of nurses	341	341	± 0
Total staffs	776	776	± 0

(3) Maintenance and Management Costs

In calculating the maintenance and management costs after completion of this project, an attempt was made to calculate expected increases or decreases in costs after integration of the new and existing facilities on the basis of the hospital's 1988 budget for facilities management.

Items where an increase or decrease in the management costs is expected.

• Maintenance expenses		▲5,690 Kina
Cleaning (additional floor space: 7,200m^2)	11,232 Kina	
Internal maintenance (for new facilities)	39,000 Kina	
Replacement of insect screens (for new facilities)	4,752 Kina	
Maintenance and management of buildings to be demolished		▲66,300 Kina
Transfer of patients to old X-ray room		▲16,000 Kina
Aid-conditioning system maintenance	21,626 Kina	
• Electric charges	39,064 Kina	
New Outpatient Department	47,929 Kina	
Old Outpatient Department (to be moved)		▲41,420 Kina
New ward	35,148 Kina	
Old ward (to be demolished)		▲6,758 Kina
New X-ray Department	13,648 Kina	
New Obstetric and Gynaecological Operating Theatre Building	21,284 Kina	
Old Obstetric and Gynaecological Operating Unit (to be demolished)		▲30,767 Kina
• Water supply and drainage charges	6,045 Kina	
New ward	38,978 Kina	
Old ward (to be demolished)		▲33,081 Kina

New Obstetric and Gynaecological Operating Theatre Building	664 Kina
Old Obstetric and Gynaecological Operating Unit (to be demolished)	▲516 Kina
• Differential	39,419 Kina

The result of the above tentative calculation done with the prices in 1988 taken as base prices indicates that the differential in the maintenance and management costs will be a increase of 39,419 Kina. If the scope is limited to the budget for operation of PMGH's facilities, a decrease of 16,922 in the costs for maintenance of the buildings can be excluded and the new increase will amount to 56,341 Kina. These figures represent 0.94 percent of the PMGH's budget of 5,935,900 Kina for operation of its facilities.

According to the budgetary guidelines of the Government of Papua New Guinea for 1988-92, the government's revenues for 1988 are estimated at 880 million. For 1991, when operation of the new facilities is scheduled to start, revenues are estimated at 935 million, a 6.25 percent increase over the level of 1988. If it is assumed that the real rate of growth of PMGH's budget is linked to that of the government's revenues, it is possible to increase the annual maintenance cost to 0.94 percent of PMGH's 1988 budget for operation of the facilities in 1991. This figure is equivalent to the present level of maintenance costs.

CHAPTER 7 EVALUATION OF THE PROJECT

CHAPTER 7 EVALUATION OF THE PROJECT

In the national health and medical health policy of Papua New Guinea, top priority is given to primary health services. In 1985, 96 percent of the nation's population were able to reach medical health facilities within 2 hours. However, there had been no significant change in the pattern of the most prevalent diseases over the past decade, with no decrease in the cases of diarrhoea, pneumonia and malaria. To overcome this situation, the national government worked out the Second National Health Plan 1986-90 aimed at improving the quality of primary health services, as well as increasing the number of primary health services facilities.

Seventy percent of the nation's population (as of December 31, 1985) were receiving medical health services at a total of 2,231 aide posts, which are positioned at the smallest primary health facilities in the nation. It should also be noted that, in 1984, 53 percent of the total number of operations performed at public medical health facilities were performed at primary health services facilities. These figures evidence the great importance primary health carries in the nation's medical system.

On the belief that the secondary health facilities' support to the primary health facilities in terms of personnel and technology is indispensable to the realisation of improvements in the quality of medical care, the national government worked out a programme to improve the quality and efficiency of primary health services institutions by redeveloping the facilities and functions of the nation's hospital, and drew up a plan to improve the facilities of Port Moresby General Hospital, which is the nation's referral and teaching hospital, as well as the largest primary health institution in Central Province and the National Central District, as part of the programme.

The project is evaluated with this background in mind.

(1) Papua New Guinean Organisation Responsible for Implementation of this Project.

In the system for implementation of this project, the project implementation commission and the executive group headed by the Director of PMGH will carry out all project operations, from designing to completion of the construction work, under the direction of the Secondary Health Services Division of the Department of Health of Papua New Guinea. The Department of Works of Papua New Guinea will be responsible for architectural approval and permission related to this project.

The above-mentioned organisations have already been formed, and it is expected that sufficient preparatory work will be conducted before this project is started. In this context, it is considered reasonable and advisable that these organisations take full responsibility for implementation of this project.

(2) Operating and Managing System

After completion of this project, the new facilities will be integrated into the existing facilities of PMGH and will be operated by the Department of Health. The number of PMGH's personnel in 1991 is estimated at 776.

The result of a tentative calculation of the annual maintenance costs for 1991 indicates that the net increase in the maintenance costs from 1988 to 1991 will be about 56,341Kina and account for 0.94 percent of PMGH's 1988 budget for operation of its facilities. If it is assumed that between 1988 and 1991 the hospital's annual budget for operation of its facilities will increase by 6.25 percent (about 370,100 Kina), the figure for the net increase will represent 0.89 percent of the 6,306,000 Kina that would be

the 1991 budget. Thus it will be possible to operate all the facilities after completion of this project within the range of the present budget.

(3) Effects of This Project

Effects, both direct and indirect, of this project include improvements in the quality of medical health services, human resources development in the field of medical health, and improvements in efficiency of the functions of the hospital.

1) Improvements in the Quality of Medical Health Services

Typical direct effects of this project will be that as a result of construction of the new facilities with 580 beds, the number of beds at the hospital will be increased by 113 and that the integration of the Outpatient Departments will result in increases in the efficiency of the functions of the hospital, making it possible to accept 557,000 outpatients and 27,000 inpatients annually with the number of hospital personnel equivalent to the present level, and without any increase in the operating costs.

Furthermore, it will become possible to support primary health services through local hospitals, by making about 30 beds from local medical health institutions available to referral patients.

2) Human Resources Development in the Field of Medical Health

Improvements in efficiency of the functions of the hospital will lead to more effective education and training services to students and graduates of UPNG and the College of Allied Health Sciences, as well as other medical care related professionals. This, in turn, will generate nationwide ripple effects in the national government's effort to improve the quality of services at medical health institutions across the country.

3) Improvement in Efficiency of the Functions of the Hospital

It will be possible to expand the scope of services provided at the hospital without increasing the ratio of the hospital's budget to the Department of Health's total budget, by integrating the superannuated facilities and rectifying the inefficient arrangement of them at a cost level equivalent to the present level. This, in turn, will contribute to improvements in the quality of primary health services, mainly through training given to medical professionals working at provincial hospitals.

Likewise, the quantitative expansion in direct medical health services in Central Province and the National Central District will contribute to the enhancement of welfare programmes for community residents.

Thus it is clear that this project will greatly contribute to the improvement in the quality of medical health services in Papua New Guinea. This project is aimed at increasing the number of beds in the hospital and upgrading its ability to diagnose and treat outpatients efficiently. With the functions of the hospital being improved remarkably, the existence of a well-organised system for operating and managing the new facilities, and the great efforts of the Papua New Guinean side, it can be judged feasible and justifiable for the Government of Japan to provide grant aid for this project.

CHAPTER 8 CONCLUSION AND RECOMMENDATIONS

CHAPTER 8 CONCLUSION AND RECOMMENDATIONS

Conclusion

As a result of examination of the contents of the request from the Government of Papua New Guinea and analysis of the surveys on the background and the contents of this project, we reached the conclusion that the contents of this project described in this report and Port Moresby General Hospital's need for implementation of this project are both justified.

Port Moresby General Hospital, whose facilities are to be improved under this project, is the national referral and teaching hospital located in Port Moresby, the capital of Papua New Guinea. It is also responsible for primary health services for residents of Central Province and the National Central District. It is the only public primary health institution in this region. Accordingly, it is expected that the effects of an increase in the number of beds in the hospital, and improvement in the efficiency of the functions of the hospital will contribute to the improvement of the quality of primary health in Papua New Guinea, through its support to provincial hospitals across the country in terms of personnel and technology and its acceptance of increasing numbers of patients as the nation's referral hospital. It will have far-reaching ripple effects nationwide. In this context, it is considered reasonable and advisable for the Government of Japan to provide grant aid for this project.

Recommendations

The following recommendations are presented so that this project may be implemented promptly and the facilities constructed may be operated smoothly and effectively.

(1) Recommendations Concerning Implementation of This Project

1) This project is to improve hospital facilities currently in use, and therefore it is necessary to carry out the construction work and procurement and installation work of medical equipment without disturbing the ongoing services of the facilities affected. Accordingly, it is necessary to explain in detail the entire construction work process to the contractor after detailed consultations with the Papua New Guinean side.

2) Smooth implementation of the work by the Papua New Guinean side

It is essential to the smooth implementation of this project for Papua New Guinea to take the necessary budgetary measures relative to the progress of the project. Particularly important are the demolishing and removal of facilities presently occupying the construction site, site preparation, and temporary electric installation. This work must be completed before the work by the Japanese side can get started.

(2) Recommendations concerning Medical Health Services at Port Moresby General Hospital

1) Utmost emphasis should be placed on human resources in the field of medical health services

If human resources in the field of primary health services are developed in large quantities on the basis of past achievements in modern medicine and in close cooperation with UPNG and other medical training institutions, and if these human resources are stationed at primary health facilities across the country, it will greatly help raise the level of medical health services in the country. In this context, Port Moresby General Hospital is in a position to establish the base of a national system for developing human resources in the field of medical health services by expanding its programmes for

training medical professionals. Such efforts by PMGH will certainly contribute to a significant breakthrough in medical care in Papua New Guinea.

2) Separation of the hospital's primary health services from its routine services

Primary health services should be separated from the hospital's routine services. More emphasis should be placed on development of human resources and acceptance of referral patients, both of which are very important to the hospital. These activities cannot be carried out at any place other than this hospital.

3) Improving efficiency of public health inspections

The procedures for public health inspections should be automated and the organisation responsible for such inspections should become independent of other organisations so that improvement of the local medical care environment, prevention of diseases, and diagnosis may be carried out accordingly on a large scale.

(3) Recommendations concerning Management

A nursing system to cope with the addition of 113 beds can be secured for the time being through rationalisation in the form of the integration of Outpatient Departments and the transfer of 10 nurses to the new ward. On the other hand, however, it is expected that there will be an increase in the nurses' work load at Outpatient Departments as a result of increases in the number of inpatients discharged earlier than scheduled due to the general shortening of the length of hospitalization to offset natural increases in the number of patients. The general shortening of the length of hospitalization will also increase the nurses' work load at the wards.

To cope with such a situation, the number of nurses for the Paediatric, Surgical, General and Psychiatric wards after completion of this project

should be 85 for a total of 580 beds, compared with 56 for a total of 467 beds for the Internal, Tuberculosis, Surgical, Paediatric and Psychiatric wards before the start of this project; and that the number for the Casualty Outpatient and Specialist Clinic after completion of this project should be 29 and 14 respectively, which compares with a total of 50 nurses for the Tuberculosis Outpatient, STD Outpatient, Specialist Clinic before start of this project. On balance, the total number of nurses should be increased by 22 after completion of this project.

ANNEX

ANNEX 1

1-1 Members of the Basic Design Study Team

(1) Basic Design Study Team (May 23 ~ June 15, 1988)

• Dr. Naruo UEHARA	Leader	Department of International Cooperation National Medical Center The Ministry of Health and Welfare
• Dr. Etsuko KITA	Hospital Management	〃
• Mr. Yoshikatsu NAKAMURA	Project Coordination	Grant Aid Planning and Survey Department, JICA
• Mr. Ken MAJIMA	Project Manager Architectural Planning	Yamashita Architects & Engineers, Inc.
• Mr. Masahiro KATSUME	Architectural Design	〃
• Mr. Norio ISHIOKA	Electrical Facilities	〃
• Mr. Tsukasa TAMAKI	Mechanical Facilities	〃
• Mr. Minoru TANAKA	Structural Planning	〃
• Mr. Kouzo NAKATANI	Medical System	〃
• Mr. Katsuo TATENO	Medical Equipment Planning	〃

(2) Basic Design Study Team (Explanation of Draft Final Report)

(August 22 ~ August 31, 1988)

● Dr. Etsuko KITA	Leader	Department of International Cooperation National Medical Center The Ministry of Health and Welfare
● Mr. Ken MAJIMA	Project Manager, Architectural Planning	Yamashita Architects & Engineers, Inc.
● Mr. Norio ISHIOKA	Electrical Facilities	〃
● Mr. Kouzo NAKATANI	Medical System	〃

1-2 Field Study Schedule

(1) Basic Design Study (May 23 ~ June 15, 1988)

No.	Date	Place	Schedule
1	May 23 (Mon)	Movement	Lv. Tokyo (Ms. KITA and Messrs. UEHARA, NAKAMURA, MAJIMA, KATSUME, ISHIOKA, TAMAKI, TANAKA, NAKATANI, TATENO)
2	24 (Tue)	〃	Ar. Sydney
3	25 (Wed)	〃	Lv. Sydney Ar. Port Moresby
		Port Moresby	Courtesy call and meeting at the Embassy of Japan and JICA Port Moresby office
4	26 (Thu)	〃	Courtesy call and meeting at Department of Finance and Planning (DOFP) Meeting and Survey at Port Moresby General Hospital (PMGH)
5	27 (Fri)	〃	Meeting and Survey at PMGH Survey of the proposed construction site
6	28 (Sat)	〃	Meeting at PMGH and Department of Health (DOH)
7	29 (Sun)	Movement	Lv. Port Moresby Ar. Mt. Hagen (Ms. KITA and Messrs. UEHARA, NAKAMURA, MAJIMA, NAKATANI)
		Port Moresby	Team meeting
8	30 (Mon)	Mt. Hagen	Survey of the Hospitals
		Movement	Lv. Mt. Hagen Ar. Port Moresby
		Port Moresby	Meetings at DOFP and PMGH Survey of the local construction situation
9	31 (Tue)	〃	Meetings at DOH and the National Central District Interim Commission (NCDIC), Electricity Commission Interim report to the Embassy of Japan
10	June 1 (Wed)	〃	Meetings at DOH and National Fire Services, Post and Telecommunication Corporation Meeting at DOFP Survey of the local construction situation
11	2 (Thu)	〃	Meetings at DOFP, and DOH Signing of "Minutes of Meetings" Report of the result to the Embassy of Japan and JICA Meetings at the National Weather Service Survey of the local construction situation
12	3 (Fri)	〃	Meetings at PMGH and DOFP Survey of the local construction situation Meeting at Waterboard
		Movement	Lv. Port Moresby Ar. Sydney (Ms. KITA and Messrs. UEHARA, NAKAMURA)
13	4 (Sat)	Port Moresby	Survey of PMGH Analysis of collected data
		Movement	Lv. Sydney Ar. Tokyo (Ms. KITA and Messrs. UEHARA, NAKAMURA)

No.	Date	Place	Schedule
14	June 5 (Sun)	Port Moresby	Survey of PMGH, the College of Allied Health Sciences Team meeting
		Movement	Lv. Port Moresby Ar. Sydney (Messrs. ISHIOKA, TAMAKI, TANAKA)
15	6 (Mon)	Port Moresby	Meeting at PMGH and DOW Survey of construction site, infrastructure
		Movement	Lv. Sydney Ar. Tokyo (Messrs. ISHIOKA, TAMAKI, TANAKA)
16	7 (Tue)	Port Moresby	Meeting and Survey at PMGH Survey of local construction situation
17	8 (Wed)	〃	Survey at PMGH Meeting at DOW Survey of the local construction situation
18	9 (Thu)	〃	Meeting at PMGH and DOW Meeting at taxation office
19	10 (Fri)	〃	Meeting at DOW Survey at PMGH and local construction situation
20	11 (Sat)	〃	Survey at PMGH Analysis of collected data
21	12 (Sun)	〃	Team meeting
22	13 (Mon)	〃	Team meeting
23	14 (Tue)	〃	Meeting at DOH Report of the result to the Embassy of Japan and JICA
		Movement	Lv. Port Moresby Ar. Sydney (Messrs. MAJIMA, KATSUME, NAKATANI, TATENO)
24	15 (Wed)	Movement	Lv. Sydney Ar. Tokyo (Messrs. MAJIMA, KATSUME, NAKATANI, TATENO)

(2) Explanation of Draft Report (August 22 ~ August 31, 1988)

No.	Date	Place	Schedule
1	August 22 (Mon)	Movement	Lv. Tokyo (Messrs. MAJIMA, ISHIOKA, NAKATANI)
2	23 (Tue)	〃	Ar. Sydnery Lv. Tokyo (Ms. KITA)
3	24 (Wed)	〃	Ar. Sydnery Lv. Sydney (Ms. KITA and Messrs. MAJIMA, ISHIOKA, NAKATANI) Ar. Port Moresby
		Port Moresby	Courtesy call and meeting at the Embassy of Japan and JICA Port Moresby Office
4	25 (Thu)	〃	Meeting at DOFP
5	26 (Fri)	〃	Courtesy call to Ambassador Nomura Meeting at DOH
6	27 (Sat)	〃	Meeting at DOW, and PMGH Signing of "Minutes of Meetings"
7	28 (Sun)	〃	Team Meeting
		Movement	Lv. Port Moresby (Ms. KITA) Ar. Brisbane, Lv. Brisbane
8	29 (Mon)	〃	Ar. Tokyo
		Port Moresby	Meeting at DOW, National Fire Services Survey of construction site
9	30 (Tue)	〃	Meetings at DOFP, DOW Report of the result to the Embassy of Japan and JICA
		Movement	Lv. Port Moresby (Messrs. MAJIMA, ISHIOKA, NAKATANI) Ar. Sydney
10	31 (Wed)	〃	Lv. Sydney Av. Tokyo

1-3 List of the Persons Interviewed in the Field Study

(1) Department of Health

Dr. Quentin Reilly	(Secretary for Health)
Dr. E. Talwat	(First Assistant Secretary for Secondary Health Services)
Dr. Leonard Loh	(Assistant Secretary for Health)
Dr. Gary Ou'u	(Medical Superintendent of PMGH)
Ms. Jane Thomason	(Coordinator)
Mr. Rore Rikis	(Lands & Building Coordinator)
Mr. Robert C. Whaites	(Chief of Pharmaceutical Goods)
Mr. Dennis C. Davies	(Superintendent of Pharmaceutical Supplies)

(2) Department of Finance and Planning

Mr. Robert Igara	(First Assistant Secretary for Foreign Aid Management Division)
Ms. Fiu williame	(Assistant Secretary for Foreign Aid Management Division)
Mr. George Paru	(Principal Bilateral Aid Programme Officer)
Mr. Joe Pottory	(Senior Planner of Health)
Mr. Y. Suzuki	(Aid Advisor)

(3) Department of Works

Mr. David Gole	(Principal Architect)
Mr. Brian Smith	(Hospital Architect)
Mr. Keith Mclelland	(Quantity Surveyer)
Mr. Mike Butt	(Principal Programme Officer)
Mr. S. Barrow	(Exective Engineer)
Mr. A. E. Smaller	(Principal Engineer)
Mr. S. Panchalingam	(Senior Plant Engineer)
Ms. Susan Pearson	(Architect)

(4) Port Moresby General Hospital

Dr. Gary Ou'u	(Medical Superintendent of PMGH)
Dr. Miila Gena	(Clinical Superintendent)
Dr. J. Vince	(Assistant Clinical Superintendent)
Ms. Margaret Loko	(Hospital Secretary)
Prof. J. Biddulph	(Senior Paediatrician)
Dr. D.L. Barua	(Pathologist)
Dr. T. K. Dutta	(Ophthalmologist)
Dr. N. Das	(Senior Obstetrician)
Prof. C. A. Klufio	(Senior Obstetrician)
Prof. Frank Smith	(Surgeon)
Dr. K. L. Dagam	(Senior Surgeon)
Dr. A. C. Gupta	(ENT Specialist)
Dr. P. I. Patel	(Senior Anaesthesiologist)
Dr. S. Varatharajan	(Anaesthesiologist)
Ms. K. Mauiaua	(Matron)
Ms. Susan Haroe	(Matron)
Ms. Nancy Popei	(Deputy Matron)
Ms. Janet Doke	(Nurse Coordinator)

(5) Electricity Commission

Mr. Murray Phipps	(Superintendent Destribution Design)
Mr. Joe Bariamu	(Manager Operation and Maintenance)

(6) Post and Telecommunication Corporation

Mr. Jim Bantegui	(Executive Manager Corporation Planning)
Mr. Kilori Sepoe	(Corporation Planner)

(7) National Capital District Interim Commission

Mr. Brian Martin	(Executive Engineer)

(8) National Fire Services

Mr. Mathew G. Yamanson	(Superintendent, Fire Prevention)
Mr. Roy C. Kurim	(Deputy Chief Fire Officer)

(9) The Waterboard

Mr. E. S. Webber	(Engineering Manager)
Mr. Tom Fawcett	(Principal Engineer Water Supply Design)

(10)National Weather Service

Mr. James Nako

(11)Taxation Office

Mr. Nagora Bogan	(Chief Collector of Tax)

(12)The Embassy of Japan

Mr. Chusaku Nomura	(Ambassador of Japan)
Mr. Tateo Iino	(Counsellor)
Mr. Akihisa Watanabe	(Third Secretary)
Mr. Hiroaki Takashima	(Third Secretary)

(13)JICA Papua New Guinean Office

Mr. Katsuyasu Nakano	(Director)
Mr. Akira Kumano	
Mr. Hideshi Maruta	

MINUTES OF DISCUSSIONS
ON
THE BASIC DESIGN STUDY OF THE PROJECT FOR
THE REDEVELOPMENT OF PORT MORESBY GENERAL HOSPITAL
IN
PAPUA NEW GUINEA

In response to the request of the Government of Papua New Guinea, the Government of Japan decided to conduct a basic design study on the Project for the Redevelopment of Port Moresby General Hospital (PMGH) (hereinafter referred to as "Project") and entrusted the said study to the Japan International Cooperation Agency (hereinafter referred to as JICA).

The JICA sent to Papua New Guinea a study team headed by Dr. Naruo UEHARA, Medical Official at the Department of International Cooperation, National Medical Centre Hospital, Ministry of Health and Welfare, from May 23 to June 15, 1988.

The team had a series of discussions on the Project with the authorities concerned of the Government of Papua New Guinea, and conducted a field survey in Port Moresby and Mount Hagen.

As the result of the study, both parties agreed to recommend to their respective Governments that the major points of understanding reached between them, as attached herewith, should be examined towards the realization of the Project.

Port Moresby, June 2, 1988

Dr. Naruo UEHARA
Team Leader
Basic Design Study Team
Japan International Cooperation Agency

Dr. Q. REILLY
Secretary
Department of Health,
Papua New Guinea

Mr. R. IGARA
First Assistant Secretary
Department of Finance &
Planning,
Papua New Guinea

ATTACHMENT

1. The Project Title
   The Project for the Redevelopment of Port Moresby General Hospital

2. The Objective of the Project

   The objective of the Project is to complete the physical redevelopment of Port Moresby General Hospital (PMGH) in such a way to maximize the efficiency of available staff, and minimize ongoing maintenance requirements, and thus to upgrade its function by providing an integrated function for medical services and medical education through construction and remodelling of hospital buildings, and supply and installation of medical equipment.

3. The Function of Port Moresby General Hospital

   The function of Port Moresby General Hospital are as follows:

   (1) To serve as a general hospital for National Capital District and Central Province area;

   (2) To provide primary health care services for National Capital District area;

   (3) To serve as a national referral hospital in Papua New Guinea;

   (4) To serve as national training hospital and provide the facilities and equipment for clinical practice of the Faculty of Medicine, University of Papua New Guinea and the College of Allied Health Sciences, Port Moresby.

4. The Responsible and Coordinating

   The Department of Health (DOH) shall be responsible for the efficient management and execution of the Project in close collaboration with the Department of Works (DOW) under the overall coordination of the Department of Finance & Planning (DOFP).

5. The Executing and Implementing Agencies

   Department of Health (DOH)

6. The Project Site

The project site is in the premises of PMGH at Korobosea, Port Moresby as shown in Annex I.

7. The Major Items Requested for the Project

The major items requested for the Project are listed in Annex II.

8. Grant Aid Programme

(1) The PNG side has understood the system of Japan's Grant Aid Programme and the principle for the use of Japanese consulting firm and contractor(s) for the implementation of the Project.

(2) The Study Team will convey to the Government of Japan the desire of the PNG Government that the former takes necessary measures to cooperate in implementing the Project by providing necessary facilities and equipment under the Japan's Grant Aid Programme.

(3) The Government of Papua New Guinea will take necessary measures as listed in Annex III on condition that the Grant Aid by the Government of Japan would be extended to the Project.

9. Local Procurement

The Government of PNG and the Team have agreed to the importance that certain locally produced materials, products and services should be procured under the Project.
It has been noted important in order to minimise the difference in industrial standards between both countries and difficulties with maintenance of such products by PNG side in the future.

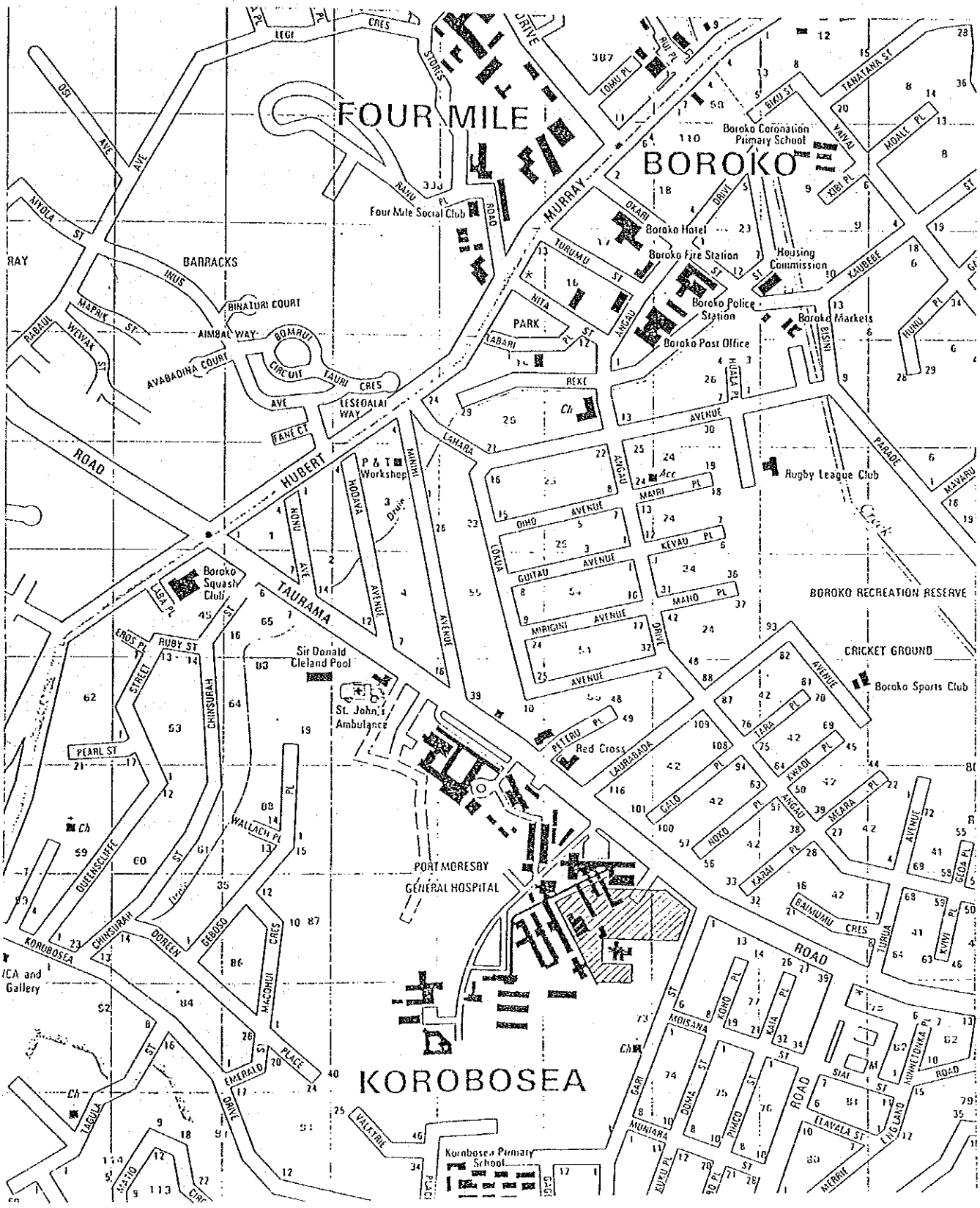
10. Handling and Maintenance of Medical Equipment

The Government of PNG and the Team have agreed that for all medical equipment provided under the Grant, on-site training should be provided to PNG personnel on operation and maintenance of equipment. All supplied equipment should be accompanied by relevant manuals in English language.
It was further agreed that the Team will convey to the Government of Japan, the desire of PNG side that arrangements acceptable to both Governments would be made regarding procurement of spare parts and maintenance for all equipment supplied under the Grant.

11. It was agreed that advance transmission of the vital sections of the draft final report would be made to enable PNG side to properly study the report and make constructive response prior to the arrival of the Draft Final Report Team to discuss the report.

ANNEX I

The site for the Project.



The Major Items Requested for the Project.

Items requested by the Government of Papua New Guinea whose cost will be borne by the Government of Japan are as follows in order of priority:

1. Construction of following buildings and facilities;

   (1) New hospital building including;

   (a) Outpatient
   (b) Casualty
   (c) Specialist clinic
   (d) Dispensary
   (e) X-ray
   (f) Mortuary
   (g) Medical ward-240 beds
   (h) Surgical ward-160 beds
   (i) Paediatric ward-150 beds
   (j) Psychiatric ward-50 beds
   (k) Others
   (l) Emergency power plant unit
   (m) Outside utilities such as;
      (1) Parking lot
      (2) Access road within the site

2 O&G Operation theatre, Special care nursery, X-ray.

3 Rehabilitation

4. Remodelling and renovation of the existing buildings and facilities such as;

   (1) Existing main hospital block

      (a) Administration offices in place of outpatient and clinic area

      (b) Pathology in place of mortuary area

5. Medical equipment (Movable)

ANNEX III

Arrangements required to be taken by PNG side

1. To secure the site for the Project.

2. To demolish, clear, and level the site prior to the commencement of the construction.

3. To undertake incidental outdoor work such as fencing, gates, and exterior lighting in and around the site.

4. To construct the access road to the site prior to the commencement of the construction.

5. To provide facilities for distribution of electricity, water supply, telephone, drainage and other incidental facilities to the project site.

6. To bear commissions to the Japanese foreign exchange bank for the banking services based on the Banking Arrangement.

7. To ensure the necessary budget and personnel for the proper and effective operation and maintenance of the facilities and the equipment provided under the Grant.

8. To ensure prompt unloading, tax exemption, customs clearance at the port of disembarkation in PNG and prompt internal transportation of the materials and equipment provided under the Grant.

9. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in PNG with respect to the supply of products and services for the Project.

10. To accord Japanese Nationals whose services may be required in connection with the supply of products and the services under verified contract such facilities as may be necessary for their entry into PNG and stay therein for the performance of their work.

11. To maintain and use properly and effectively the facilities constructed and equipment purchased under the Grant.

12. To bear all the expenses other than those to be borne by the Grant, necessary for the construction of the facilities as well as for the transportation and installation of the equipment.

MINUTES OF DISCUSSIONS

ON

THE DRAFT REPORT OF THE BASIC DESIGN STUDY ON THE PROJECT

FOR

THE REDEVELOPMENT OF PORT MORESBY GENERAL HOSPITAL

IN

PAPUA NEW GUINEA

At the request of the Government of the Papua New Guinea, the Government of Japan decided to conduct a Basic Design Study on the Project and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA"). JICA sent the Basic Design Study Team headed by Dr. Naruo UEHARA from May 23 to June 15, 1988. The Team carried out a field survey and had a series of discussions with the authorities concerned of the Government of the Papua New Guinea.

As the result of the survey and discussions, JICA prepared a Draft Final Report and dispatched a mission to explain discuss the Report from August 22 to 31, 1988.

Both parties had a series of discussions on the Report and have agreed to recommend to their respective Governments that the major points of understanding reached between them, attached herewith, should be examined towards the realisation of the Project.

Port Moresby, August, 26, 1988

Dr. Etsuko KITA
Team Leader
Japanese Study Team
JICA

Dr. Q. REILLY
Secretary
Department of Health
Papua New Guinea

Ms F. Williame
a/First Assistant Secretary
Department of Finance &
Planning
Papua New Guinea.

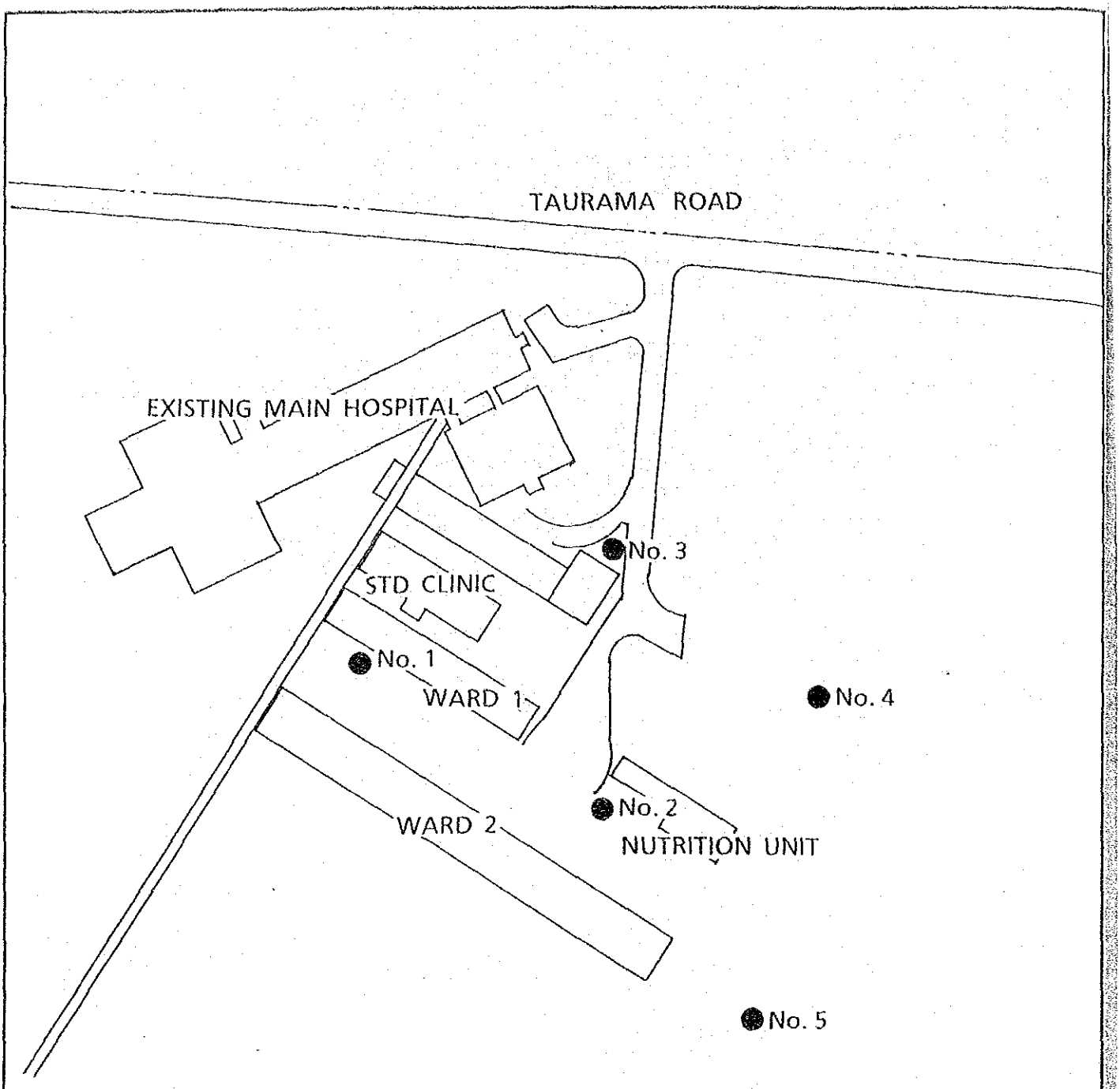
ATTACHMENT

1. Papua New Guinea side has agreed in principle to the Basic design proposed in the Draft Final Report. Alterations mutually agreed upon and considered essential to the Project will be incorporated in the Final Report.

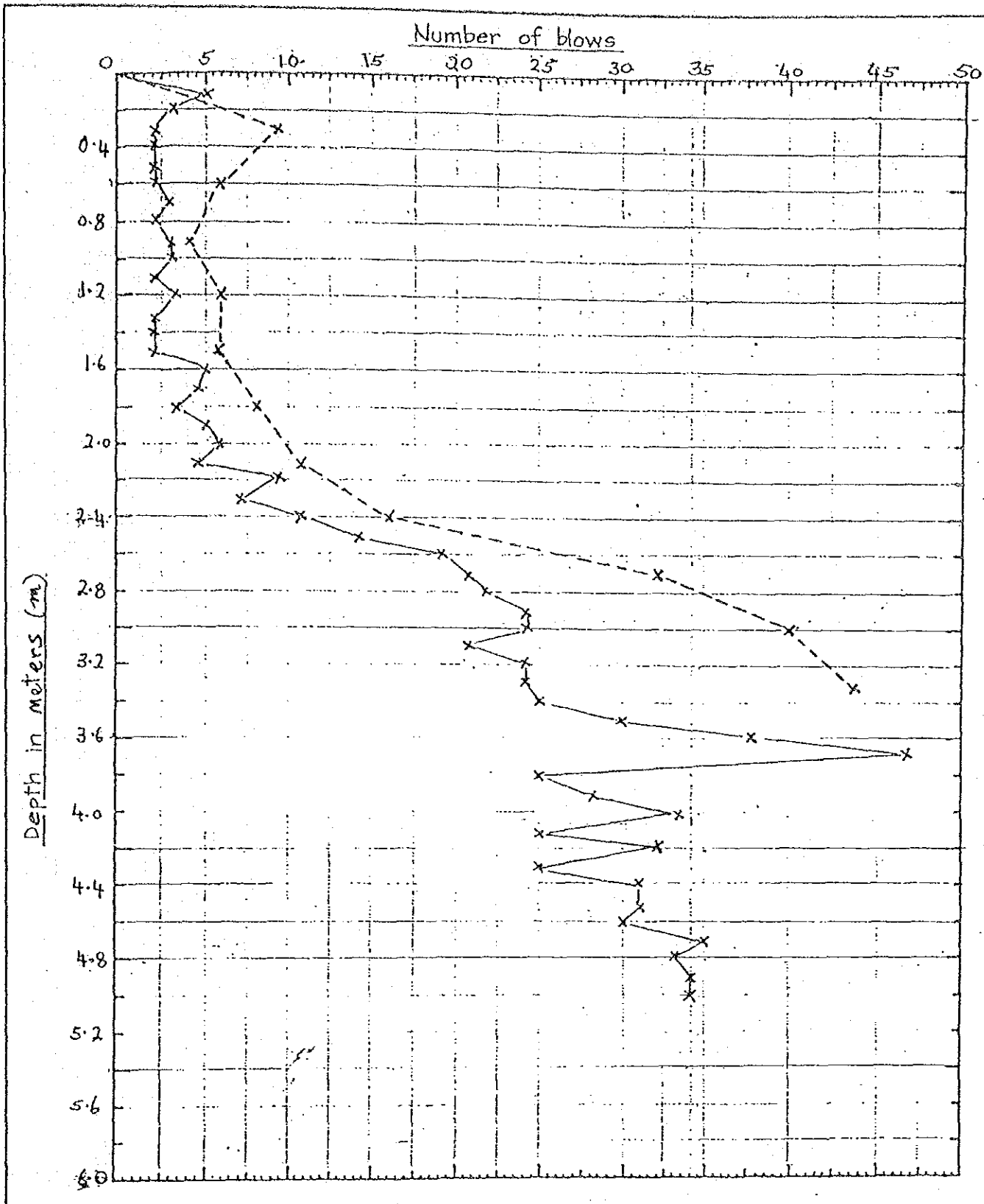
2. The Papua New Guinea side noted Japan's Grant Aid System and reconfirmed the measures to be taken by the Government of the Papua New Guinea for the realisation of the Project as agreed upon in the Minutes of Discussions dated June 2, 1988.

3. JICA will submit the Final Reports (10 copies in English) to the papua New Guinea side in September 1988.

ANNEX 2



● Investigation Locations including
- hardauger
- 9 kg penetrometer
- 25 kg penetrometer
- 56 kg SPT (where appropriate)



LEGEND :—

P3 :— 25 kg Penetrometer Hammer

×—×—×—× blows/300 mm

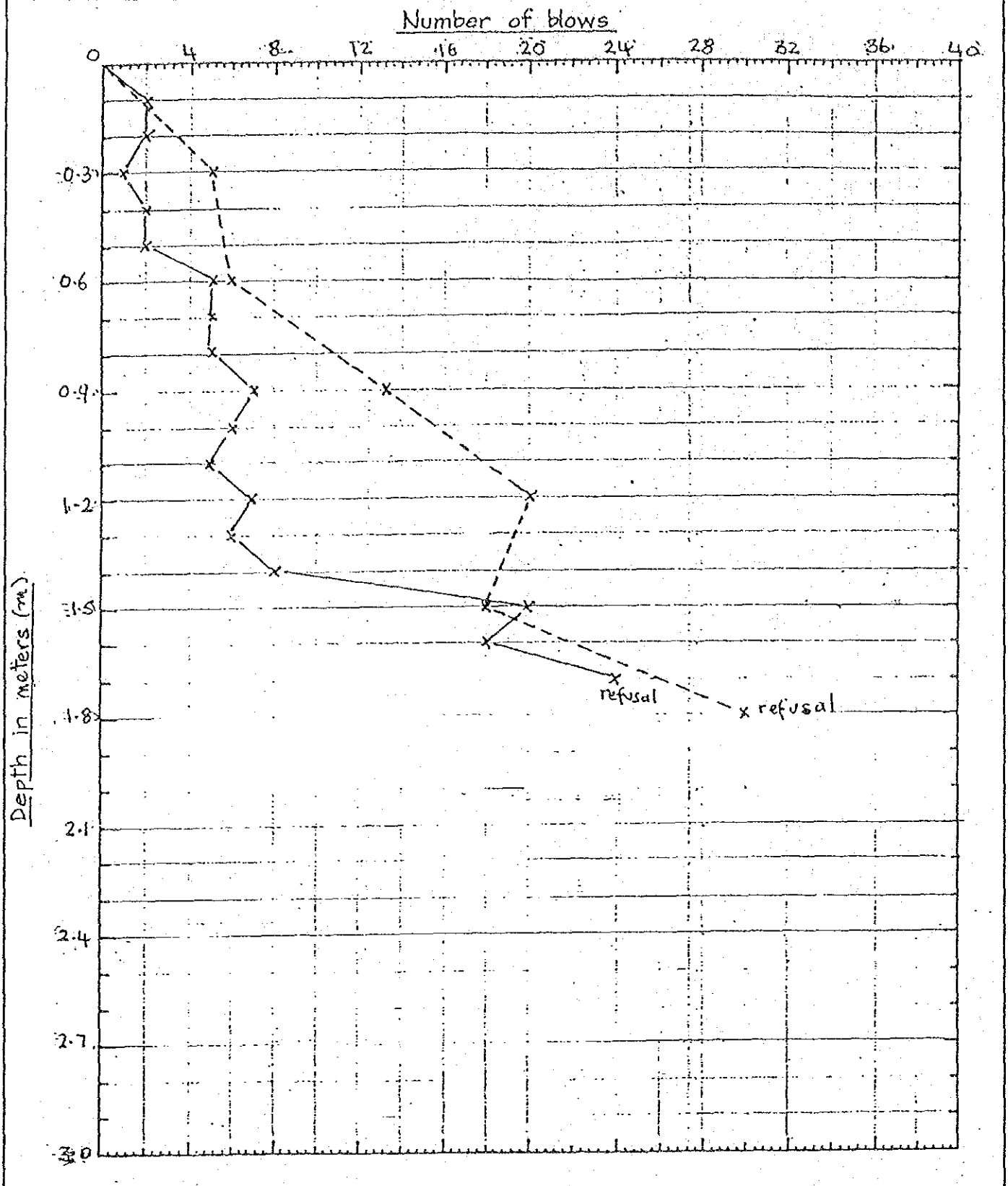
DC3 :— 9 kg Penetrometer Hammer

×—×—×—× blows/100 mm.

PORT MORESBY GENERAL HOSPITAL REDEVELOPMENT, N.C.D.

GRAPHICAL PRESENTATION OF PENETRATION TEST RESULTS

APPENDIX | No. 1



LEGEND :—

P4 = 25 kg Penetrometer Hammer

x---x---x---x blows/300 mm

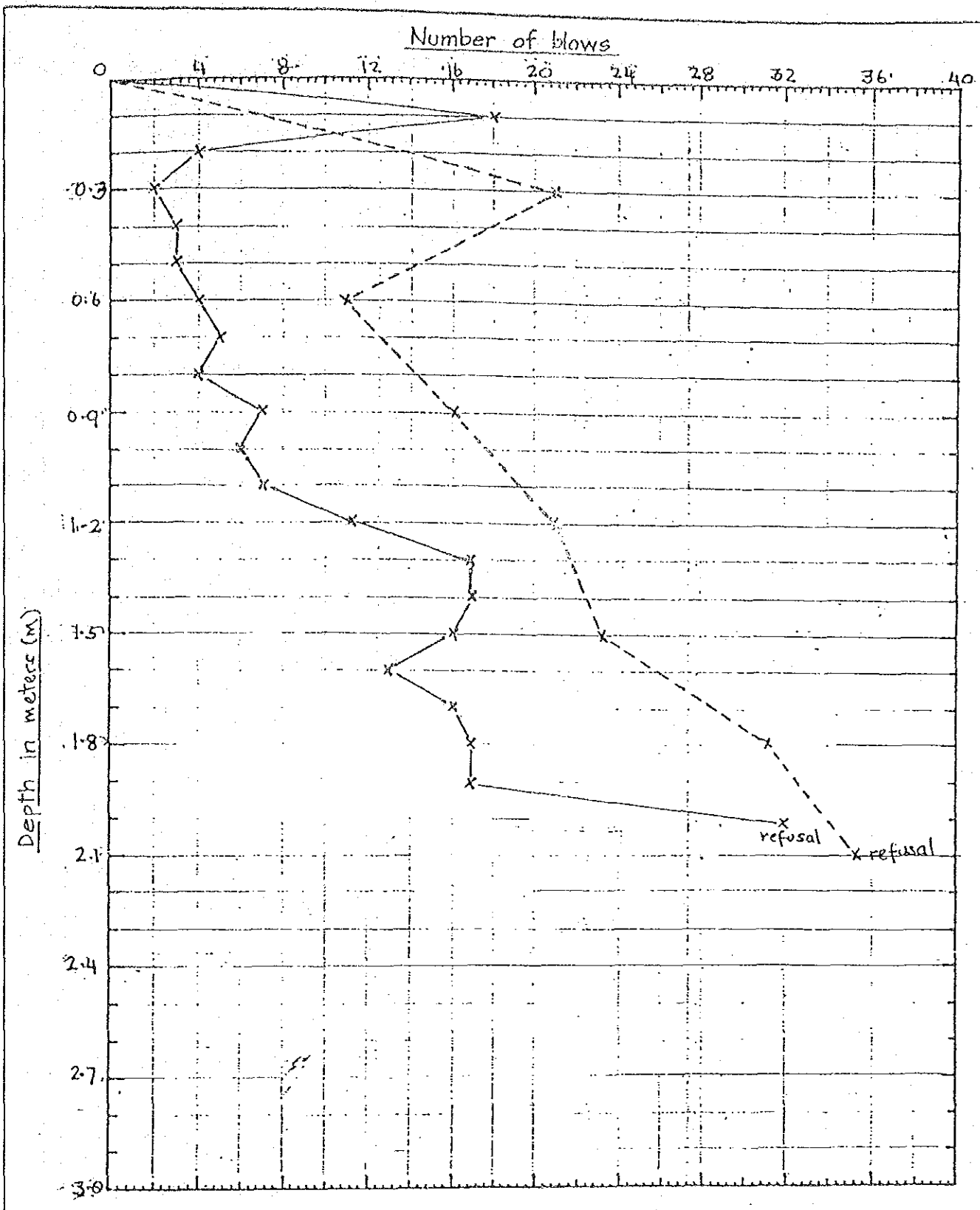
DC4 = 9 kg Penetrometer Hammer

x——x——x——x blows/100 mm.

PORT MORESBY GENERAL HOSPITAL REDEVELOPMENT, N.C.D.

GRAPHICAL PRESENTATION OF PENETRATION TEST RESULTS

APPENDIX | No. 2



LEGEND :—

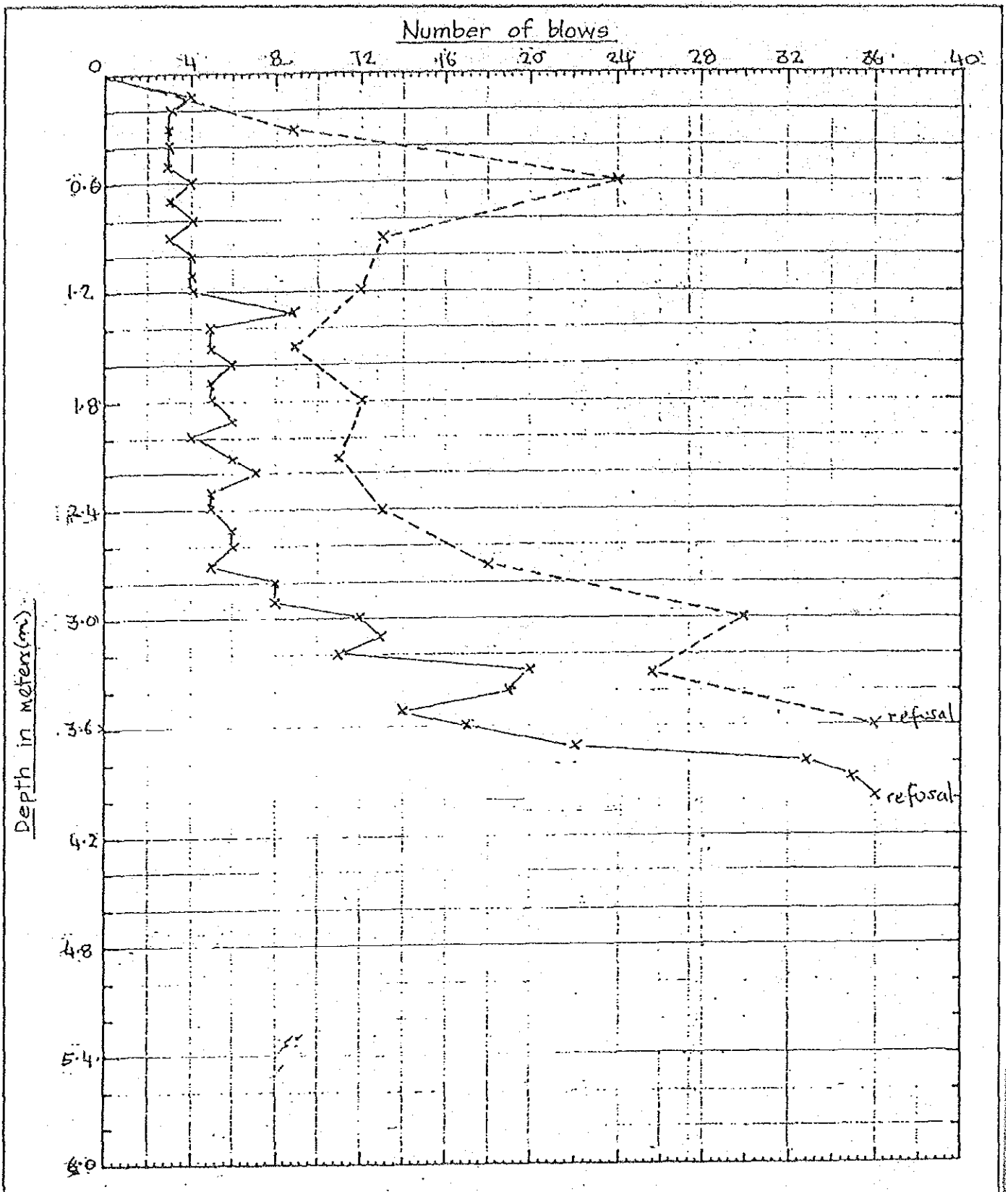
P5 = 25kg Penetrometer Hammer
x---x---x---x blows/300mm

DC5 = 9 kg Penetrometer Hammer
x——x——x——x blows/100mm.

PORT MORESBY GENERAL HOSPITAL
. REDEVELOPMENT, N C D.

GRAPHICAL PRESENTATION OF PENETRATION TEST RESULTS

APPENDIX | No. 3



LEGEND :—

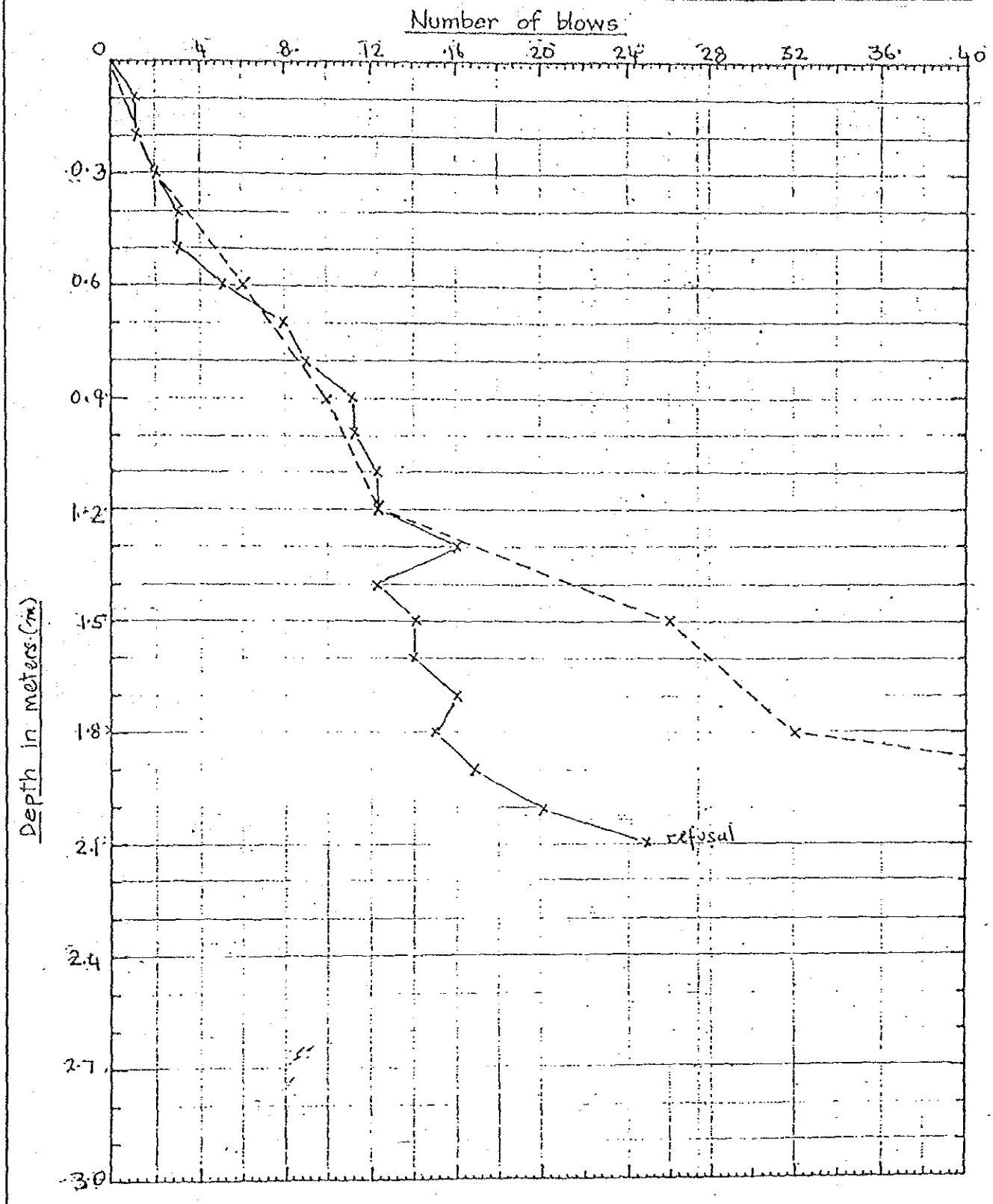
P6 & 25kg Penetrometer Hammer
×—×—×—× blows/300mm

DC6 - 9kg Penetrometer Hammer
×—×—×—× blows/100mm.

PORT MORESBY GENERAL HOSPITAL
REDEVELOPMENT, N.C.D.

GRAPHICAL PRESENTATION OF PENETRATION TEST RESULTS

APPENDIX | No. 4



LEGEND :—

P.7 = 25 kg Penetrometer Hammer

x—x—x—x blows/300 mm

DC7 = 9 kg Penetrometer Hammer

x—x—x—x blows/100 mm.

PORT MORESBY GENERAL HOSPITAL REDEVELOPMENT, N.C.D.

GRAPHICAL PRESENTATION OF PENETRATION TEST RESULTS

APPENDIX | No. 5

RESULT OF ANALYSIS OF CITY WATER

Water analysis of existing Main Hospital Block is shown as following Table.

Table RESULT OF ANALYSIS

Item	Standard of Water on Japanese Water Regulation	Result of Analysis
pH	5.8~8.6	7.4 (21°C)
Odor	Nil	Nil
Taste	Nil	Nil
Chromaticity	5 deg. or less	1 deg.
Turbidity	2 deg. or less	less than 1 deg.
Nitrite Ion (NO_2^-): Nitrite Ion (NO_3^-)	10 mg/ℓ or less	less than 0.2 mg/ℓ
Chloride Ion ($C\ell^-$)	200 mg/ℓ or less	3.9mg/ℓ
Oxygen Demand by Potassium Permanganate at 100°C	10 mg/ℓ or less	less than 1.0 mg/ℓ
Bacterium	100 Nos/mℓ or less	Nil
Coliform Group	Nil	Nil
Cyanide Compounds	Nil	Nil
Mercury (Hg)	Nil	Nil
Organic Phosphate	Nil	Nil
Copper (Cu)	1.0 mg/ℓ or less	less than 0.006 mg/ℓ
Iron (Fe)	0.3mg/ℓ or less	0.14mg/ℓ
Manganese (Mn)	0.3mg/ℓ or less	less than 0.004mg/ℓ
Zinc (Zn)	1.0mg/ℓ or less	0.17mg/ℓ
Lead (Pb)	0.1mg/ℓ or less	less than 0.02mg/ℓ
Hexavalent Chromium	0.05mg/ℓ or less	less than 0.05mg/ℓ
Cadmium (Cd)	0.01mg/ℓ or less	less than 0.004mg/ℓ
Arsenic (As)	0.05mg/ℓ or less	less than 0.01mg/ℓ
Fluorine Compounds	0.8mg/ℓ or less	less than 0.20mg/ℓ
Hardness	300mg/ℓ or less	less than 37.0mg/ℓ
Evaporation Residues	500mg/ℓ or less	115mg/ℓ
Phenoles	0.005mg/ℓ or less	less than 0.005mg/ℓ
Anion Surface Active Agents	0.5mg/ℓ or less	0.03mg/ℓ