

Ventilating System

Rooms are naturally ventilated in principle. Where forced air ventilation is required, exhaust fans will be provided to change air at the following frequencies:

All rooms: 3 to 5 air changes per hour

3) Water Supply and Drainage System

Water Supply System

Existing water supply piping will be extended as necessary to supply water to the extended areas.

Hot Water Supply System

Existing hot water supply piping will be extended as necessary to supply hot water to the extended areas.

Drainage and Venting Systems

Existing piping will be extended as necessary to the extended areas.

4-3-5 Building Material Plan

(1) Exterior Finish Materials

Roofing: In PNG galvanised sheet metal is generally used for roofing. There is only one firm asphaltic providing waterproofing (at 10-year warranty) such as generally used in Japan. It is apparent that galvanised sheet metal is inferior in its insulating efficiency, but the problem may be resolved to a certain degree if thermal insulation will be provided. Therefore, galvanised (zinc-

coated) steel sheet is to be used in this project taking into consideration the local situation. Asphaltic waterproofing is also specified where it is deemed essential.

Exterior Walls: Columns and beams will be constructed of reinforced concrete, and the exterior walls will be normally constructed of concrete blocks. Exteriors are generally painted. However, spray painting is considered more suitable in view of water-tightness and weather resistance. In this project the exterior walls will be constructed of concrete blocks with a spray paint finish over the cement mortar trowelled finish or with decorated bricks directly over the concrete blocks.

(2) Interior Finish Materials

Floors: Existing hospitals are aged, and their floors are finished with vinyl tiles or vinyl sheets over wooden substratum. The existing finish materials are acceptable, but the wooden substrata are badly deteriorated. In this project, the floors will be finished with vinyl sheeting generally used in PNG over concrete substrata. Floors of stores will be finished with trowelled finished concrete. Special provisions will be specified to provide non-slip tiles to wet areas or to select special materials for certain rooms to meet special services and functions.

Interior Walls: Painting is the finish most commonly used in the country. In this project, the finishes are determined by the function of each

individual room. The interior walls are basically finished with trowelled cement mortar over concrete blocks or painting the boards on wooden or metal furrings.

Ceilings:

The ceilings are finished with a prefabricated system which is generally used in the country. The systematized ceilings (lighting fixtures and air conditioning outlets are also systematized) are fabricated of insulated decoration boards 600 mm by 300 mm, and removable accesses will be provided for maintenance of electric wiring and sanitary piping. Ceilings of wet areas are finished with painted water-proofed calcium silicate boards.

Windows:

Aluminium louvered windows (locally called "Jalousie") will be provided for major exterior openings. Since the louvered windows have been used in most openings in the existing hospitals, maintenance problems have not occurred. The windows at ground floor will be protected with aluminium security bars on the exterior, and all windows are covered with insect screen.

4-3-6 Exterior Site Plan

The exterior plans are limited to the minimum necessary for assuring an accessible way to the project facilities as stated below:

Lae (Angau Memorial) Hospital

- New access road from Markham Road, the City main road, to service areas and a bypass to the existing nursing school.

- An access between the existing parking lot and the main entrance of New Central Building.

Mt. Hagen Hospital

- Areas around the entrance of New MCH and OPD Buildings.
- Connecting road between the existing operating theatre and New MCH Building.
- Access road to the Bulk Store in New OPD Building.

4-3-7. Medical Equipment Plan

Functions and descriptive services of each clinical room in various units and departments will be carefully reviewed for selection of optimum equipment to be furnished in view of organizations, scales and characters of each hospital, and from the points of layout, floor areas, and coordinating services with other rooms along the line of the redevelopment plan. In addition to the foregoing review, various factors including disease patterns, numbers of patients, doctors, nurses and nurse aides, and other health service employees, and the present level of health services, are taken into consideration in selecting adequate equipment well balanced to all units and departments in a manner to assure smooth operations of the health services. Existing equipment which is still in good condition will be relocated and reused.

(1) Lae (Angau Memorial) Hospital

Outpatient Department

Consultation Cubicle

Existing equipment will be relocated and reused.

Treatment Room

Existing equipment will be reused.

Emergency Department

All existing equipment is old (made in 1975) and not reusable. New equipment will be provided for replacement as necessary.

Specialist Clinics

Internal Medicine: Existing equipment will be replaced.

Operating Theatre

Existing equipment will be replaced.

ENT

New treatment units will be provided.

Ophthalmology

New treatment units will be provided.

STD

Existing equipment will be relocated.

Dispensary Department

Dispensary

All existing equipment will be reused except a new dispensing table to be provided.

Examination Department

X-Ray Room

Existing equipment is very old, made in 1975, and has exceeded the normal service life. Relocation may be very hard. This equipment will be reused by the Gynaetrical and Obstetrical Ward for as long as possible.

Dark Room

The equipment is fixed to the building and is deteriorated due to age. New equipment will be provided.

Pathology

All equipment except the testing table is relocated.

Operating Department

Operating Theatre

The existing operating therapies will be reused by the Gynaetrical and Obstetrical Ward. It may be necessary to provide new equipment required to achieve its mission.

Resuscitation Room

Six new units will be provided.

Administration Department

Medical Record Room: At present medical records are stacked up without filing, interfering with working spaces. New shelves will be provided.

Major Equipment Supply List

Outpatient Department

(Specialist Clinic)

ENT treatment unit	L1-1
ENT treatment chair	L1-2
Ophthalmologist slit lamp	L1-3
Synoptphone	L1-4
1 ch electrocardiograph	L1-5
Examination couch	L1-6
Spot light (standard) and others	

(Emergency Outpatients)

1 ch electrocardiograph	L2-1
Minor operating table	L2-2
Minor shadowless lamp	L2-3
Anaesthetic instrument (minor operation)	L2-4
Defibrillator	L2-5
and others	

Dispensary Department

Prescription table	L3-1
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Examination Department

(X-ray Room)

X-ray viewer	L4-1
X-ray system	L4-2
Dryer for film and others	L4-3

(Pathology)

Laboratory table (central)	L5-1
Laboratory table (side)	L5-2
Laboratory table (side)	L5-3

Operating Department

(Operating Theatre)

Operating table	L6-1
Anaesthetic instrument (major operation)	L6-2
Shadowless lamp	L6-3
Defibrillator	L6-4
Portable spot light	L6-5
Suction device	L6-6
and others	

(Central Supply)

High pressure steam steriliser	L7-1
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(Resuscitation Room)

ECG monitor	L8-1
Defibrillator	L8-2
Resuscitation bed (2 crank beds)	L8-3
Infusion pump	L8-7
Emergency cart with emergency sets and drip stands, and others	

Administration Department

(Medical Records Room)

Medical record rack unit	L9-1
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(2) Mt. Hagen Hospital

Outpatient Department

Special Outpatient

Internal Medicine

Minimum necessary equipment is not available. Basic equipment must be provided.

Surgery

Minimum necessary equipment is not available. Basic equipment must be provided.

Dispensary Department

Dispensary

Dispensing table is required. All other equipment will be relocated for reuse.

Examination Department

X-ray Room

Existing equipment is deteriorated and not adequate for relocation. Replacement is necessary.

Dark Room

The equipment is fixed to the building and is old and deteriorated. Developing unit will be provided.

Pathology

Testing table and autoclave will be provided for replacement. All other equipment are relocated for reuse.

Inpatient Wards

Paediatric Building

Children's beds (2,060 x 910 x 510) must be provided.

Obstetric Ward

Adult's beds (2,060 x 910 x 700) must be provided.

Delivery Room

Delivery beds need to be supplemented. All other existing equipment will be relocated for reuse.

Neonate Room

Neonate beds need to be supplemented.

ICU Room

Most of the existing equipment will be relocated for reuse.

Major Equipment Supply List

Outpatient Department

(Specialist Outpatient Clinic)

Examination couch

1 ch portable electrocardiograph and others

(Children Outpatients)

Treatment set

Dispensary Department

Prescription counter

M2-1

- ditto -

M2-2

Examination Department

(X-ray Room)

X-ray system

M3-1

Developing tank

M3-2

and others

(Pathology)

Laboratory table

Inpatient Ward

(Paediatric)

Emergency sets (for children)

M5-1

ECG monitor

M5-2

Drip stands

M5-3

Trolley

M5-4

Electrocardiograph (1 channel portable)

M5-5

Beds (for children) with vinyl mat

M5-6

Mat (vinyl sheet)

Phototherapy

M5-7

Ultrasonic nebuliser with face mask

M5-8

Refrigerator and others

(Obstetric)		
Beds (for adult)		M6-1
Mat (vinyl sheet) and others		
(Delivery Room)		
Labour and delivery beds		M7-1
Obstetric operating table		M7-2
Anaesthetic instrument		
Shadowless light		M7-3
Vacuum extractor and others		
(Neonate)		
Emergency cart		M8-1
Phototherapy		M8-2
Refrigerator		M8-3
Bassinet carts		M8-4
ECG monitor		M8-5
Infusion pump		M8-6
Infant incubator		M8-7
(Special Care Nursery)		
Bassinet carts		M9-1
(ICU Room)		
Defibrillator		M10-1
ECG monitor		M10-2
Infusion pump		M10-3

(3) Wewak Hospital

Outpatient Department

Clinic Room

Equipment needs to be supplemented.

Emergency Treatment Room

Equipment needs to be supplemented.

Dispensary Department

Dispensing Room

Dispensing tables will be provided. All other equipment will be relocated for reuse.

Examination Department

X-ray Room

Existing radiograph equipment is badly deteriorated, malfunctioned, and required of replacement with similar equipment.

Pathology

Autoclave, testing table, draft chamber need replacement. All other existing equipment will be relocated for reuse.

Inpatients Ward

Physiotherapy: Health services are often interrupted for lack of equipment. Supplement is urgently necessary.

Major Equipment Supply List

Outpatient Department

(General Outpatient)

Outpatients diagnostic apparatus
Sphygmomanometer
Stethoscope (for doctors)
Spirometre
Spiroanalyser and others

(Emergency Outpatient)

Portable defibrillator
Manual resuscitator
Laryngoscope set
Emergency cart
Portable suction device
Nebuliser
Examining table
Small operating instrument sets
1 ch cardiograph and others

Dispensary Department

Prescription counter

Examination Department

(X-ray Room)

X-ray system

Protector and others

(Pathology)

Laboratory table (center) W4-1

- ditto - (side) W4-2

- ditto - (side) W4-3

Spectrophotometre W4-4

Inpatients Ward

(Special Care Nursery)

Bassinet carts W5-1

Drip stands W5-2

Infusion pump W5-3

and others

(Physiotherapy)

Bicycle exerciser

Parallel bars

Bar-bell

Chest pulley

Walkerette

Wheel chair

Steel bars

Treatment bed

Infrared ray lamp and others

4-3-8 Basic Design Drawing

List of Floor Area

Gross Floor Areas

(1) Lae (Angau Memorial) Hospital

New Central Building

Connection Corridor

(2) Mt. Hagen Hospital

New MCH Building

New OPD Building

(3) Wewak Hospital

Major Room Layout Drawings

Basic Design Drawings

LIST OF FLOOR AREA (m²)

PROJECT FACILITIES	BASEMENT	GROUND FLOOR	1ST FLOOR	TOTAL AREA	EXTERIOR STAIRWAY/SLOPE	ENTRANCE EAVES
Lae (Angau Memorial) Hospital	0	2,854	1,941	4,795	387	180
Connection Corridor	0	10	0	10		
			Sub Total	4,805		
Mt. Hagen Hospital						
New MCH Building	130	1,474	1,163	2,767	206	0
New OPD Building	0	360	324	684	18	0
			Sub Total	3,451		
				8,256	including 611	including 180

PROJECT FACILITIES	RECONSTRUCTION	EXTENSION	TOTAL AREA
Wewak Hospital	486	207	693

(1) Lae (Angau Memorial) Hospital
New Central Building 4,805 m²

OUTPATIENT DEPARTMENT	FLOOR AREA (m ²)	REMARKS
Waiting Area	260	150 persons x 1 - 2 m ² /person
Sub-Waiting Area	65	30 persons x 1 - 2 m ² /person
Consultation Cubicle	55	5 rooms (see Layout Drawing 1)
Treatment Area	115	20 persons (see Layout Drawing 2)
Medication Room	10	2 beds (see Layout Drawing 2)
Injection Room	10	2 beds (see Layout Drawing 3)
Dirty Utility	8	
Sister's Office	17	
Public Toilet	46	Male: 4 closets + 5 urinals Female: 4 closets + 1 closet for handicapped
Staff Toilet	6	2 closets
Staff Room	14	7 persons x 2 - 3 m ² /person
Store	29	
Entrance Hall	143	
Entrance Eaves	180	
Corridor	214	
Sub Total	1,172	
SPECIALIST CLINIC	FLOOR AREA (m ²)	REMARKS
Waiting Area	27	15 persons x 1 - 2 m ² /person
Sub-Waiting Area	18	9 persons x 1 - 2 m ² /person
Reception	11	
Special Clinic	39	3 rooms (see Layout Drawing 4)
Plaster Room	18	(see Layout Drawing 4)
Treatment room	15	
Ophthalmology Clinic	37	(see Layout Drawing 3)
ENT Clinic	37	(see Layout Drawing 3)
STD Clinic	56	(see Layout Drawing 5)
Male Waiting (STD)	15	5 persons x 1 - 2 m ² /person
Female Waiting (STD)	17	5 persons x 1 - 2 m ² /person
Dirty Utility (STD)	6	(including patient toilet)
Corridor	102	
Sub Total	416	

CASUALTY	FLOOR AREA (m ²)	REMARKS
Resuscitation Room	24	(see Layout Drawing 6)
Observation/Recovery Room	71	(see Layout Drawing 6)
Nurse Station	12	
Dirty Utility	12	
Plaster Room	12	
Minor Operating Theatre	25	(see Layout Drawing 6)
Scrub Area	3	
Delivery Room	13	
Toilet	12	Male: 1 closet + 1 urinal Female: 2 closets
Store	18	
Corridor	142	
Outside Slope and Stair	188	
Sub Total	532	
TOTAL	2,102	

DISPENSARY	FLOOR AREA (m ²)	REMARKS
Waiting Area	72	40 persons x 1 - 2 m ² /person
Dispensary Area	54	(see Layout Drawing 7)
Bulk Storage Area	108	
Alcohol Room	6	
Cool Room	6	
Disposal Area	6	
Unloading Corner	18	
Chief Pharmacist	12	
Staff Room	36	12 persons x 2 - 3 m ² /person
Staff Toilet	10	2 closets
Pantry	8	
Corridor	41	
Sub Total	377	

RADIOLOGY	FLOOR AREA (m ²)	REMARKS
Waiting Area	58	30 persons x 1 - 2 m ² /person (see Layout Drawing 8) 7 persons x 2 - 3 m ² /person w/toilet 2 closets 2 closets
Reception	6	
X-Ray Room	93	
Dark Room	13	
Filing Store	20	
Service Area	77	
Staff Room	24	
Doctor's Room w/Toilet	16	
Reading Room	10	
Store	16	
Trolley Bay	7	
Patient Toilet	4	
Staff Toilet	4	
Corridor	52	
Sub Total	400	
SPECIALIST CLINIC	FLOOR AREA (m ²)	REMARKS
Waiting Area	27	12 persons x 1 - 2 m ² /person (see Layout Drawing 9) (see Layout Drawing 9) 10 persons x 2 - 3 m ² /person
Reception	12	
Laboratory	90	
Washing & Sterilising Room	19	
Virus Room	18	
Cold Room	9	
Bleeding Room	9	
Chief Pathologist Office	13	
Staff and Meeting Room	25	
Store	24	
Staff Toilet/Pantry	12	
Corridor	84	
Sub Total	342	
TOTAL	742	

OPERATING THEATRE (1,077 m²)

OPERATING THEATRE	FLOOR AREA (m ²)	REMARKS
Operating Room	144	3 rooms (see Layout Drawing 11) 5 beds (see Layout Drawing 11) male and female rooms 15 persons x 2 - 3 m ² /person 4 closets + 2 showers
Anaesthetic Area	51	
Recovery Room	54	
Nurse Station	23	
Trolley Bay	31	
Dirty Utility	18	
Anaesthetist Bay	9	
Doctor Room	9	
Sister Room	9	
Staff Change Room	42	
Scrub Room	6	
Staff and Meeting Room	36	
Major Equipment Room	20	
Equipment Bay	5	
Staff Shower/Toilet	11	
Corridor	198	
Outside Slope	195	
Sub Total	861	
CENTRAL SUPPLY	FLOOR AREA (m ²)	REMARKS
Sterilising Room	30	(see Layout Drawing 10)
Sterile Stock Room	42	(see Layout Drawing 10)
Washing & Preparation Room	87	(see Layout Drawing 10)
Corridor	57	
Sub Total	216	
TOTAL	1,077	

ADMINISTRATION	FLOOR AREA (m ²)	REMARKS
Budget and PR Unit	80	
Chief Office	12	
Security Office	10	
Accounts Office	14	
Medical Records	35	(see Layout Drawing 12)
Admission Office	6	
Chief Admission Office	11	
General Office	24	4 persons x 6 m ² /person
Staff Toilet	26	Male:2 closets + 3 urinals Female: 3 closets
Pantry	6	
General Store	36	
On-Call Staff Room	48	4 rooms
Kitchen and Dining Room	25	w/toilet and shower
Mechanical Room 1	19	heat exchanger
Mechanical Room 2	19	airconditioning system
Mechanical Room 3	8	
Electrical Room	16	
Corridor	102	
Sub Total	497	

CONNECTION CORRIDOR 10 m²

(2) MT. HAGEN HOSPITAL

New MCH Building 2,767 m²

X-RAY DEPARTMENT	FLOOR AREA (m ²)	REMARKS	
Waiting Area	27	10 persons x 1 - 2 m ² /person 1 room (see Layout Drawing 13)	
X-ray Room	23		
Dark Room	8		
Change Room	5		
Office	10		
Film Store	13		
Patient Toilet	4		1 closet
Corridor	20		
Sub Total	110		

ICU	FLOOR AREA (m ²)	REMARKS
ICU Room	40	3 beds (see Layout Drawing 14)
Isolation Room	16	1 bed (see Layout Drawing 14)
Nurse Station	16	
Dirty Utility	9	
Equipment Store	8	
Scrub Room	8	
Corridor	19	
Sub Total	116	

PAEDIATRIC WARD(100 BEDS)	FLOOR AREA (m ²)	REMARKS
Ward (2 units x 50 beds)	712	(see Layout Drawing 15)
Sister Room	24	2 rooms
Doctor Room	30	2 rooms
Staff Room	22	12 persons x 2 - 3 m ² /person
Nurse Station	18	2 places
Dirty Utility	12	2 rooms
Milk Room	14	2 rooms
Treatment Room	40	2 rooms
Linen Store	18	2 rooms
Equipment Bay	20	
Store	12	2 rooms
Patient Toilet	44	(5 closets + 5 urinals) x 2 places
Toilet for Handicapped	8	1 closet x 2 places
Patient Shower Room	22	2 booths x 2 places
Corridor	121	
Sub Total	1,117	

OBSTERIC WARD(100 BEDS)	FLOOR AREA (m ²)	REMARKS
Ward	356	50 beds (see Layout Drawing 15)
Equipment Store	6	
Neonate	38	(see Layout Drawing 15)
Treatment Room	20	
Nurse Station	9	
Sister Room	11	
Doctor Room	15	
Staff Room	24	12 persons x 2 - 3 m ² /person
Dirty Utility	5	
Linen Room	5	
Store	5	
Patient Toilet	22	5 closets
Toilet for Handicapped	4	
Shower Room	10	2 booths
Staff Toilet	8	Male: 1 closet + 2 urinals Female: 2 closets
Corridor / Slope	266	
Sub Total	804	

LABOUR AND DELIVERY	FLOOR AREA (m ²)	REMARKS
Normal Delivery	110	8 beds (see Layout Drawing 18) 1 room (see Layout Drawing 18) w/shower room
Abnormal Delivery	30	
Patient Toilet & Wash Room	10	
Nurse Station	10	
Line Store	6	
Dirty Utility	8	
Equipment Store	8	
Corridor	55	
Sub Total	237	

SPECIAL CARE NURSERY	FLOOR AREA (m ²)	REMARKS
Special Care Nursery	27	7 cots (see Layout Drawing 17) 3 cots (see Layout Drawing 17) 4 beds
Isolation Room	12	
Nurse Station	13	
Mother Room	29	
Preparation	8	
Corridor	33	
Sub Total	122	

ADMINISTRATION	FLOOR AREA (m ²)	REMARKS
Entrance	20	Male: 1 closet + 1 urinal Female: 2 closets
Admission Waiting	21	
Reception Office	12	
Patient Toilet	28	
Boiler Room	53	
Electrical Room	12	
Generator Room	65	
Corridor	50	
Sub Total	261	

New OPD Building 684 m²

SCIALIST CLINIC	FLOOR AREA (m ²)	REMARKS
Waiting Area	29	10 persons x 1 - 2 m ² /person 3 rooms
Consultation Cubicle	27	
Service Area	18	
Treatment Room	24	
Plaster Room	9	
Doctor Room	14	
Sister Room	9	
Dirty Utility	6	
Corridor	11	
Sub Total	147	

DISPENSARY	FLOOR AREA (m ²)	REMARKS
Waiting Area	36	20 persons x 1 - 2 m ² /person (see Layout Drawing 19) 4 persons x 2 - 3 m ² /person
Dispensary	58	
Bulk Storage	54	
Alcohol	6	
Cold Room	6	
Disposal Room	6	
Pharmacist Office	9	
Staff Room	13	
Staff Toilet	9	
Corridor	26	
Sub Total	213	

PATHOLOGY	FLOOR AREA (m ²)	REMARKS
Waiting Hall	18	9 persons x 1 - 2 m ² /person (see Layout Drawing 20)
Laboratory	72	
Bleeding Bay	9	
Cold Room	9	
Washing & Sterilising	18	
Pathologist Office	13	
Staff and Meeting Room	21	
Equipment Store	6	
Staff Toilet	4	
Pantry	6	
Patient Toilet	4	
Corridor	72	
Sub Total	252	

DISPENSARY	FLOOR AREA (m ²)	REMARKS
On-Call Staff Room	41	3 rooms
Kitchen and Dining	18	
Corridor	13	
Sub Total	72	

(3) WEWAK HOSPITAL

Reconstruction 486m² Extension 207m² Total 693m²

OUTPATIENT DEPARTMENT	FLOOR AREA (m ²)	REMARKS
Waiting Area	42	
Consultation Cubicle	21	
Injection Room	11	
Mixture Room	11	
Observation Room	12	
Treatment Room	71	
Emergency Room	24	
Staff Room	9	
Store	8	
Corridor	38	
Sub Total	247	

DISPENSARY	FLOOR AREA (m ²)	REMARKS
Dispensary	43	including extending area of 19 m ²
Store	10	
Sub Total	53	

PATHOLOGY	FLOOR AREA (m ²)	REMARKS
Laboratory	80	including extending area of 21 m ² (see Dwg 21)

OPERATING THEATRE	FLOOR AREA (m ²)	REMARKS
Recovery	18	including extending area of 18 m ²
Store	8	
Female Change Room	15	
Sub Total	41	

SECIAL CARE NURSERY	FLOOR AREA (m ²)	REMARKS
Nursery	47	(see Layout Drawing 22)
Nursery Station	17	
Sub Total	64	

PHYSIOTHERAPY	FLOOR AREA (m ²)	REMARKS
Physiotherapy	59	including extending area of 12m ²
Transport Wating	39	
Slope	12	
Sub Total	110	

PSYCHIATRIC	FLOOR AREA (m ²)	REMARKS
Recreation & Dining Area	40	
Ward	40	
Office	18	
Sub Total	98	

MAJOR ROOM LAYOUT DRAWINGS

(1) Lae (Angau Memorial) Hospital

- | | |
|-----------------|---|
| Layout Drawings | 1: General Consultation Room |
| | 2: Treatment Room |
| | 3: Specialist Outpatients (Ophthalmology & ENT) |
| | 4: Specialist Outpatients (Surgery & Internal Medicine) |
| | 5: Specialist Outpatients (STD) |
| | 6: Emergency Outpatients |
| | 7: Dispensary Room |
| | 8: X-Ray Room |
| | 9: Pathology Laboratory |
| | 10: Central Supply |
| | 11: Operating Theatre |
| | 12: Medical Records Store |

(2) Mt. Hagen Hospital

- | | |
|-----------------|-----------------------------------|
| Layout Drawings | 13: X-Ray Room |
| | 14: ICU Room |
| | 15: Obstetric and Paediatric Ward |
| | 16: Neonate Room |
| | 17: Special Care Nursery Room |
| | 18: Delivery Room |
| | 19: Dispensary Room |
| | 20: Pathology Laboratory |

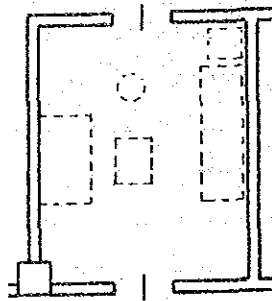
(3) Wewak Hospital

- | | |
|-----------------|-------------------------------|
| Layout Drawings | 21: Pathology Laboratory |
| | 22: Special Care Nursery Room |

(1) LAE (ANGAU MEMORIAL) HOSPITAL

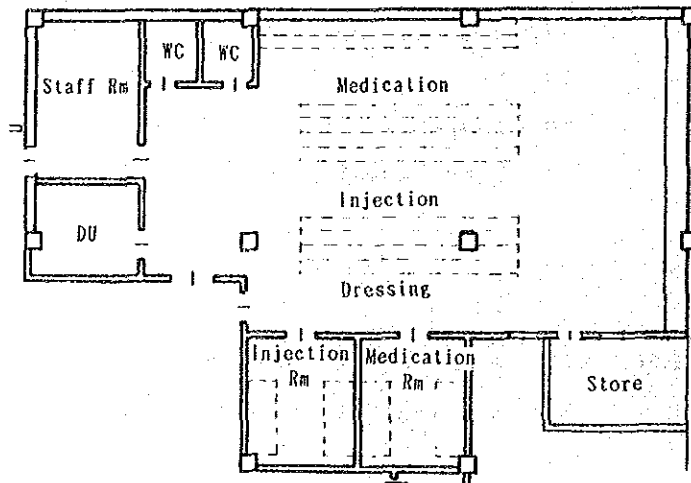
Lay out-No. 1

OUTPATIENT DEPT. General Consultation Room (11m²)



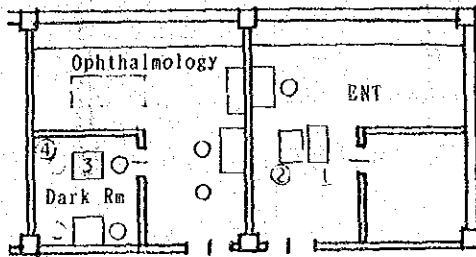
Lay out-No. 2

OUTPATIENT DEPT. Treatment Room (119m²)/Medication Room (10m²)/Injection Room (10m²)
Staff Room (14m²)/Dirty Utility (8m²)/Staff toilet (3m²)/Store (10m²)



Lay out-No. 3

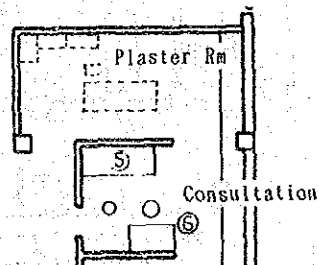
SPECIALIST CLINIC | Ophthalmology Consultation Room (27 m²) / Dark Room (9 m²)
 E.N.T. Consultation Room (27 m²) / Examination Room (9 m²)



ENT Treatment Unit	L1-1
ENT Treatment Chair	L1-2
Slit Lamp	L1-3
Synoptophore	L1-4

Lay out-No. 4

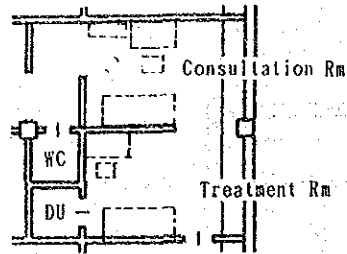
SPECIALIST CLINIC | Specialist Clinic (13 m²) / Plaster Room (18 m²)



ECG Machine	L1-5
Examination Couch	L1-6

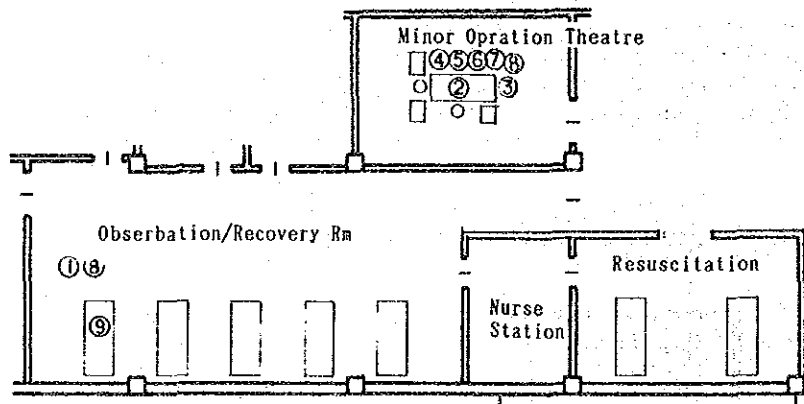
Lay out-No.5

SPECIALIST CLINIC | STD Consultation Room (14 m²)



Lay out-No.6

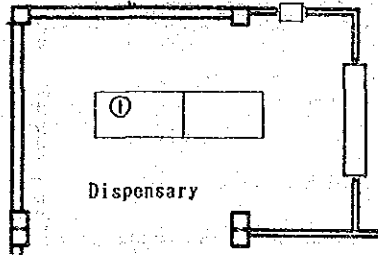
EMERGENCY | Observation/Recovery Room (71 m²)/Resuscitation Room (28 m²)
Minor Operation Theatre (25 m²)/Nurse station (13 m²)



ECG Monitor	L2-1
Operating Table	L2-2
Portable Shadowless Lamp	L2-3
Anesthesia Machine	L2-4
Defibrillator	L2-5
Spot Light	L2-6

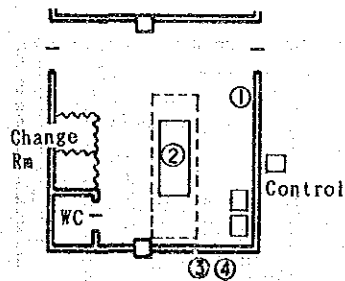
Emergency Cart	L2-7
Nebulizer	L2-8
2 Crank Bed	L2-9

DISPENSARY	Dispensary Room (54 m ²)
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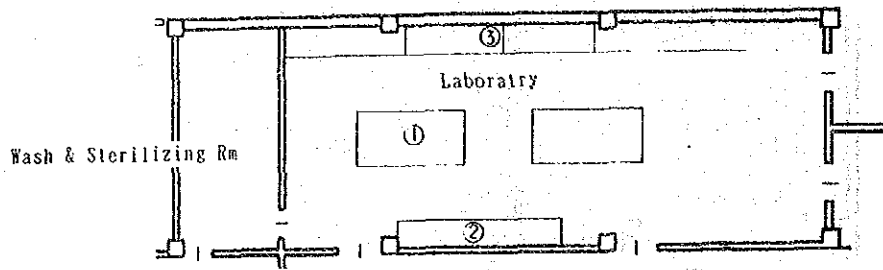
Prescription Counter	L3-1
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EXAMINATION	X Ray Room (32 m ²)
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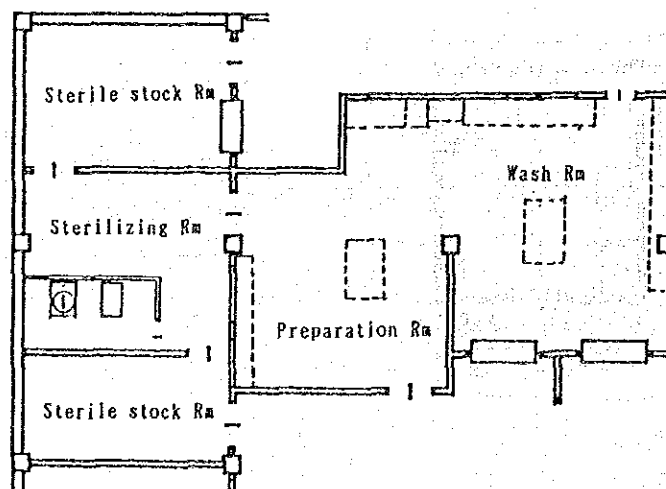
X-RAY Views	L4-1
X-Ray System	L4-2
Dryer for Film	L4-3
Automatic Film Processor	L4-4

EXAMINATION	Laboratory(90m ²)/Wash & Sterilizing Room(19m ²)
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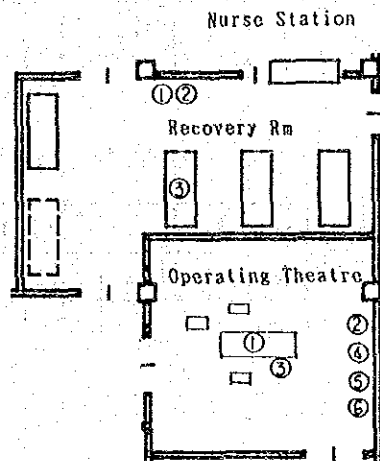
Laboratory table	L5-1
"	L5-2
"	L5-3

CENTRAL SUPPLY	Sterilizing Room(30m ²)/Wash & Preparation Room(87m ²)
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Autoclave	L7-1
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OPERATING THEATRE	Operating Room(36m ²)/Recovery room(54m ²)
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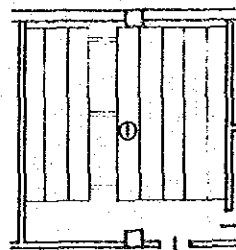
Operating Rm

Operating Table	L6-1
Anesthesia Machine	L6-2
Portable Shadowless Lamp	L6-3
Defibrillator	L6-4
Spot Light	L6-5
Suction Pump	L6-6

Recovery Rm

ECG Monitor	L8-1
Defibrillator	L8-2
2 Crank Bed	L8-3

ADMINISTRATION	Medical Records Room(35m ²)
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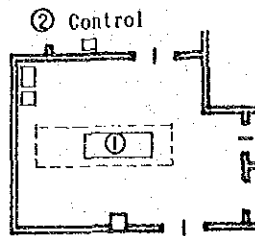


Medical Records Rack	L9-1
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(2) MT. HAGEN HOSPITAL

Lay Out-No. 13

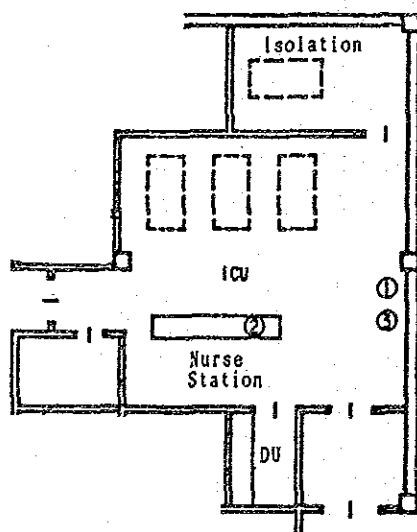
EXAMINATION X Ray Room (23 m²)



X-Ray System	M3-1
Developing Tank	M3-2

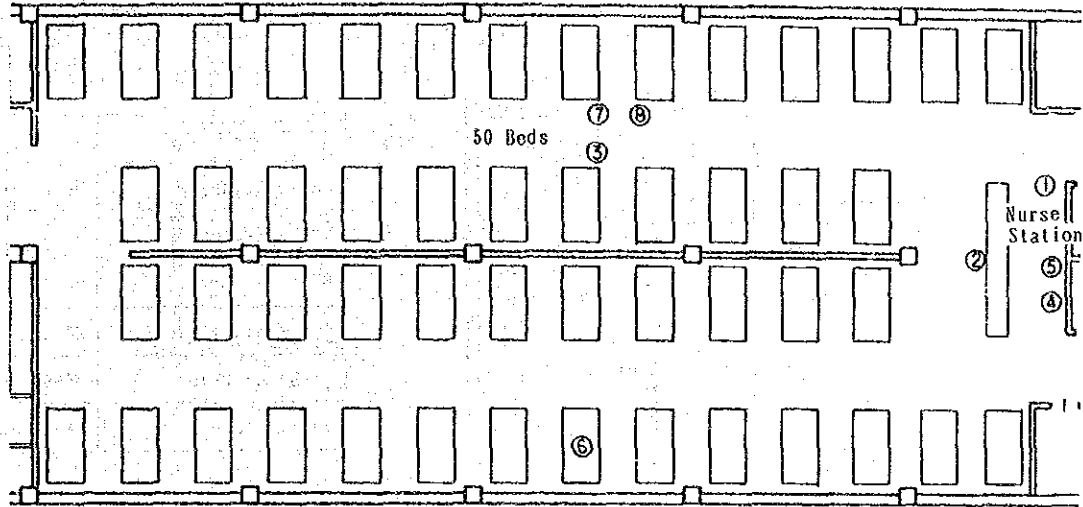
Lay out-No. 14

I. C. U. I. C. U. Room (40 m²)



Defibrillator	M10-1
ECG Monitor	M10-2
Infusion Pump	M10-3

PAEDIATRIC & OBSTETRIC WARD Ward (356 m²) × 2 UNITS

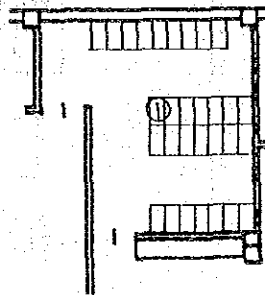


Emergency Set	M5-1
ECG Monitor	M5-2
Drip Stand	M5-3
Trolley	M5-4
ECG Machine	M5-5

Bed for Child	M5-6
Phototherapy	M5-7
Nebulizer	M5-8

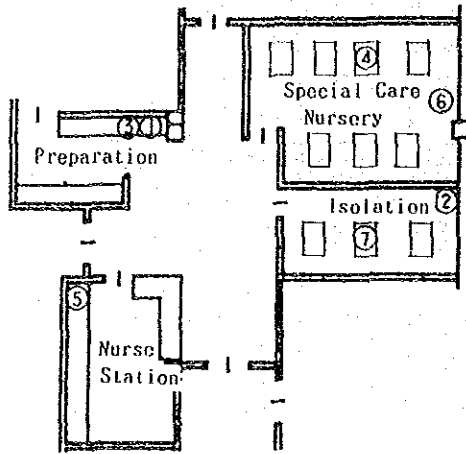
Obstetric Ward	
Beds	M6-1

NEONATE Neonate Room (38 m²)



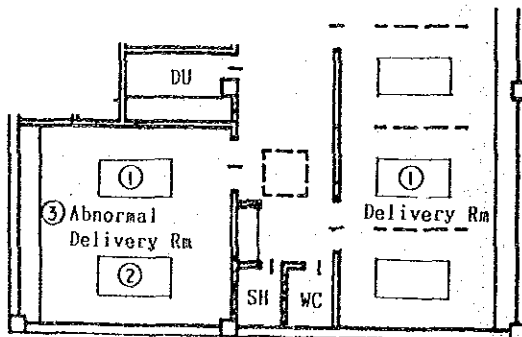
Bassinet Cart	M9-1
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SPECIAL CARE NURSERY | Special Care Nursery (27m²)/Nurse Station (16m²)
Isolation Room (12m²)



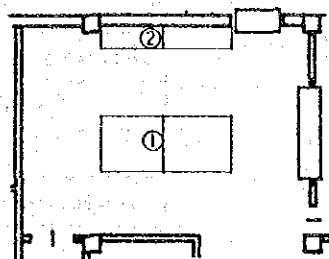
Emergency Cart	M8-1
Phototherapy	M8-2
Refrigerator	M8-3
Bassinet Cart	M8-4
ECG Monitor	M8-5
Infusion Pump	M8-6
Ventilator	M8-7

DELIVERY | Normal Delivery (16.5m²)/Abnormal Delivery (31m²)



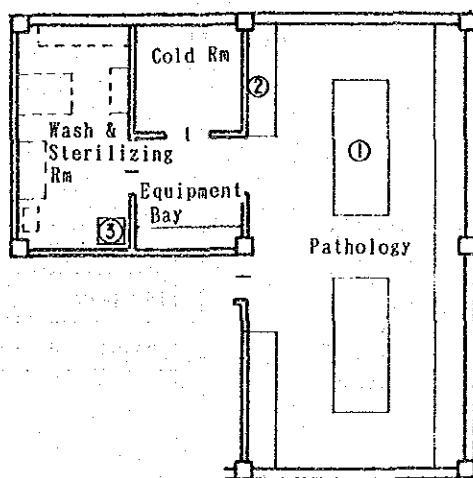
Labor & Delivery Beds	M7-1
Operating Bed	M7-2
Shadowless Lamp	M7-3

DISPENSARY	Dispensary Room (54m ²)
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Prescription Counter	M2-1, 2
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EXAMINATION	Laboratory (72m ²)/Wash & Sterilizing Room (18m ²)/Cold Room (9m ²) Equipment Store (6m ²)
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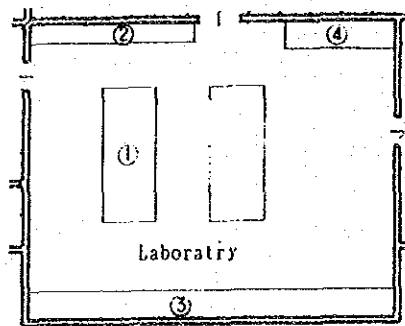
Laboratory table	M4-1
"	M4-2
Vertical Steam Sterilizer	M4-3

(3) WEWAK HOSPITAL

Lay out-No. 2

EXAMINATION

Laboratory (80 m²)

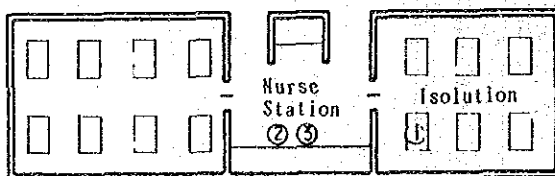


Laboratory table	W4-1
"	W4-2
"	W4-3
Spectrophotometer	W4-4

Lay out-No. 1

SPECIAL CARE NURSERY

Nursery (47 m²) / Nurse Station (17 m²)



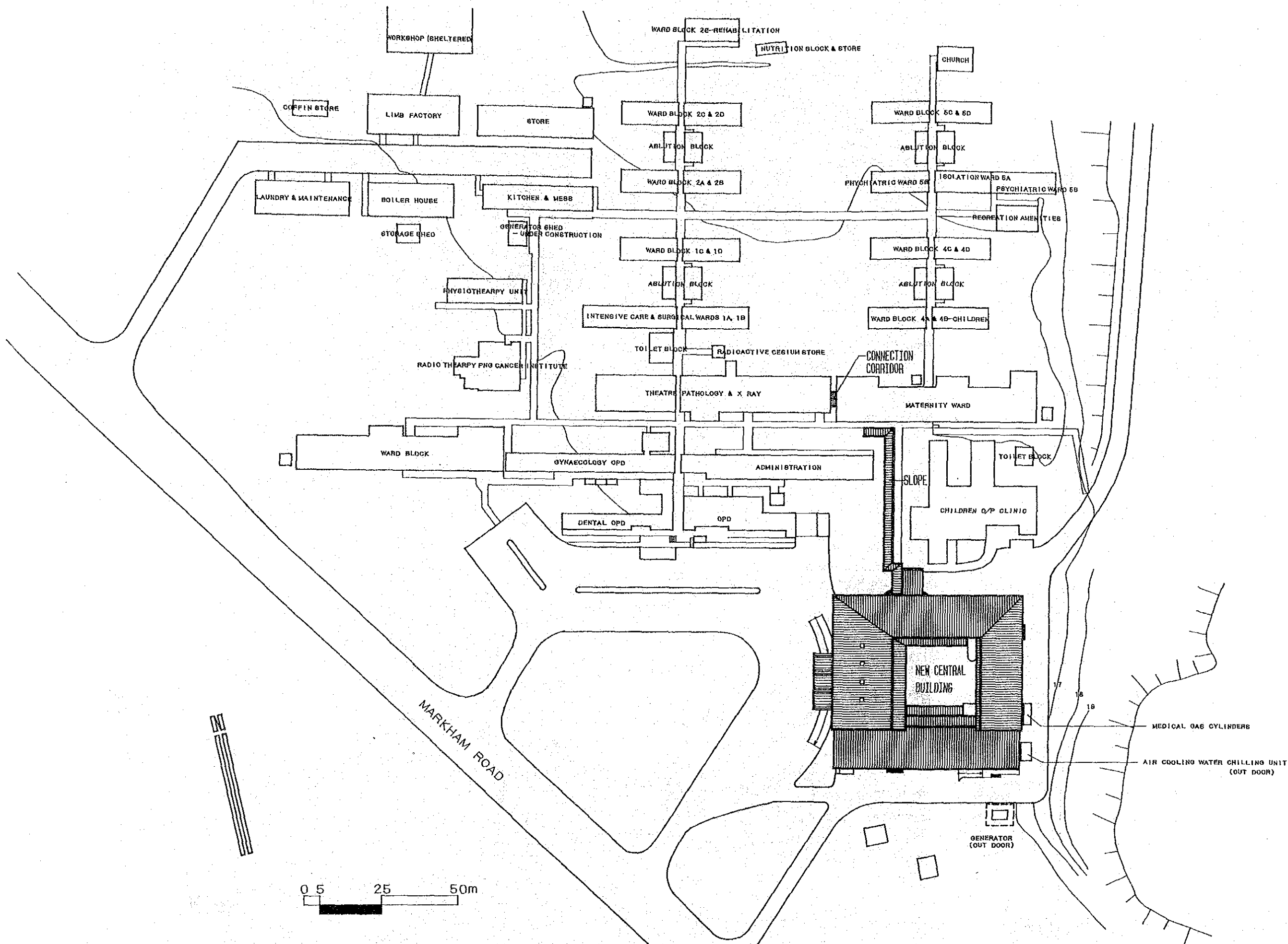
Bassinet Cart	W5-1
Drip Stand	W5-2
Infusion Pump	W5-3

Basic Design Drawings

- (1) Lae (Angau Memorial) Hospital
 - 1 Site Plan
 - 2 New Central Building, Ground Floor Plan
 - 3 New Central Building, 1st Floor Plan
 - 4 New Central Building, Elevation - 1
 - 5 New Central Building, Elevation - 2
 - 6 New Central Building, Section
 - 7 Connection Corridor, Plan, Section and Elevation

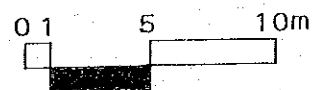
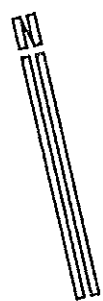
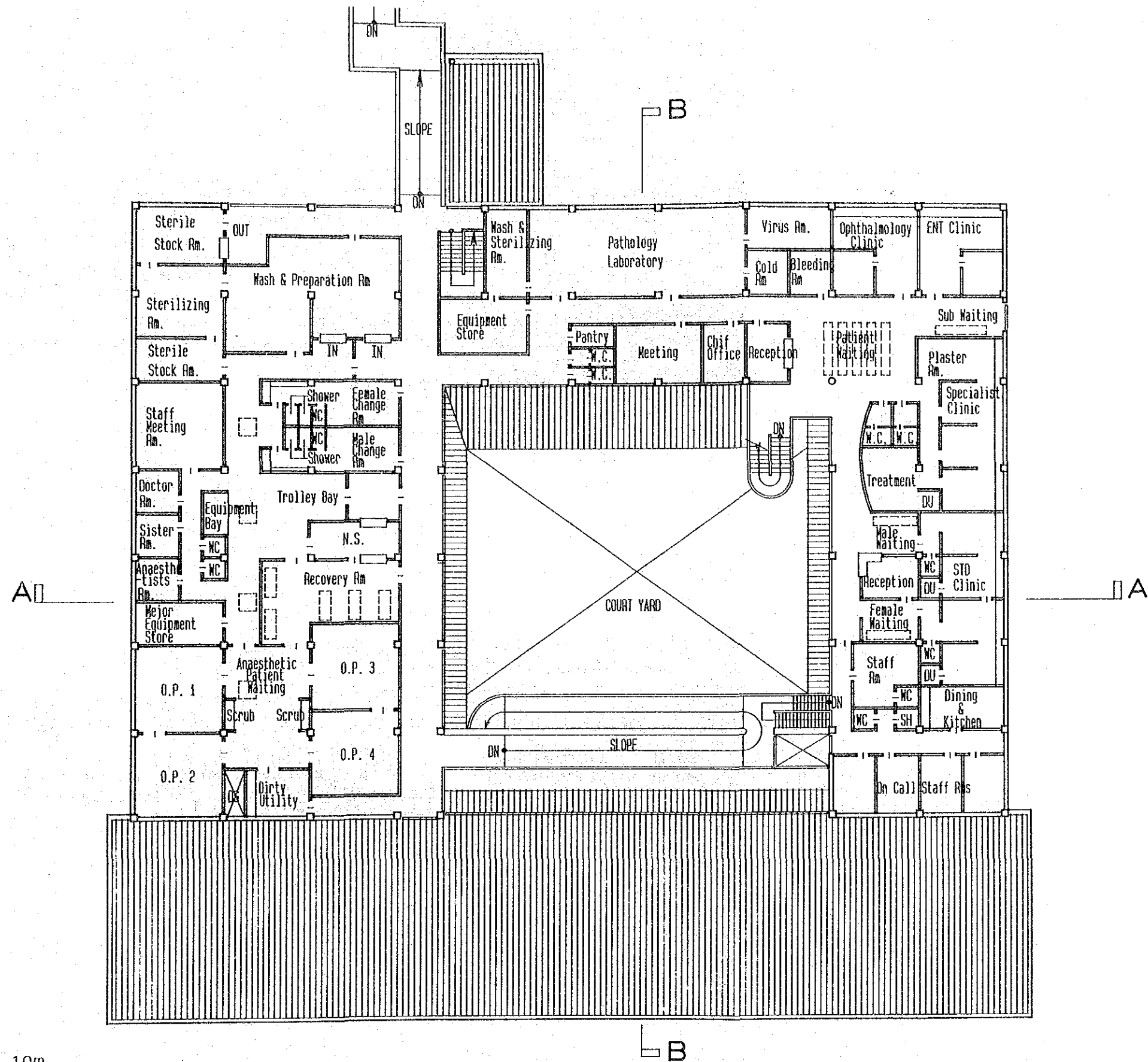
- (2) Mt. Hagen Hospital
 - 8 Site Plan
 - 9 New MCH Building, Basement & Ground Floor Plans
 - 10 New MCH Building, 1st Floor Plan
 - 11 New MCH Building, Elevation
 - 12 New MCH Building, Section
 - 13 New OPD Building, Ground & 1st Floor Plans
 - 14 New OPD Building, Elevation and Section

- (3) Wewak Hospital
 - 15 Site Plan
 - 16 - 20 Reconstruction Plans, Elevations, and Sections

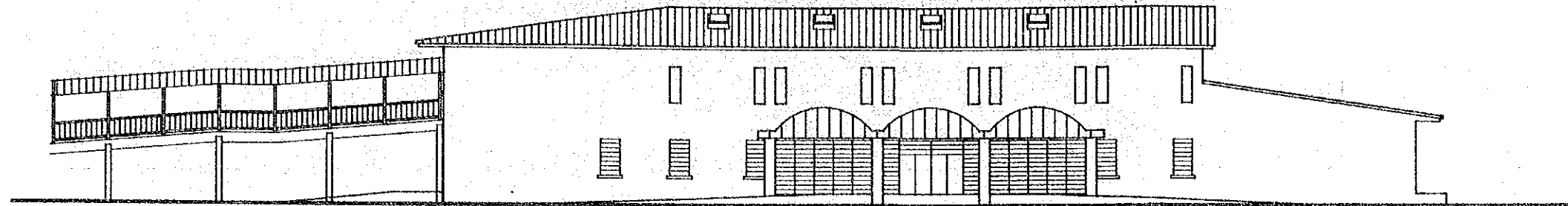


LAE (ANGAU MEMORIAL) HOSPITAL RE-DEVELOPMENT PLAN

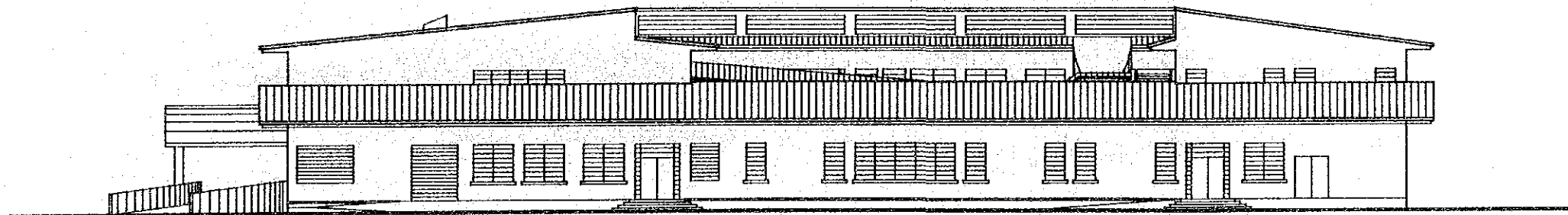
SITE PLAN 1



1st FLOOR PLAN
 LAE (ANGAU MEMORIAL) HOSPITAL RE-DEVELOPMENT PLAN NEW CENTRAL BUILDING 3



WEST ELEVATION

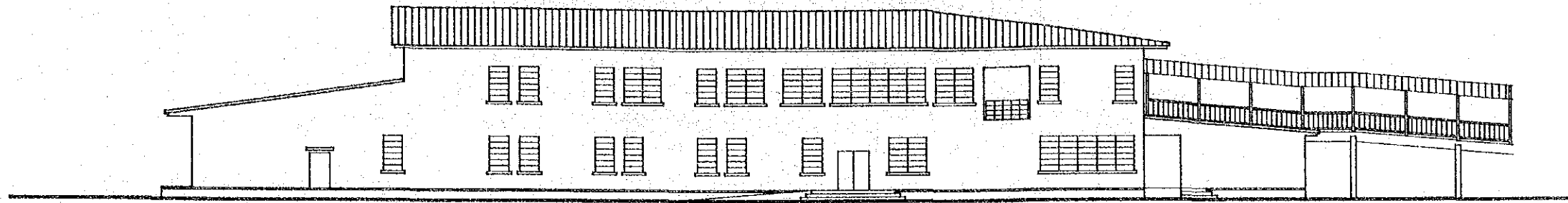


SOUTH ELEVATION

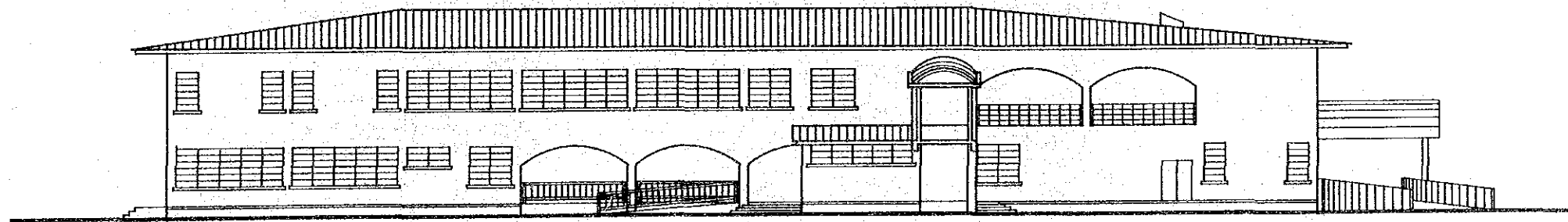


ELEVATION - 1

LAE (ANGAU MEMORIAL) HOSPITAL RE-DEVELOPMENT PLAN NEW CENTRAL BUILDING 4



EAST ELEVATION

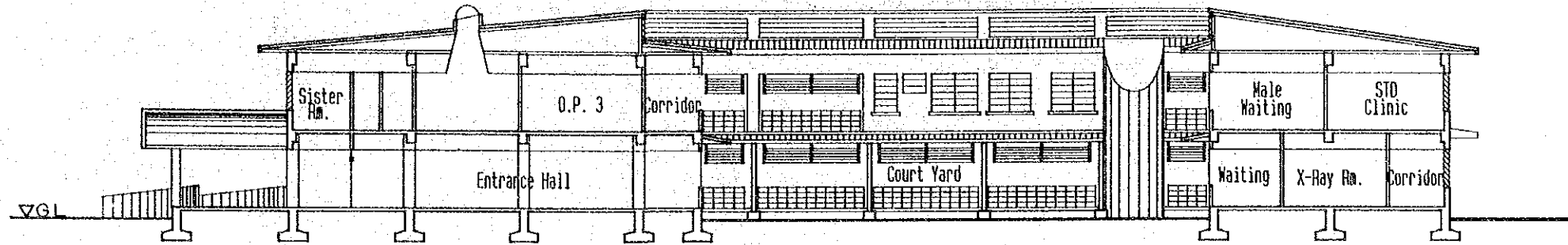


NORTH ELEVATION

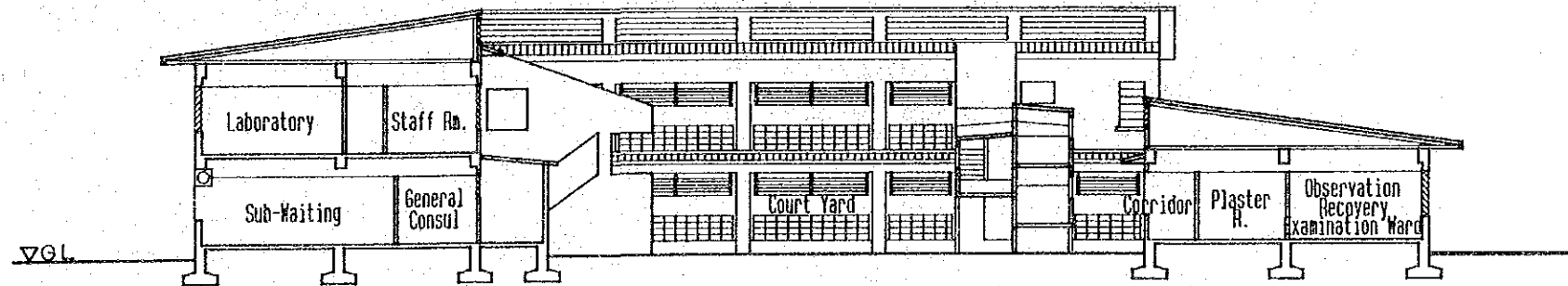


ELEVATION - 2

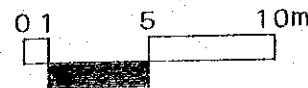
LAE (ANGAU MEMORIAL) HOSPITAL RE-DEVELOPMENT PLAN NEW CENTRAL BUILDING 5



A-A SECTION

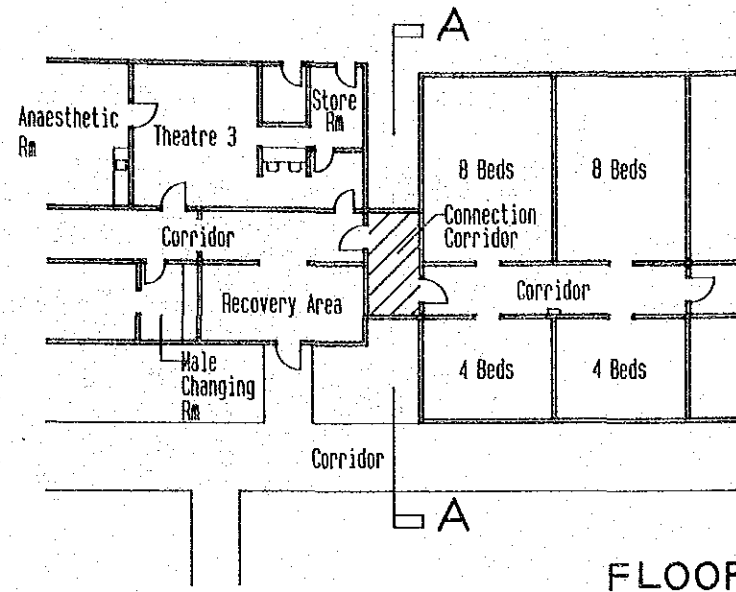


B-B SECTION

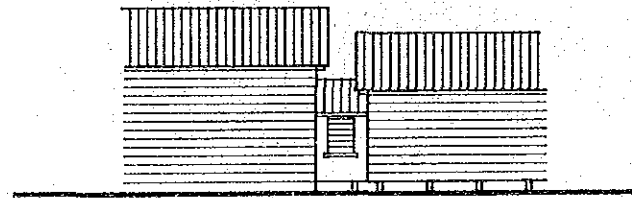


SECTION

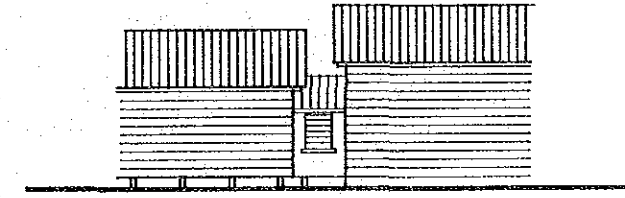
LAE (ANGAU MEMORIAL) HOSPITAL RE-DEVELOPMENT PLAN NEW CENTRAL BUILDING 6



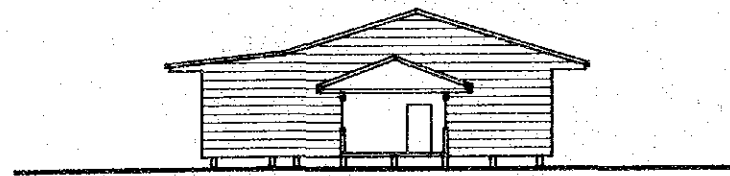
FLOOR PLAN



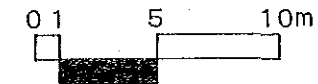
SOUTH ELEVATION

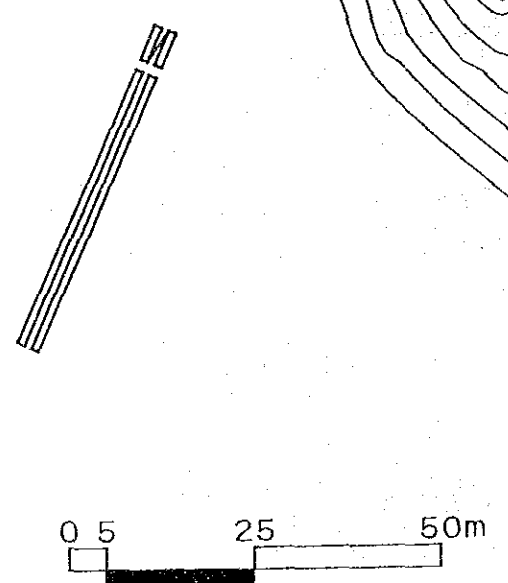
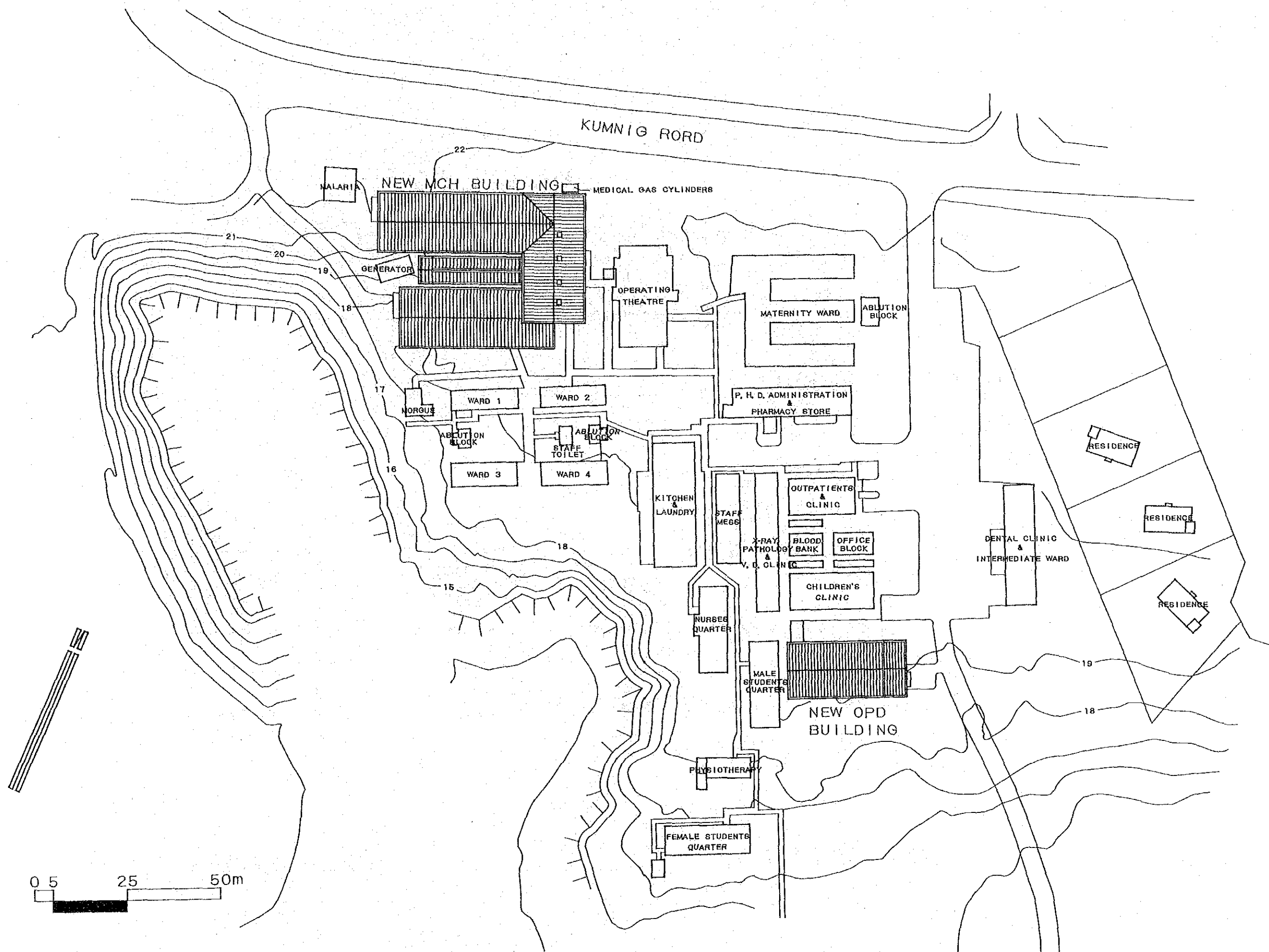


NORTH ELEVATION



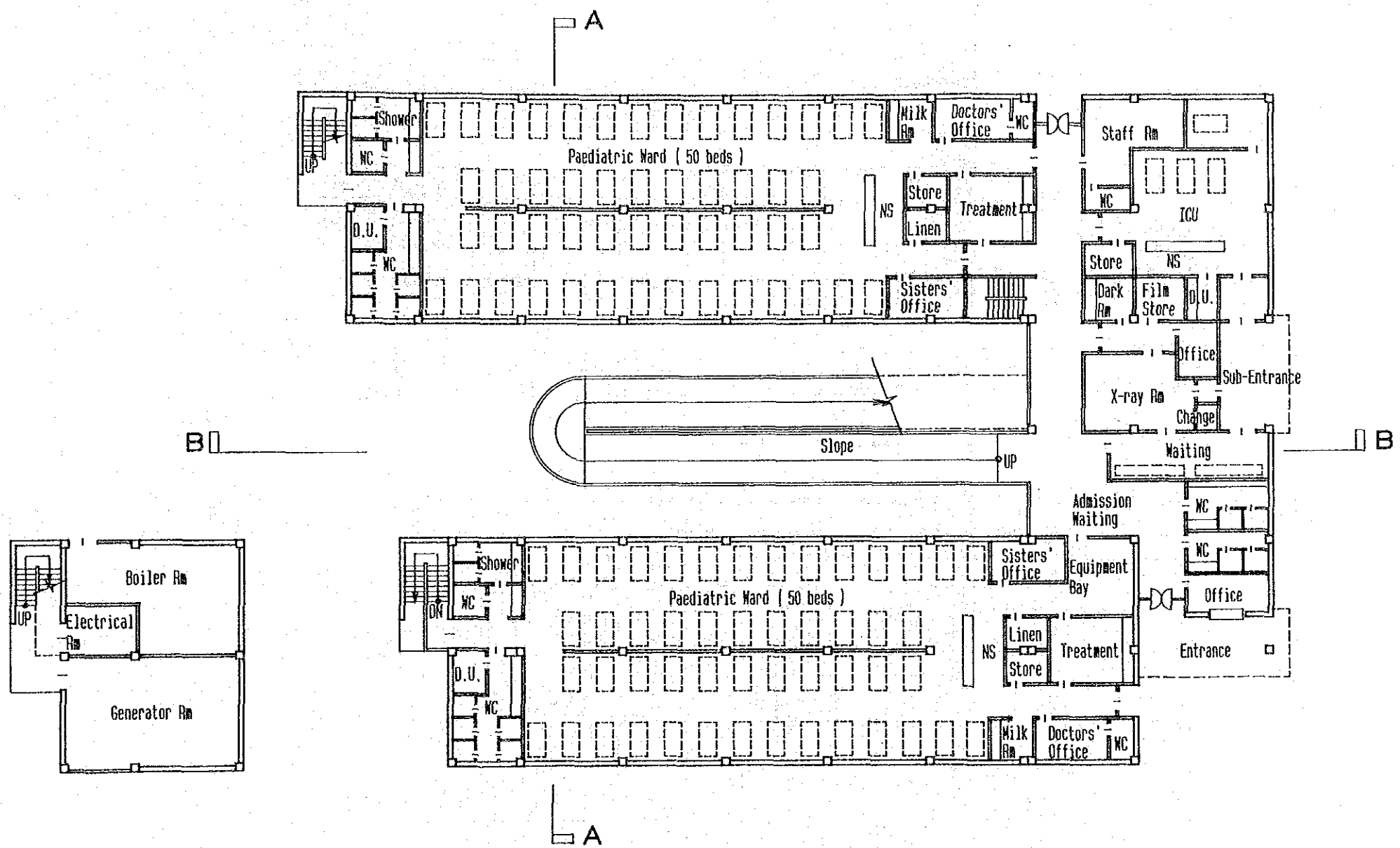
A-A SECTION





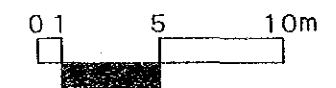
MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

SITE PLAN 8



B1 FLOOR PLAN

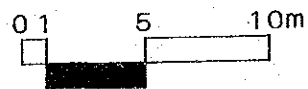
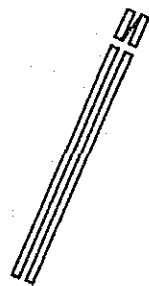
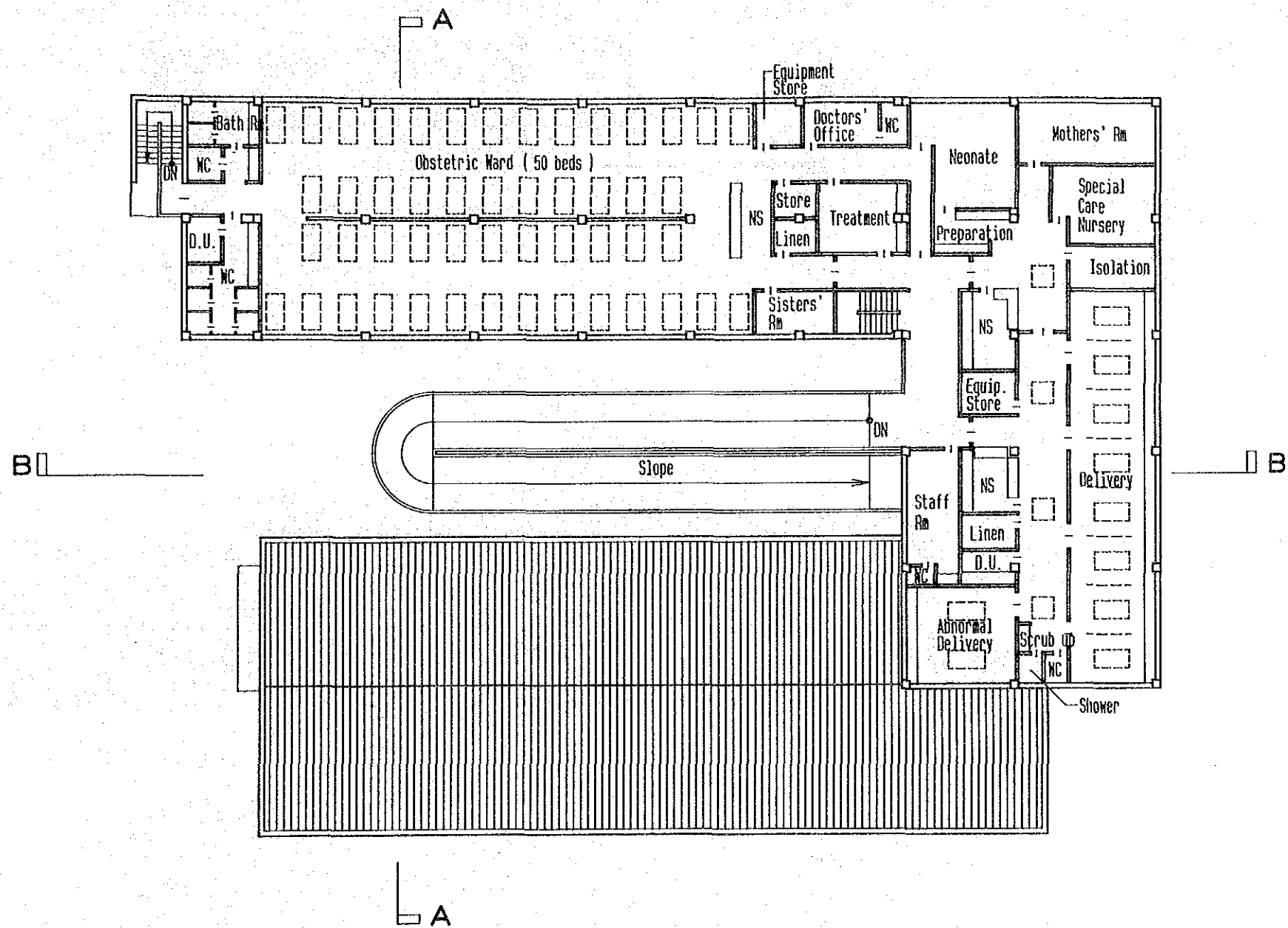
GROUND FLOOR PLAN



B1, GROUND FLOOR PLAN

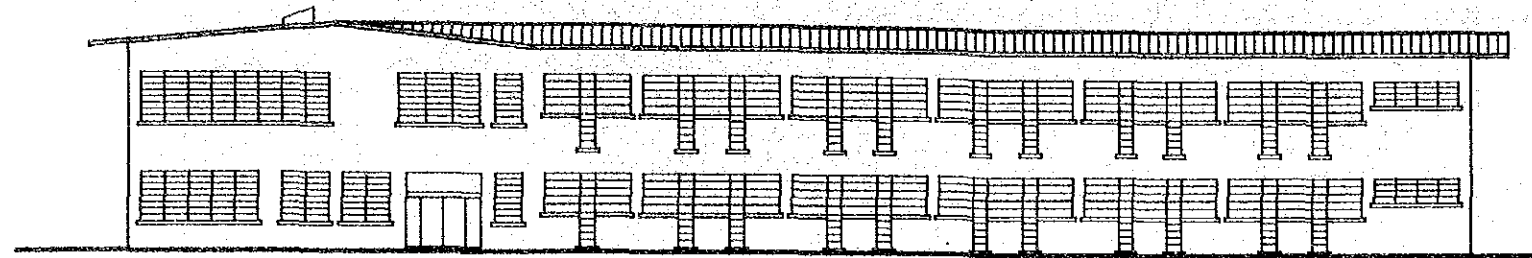
NEW MCH BUILDING 9

MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

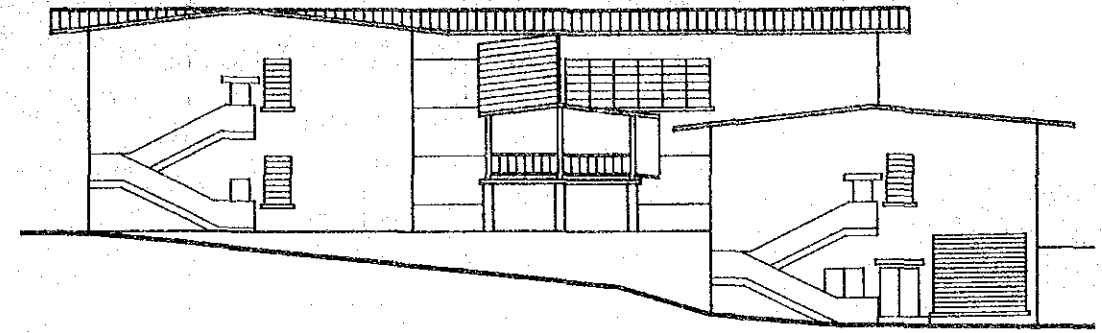


MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

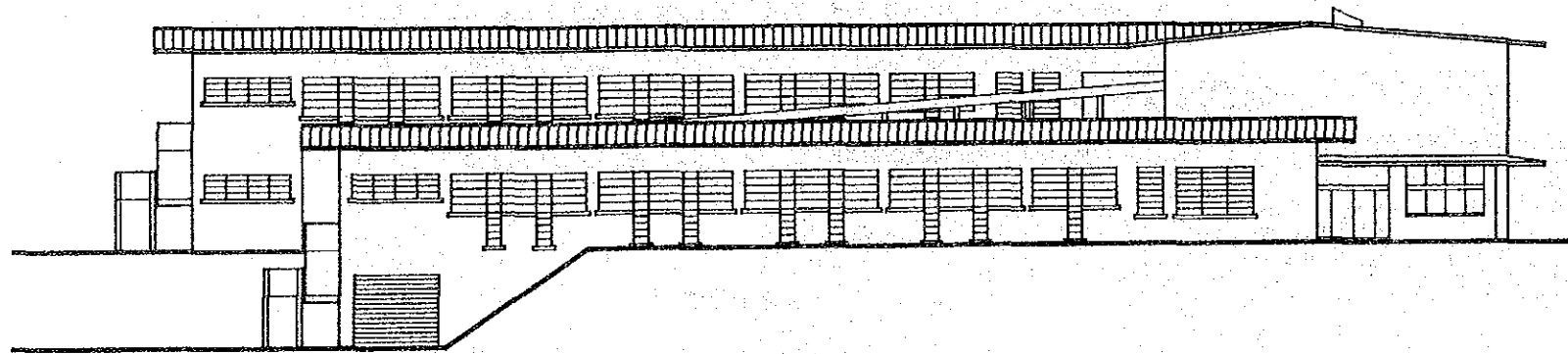
1st FLOOR PLAN
NEW MCH BUILDING 10



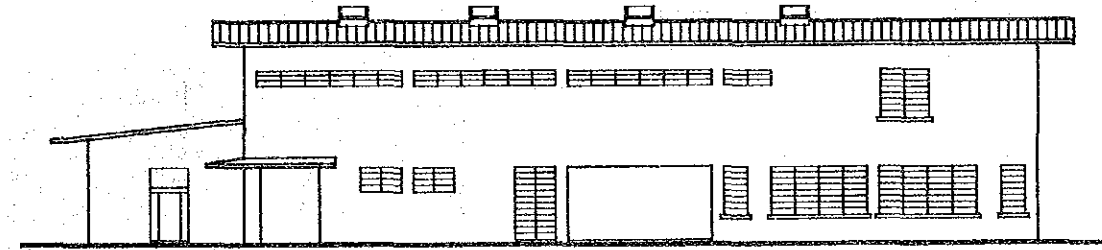
NORTH ELEVATION



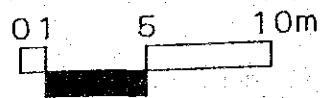
WEST ELEVATION



SOUTH ELEVATION

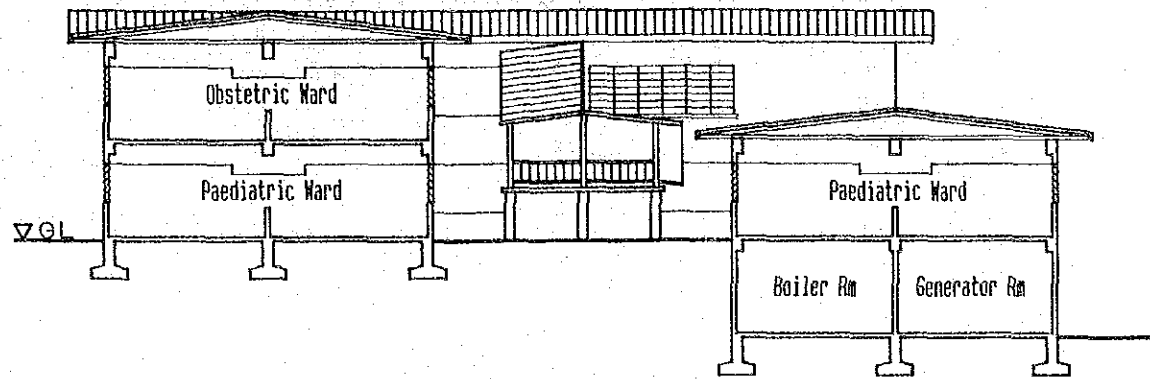


EAST ELEVATION

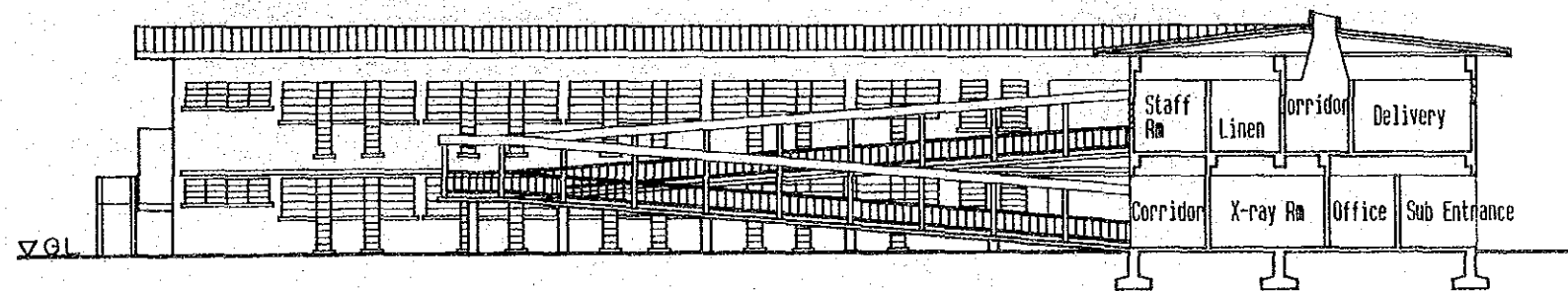


MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

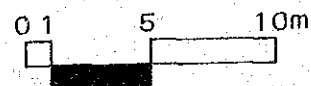
ELEVATION
NEW MCH BUILDING 11



A-A SECTION



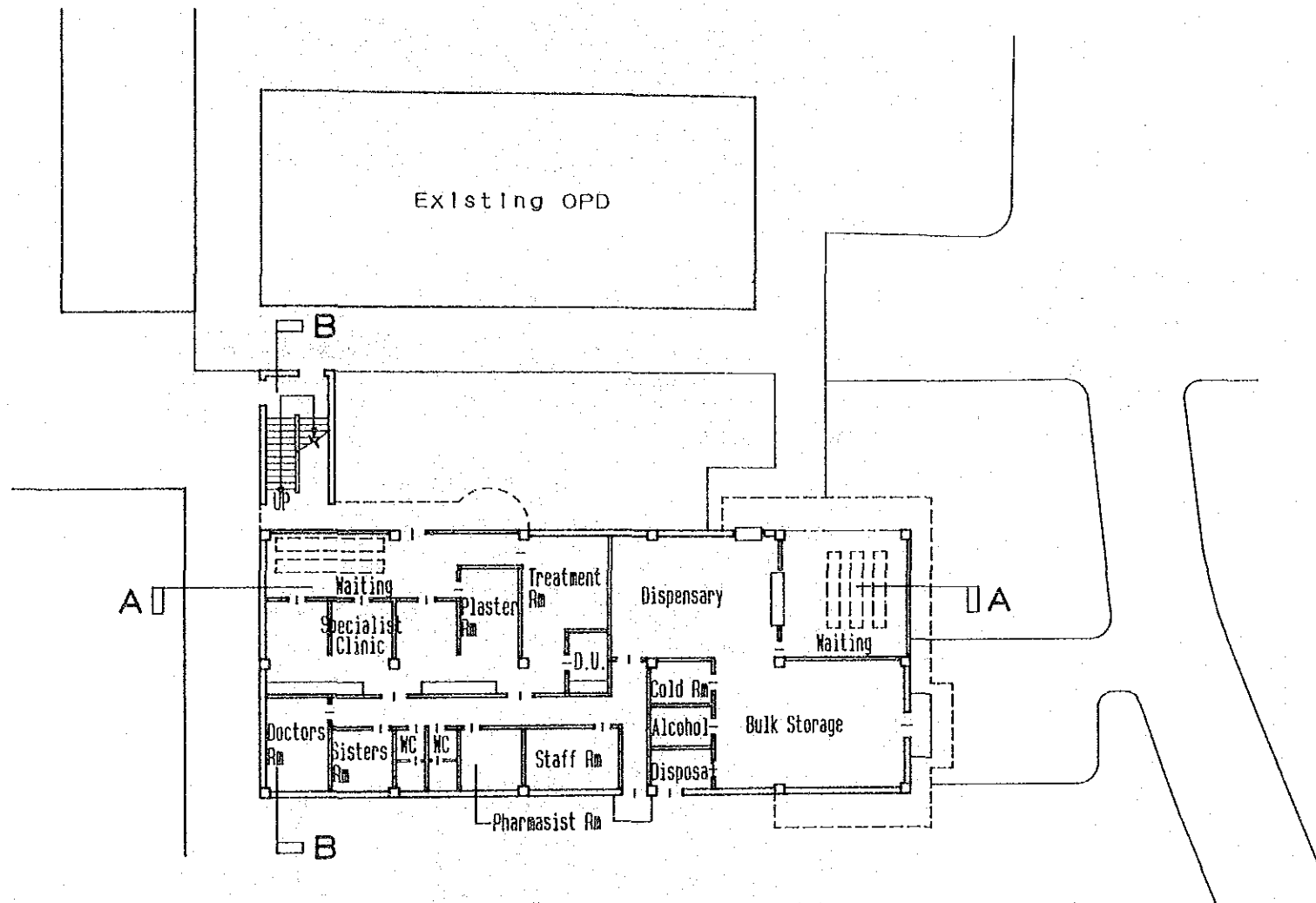
B-B SECTION



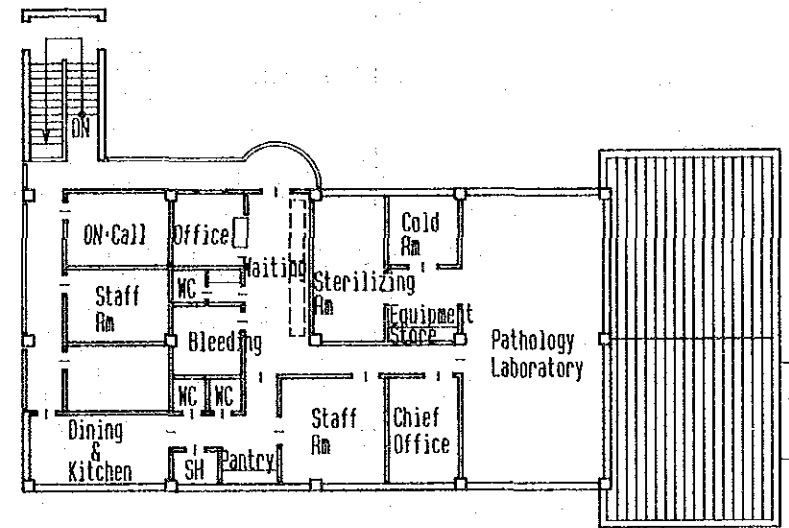
MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

SECTION

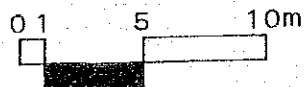
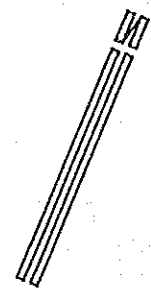
NEW MCH BUILDING 12



GROUND FLOOR PLAN



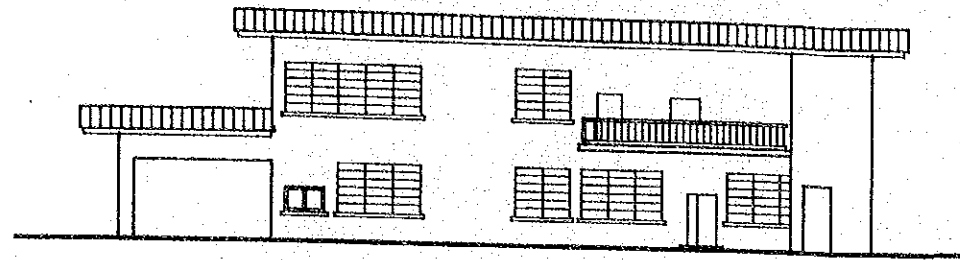
1st FLOOR PLAN



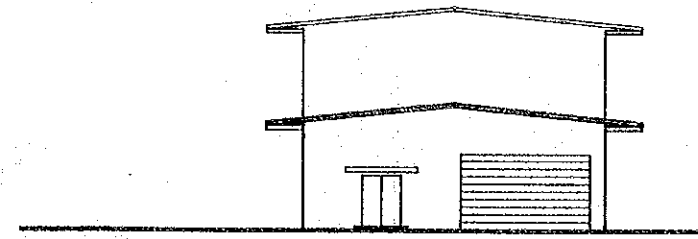
MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

FLOOR PLAN

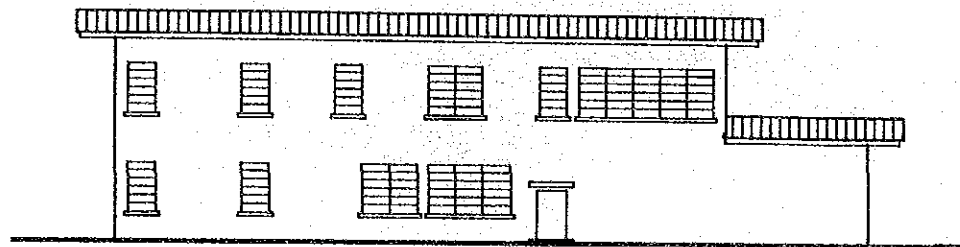
NEW OPD BUILDING 13



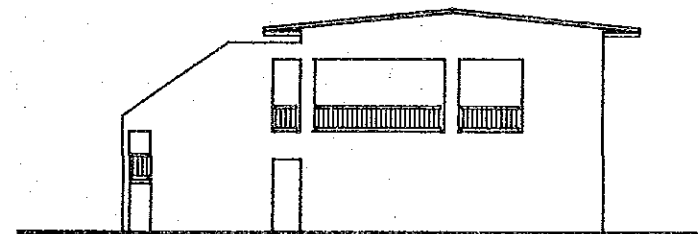
NORTH ELEVATION



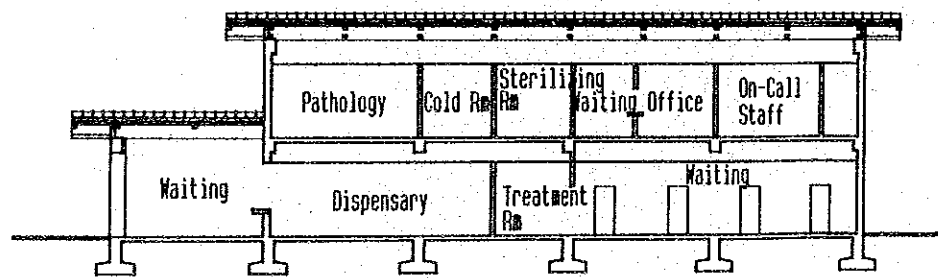
EAST ELEVATION



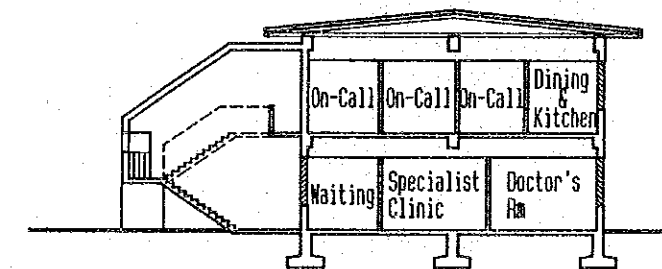
SOUTH ELEVATION



WEST ELEVATION



A-A SECTION

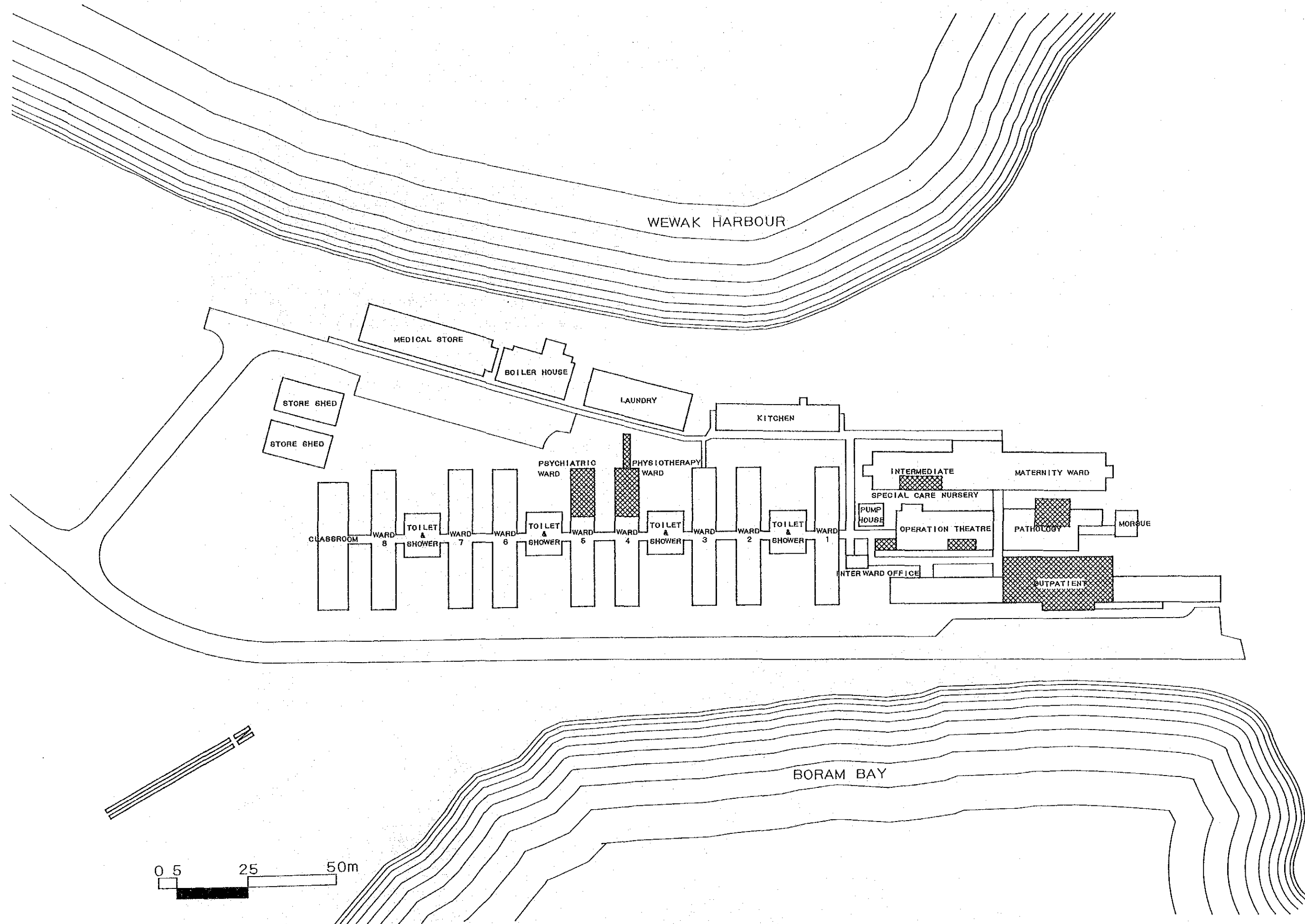


B-B SECTION



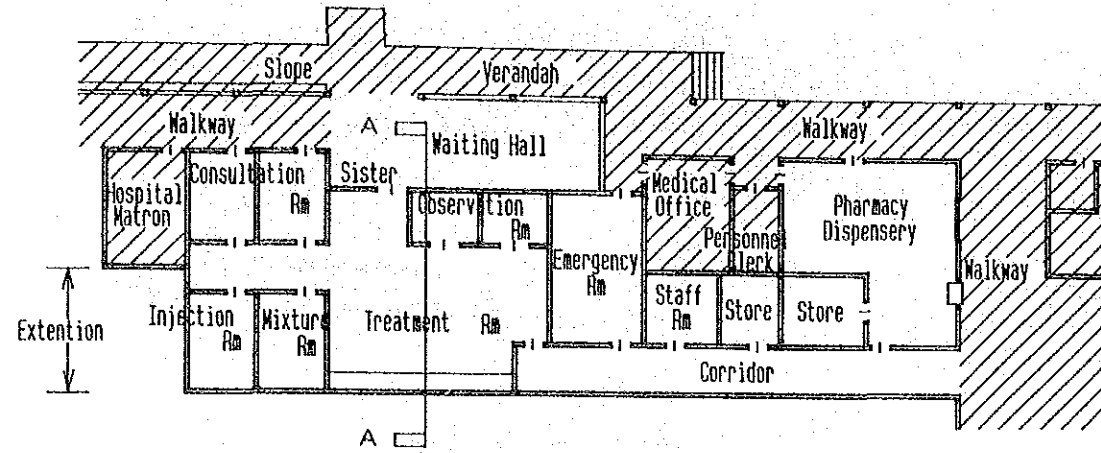
MT. HAGEN HOSPITAL RE-DEVELOPMENT PLAN

ELEVATION & SECTION
NEW OPD BUILDING 14

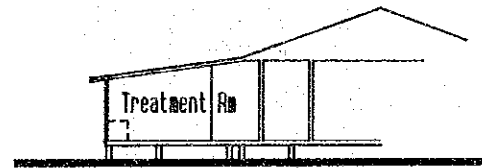


WEWAK HOSPITAL RE-CONSTRUCTION PLAN

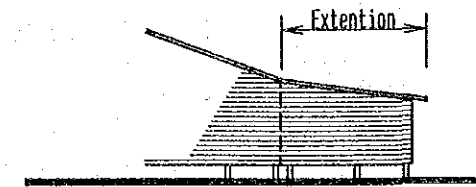
SITE PLAN 15



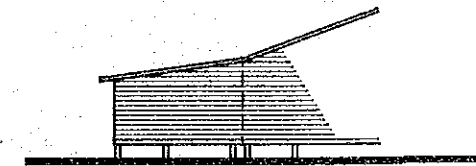
FLOOR PLAN



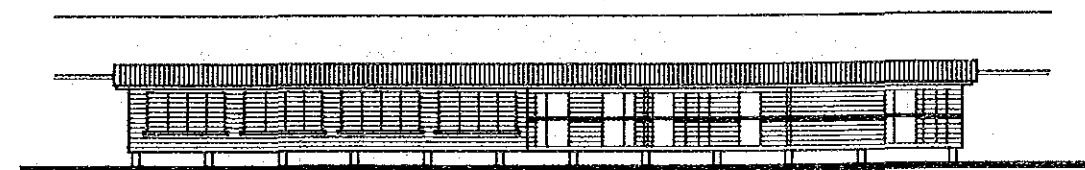
A-A SECTION



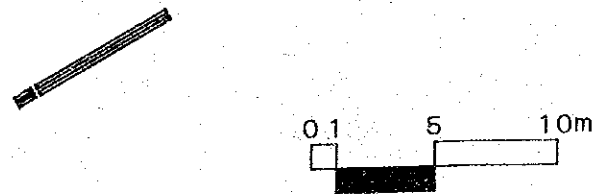
NORTH ELEVATION

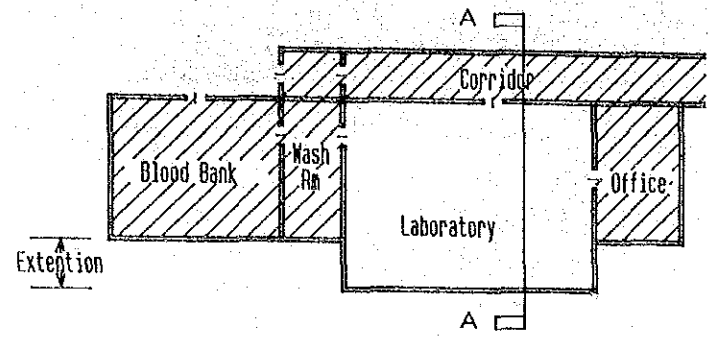


SOUTH ELEVATION



WEST ELEVATION

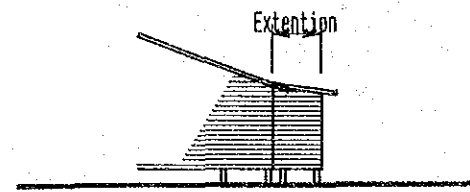




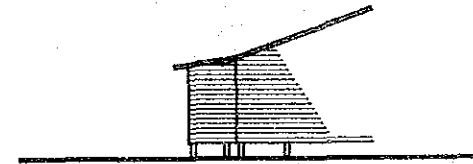
FLOOR PLAN



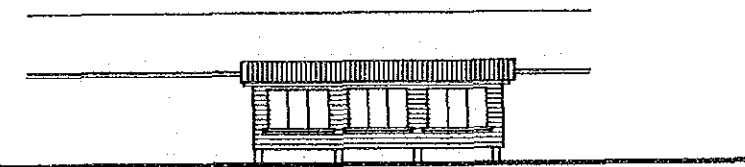
A-A SECTION



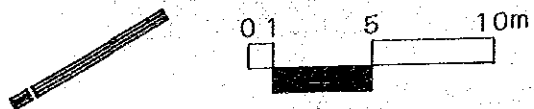
NORTH ELEVATION



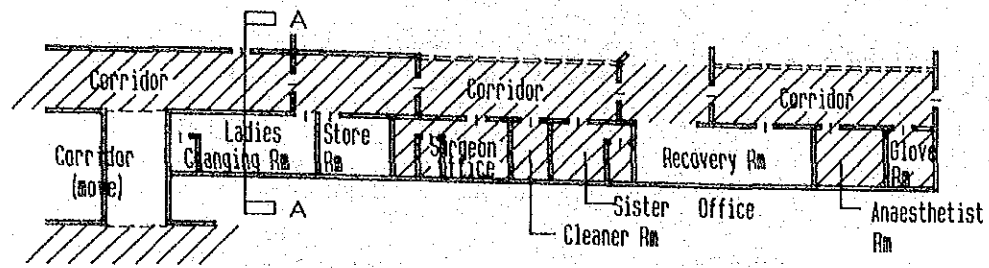
SOUTH ELEVATION



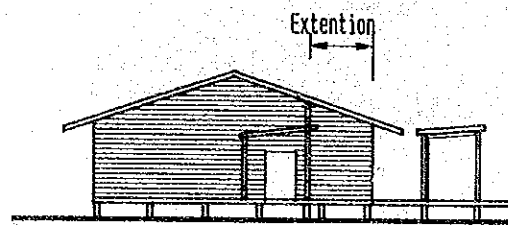
WEST ELEVATION



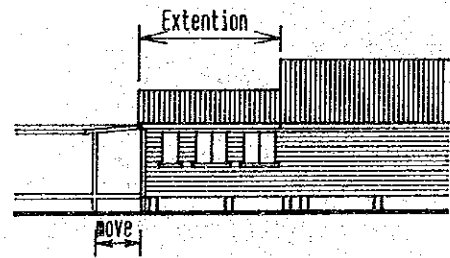
OPERATING THEATRE



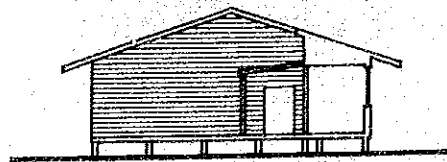
FLOOR PLAN



SOUTH ELEVATION

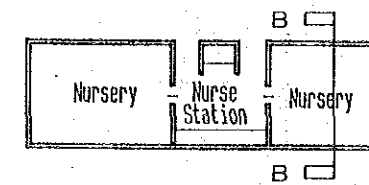


EAST ELEVATION

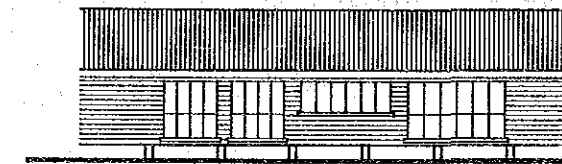


A-A SECTION

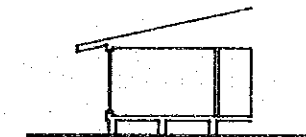
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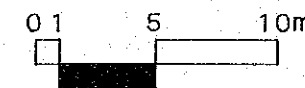
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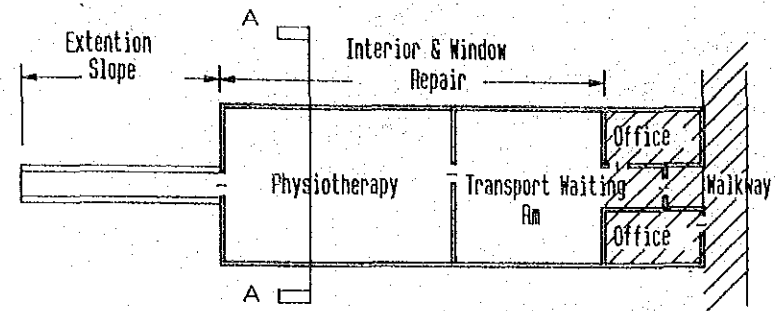


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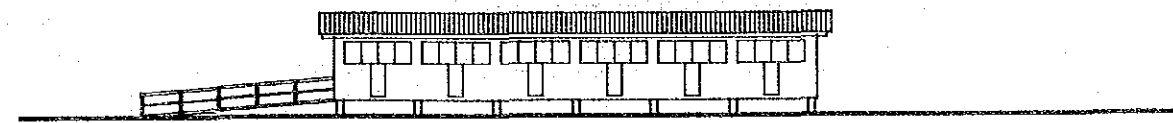


B-B SECTION





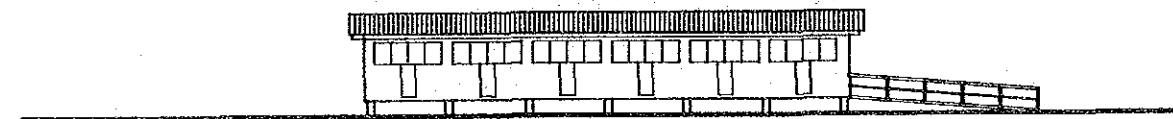
FLOOR PLAN



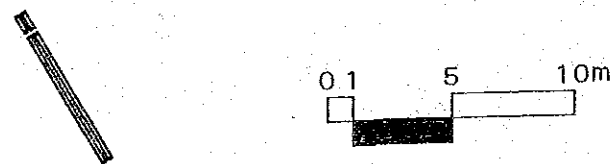
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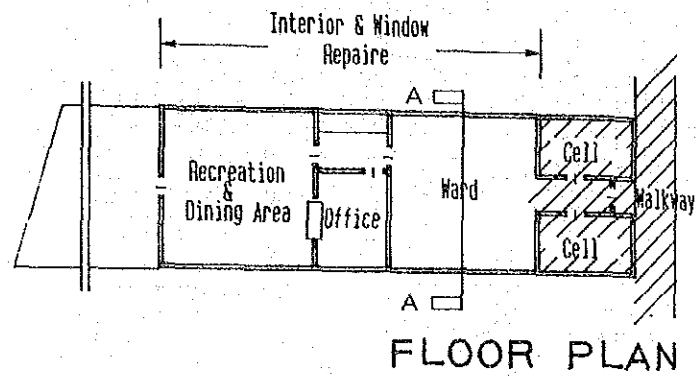


A-A SECTION

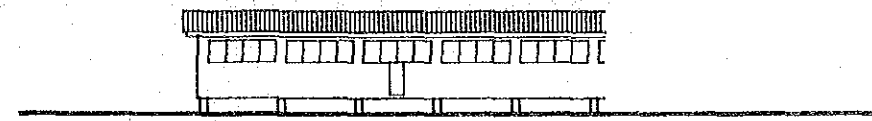


NORTH ELEVATION





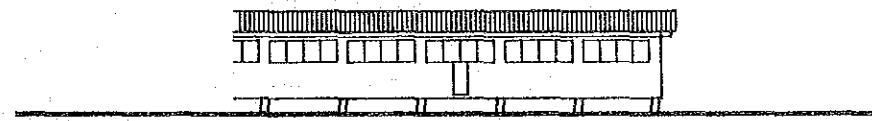
FLOOR PLAN



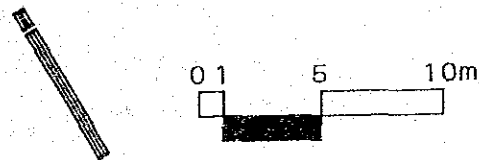
SOUTH ELEVATION



A-A SECTION



NORTH ELEVATION



4-4 PROJECT EXECUTION

4-4-1 Project Execution System

If this project is to be executed under the grant aid funding from the Government of Japan, it is desirable that the project be implemented in the order as described below.

(1) Responsibilities of the Government of PNG

This project is executed and administered under the responsibilities of the Department of Health, PNG. However, the entire project is coordinated by the Department of Finance and Planning (DOFP), and construction and its related matters are administered by the Department of Works.

The Government of PNG will be responsible for the following items:

- To make an agreement and contract with a consultant firm established under the laws of Japan for design and management of facilities and equipment (commissioning of detailed designs, tendering administration, and construction supervision).
- To announce bidding in newspapers published in Japan. To select construction contractors and equipment suppliers, through prequalification and tendering, from the firms registered and established under the laws of Japan, and to award contracts.
- To obtain verification from the Government of Japan for the contracts of consultant and construction.
- To complete preparation work to be performed by the Government of PNG prior to commencement of the project.
- To make payment to the contractors through the bank designated by the Government.

- To issue certificates in accordance with the terms of contracts.

(2) Responsibilities of Consultant

Consultant provides services in accordance with the requirements of the grant aid. The scope of work covers the items as outlined below:

- 1) Detailed Design Drawings: To prepare tender document package to include drawings and specifications.
- 2) Execution of Tender and Contractual Administration for the Government of PNG: To prequalify tenderers, tendering, and witness to construction contract.
- 3) Construction Supervision: Perform on-site construction supervision, and issue necessary certificates.

(3) Responsibilities of Contractors

Construction is to be performed by a Japanese contractor in accordance with the requirements of the Japan's grant aid. Therefore, the contractor must conform to the requirements and strictly adhere to the date of completion as set forth in the contract.

4-4-2 Scope of Work and Responsibilities

Scope of work and responsibilities of the both governments of Japan and PNG are as outlined below:

(1) Responsibilities of the Government of Japan

- 1) Construction
 - a. Building work
 - b. Electrical, water supply and drainage work, and air

conditioning and ventilation systems

2) Medical Equipment

- a. Provision of medical equipment
- b. Installation of medical equipment

3) Exterior Site Work

- a. Construction of servicing areas around the main entrance and access passage. (only for Lae Hospital)
- b. Construction of access way, connection road between the new building and existing operating theatre building (only for Mt. Hagen Hospital), and the access way to the Dispensary Department.
- c. Erection of exterior security lights (only for Lae Hospital and Mt. Hagen Hospital)

4) Exterior Utilities

- a. Provision of electrical wiring from the initial power receiving transformer station.
- b. Provision of water piping from the existing water meter.
- c. Provision of telephone lines from the MDF.

5) Others

- a. Transportation and delivery of the project materials and equipment to the sites of construction.
- b. Provision of detailed designs, tendering and contract administration, and construction supervision services.

(2) Responsibilities of the Government of PNG

1) Preparation and Clearing of Construction Sites

- a. Securing proper construction areas necessary for execution of the project.
- b. Demolition and removal of existing facilities, clearing trees and other obstructions, and grading the entire areas within the site of construction.
- c. Providing areas necessary for erection of temporary project offices, working spaces, and materials and equipment store.
- d. Providing water and electric power on permanent basis throughout the construction period including pre- and post-construction period.
- e. Sodding and planting.

2) Exterior Utilities

- a. Lead-in of electrical power.
- b. Connection of water supply piping to the City main.

3) Equipment and Furnishings

- a. Furnishing general residential furniture, office furniture and equipment.
- b. Providing medical equipment and supplies except those provided from the Government of Japan.

4) Other Miscellaneous Matters

- a. Expenses required of banking arrangement.

- b. Expenses required of application for tax exemption.
- c. Necessary actions to expedite custom clearance and inland transportation.
- d. Execution of application procedures for tax exemption against any taxes to include customs, income taxes, and other financial surcharges to be imposed for Japanese nationals to participate in the project under the verified project.
- e. Coordinating with the related authorities for immigration procedures and other conveniences for Japanese nationals to achieve their tasks after completion of the project.
- f. Operations and maintenance of facilities and equipment to use them properly and effectively.
- g. Payment of expenses necessary for obtaining architectural and building approval and permission.

4-4-3 Execution Guidelines

This project is expected to be completed within a single fiscal year in principle. Meanwhile, the construction sites are scattered at three remote locations under different environment and social situations. The construction must be performed in a manner to suit physical conditions at each individual site. In addition, the construction schedule must be completed in a manner to minimise interference to the health service activities in the existing hospitals. Contractor is required to assure safety for all personnel including hospital employees, patients and contractors themselves throughout the period of construction. The construction sites are scattered at three different places as explained previously, but the construction will be undertaken by a single contractor (Japanese) for the following reasons:

- Provided the contract is awarded to three separate contractors, it may cause confusion and troubles among related parties in splitting scope of work and responsibilities, in administration of construction and schedule management, in coordinating among contractors, and in performance of security services, operational tests and training.
- Provided the contract is awarded to a single contractor, it will save indirect costs such as temporary work, temporary facilities, field expenses etc.
- Provided the contract is awarded to a single contractor, it can place on the single contractor full and coherent responsibilities on various tasks in the contract to include procurement of materials and equipment, transportation, field construction, operational tests, turnover and acceptance, proper disposition of claims throughout the period of warranty.

4-4-4 Special Precautions

The following precautions must be specifically noted by all concerns to participate in the project in order to complete all work in the contract within the time agreed in accordance with the requirements of the Japan's grant aid:

- 1) The construction site and its surroundings should be selected and determined upon full coordinating with the local authority in view of minimizing interruption to the health services of the existing hospitals.
- 2) Demolition and removal of the existing facilities by the Government of PNG, points of relocation of the existing facilities, provision of temporary infrastructure during the period of contract, and official procedures should be verified by the contractor prior to commencement of actual construction work.

- 3) There are about four major local contractors who may be capable to perform construction of similar sizes to this project. They are either Australians or New Zealanders. There are 10 other contractors who perform small-scale contracts, and their capabilities in management of project schedule and in quality control are questionable. The prime contractor is expected to be a Japanese, but major work is performed by local subcontractors. Therefore, the prime contractor is required to carefully select the best qualified subcontractors having reputable performance records of sizable construction, capabilities in timely procurement of necessary materials and equipment, and mobilization ability of labour forces, to complete the construction within the limited time frame.
- 4) The weather conditions are different at each individual site. The construction schedule would be substantially affected by rainy season. The contractor is required to set up his plans of transportation (especially between Lae and Mt. Hagen) and construction procedures by taking into account the possibility of floods and flood disasters, and security.

4-4-5 Construction and Supervision

Since Mt. Hagen Hospital is located at a point 1,700 metres above the sea level, and two other sites at Lae and Wewak which are located along the beach. Transportation and labour forces required may be more than estimated. Construction schedule, procurement of materials and equipment, and mobilization of work forces, therefore, must be carefully set up to suit the physical conditions at each site. The typical role of each site is stated below for reference purpose:

1) Lae

- To designate this site as a main execution base.
- To designate this site as a receiving point of construction materials and equipment.

- To designate this site as a delivery point of imported materials and equipment.

2) Mt. Hagen

To designate this site as a secondary base to execute contract.

3) Wewak

To plan water-borne transportation between Lae and Wewak. Materials are locally available because the size of the project is relatively small.

Construction Plan

The contractor should organise his site office with Japanese staff of three managers responsible for architectural work, mechanical and electrical work, and administration permanently stationed at Lae under the project manager who is responsible for the entire contract. In addition to the above, two managers responsible for architectural work, and mechanical and electrical work should be stationed permanently at Mt. Hagen. One Japanese staff is required to station at Wewak throughout the construction. The above is a recommendable organisation for smooth fulfilment of the contract.

Supervision Plan

The consultant sends his staff to Lae to be stationed there permanently. The work at Wewak is periodically checked by the staff. The consulting staff are required to coordinate among the project representatives from the Governments of Japan and PNG and to resolve technical problems for smooth progress of construction. The consultant also dispatches specialists from Japan as necessary to review critical problems, to verify and determine the facts, and to give necessary directions for

completion of the construction within the period as authorized by the Japan's grant aid.

4-4-6 Materials and Equipment Procurement Plan

(1) Construction Materials and Equipment

Local Procurement and Procurement in Japan

a) Materials and Equipment Procured in Local Markets

Local Products

Aggregates, lumber, plywood, concrete blocks, paints, and PVC products

Imported Products

Cement, reinforcing bars, brick, tiles, doors and windows hardwares, locks, roofing materials, ceiling materials, interior finish materials, mechanical and electrical materials, sanitary fixtures, air conditioning packages (imported from Australia, New Zealand, Japan and other countries)

b) Materials and Equipment Procured in Japan

Steel structural shapes, prefabricated metals, custom-made distribution panelboards, medical equipment and supplies, and others

Basis and Adequacy of Section of Japanese Products

The materials and equipment listed above for procurement at local markets (including imported products) are normally used in the country and expected to be available without causing problems of shortage or quality. The materials and equipment for this project, therefore, are procured in principle at local markets. However, the materials and equipment will be imported

from Japan or third countries in the event the following situations have occurred:

- a) When products are short of requirements, or quality and dimensions of products do not conform to the specified variations and tolerance.
- b) When prices of products to be procured at the local markets are higher than products to be imported from Japan or third countries (including packing and shipping charges).
- c) When local products do not conform to the required functions or system operation.
- d) When spare parts are not available constantly.
- e) In a case products are imported from third countries, the technical levels of the country must be at a satisfactory level.

(2) Medical Equipment and Supplies

The most medical equipment and supplies presently used at hospitals in PNG have been imported from Australia. When it is apparent that products from third countries are superior (in prices and maintainability) than the products from Japan, then the former will be positively procured without hesitation.

4-4-7 Project Schedule

The consultant will start to progress immediately after award of consulting contract after the Exchange of Notes (E/N) have been agreed to and exchanged between the Governments of Japan and PNG for the grant aid project.

The work, after the E/N have been completed, is classified into three phases as stated below. The overall work will be progressed

as shown on the schedule on the next sheet.

Phase 1: Preparation of Construction Drawings

Tender document packages will be prepared based on this report. Estimated time of completion is approximately 3 months.

Phase 2: Prequalification and Tender

Estimated time frame is approximately 2 months for tender announcement, prequalification of prospective tenderers, review of estimated construction cost, witness to contract agreement.

Phase 3: Construction

Estimated time of completion is approximately 12 months including installation and operational testing of equipment.

Month	1	2	3	4	5	6	7	8	9	10	11	12
CONSTRUCTION DRAWINGS	Prepare detailed drawings (in Japan)											
	Discuss problem on site			Approval		Total 5 months						
				Arrange tendering								
				Prequalify tenderers								
LAE (ANGAU MEMORIAL) HOSPITAL												
						Term of Construction = 12 Months						
Site Preparation Work	■											
Earth Work		■										
Foundation Work			■									
Structural Work			■									
Roofing Work					■							
Finish Work						■						
Utilities and Equipment Installation						■						
Medical Equipment Installation										■		
MT. HAGEN HOSPITAL												
						Term of Construction = 12 Months						
Site Preparation Work	■											
Earth Work		■										
Foundation Work			■									
Structural Work			■									
Roofing Work					■							
Finish Work						■						
Utilities and Equipment Installation						■						
Medical Equipment Installation										■		
WEWAK HOSPITAL												
						Term of Construction = 4 Months						
Reconstruction & Extension	■											
Medical Equipment Installation				■								

PROCUREMENT AND CONSTRUCTION

4-4-8 Estimated Project Cost (PNG)

Estimated Project Cost to be borne by the Government of PNG: 125,700 Kina

Breakdown of Cost to be borne by PNG

Demolish and remove existing facilities, and prepare sites for construction:

1) Lae (Angau Memorial) Hospital	25,500 Kina
2) Mt. Hagen Hospital	<u>31,600</u>
Sub Total:	57,100 Kina

Major Work

1) Lae (Angau Memorial) Hospital	
• Provide power source (primary power from pole to substation)	11,500 Kina
• Reroute 11 kV wiring	5,500
• Reroute water supply piping	6,700
2) Mt. Hagen Hospital	
• Provide power source (primary power from pole to substation)	13,409
• Reroute electrical wiring to interfere construction	12,100
• Connect water piping to City main piping	1,200
• Reroute water piping to interfere construction	6,700

3) Wewak Hospital

• Provide power source	11,500
Sub Total:	68,600 Kina
Total Cost:	125,700 Kina

Note: The above costs include only construction materials and labour cost. Costs of connecting power source and water piping are not included.

CHAPTER 5

EVALUATION OF THE PROJECT AND CONCLUSION

CHAPTER 5 EVALUATION OF THE PROJECT AND CONCLUSION

5-1 BACKGROUND OF THE PROJECT

This project will improve the quality of the present health services as well as improving the efficiency of operations at the three existing hospitals by the following accomplishments. This project will take the initiative for future development of other provincial hospitals and also contribute greatly for improvement of health services in Papua New Guinea.

1) Lae (Angau Memorial) Hospital

The improvements will have an immediate effect on the services provided to outpatients, which have increased to 193,000 in 1988, by providing more a spacious building and greatly improving the efficiency of the present health staff. In addition, existing deteriorated equipment, such as X-Ray units, will be replaced with new equipment suitable for the local conditions. Additional space will be provided for the operating theatres which will greatly relieve the problems presently being experienced with the restricted spaces. Thus, overall efficiency of hospital operations will be greatly improved.

Secondary effects of the project are that the present maternity services (including special care nursery) can be strengthened or enhanced at the local level by consolidating the delivery related departments with the operating theatre to be relocated in the New Central Building. Future modifications to the existing outpatient building and other buildings may be performed without interrupting the other departments.

2) Mt. Hagen Hospital

The immediate effect of the project will be to relieve the critical problems arising from the shortage of beds. The

problems at the hospital, which recorded 192,000 outpatients in 1987, can be resolved by the addition of about 110 beds in the new Maternity and Children (MCH) Building. This construction will require the demolition of some existing small wards at the site. All maternity services, including services before and after birth, and special care nursery can be consolidated. This will greatly improve the maternity and child health services, which are considered so important all over Papua New Guinea, but especially in areas of high population growth.

Approximately 110 total additional beds can be provided to the hospital by building the New MCH Building. Beds will be laid out in accord with the dual lined Nightingale system instead of the present single line system. This will allow the additional beds to be handled without an immediate increase to the present staff. After completion of the new outpatient building the old outpatient building, where pathology and X-ray services were hampered by limited space, can be revised and integrated with the new building to render comfortable services. Outpatient health services for both adults and children will be greatly improved.

A secondary benefit is that a middle and long term redevelopment plan has been established by this project for future development.

3) Wewak Hospital

The hospital is located in a remote place, but received approximately 84,500 adult patients in 1988 from the provinces of East Sepik and West Sepik. The present facilities for outpatients, examination, dispensary, operating theatres and in-patients have not been substantially modified or expanded since their original construction. The hospital is suffering from a shortage of space and degradation of functions. This project provides additional space by modifications or extensions to the existing buildings.

Existing problems for shortage of spaces will be considerably resolved with the redevelopment plan by freeing the hospital from crowded patients and inefficiency. Spaces for special care nursery services will also be ensured by altering the part of the intermediate ward. Present health services will also be much upgraded by modifying the damaged interiors in the existing wards.

From the statements above, it is evident that the degraded and inefficient health services in the old and deteriorated provincial hospitals can be much improved with the redevelopment plan of three existing hospitals. It is also apparent that these hospitals after redeveloped will be able to support and strengthen the primary health services which have been continuously intended in the Second National Health Plan.

The immediate purposes of the redevelopment plan are variable for each hospital to apply, but the basic purposes are to strengthen the capacities of handling outpatients and to increase the number of beds. The project will be greatly appreciated for improvement of health services and in efficiency of functions at each hospital.

5-2 CONCLUSION

As a result of analysing the requests for the project from the Government of Papua New Guinea, the background of requests, and their contents, it has been judged that the needs for implementation of the project for three provincial hospitals at Lae, Mt. Hagen and Wewak in view of the contents described in this report have become urgently pressing.

Three hospitals at Lae, Mt. Hagen and Wewak described in this report have been providing health services as a national base hospital in the Province of Morobe, as a provincial base hospital in the Province of Western Highlands, and as a provincial hospital in the Province of East Sepik, respectively. They are all general hospitals to provide secondary health services, deemed very important in Papua New Guinea. These hospitals act as referral hospital, and support and train the primary health services in their or neighbouring provinces as well as providing primary health services to the population in the regions. Therefore, the upgraded health services and increased beds achieved by implementation of this project and succeeding redevelopment plans will benefit to the population reached 1,000,000 in 1987. Its far-reaching influences will cover over one third of the population in the main island of Papua New Guinea. It is considered justifiable that the grant aid from the Government of Japan is well worth and adequate in view of the great enthusiasm and expectation of the Government of Papua New Guinea.