Boksburg-Benoni Hospital

No.	S.A. Made	Section	Description	Q'ty
5- 2		OPD, Clinic	Diagnostic Set	13
5- 4		Emergency	Bilirubinometer + Centrifuge	1
5- 6		Emergency	Laryngoscope, Babies, Complete	1
5- 7		ENT Dept.	Laryngoscope, Fibre Optic Type	1
5- 10		OPD, Ward	Electrocardiograph Machine, 3-ch.	4
5- 11		OPD, Ward, Theatre	Pulse Oximeter	8
5- 12		OPD, Clinic	NIBP Monitor, Electronic Type	12
5- 13		Theatre, Clinic	Blood Warmer	8
5- 14		Theatre	Ventilator	2
5- 15		Theatre	Blood Gas Analyzer with Haemoglobinometer	1
5- 16		Theatre	Power Drill, Orthopedic	1
5- 18		CSSD	Instrument Washing Machine	1
5- 20	○	Ward	Bed	12
5- 21		Gynecology, Obstetrics	Ultrasound Machine with Vaginal Probe	1
5- 22	○	OPD, Clinic	Patient Scale	8
5- 24	○	ICU	Infusion Pump, Volumetric Type	2
5- 25		ENT	Screening Audiometer, Portable	5
5- 26		CSSD	Autoclave (500L)	1
5- 27		Gynecology	Colposcope	1
5- 29		Ophthalmology Dept.	Phaco Emulsification Machine	1
5- 30		Ophthalmology Dept.	Chart Projector, Automatic Type	1
5- 31		Ophthalmology Dept.	Keratometer	1
5- 33		Ophthalmology Dept.	Indirect Ophthalmoscope	1
5- 34		Ophthalmology Dept.	Retinoscope	1
5- 35		Ophthalmology Dept.	Instrumentation for Eye Operations	1
5- 36		Ophthalmology Dept.	Aplamation Tonometer	1
5- 37		Ophthalmology Dept.	Perimeter	1
5- 38		Ophthalmology Dept.	Slit Lamp	1
5- 39		Ophthalmology Dept.	Ultrasound Machine, B Mode (Ophthalmology)	1
5- 40		Gynecology, Obstetrics	Examination Chair, Gynaecology	1
5- 41		Gynecology, Obstetrics	Obstetric Instruments (Forceps)	1
5- 42		Gynecology, Obstetrics	Suturing Instruments	2
5- 44		Gynecology, Obstetrics	Cardiotocograph (CTG), Fetal Use	2
5- 45		Gynecology, Obstetrics	Ultrasound Machine, Portable (OBS+GYNAME)	1
5- 46		Theatre (Orthopedic)	Operating Table, Orthopedic	1
5- 47		Theatre	ECG Monitor	1
5- 48		X-Ray Dept.	CT Scan (Whole Body)	1
5- 49		X-Ray Dept.	C-Arm (Mobile)	1

108

Qwa-Qwa Hospital (Manapo, Elizabeth Ross)

No.	S.A. Made	Description	Description	Q'ty
6- 1		X-Ray Dept.	X-Ray Unit, Screening Type (Manapo)	1
6- 2		X-Ray Dept.	X-Ray Bucky Unit (Manapo, ER)	2
6- 3		Gynecology, Obstetrics	Ultrasound Machine with Vaginal Probe (Manapo)	1
6- 4		X-Ray Dept.	X-Ray Unit, Portable Type (Manapo)	1
6- 5		X-Ray Dept.	Film Processor, Daylight (Manapo)	1
6- 6		ICU	Bedside Monitor for ICU (Manapo)	2
6- 7		ICU	Ventilator, ICU (Manapo)	2
6- 8		Physiotherapy	Physiotherapy Equipment (Manapo)	1
6- 9		Maintenance	Medical Gas Panels (Manapo)	1
6- 10		Maintenance	Incinerator (Manapo)	1
6- 15		Theatre	Bronchoscope, Flexible with Light Source (Manapo)	1
6- 16		Theatre	Orthopedic Operating Table (Manapo)	1

15

King Edward VIII Hospital

No.	S.A. Made	Section	Description	Q'ty
7- 1		X-Ray Dept.	CT Scan (Spiral)	1
7- 2		X-Ray Dept.	X-Ray Equipment for Screening Room	2
7- 3		X-Ray Dept.	Ultrasound Machine, Colour Doppler	1
7- 4		Theatre	Endoscopic Ultrasound Scanning System	1
7- 5		Ophthalmology	Argon Laser Photocoagulator	1

6

Kimberley Hospital

No.	S.A. Made	Section	Description	Q'ty
8- 1		Emergency	X-Ray Unit	1
8- 2		Emergency	X-Ray Unit, Tomography	1
8- 3		Emergency	X-Ray Unit, Mobile Type (30Kw)	1
8- 4		Emergency	Micro Processor, Fully Set	1
8- 5		Emergency	Trolley Trauma	2
8- 6		Emergency	Cassette	1
8- 7		Emergency	Cupboard/Storage of Cassette	2
8- 9		Emergency	Child Restraint	2
8- 10		Emergency	ID Printer	1
8- 11		Emergency	Cassette Holder, Mobile	2
8- 12	○	Emergency	Drip Stand	2
8- 13		Theatre	ECG Monitor, 3-ch.	1
8- 14		ICU	Blood Gas Analyzer	1
8- 15		ICU	Ambubag	3
8- 16	○	Emergency Centre	Ambulance	1
8- 17		Ward	Apnoea Monitor	3
8- 18		Theatre	Argon Laser Phtocoaugulator	1
8- 19		ENT	Audiometer	1
8- 20	○	Emergency	Infusion Pump, Volumetric Type	1
8- 21	○	CSSD	Autoclave	1
8- 22		Ophthalmology	Auto Refractometer	1
8- 24		ICU	Bed for ICU	4
8- 25		Ward	Bed Striker	2
8- 26		Ward	Bidet	1
8- 27		Theatre	Bone Cutter	1
8- 28		Emergency	Bronchoscope, Flexible with Light Source	1
8- 29		Emergency	Bronchoscope, Paediatric	1
8- 30		ICU (Infant), Ward	ECG Monitor	8
8- 32		Obstetrics	Cardiotocograph (CTG), Fetal Use	1
8- 33		Theatre	Cholangiogram Table	1
8- 34		Ward	Cot Bed, Adult	4
8- 35		OPD, Emergency	Diagnostic Set	4
8- 36		Obstetrics	Cardiotocograph (CTG), Fetal Use	2
8- 38		CSSD	Drying Cabinet	1
8- 40		Ward	Defibrillator with ECG Monitor	2
8- 41		Emergency	ECG Monitor	1
8- 42		Pediatrics	ECG Monitor, Paediatric	1
8- 45	○	Ward	Folder Trolley for Patient File	14
8- 46		CSSD	Forcep Gillies	50
8- 47		CSSD	Forcep Mosquito, Cof	20
8- 48		CSSD	Forcep Mosquito, Str	50
8- 49		CSSD	Forcep Spencer Wells, Str	20
8- 50		Ward	Glucometer	9
8- 51		CSSD	Handle (BP No3)	50
8- 52		CSSD	Handle (BP No4)	30
8- 53		Ward	Haemoglobin Meter	5
8- 54		ICU	Hyper/Hypothermia Unit	1
8- 55	○	Theatre, ICU (Infant)	Infant Incubator, Open Type (ICU)	2
8- 56	○	Ward	Infant Incubator	5
8- 57	○	Ward, Delivery Room	Infant Warmer with Resuscitation Unit	4
8- 58	○	ICU, Trauma	Infusion Pump (Adult)	13
8- 59	○	ICU (Infant)	Infusion Pump (Neonatal)	4

No.	S.A. Made	Section	Description	Q'ty
8- 60	○	Trauma	Infusion Pump (Paediatric)	2
8- 61		Maintenance	Medical Air Compressor	1
8- 62		Emergency	Microscope for Lab.	1
8- 63		Emergency	Ventilator, Mobile Type	1
8- 64		CSSD	Needle Holder	50
8- 65		OPD, ICU, Ward	NIBP Monitor, Electronic Type	11
8- 66		Emergency	Operating Table	1
8- 67		Theatre	Operating Microscope	1
8- 68		Ophthalmology	Opthalmoscope Indirect	1
8- 69		ICU(Infant)	Oxygen Head Box	2
8- 70		ICU(Infant)	Oxygen Monitor	2
8- 71		Obstetrics	Oxygen Pressure Alarm	1
8- 72		Ward	Peak Flow Meter	3
8- 73		Ophthalmology	Phaco Emulsification Machine	1
8- 74	○	Infant Room	Phototherapy Unit	2
8- 75		Emergency	Plier with Twisting Forcep	1
8- 76		Emergency	Plaster Saw	1
8- 77		Emergency	Plaster Cutter	1
8- 78	○	ICU (Infant)	Infant Incubator with Ventilator	1
8- 79		Emergency, Premature, Ward	Pulse Oximeter	3
8- 80		Theatre	Punch No3 (for Orthopedic Ops)	6
8- 82		Ophthalmology	Retinoscope	1
8- 84		Theatre	Rongeur Bone (for Orthopedic Ops)	1
8- 85		Pharmacy	Scale Electronic (Pharmacy)	1
8- 86		ICU (Infant)	Weigh Scale Electronic, Neonatal	1
8- 87		Premature Room	Weigh Scale Electronic, Paedriatric	2
8- 88	○	OPD	Weigh Scale with Height Measure	2
8- 89		CSSD	Scissors Metzembaum, Cof 140cm	26
8- 90		Ophthalmology	Slit Lamp	1
8- 91		CSSD	Speculum Vaginal, Cusco med	6
8- 92		Trauma	Steel Bath	3
8- 93		CSSD	Stitch Scissors	100
8- 94	○	CSSD	Suction Unit (High Vacuum)	5
8- 95	○	CSSD	Suction Unit (Low Vacuum)	25
8- 96		CSSD	Syringe Dental	15
8- 97	○	Ward (Pediatric)	Syringe Pump	3
8- 98		X-Ray Dept.	Table Top Processor	1
8- 100		Emergency	Trolley Patient with Side	2
8- 102		Emergency	Trolley Trauma	2
8- 103		Theatre	Uretero-Renoscope & Instrument	1
8- 104		Delivery Room	Vacuum Extractor, Electric Type	1
8- 105		ICU, Trauma	Ventilator	2
8- 106		ICU, Trauma	Ventilator, Neonatal	1
8- 108		ICU, Trauma	Electric Blanket	1
8- 111		Maintenance	Diathermy Tester	1
8- 112		Maintenance	Pacemaker Tester	1
8- 113		Maintenance	ECG Stimulator	1
8- 114		Maintenance	Defibrillator Tester	1
8- 115		Maintenance	Ventilator Tester for BME	1
8- 116		Psychiatric	Sound/Music System	1
8- 117	○	Psychiatric	Volley Ball Set	1
8- 118	○	Psychiatric	Ping Pong Ball Table	1
8- 119	○	Psychiatric	Sanding Machine & Belts	1

No.	S.A. Made	Section	Description	Q'ty
8- 120		Psychiatric	Lathe	1
8- 121		Psychiatric	Sewing Machine	2
8- 122		Psychiatric	ECT Machine	1
8- 125		Psychiatric	Diagnostic Set	2
8- 126	○	Psychiatric	Weigh Scale with Height Measure	2
8- 133	○	CSSD	Autoclave, Steam Type	1
8- 134		CSSD	Drying Cabinet	1

657

Penge Hospital

No.	S.A. Made	Section	Description	Q'ty
9- 1		Theatre	Anaesthetic Machine	1
9- 2		Theatre	Anaesthetic Stool, Height Adjustable	1
9- 3		Infant Room	Apnoea Monitor	2
9- 4	○	Infant Room	Bassinet	6
9- 5	○	Infant Room	Mattress for Bassinet	6
9- 6	○	OPD, Emergency	Sphygmomanometer, Wall Mounted Type	6
9- 7	○	Pediatric	Paediatric Bed	4
9- 8	○	Pediatric	Mattress for Paediatric Bed(Water Proof)	4
9- 9		Theatre	Emergency Light with Transformer	1
9- 10		Emergency	Emergency Patient Trolley, Adjustable Type	3
9- 11	○	Emergency, Theatre	Suction Unit, 2-Bottle	2
9- 12	○	Emergency, Ward	Emergency Trolley, Complete	3
9- 13		CSSD	Warming Cabinet	1
9- 14		Kitchen	Food Trolley	5
9- 15		Lab, Ward	Glucometer	4
9- 16		Lab, Ward	Haemoglobin Meter	4
9- 19	○	Obstetric	Infant Incubator Manual Type, Mobile	2
9- 22		Obstetric	Weigh Scale, Infant, Digital Type	1
9- 23	○	Emergency, Ward	Infusion Pump	4
9- 24	○	Ward	Instrument Trolley	5
9- 25	○	Emergency, Theatre	Kick Bucket	4
9- 26	○	Emergency, Theatre	Kick Bucket with Lid	4
9- 28		Emergency, Theatre	Laryngoscope Blades	3
9- 29		Emergency, Theatre	Laryngoscope Handle (Medium Plain)	1
9- 30		Emergency, Theatre	Mayo Table	1
9- 31	○	Emergency, Theatre	I.V.Stand, Mobile	4
9- 32		Ward	Oxygen Flowmeter with Humidifier (Double)	4
9- 33	○	OPD, Emergency	Patella Hammer	4
9- 34		Emergency	Patient Trolley with Side Sails	1
9- 35	○	Infant Room	Phototherapy Unit	2
9- 36		Emergency	Resuscitator with Peep Value	1
9- 37		Emergency, Ward	Resuscitator with Peep Value, Children	2
9- 38		Emergency, Ward	Resuscitator Trolley, Complete (Mobile)	2
9- 39		Emergency, Ward	Resuscitator, Infant	2
9- 40	○	OPD, Emergency	Single Bowl Stand	3
9- 41	○	OPD, Emergency, Ward	Sphygmomanometer, Portable (Desk Top) Type	6
9- 42		Delivery Room	Obstetric Delivery Bed	1
9- 43		Delivery Room	Mattress for Obstetric Delivery Bed (Above)	1
9- 44	○	OPD, Emergency, Ward	Stethoscope (Dual Hand)	4
9- 45		Gynecology & Obstetrics	Stethoscope, Foetal	2
9- 46		Surgery	Head Light, Surgeons (Power Source Use)	1
9- 47		Surgery	Surgeons Stool (Height Adjustable)	1
9- 48	○	Ward	Suction Unit, Wall Mounted Type	4
9- 49	○	Theatre	Infant Incubator (Theatre)	1
9- 50		Theatre	Vacuum Extractor, Electric Type & Manual Type	1
9- 51	○	Ward	Visitors Stool, Under Bed Type	6
9- 52		Emergency, Theatre, Ward	Wall Clock	4
9- 53	○	Mobile clinic	Mobile Clinic Vehicle (4WD)	2

No.	S.A. Made	Section	Description	Q'ty
9- 54	○	Ward	Bed (Hi-Low Adjustable Backrest) and Mattress	62
9- 55	○	Ward	Pillow	62
9- 56		OPD, Emergency	Small Operating Instruments	1
9- 57	○	Waiting Room	Arm Chair, Half Back	20
9- 58	○	Ward	Orthopedic Frame, Complete	10
9- 59	○	Ward	Bedpan	40
9- 60	○	Ward	Bedpan and Urinal Rack, Wall Mounted Type	5
9- 61	○	Ward	Bedside Lamps, Wall Mounted Type	62
9- 62	○	Ward	Bedside Locker	62
9- 63		Theatre	Blood Warmer	2
9- 64	○	Theatre	Instrument Trolley with Basin and Bowl	2
9- 65		Theatre	Diathermy Machine, Bipoler	1
9- 66		Theatre	Double Foot Step	2
9- 67	○	Ward	Dressing Trolley	4
9- 68		Examination Room	Electrocardiograph Machine, 1-ch.	1
9- 69		Obstetric	Episiotomy Scissors	3
9- 70		OPD, Emergency	Examination Couch	4
9- 71		OPD, Emergency	Examination Light, Mobile Type	3
9- 72		OPD, Emergency	Examination Light, Wall Mounted Type	6
9- 73		OPD, Emergency	Instrument Trolley	3
9- 74	○	OPD, Emergency	I.V Stand, Mobile	4
9- 75	○	Ward	I.V Stand, Wall Mounted with Clamp	62
9- 76	○	Ward	Kick Bucket	5
9- 77	○	Ward	Kick Bucket with Lid	5
9- 78	○	Ward	Kick Bucket without Bucket	5
9- 79	○	Ward	Leg and body Cradle	5
9- 80	○	OPD, Ward	Measuring Tape	3
9- 81		Ward	Oxygen Flowmeter with Humidifier, Wall Mounted Type	5
9- 82		Ward	Orthopedic Frame, Complete	4
9- 83		Ward	Patient Trolley with Mattress	2
9- 84		Ward	Patient Transfer Roll Board	2
9- 85		Ward	Electric Blanket	1
9- 86	○	OPD, Ward	Weigh Scale with Height Measure	2
9- 87		OPD, Ward	Plaster Trolley with Shelves	2
9- 88	○	OPD, Ward	Poison Cabinet	4
9- 89	○	Ward	Side Rails	4
9- 90	○	Ward	Traction Unit, Small	4
9- 91	○	Laundry	Linen Trolley	9
9- 92	○	Laundry	Linen Trolley (Box Type)	9
9- 93		CSSD	Pedal Bin, Stainless Steel	4
9- 94		Orthopedic	Thomas Splint-Large	3
9- 95		Orthopedic	Thomas Splint-Medium	3
9- 96		Theatre	Trolley for Diathermy Machine	1
9- 97	○	Ward	Urinals	20
9- 98	○	Ward	Urine Bag Holder	10
9- 99	○	Ward	Overbed Table	10
9- 100	○	Ward	Visitors Stool, Under Bed Type (L)	7
9- 101	○	Ward	Visitors Stool, Under Bed Type (S)	7
9- 102	○	Ward	Waste Paper Basket (S)	7

No.	S.A. Made	Section	Description	Q'ty
9- 103	○	Ward	Waste Paper Basket (L)	10
9- 104	○	Ward	Wheel Chair, Foldable Type	4
9- 105	○	OPD, Emergency	Wheel Chair	4
9- 106	○	X-Ray Dept.	X-Ray Viewing Box, Large	4
9- 107		X-Ray Dept.	X-Ray Unit (General, bucky Type)	1
9- 108		CSSD	Assorted Set of Linbuins (70 Bins)	2
9- 109		Infant Room	Baby Warmer	5
9- 110		Orthopedic	Cast Cutter, Electric Type	2
9- 111	○	Emergency, Ward	Crash Cart with 2 Drawers, Complete	2
9- 112	○	OPD	Filing Cabinet, 4 Drawer	6
9- 113		Ophthalmology	Eye Chart	2
9- 114		Obstetric	Foetal Heart Doppler	2
9- 115		Theatre	Bedside Monitor	1
9- 116		OPD, Emergency, Ward	NIBP Monitor, Electronic Type	6
9- 117		OPD, Emergency, Ward	Paper Dispenser, Wall Mounted Type	5
9- 118		Emergency, Theatre	Pulse Oximeter	3
9- 119	○	Emergency, Theatre	Air Mattress	2
9- 120		OPD, Emergency, Ward	Sterilizer	3
9- 121		OPD, Emergency, Ward	Soap Dispenser, Wall Mounted Type	5
9- 122	○	Administration	Stationery Cupboard (4 Adjustable Shelves)	5

775

(2) Specifications for main equipments

Description	Specification	Purpose of use	Q'ty
Laparoscope with Video Facility	View angle: approx. 70° Image size: 40mm diameter Working length: approx. 290mm Outer diameter: approx. 5mm With monitor	Used in internal medicine and gynecology-obstetrics for diagnosis and surgical operation on intraperitoneal lesion.	1
Lithoclast (Endoscopic Lithotripsy)	Lithotripsy method: ultrasonic Output setting: 3 steps Suction power setting: 3 steps Monitoring mechanism: indication of probe cutting	Used for ultrasonic disintegration of stones and aspiration for stone removal.	1
Anaesthetic Machine with Ventilator	Vaporizer: × 1 Gas flow meter: × 2 Low oxygen alarm With ventilator	Used for automatic control of the administration of anesthetic gas and respiratory gas to patient under operation.	6
Phaco Emulsification Machines	<Perfusion> Method: Perista pump Suction power: 0-500mmHg Suction volume: 1-40cc/min. <Ultrasonic> Oscillation method: Piezoelectric Oscillation frequency: 60kHz Tuning: automatic	Used in the extracapsular cataract surgery for disintegration and aspiration of crystal lens and for removal of cortex from around inside the capsule.	5
Argon Laser	Laser: argon laser Coagulation output (corneal surface): 50 - 200mW Target output (corneal surface): 0 - 0.8mW or less	Used for laser fixation of detached retina; obstruction and for citrectomical pupil formation.	3
Ultrasound Machine for Eye(A/B)	Prove: 10MHz oscillator Electric resolution: axis direction: 0.14mm, side direction max. 0.3mm Measuring range: 40mm, ±30° from probe tip With calculating function of IOL power	Used for measurement of optic axis length and cornea thickness.	2

Description	Specification	Purpose of use	Q'ty
Yag Laser	Operating light: Yag laser Operating light output: 0.6- 10mJ Spot size: 15μm Target light: semiconductor laser Target method: double beam Telescope magnification: approx. 5 - 25 times	Used in the surgical operation on secondary cataract for the excision of posterior capsule membrane; for citrectomical pupil formation; and for cilliarotomy.	2
Autoclave(Flash) (150l. self-generator)	Control: microprocessor Sterilizing method: by steam Cycle indication: LED Temperature indication: digital Interior capacity: approx. 160liters Safety: when the door opens and closes	Used for autoclaving of operating gowns and operating tools.	3
Autoclave, Gas Type (E.O Gas type)	Control: microprocessor Sterilizing method: by ethylene oxide gas Cycle indication: LED Temperature indication: digital Interior capacity: approx. 160liters Safety: when the door opens and closes	Used for sterilization of operating gowns and operating tools with ethylene oxide gas.	1
Autoclave (400l)	Control: microprocessor Sterilizing method: by steam Cycle indication: LED Temperature indication: digital Interior capacity: approx. 400liters Safety: when the door opens and closes	Used for autoclaving of operating gowns and operating tools.	3
Instrument Washing Machine	Ultrasound washing tank Material of tank: Stainless steel Rinsing tank Material of tank: Stainless steel	Used for washing and rinsing instruments after operation.	1

Description	Specification	Purpose of use	Q'ty
Orthopedic Table Major	Angle adjust mechanism: manual Height adjustment: approx. 72cm~113cm Up and down angle adjustment: approx. +65° ~-45° Right and left angle adjustment: +15° ~-15° Pillow angle adjustment: approx. +45° ~-90° Backrest angle adjustment: approx. +65° ~-45° Lower limb angle adjustment: approx. -90°	A universal manual variable-control operating table that can freely adjust the patient's position for ease of operation.	3
Bronchoscope Flexible & Light Source	View angle: 120° Observation depth: approx. 3~50mm Distal end outer diameter: approx. 5.8mm Bending angle: approx. UP-180° / DOWN 130' Soft part outer diameter: approx. 6mm Working length: approx. 550mm	Used in thoracic surgery, internal medicine and otorhinolaryngology for diagnosis and observation of bronchial lesions and removal of matter.	4
Bronchoscope, Pediatric	View angle: 120° Observation depth: approx. 3~50mm Distal end outer diameter: approx. 4.9mm Bending angle: approx. UP-180° / DOWN 130' Soft part outer diameter: approx. 5mm Working length: approx. 550mm	Used in thoracic surgery, internal medicine and otorhinolaryngology for diagnosis and observation of bronchial lesions and removal of matter.	1

Description	Specification	Purpose of use	Q'ty
Endoscopic Ultrasound Scanning System	Endoscopic function View angle: 80° Observation depth: approx. 3 ~ 100mm Distal end outer diameter: approx. 13.2mm Bending angle: approx. UP/DOWN-130° RIGHT/LEFT-90° Soft part outer diameter: approx.: 11.7mm Working length: approx. 1055mm Ultrasonic function Scanning method: radial scanning Frequency: 7.5MHz,12MHz selective Focus: 30mm/7.5Mhz 25mm/12MHz	Used for observation and diagnosis of submucous lesions of esophagus, stomach, and colon.	1
Gastroscope, Pediatric	View angle: 120° Observation depth: approx. 3 ~ 100mm Distal end outer diameter: approx. 9.0mm Bending angle: approx. UP210° , DOWN90° RIGHT/LEFT-100° Soft part outer diameter: approx.: 9.0mm Working length: approx. 1025mm	Used for examination of upper gastrointestinal tract, resection of polyps, hemostasis, and removal of foreign matter.	1

Description	Specification	Purpose of use	Q'ty
Microscope, ENT	Inclination angle of observation tube: approx. 30° ~110° variable Interpupillary distance adjustment range: approx. 52~76mm Total magnification: approx. 4.3~21x Actual field of view : approx. ¢ 47 ~ 9.4mm Light intensity: max. approx. 26000lux Light source: halogen lamp, 15V, 150W, 2 lamp selectio n system	Used for observation, diagnosis and surgical treatment of nose, external ear, and larynx.	1
Operating Microscope	Inclination angle of observation tube: approx.-15° ~65° variable Interpupillary distance adjustment range: approx. 52~76mm Total magnification: approx. 5.3~27x Actual field of view : approx. ¢ 37 ~ 7.5mm Light intensity: max. approx. 97000 lux Light source: halogen lamp, 15V, 150W, 2 lamp selection system	Used for observation, diagnosis and surgical treatment of nose, external ear, and larynx.	2

Description	Specification	Purpose of use	Q'ty
Arthro Videoscope	Optical tube View direction: approx. 0~70° Angle of view: approx. 96° Imagesize: approx. ¢ 34.8mm Working length of inserting part: approx. 136mm~139mm Outer diameter of inserting part: approx. ¢ 4mm Illumination: light glass method Trocar Working length of inserting part: approx. 110mm Outer diameter of inserting part: approx. ¢ 5.5mm	Used for observation, diagnosis and surgical operation of lesions within joint cavity.	1
Colono Videoscope	View angle: 120° Observation depth: approx. 3 ~ 50mm Distal end outer diameter: approx. 6mm Bending angle: approx. UP130° ,DOWN100° Soft part outer diameter: approx.: 6mm Working length: approx. 380mm	Used for diagnosis and treatment during and after operation, and mainly for direct observation of bile duct and for removal of choledocholith.	1
Operating Microscope, Ophthalmology use within X-Y Facility	Inclination angle of observation tube: approx.45° variable Interpupillary distance adjustment range: approx. 52~76mm Total magnification: approx. 1-20x Actual field of view : approx. ¢ 51~10mm Light intensity: max. approx. 13000 lux Light source: halogen lamp, 15V, 150W, 2 lamp selection system	Used for observation, diagnosis and surgical treatment of eyeball and its periphery.	1

Description	Specification	Purpose of use	Q'ty
CO2 Incubator	Capacity: 150L or more Temperature range: approx. 5-50℃ CO2 gas concentration: approx. 0-10% or more Humidity: approx. 90%	Thermostatic unit used in pathological laboratory for cell culture.	1
Ultrasound Machine with Transvaginal probe	Indication mode: B ,M, B/M, DB Mode: 9 inches Scanning technique: electronic convex, electronic linear	Used for general ultrasonic inspection and for early diagnosis of pregnancy.	6
Ultrasound Machine, Colour Doppler	Indication mode: B, M, B/M, B with Color Flow, Monitor: 12 inches Scanning technique: electronic convex, electronic linear	Used for general ultrasonic inspection and for early diagnosis of pregnancy.	2
X-Ray Unit with Processor	Bucky table Bucky device Bucky stand X- ray tube Interval type high voltage X-ray generator	Will be a general-purpose type capable of roentgenography of skeleton, head, chest, abdomen and soft tissues, etc.	7
X-Ray Unit, Portable	Method: Capacitor type generator Tube current: max. 300 mA Tube voltage: 4 - 100 kV	A battery-powered motorized self-propelled trolley carrying a high-voltage generator, X-ray tube and X-ray tube holder in a compact form. Useful as it can be moved from bedroom to bedroom for X-ray examination of bed-ridden patients.	5
X-Ray Unit, for Screening Room	X-ray generator Remote control type R/F table TV monitor system X-ray tube	Will be an advanced system capable of fluoroscopical examination of skeleton, head, chest, abdomen and soft tissues, etc.	3

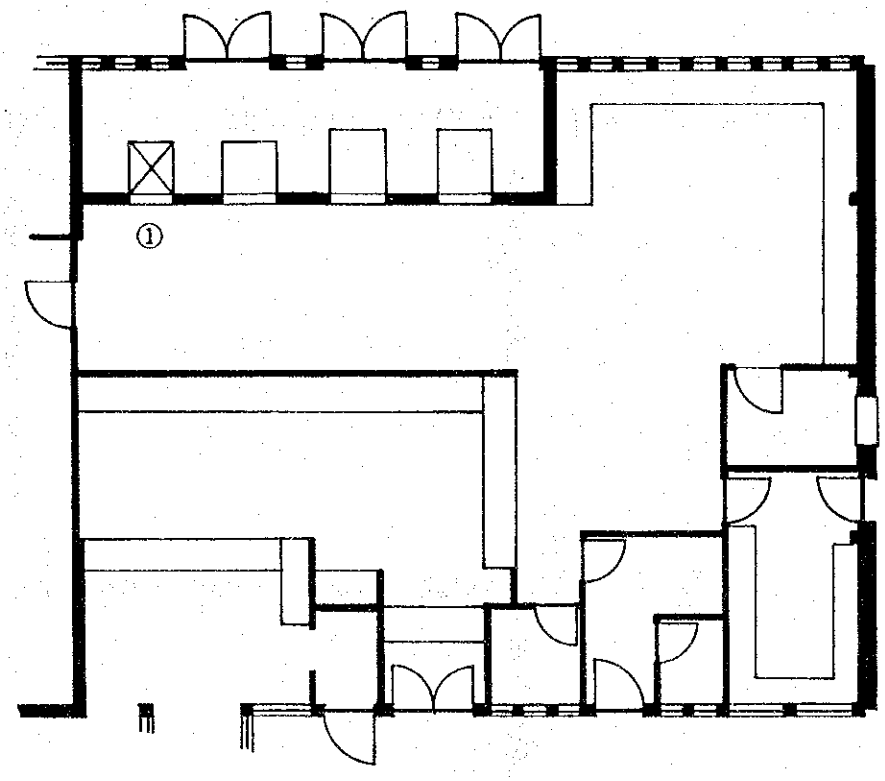
Description	Specification	Purpose of use	Q'ty
C-Arm & Image Intensifier for Theater	Portable X-ray diagnostic TV system with C arm X-ray generator 6 inches monitor: 525lines TV system Fluoroscopy: 40-100kV,0.2-3mA Swing range: ±12.5° Pulse mode: 40-100kV,6mA	A diagnostic system capable of moving X-ray unit with respect to a patient under operation.	3
CT Scan (Whole Body)	Scan parameters: Approx 3.6 second 360degree scan, Approx 120kvp, Aprox 40~160mA Image Quality: Approx 0.75mm (8.5lp/cm) Gantry: Approx 1000mmscan range Approx 63cm Gantry aperture Approx ±25° tilt	Used in diagnosis for human body by using X-ray tomograph image.	2
Ambulance	Engine: gasoline Displacement: approx. 2200cc Drive system: 4 wheels Type: one cabin	Used for transportation of emergency patient.	4
Mobile Clinic Vehicle (4WD), Complete	Engine: gasoline Displacement: approx. 2400cc Drive system: 4 wheels Type: one cabin	Used for medical services to remote inhabitants.	1 1
Blood Gas Analyzer	Sample: whole blood, plasma, serum Sample volume: approx. 35ul Measuring time: 40samples/h or more Display: LCD Printer: built-in	Used in blood chemistry test for analysis of pH, gases (PCO2, PO2) and electrolytes (Na, K, Cl, Ca) in order to detect abnormalities.	2

Description	Specification	Purpose of use	Q'ty
Monitor (Similar to ICU)	Display: CRT Monitor Operation: touch key in front panel type Measuring mode: ECG, respiratory frequency temperature, NIBP, IBP, etc. Recorder: built-in Linkage with monitoring center, available	Used for post-operative monitoring of cardiac functions and for the cardiac monitoring of ICU patient for a definite period.	13
Ventilator, Infant	Mode: CPAP, CMV, PTV, SIMV, Alarm test Tidal volume: 1-125or 126-250BPM I:E ration: 9.9:1to 1:9.9 O2 blender: 21~100%O2±3% Display: Digital Alarm: No air and no oxygen, no battery, etc.	Used for assisting in spontaneous breathing or for forced, controlled respiration of an infant.	12
Ventilator	Mode: CPAP, CMV, SIMV, Tidal volume: 40~200BPM I:E ration: 10~90% inhalation, 90~10% expiration Trigger setting: -1cmH2O~-15cm H2O and OFF	Used for assisting in spontaneous breathing or for forced, controlled reparation of a patient.	6

(3) Installation Plan for Major Equipment

The equipment required installation work under this project will be arranged as following installation plan at each designated site.

テンバ病院 / Themba Hospital



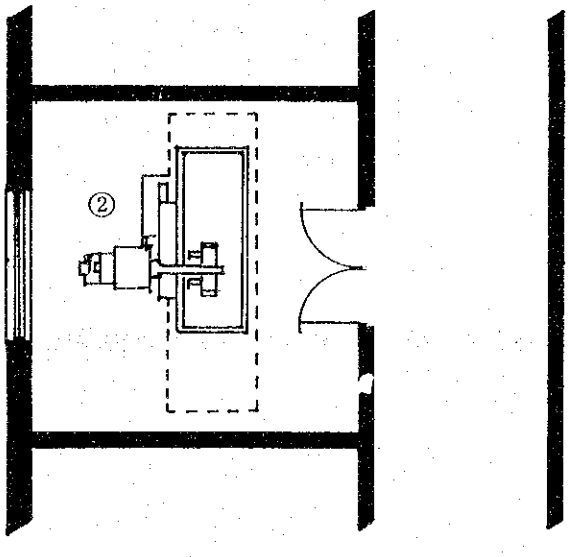
（中央材料室）
(CSSD)

① 酸化エチレンガス滅菌装置
Autoclave, E.O.Gas Type

0 1m 2m 3m 4m 5m

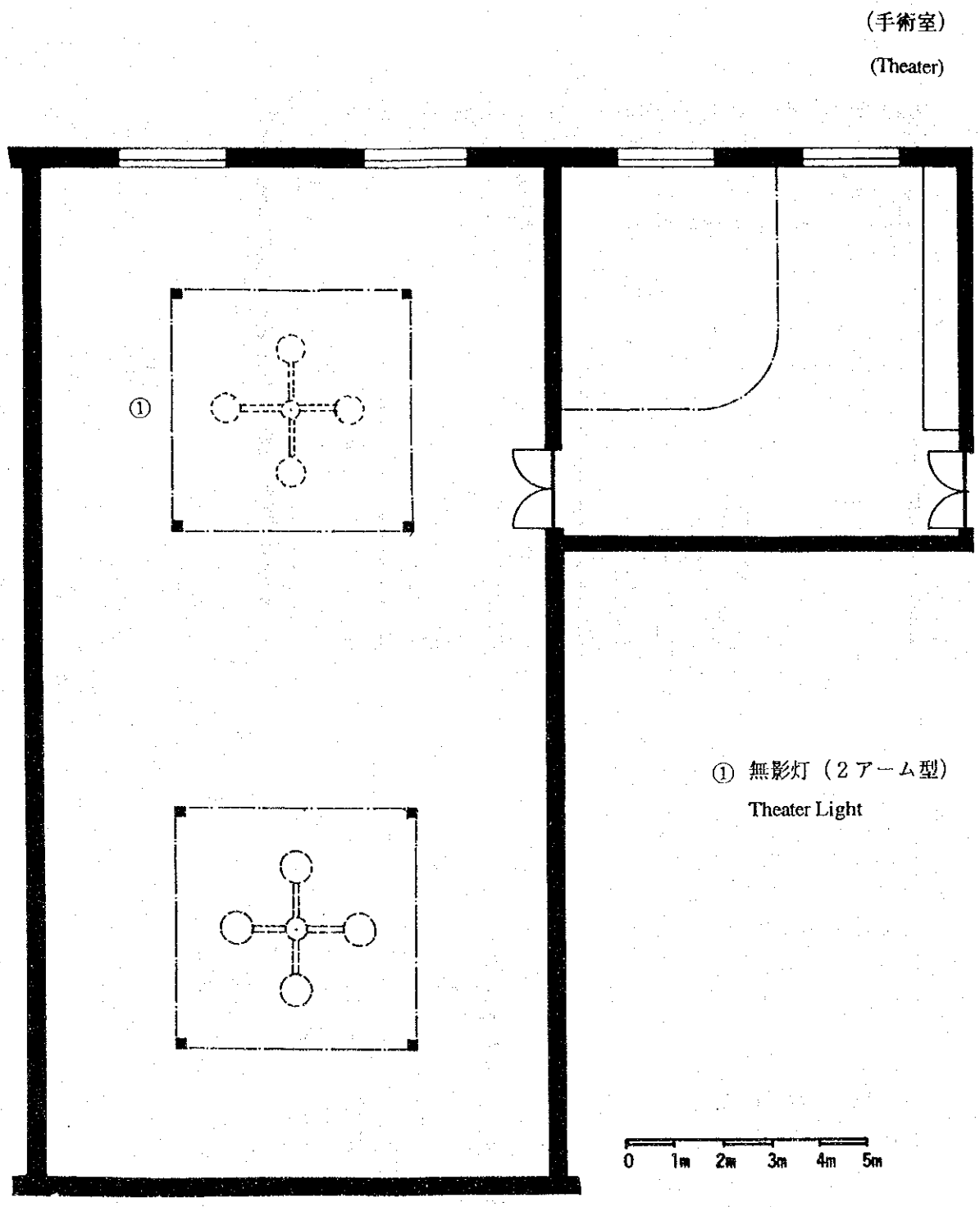
（ボンガニ・ヘルスセンター）
(Bongani Health Centre)

② 一般診断用X線撮影装置
X-Ray Unit

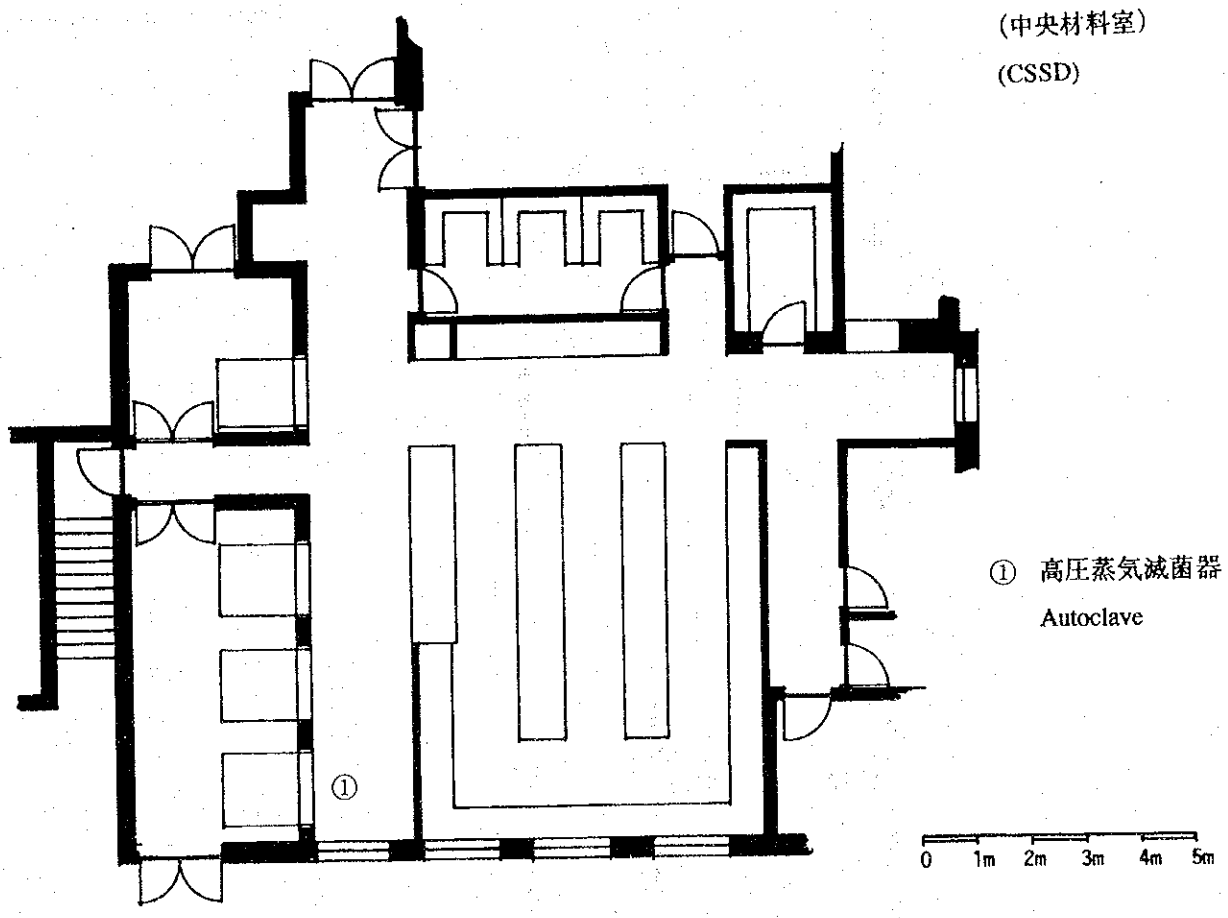


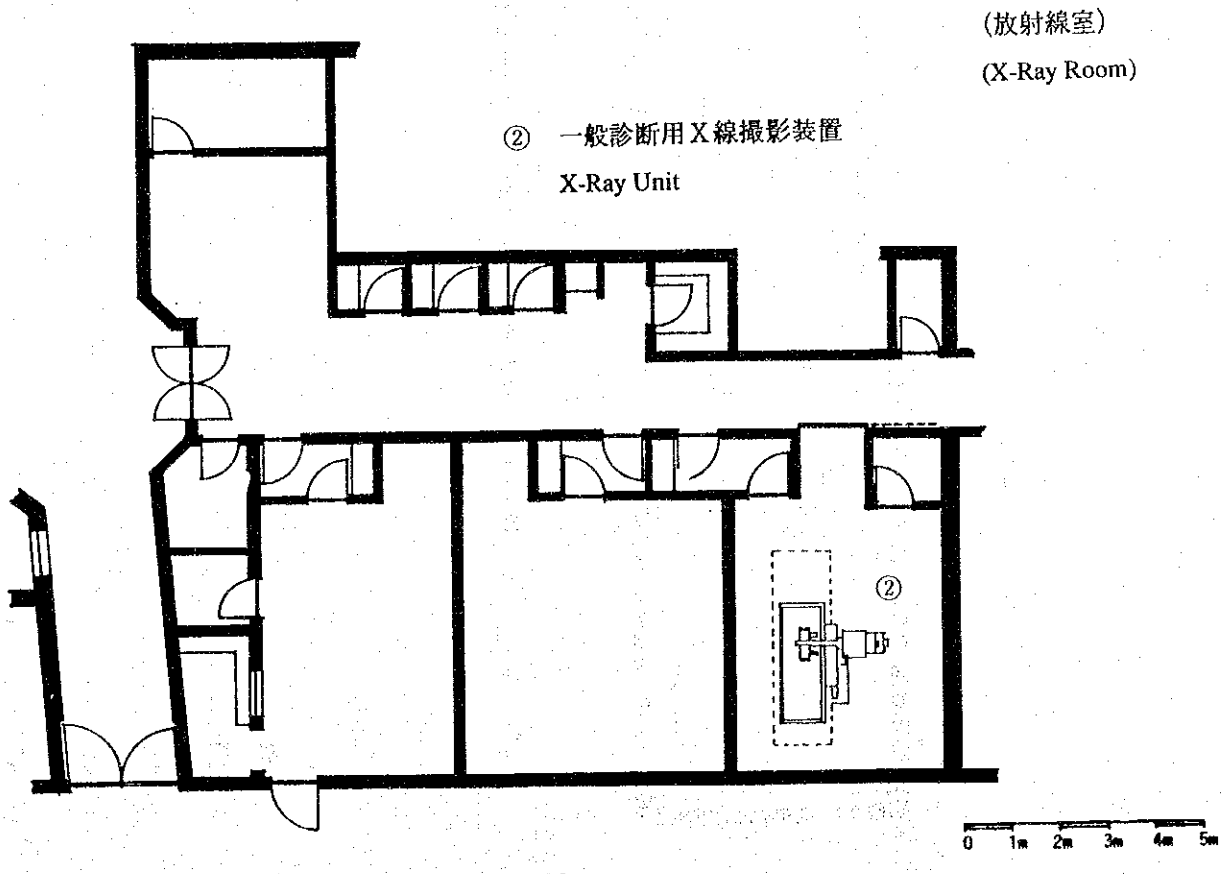
0 1m 2m 3m 4m 5m

ウムタタ病院 / Umtata General Hospital



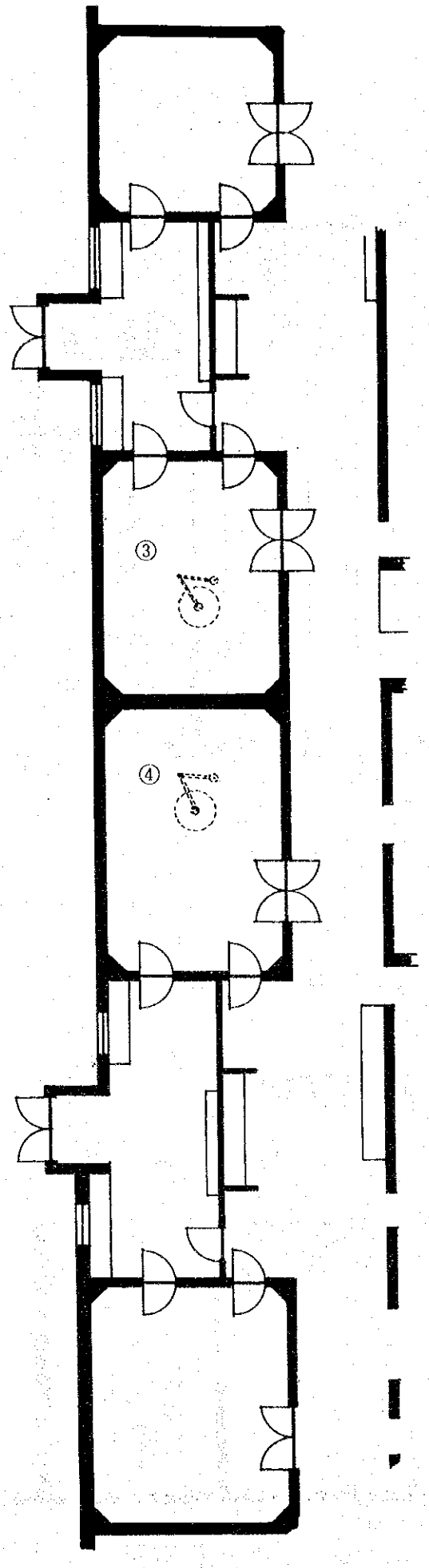
ジョージ病院 / George Hospital





ジョージ病院　（手術室）

George Hospital　(Theater Room)



③ 無影灯（1アーム型）

Theater Light

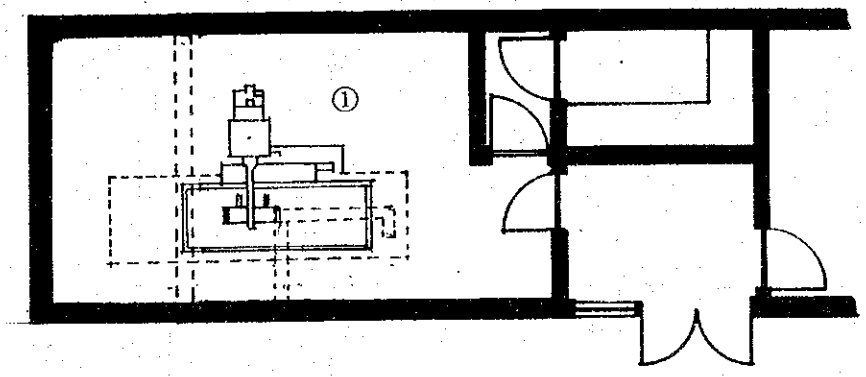
④ 無影灯（1アーム型）

Theater Light

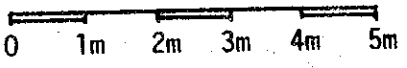
0　1m　2m　3m　4m　5m

ツワラガノ・コミュニティ病院
/ Tshwaragano Community Hospital

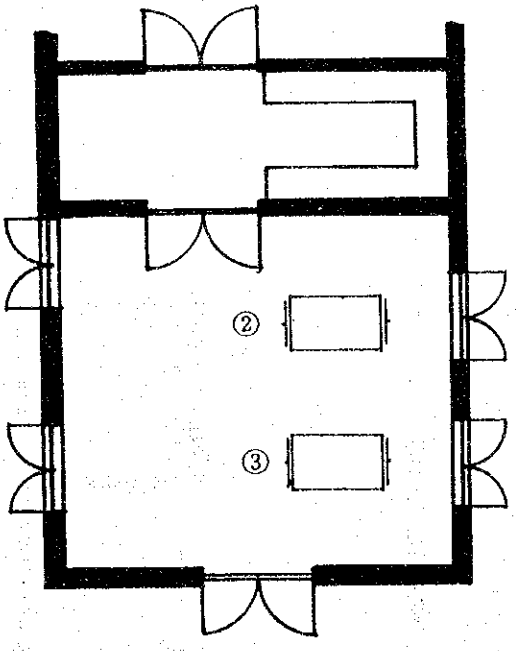
（放射線室）
(X-Ray Room)



① 一般診断用X線撮影装置
X-Ray Unit

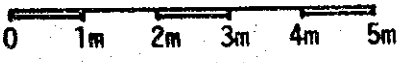


（中央材料室）
(CSSD)



② 高圧蒸気滅菌器
Autoclave

③ 高圧蒸気滅菌器
Autoclave

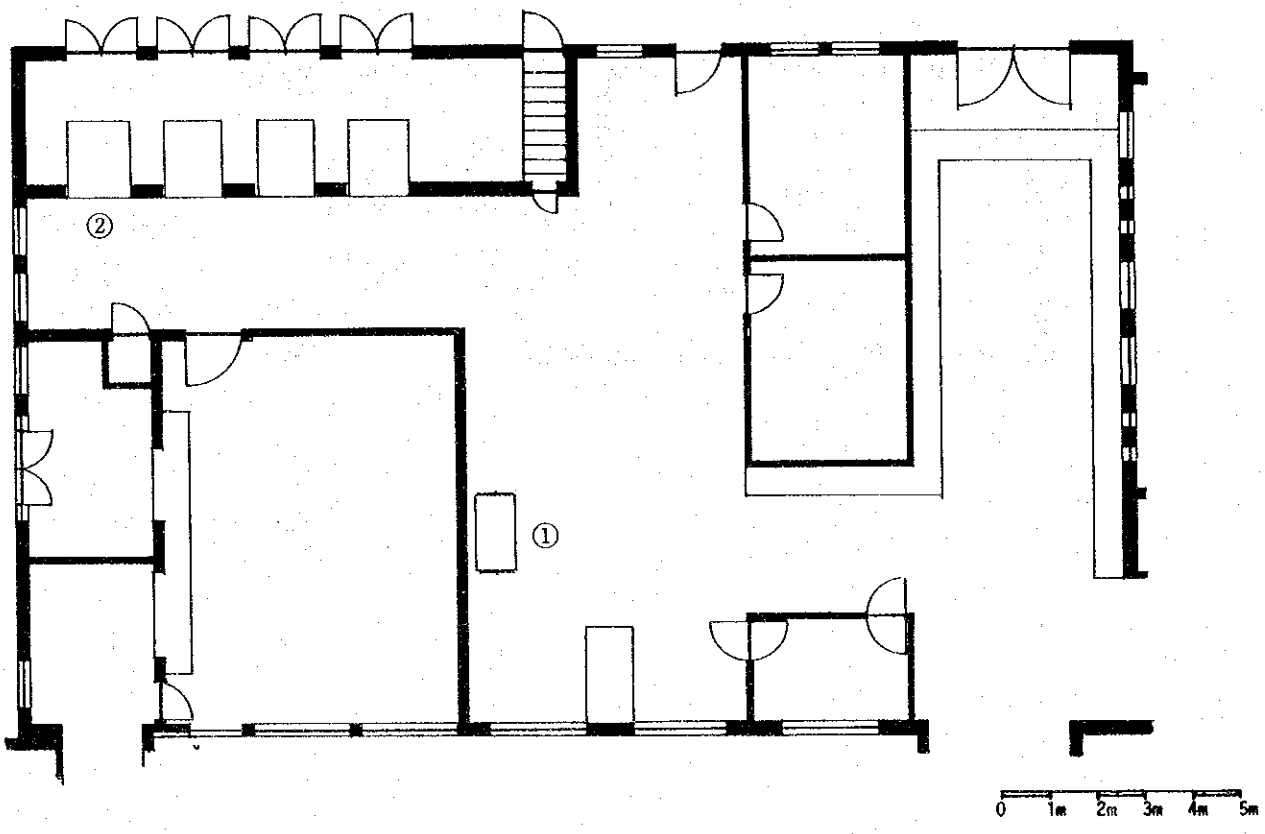


ボックスバーグ・ベノニ病院 / Boksburg-Benoni Hospital

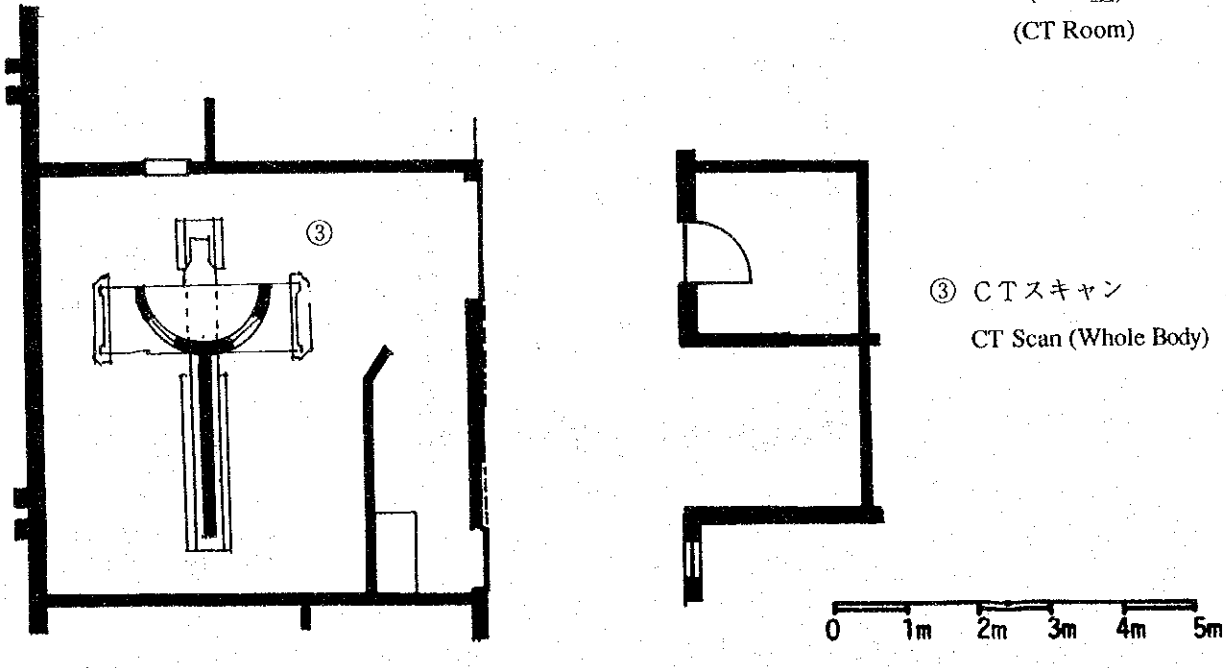
（中央材料室）
(CSSD)

① 器具洗浄機
Instrument Washing Machine

② 高圧蒸気滅菌器
Autoclave



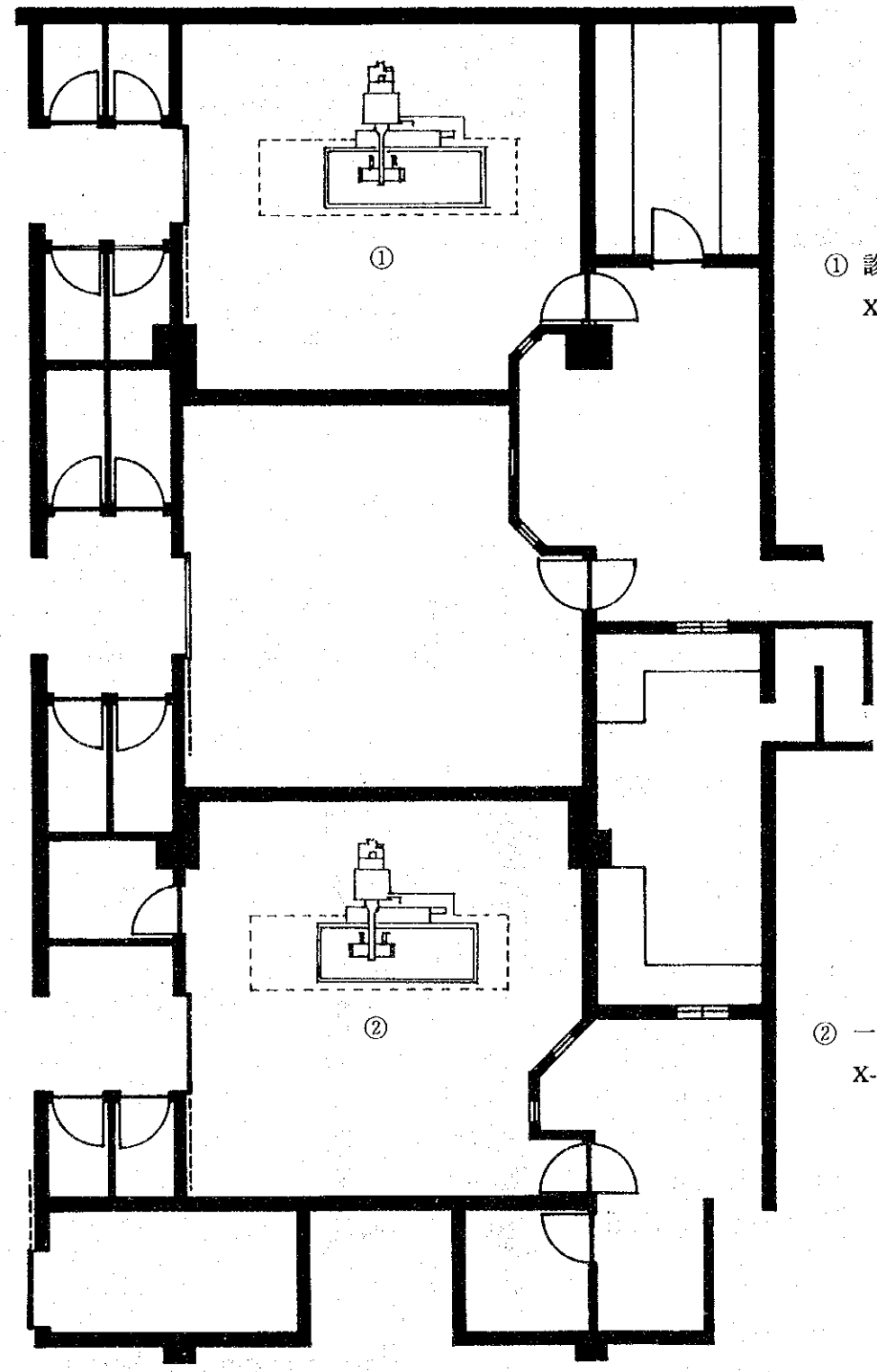
（ＣＴ室）
(CT Room)



③ ＣＴスキャン
CT Scan (Whole Body)

クワクワ病院 / Qwa-Qwa Hospital

クワクワ病院　（マナポ：放射線室）
Qwa-Qwa Hospital　(Manapo: X-Ray Room)



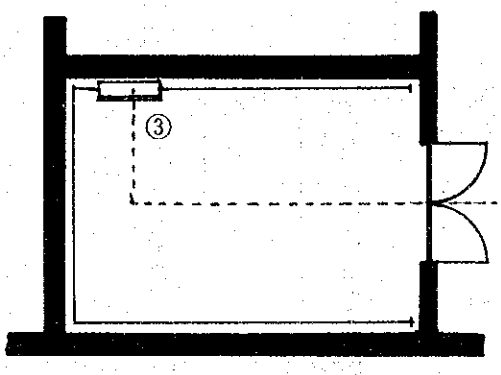
① 診断透視型X線装置
X-Ray Unit, Screening Type

② 一般診断用X線撮影装置
X-Ray Unit

0　1m　2m　3m　4m　5m

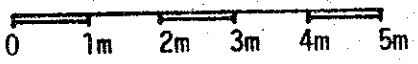
クワクワ病院　（マナポ：医療ガス室）

Qwa-Qwa Hospital　(Manapo: Medical Gas Room)



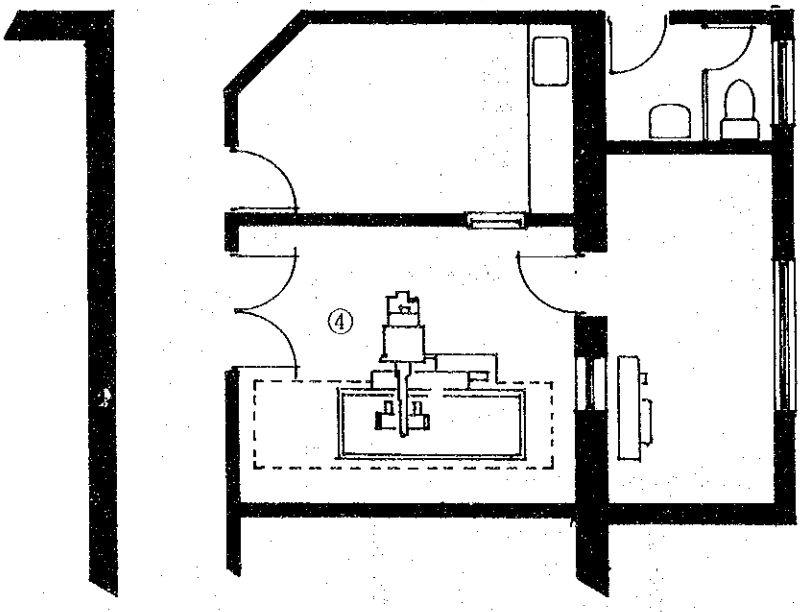
③ 医療用ガス自動切替装置パネル

Medical Gas Panels



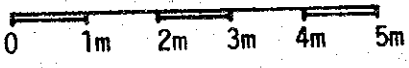
クワクワ病院　（エリザベス・ロス：放射線室）

Qwa-Qwa Hospital　(Elizabeth Ross: X-Ray Room)



④ 一般診断用X線撮影装置

X-Ray Unit



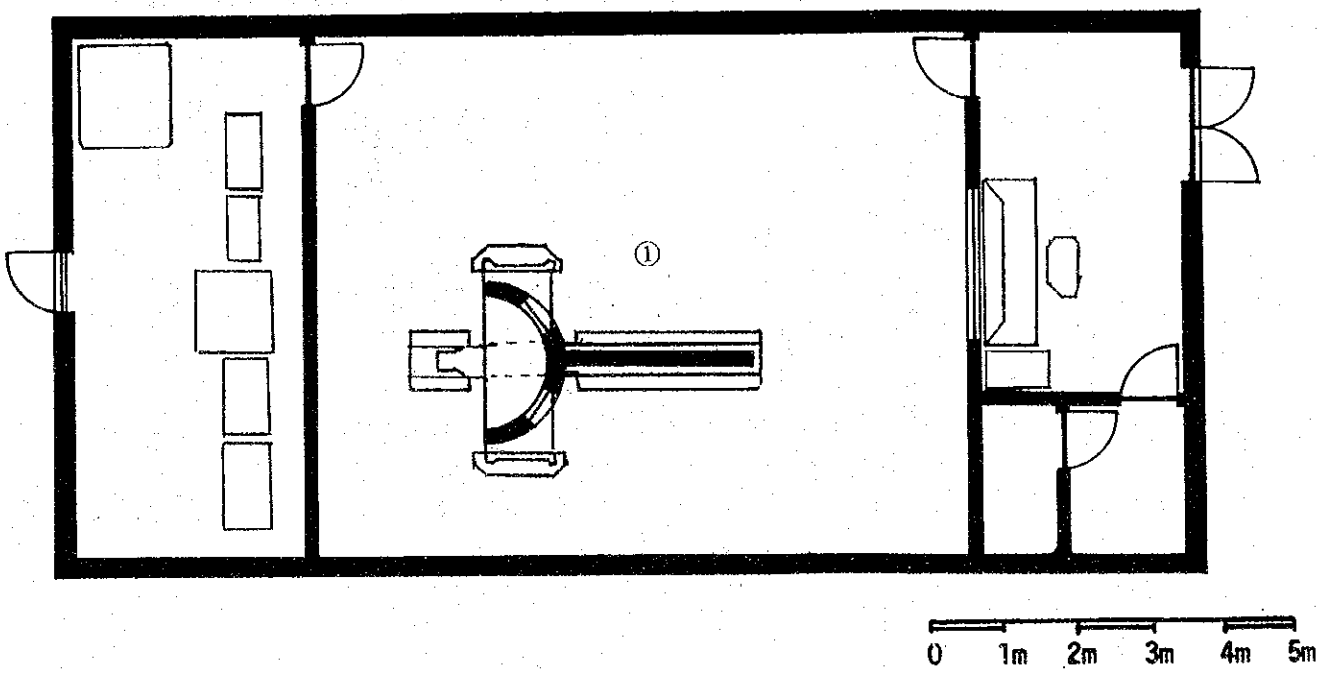
キング・エドワード８世病院 / King Edward VIII Hospital

（ＣＴ室）

(CT Room)

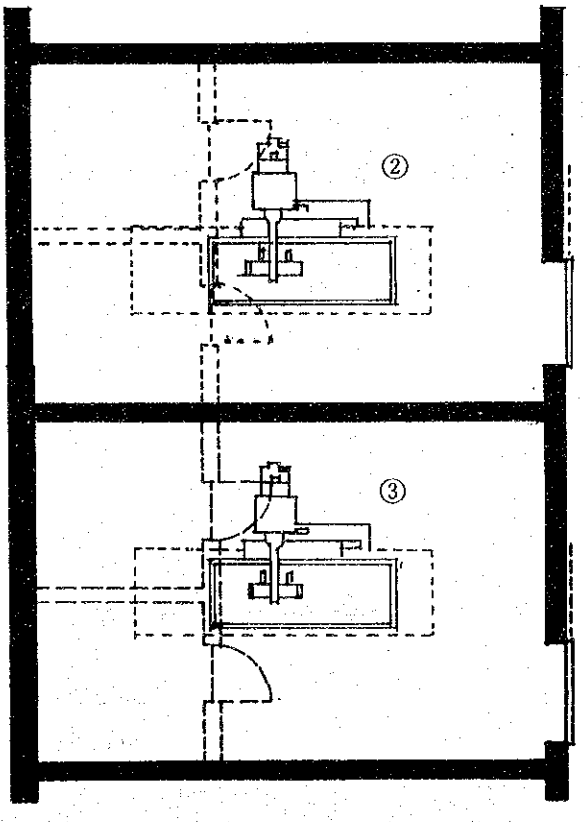
① ＣＴスキャン

CT Scan



（放射線室）

(X-Ray Room)



② 診断透視型Ｘ線装置

X-Ray Unit, Screening Type

③ 診断透視型Ｘ線装置

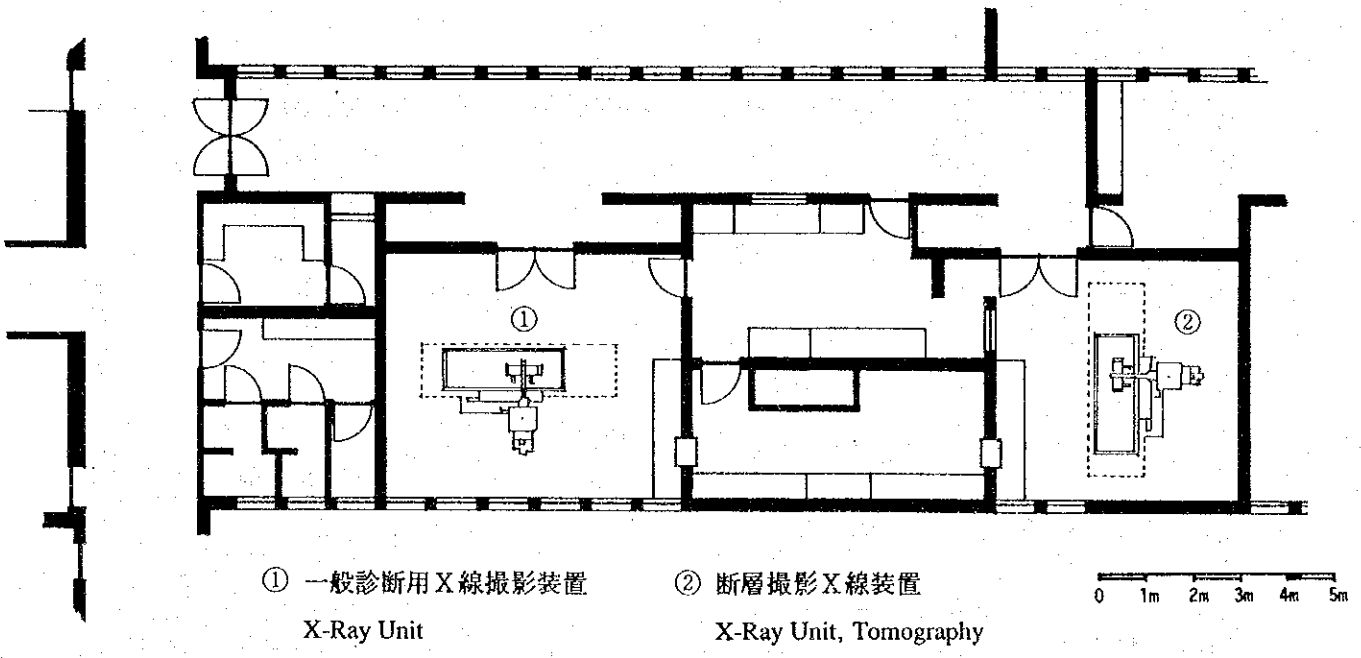
X-Ray Unit, Screening Type

0 1m 2m 3m 4m 5m

キンバリー病院 / Kimberley　Hospital

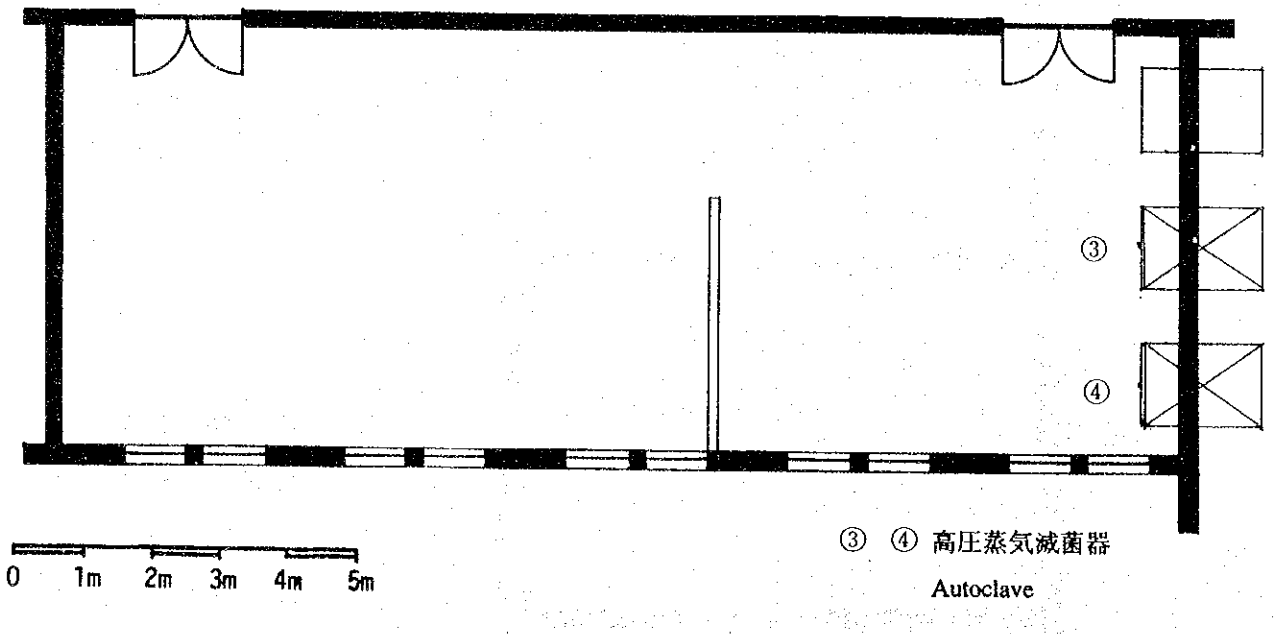
(放射線室)

(X-Ray Room)



(中央材料室)

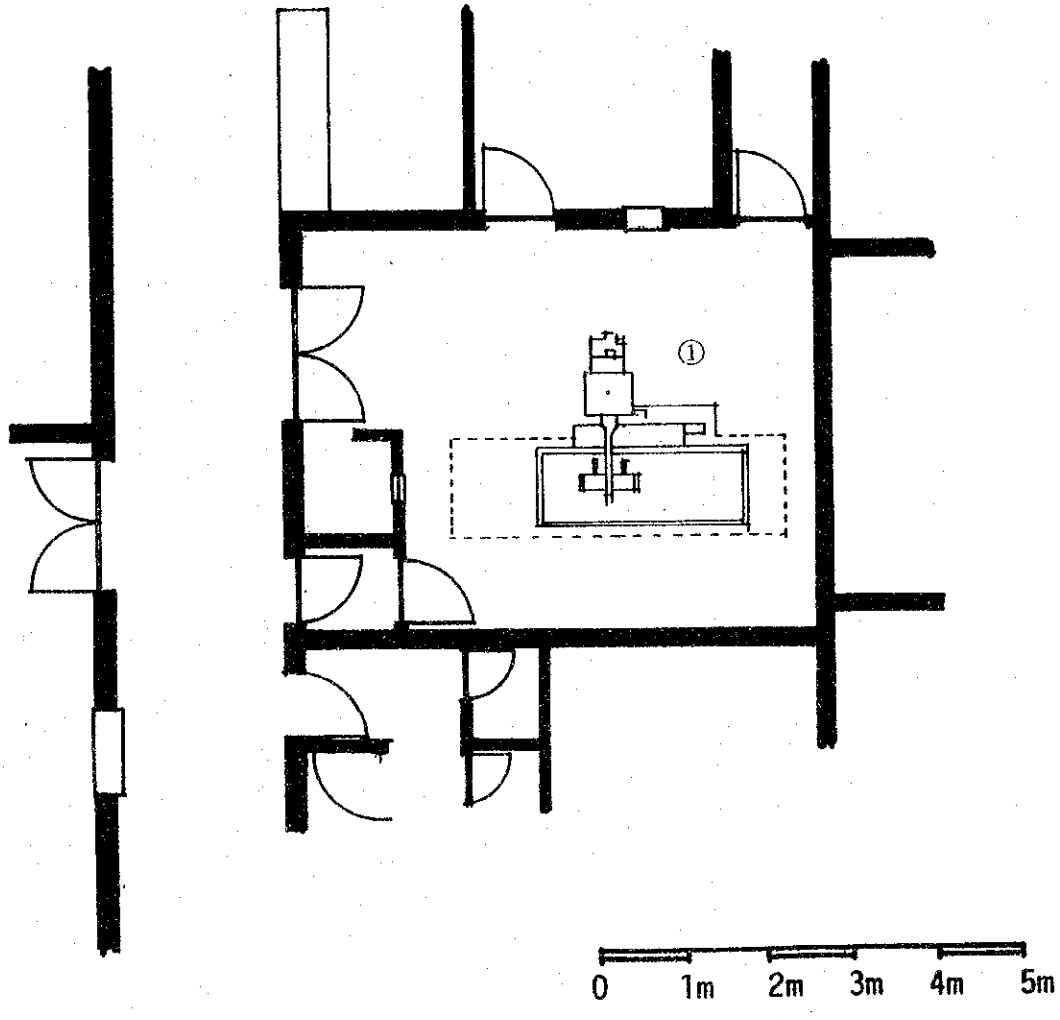
(CSSD)



ペンジ病院 / Penge Hospital

(放射線室)
(X-Ray Room)

① 一般診断用X線撮影装置
X-Ray Unit



CHAPTER 3. IMPLEMENTATION PLAN

3-1 Implementation Plan

3-1-1 Implementation Concept

This project will be implemented officially in accordance with the grant aid framework of the Government of Japan after approval of both Japanese and South African Governments and the conclusion of exchange of notes (E/N). Prior to the implementation, a Japanese consultant company will be selected by the South African side, and the detail design work of equipment will start. After completion of the detailed design, a Japanese equipment procuring company which will be chosen by tender for the project will implement the actual work of equipment procurement and installation. The contracts on the consultation and the equipment procurement will come into effect after approval of the Government of Japan.

The project should be planned within the framework of the Japan's grant aid and paying attention to the following items:

(1) The work schedule should be confirmed by both Japanese and South African staff in charge. Both sides should clarify the scope of works and the starting and completion date to avoid setting on the same period, and cooperate.

(2) Among the designated hospitals, George Hospital, Boksburg-Benoni Hospital, Kimberley Hospital, and Penge Hospital are presently under extension and renovation works. Although the work for the above-mentioned 3 hospitals excluding Penge Hospital will be completed by July '97, it is necessary to pay a close regard to the progress. The renovation and improvement at Penge Hospital has been carried out in accordance with the 2-phase, 3-year plan which intends to convert the present clinic into a district community hospital. It is recommended that the equipment procurement work should fall in line with the progress of that plan.

(3) As to CT scans, diagnostic screening and tomographic types of X-ray units, steam sterilizers, and theater lights that need installation work, layout for the installation should be planned in advance and

submitted to the South African side. If improvement works become necessary, the primary work for power supply, water supply and drainage, and renovation of rooms will be done on the South African side.

(4) Because the designated sites are scattered all over South Africa (approximately 3.5 times as large as Japan), the procured equipment will be collected to one depot in Johannesburg City. After delivery inspection and sorting for each site, the equipment will be transported to each hospital. As the whole procurement work of this project will be implemented by South African dealers (makers and agents), sufficient attention must be paid to the progress management so that the delivery and installation will be made smoothly, and the operational and maintenance instructions and trainings for the hospital staff will be provided according to the plan.

3-1-2 Implementation Conditions

Taking into account that the designated facilities are the medical facilities in practice, the procurement schedule, route, places for safekeeping and delivery and installation procedures should be duly considered through the consultation with each designated facility so that the daily medical activities may not be disturbed. In case of renewal especially, sufficient consultation should be made to avoid long unavailability of the equipment caused by the removal and prompt installation will be required for the stable medical activities.

3-1-3 Scope of Works

(1) The scope of responsibility of the Japanese side in accordance with the grant aid scheme of this project covers the procurement and subsequent installation of medical equipment for the 9 medical facilities. The scope is limited to as described below:

1. The equipment that is shown in the aforementioned equipment plan list.
2. Ocean transport and land transport expenses and domestic transport expenses to the designated facilities.
3. Expenses for installation of equipment (expenses for dispatch of

engineers, local workers, tools, and measuring meters).

4. Expenses required for carrying out test runs, guidance for operations, inspections and maintenance management relating to the whole procured equipment.

(2) Items to be shouldered by the South African Government

1. During the implementation period of the project, the South African side should accommodate a place to use for a temporary office for this project in the designated facilities.
2. The infrastructures (electric power, water supply, drainage, and other facilities) that are needed for the project should be provided or improved before installation of the equipment, and the existing equipment should be removed from the place where the new equipment will be installed.
3. The equipment that will be imported for this project should be unloaded without delay and necessary conveniences for customs clearance and domestic transport should be provided.
4. Payments of customs duties and other taxes should be exempted for the Japanese people who reside in South Africa to implement this project.
5. With respect to the bringing-in of equipment and the service provision required for the implementation of the project by the Japanese people, necessary conveniences for their stay in South Africa should be provided and sufficient considerations should be taken for their security.
6. In accordance with the agreement with the banks concerned, the South African side should pay the bank handling charges and the payment authorization commission to the Japanese bank that handled the foreign exchange.
7. The equipment procured through the grant aid should be maintained properly and used effectively. For this purpose, necessary budget and personnel should be assured.

3-1-4 Consultant Supervision

(1) Implementation system

This project is implemented by the following 4 parties:

1) Project implementing body

The implementing organization for this project is the Department of Health of the South African Central Government, and the designated facilities of the project are 9 medical facilities. The director of the department of Health of Central Government is in charge of actual work of the project.

2) Consultant

When the project is implemented through a Japanese grant aid programme, it is stipulated by its rule that a Japanese consultant gives instructions, advice, and coordination from a fair standpoint throughout the steps of design, tender, and implementation based upon the contract with the implementing organization of South Africa, and the consultant performs necessary work for smooth implementation of the project.

The specific tasks are as follows:

* Detailed design

  Preparation of tender documents for equipment procurement (tender conditions documents, equipment specifications, budget report).

* Promotion of tender and procurement contract

  Decision on the procurement contract system, preparation of procurement contract draft, examination on the contents of equipment installation work report, and selection of procurement agents (public announcement of tender, tender and tender evaluation, contract negotiation and contract witnessing).

* Inspection and approval of work execution drawings

  Inspection and approval of equipment specification report, work execution drawings, and work execution plans submitted by the procurement agent.

* Report on work progress

  Report on the progress of work execution to the implementing body and the related organizations.

* Cooperation in payment approval procedures

  Investigation of bills relating to the remuneration to be paid after shipment and cooperation in these procedures.

* Consulting work

  Witnessing of various works from the beginning through the completion. This project intends to procure the equipment made in South Africa and through South African agents. Because the whole work - procurement related work (order), inspection (at the stage of manufacturing collecting of cargo, shipping, sorting out, etc.) - will be done in South Africa, the consultant needs to be present at the side and supervise the work.

3) Equipment procurement agent

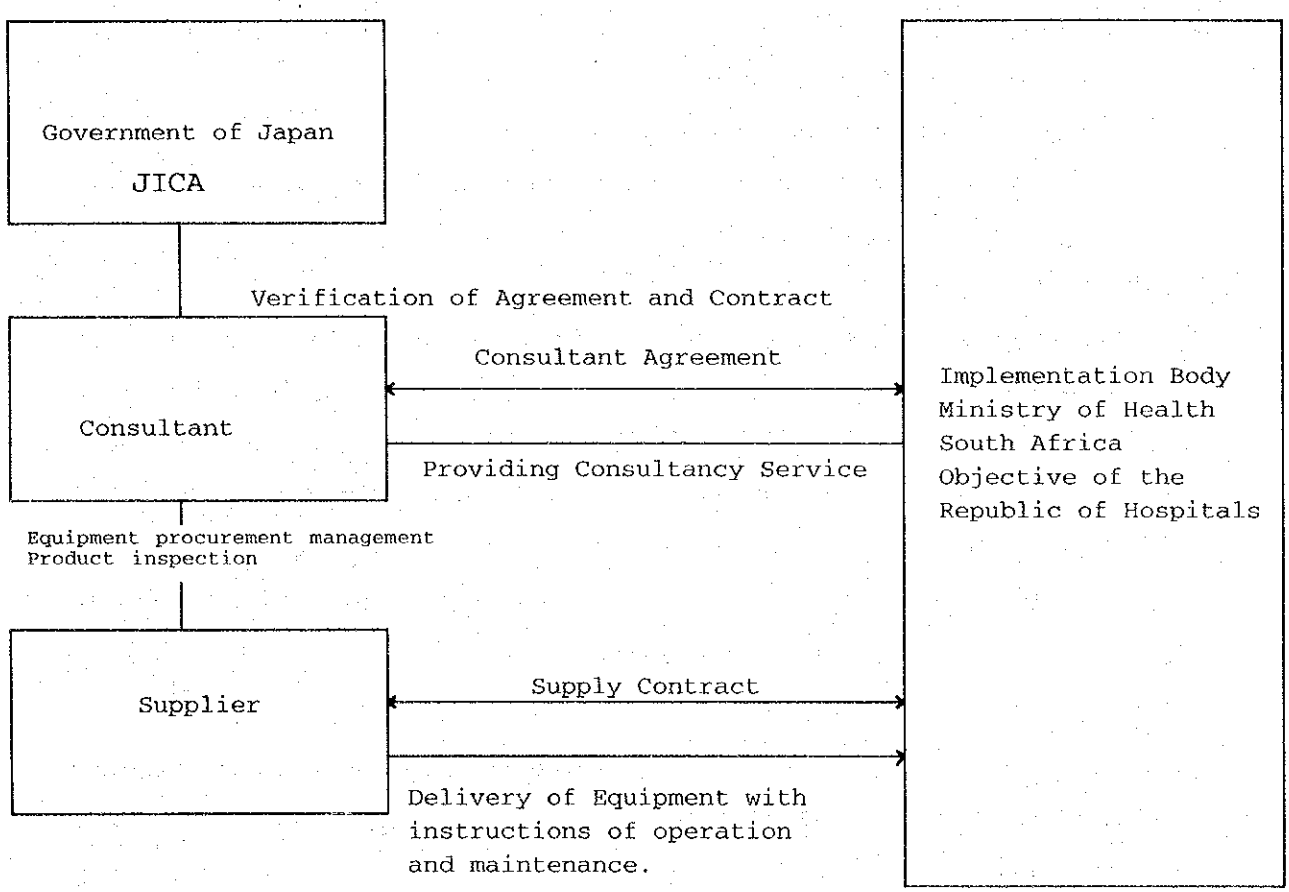
Procurement of equipment is implemented by a Japanese agent (trading company) who will be selected by tender. The agent, based upon the contract with the South African side, is responsible for manufacturing supply, bringing-in, and installation of equipment, and gives instructions on equipment operations and maintenance management to the South African side before delivery.

4) JICA

Japan International Cooperation Agency (JICA) leads the consultant and the procurement agent so that the project can be implemented properly in accordance with the Japan's grant aid system. Moreover, JICA consults with the implementing organization as required to further the project.

The implementation flow chart is as shown as follows:

Implementation flow chart



(2) Implementation design and supervision

The consultant, based on the contract with the South African side, performs the implementation design and supervision for the project. The implementation design is made to determine detailed specifications and prepare the tender documents comprised of specifications, tender guidance, draft of equipment procurement contract, etc. based on the basic design study. The supervision is made to assure the work of the procurement agent is implemented in accordance with the contract, and to give instructions, advice and coordination from a fair standpoint to promote the project.

The supervision consists of the following:

1) Stage of implementation design

Preparation of implementation design documents, tender, and contract documents.

2) Stage of tender

Prior screening of tenderers, implementation of tender, evaluation of the contents of tender, and conclusion of contract.

3) Stage of work execution

Supervision of work execution (inspection and approval of equipment specifications, supervision of shipment, ocean transport, and inland transport, instruction and supervision of installation, and supervision of works to be shouldered by the partner country), report on the work execution progress, and issuance of certificates. (The consultant, upon confirming that the equipment installation is completed and the contract conditions are conformed, witnesses delivery of the equipment and completes its duty after obtaining acknowledgment of receipt of the equipment from the South African side.)

Besides the above-mentioned works, the consultant reports on the progress, payment procedures, and completion of delivery, etc. to those

concerned of the Government of Japan.

(3) Personnel plan

Those who will be engaged in the consulting operation for the implementation design and the supervision of the work execution are as follows:

1) Project manager: 1 person

The project manager will supervise the whole consulting operation.

2) In charge of medical equipment plan: 3 persons

The persons in charge of medical equipment plan will analyze the planned equipment and make out specifications. They will confirm the facilities at the site and supplement the basic design study.

3) Cost estimation : 1 person

The cost estimator will confirm that total cost of project to compare B/D study.

3-1-5 Procurement Plan

(1) Procurement of equipment

The equipment for this project is desired to be procured through South African dealers (makers and agents). The main reasons are as described below:

1) The equipment is generally used at the designated facilities, and the specifications and grades are mostly standardized.

2) The medical equipment market in South Africa is supplied with the domestic products and the 3rd-country's products through agents in South Africa. The public medical facilities bid for necessary equipment annually within the limits of the budget. The market of medical equipment has been fully established.

3) Medical equipment makers and agents have their own maintenance network, and , offer reliable maintenance system. Availability of spare parts and consumable and efforts to improve technical level for equipment operation and repair works through seminars are no less than advanced

countries.

4) Prices of medical equipment are stable and inexpensive.

Because most of the objective medical equipment for the project is for renewal, it is regarded as the most reasonable and economical to procure them at the South African market, taking into consideration the grades and specifications of the existing equipment.

(2) Method to bring in the medical equipment

The objective equipment is classified into the domestic products of South Africa and the 3rd-country products, and all of which will be once collected to warehouses in Johannesburg City. After arrival confirmation, sorting out, it will be transported to the 9 destinations all over the country, installed and delivered with test runs, training and final inspection.

It will take approximately 4 months for manufacturing, collection and delivery to the sites, and 3 months for installation and final hand-over.

3-1-6 Implementation Schedule

(1) Implementing process

When this the project is approved by a Cabinet meeting of the Government of Japan and the Exchange of Notes relating to the implementation is concluded between both relevant countries, the project will be carried out in the following procedures:

1. Conclusion of Exchange of Notes between both governments.
2. Conclusion of agreement between the implementing organization and the Japanese official foreign exchange banks on payment of the grant aid fund from the Japanese side required for the project (Banking Arrangement).
3. Conclusion of the consultancy contract between the implementing organization and the Japanese consultant.
4. Payment by the implementing organization and Issuance of authorization to pay for the consultancy.

5. Verification of the above-mentioned contract and approval of payment by the Government of Japan.
6. Implementation Design and preparation of tender documents by the consultant.
7. Approval of the tender documents by the implementing organization and preparation of tender by the consultant.
8. Implementation of tender and evaluation of tender documents.
9. Conclusion of agent contract (sales contract) relating to equipment procurement between the implementing organization and a Japanese trading company.
10. Verification of the above-mentioned contract by the Government of Japan.
11. Issuance of authorization to pay according to the agent contract (sales contract) by the Department of Health of the Central Government.
12. Approval to equipment manufacturing and work execution drawings (the consultant examines and approves the specification documents to be submitted by equipment supplier, necessary instructions, and coordinate through close contacts with the Department of Health for smooth execution of work).
13. Equipment witnessing inspection. (The consultant witnesses factory inspection before shipment as required and approves the inspection as the proxy of the Department of Health of the Central Government).
14. Work execution management. (In accordance with the contract, the consultant as the proxy of the Department of Health scrutinizes and approves the equipment documents, inspects and approves the equipment, supervise shipment, inland transportation, instructions at the installation, and supervision on installation, and work execution shouldered by the partner country.)
15. Progress management (The consultant supervise work progress so that the equipment procurement contract can be completed within the

period stated in the Exchange of Notes and gives necessary directions to the supplier.)

16. Final inspection and test runs (The consultant makes work completion inspection and commissioning of the procured equipment, confirms the performances described in the specification documents, and submits certificate of completion to the Department of Health of the Central Government).

17. Completion and delivery

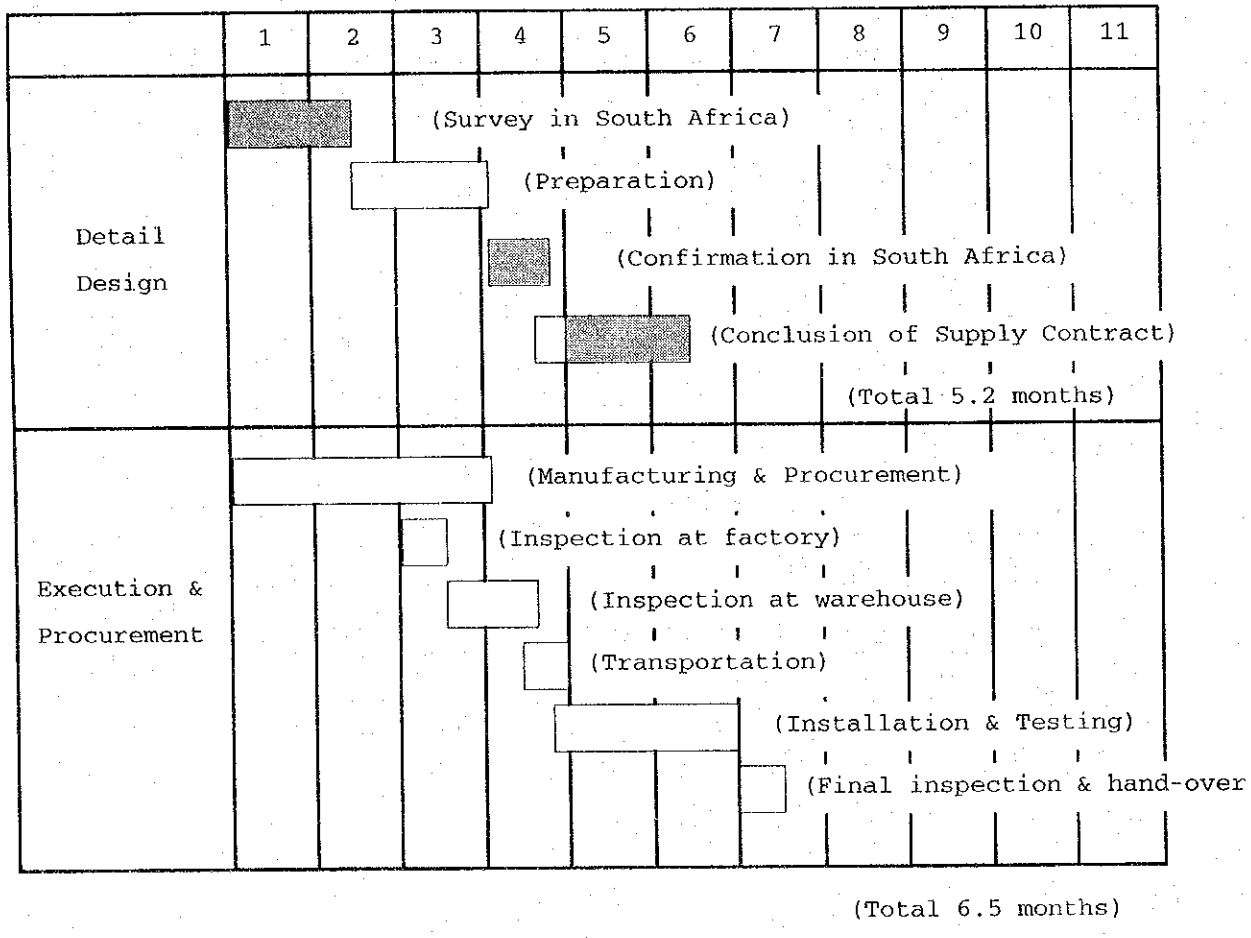
(2) Period of implementation

After the conclusion of the Exchange of Notes, the period required for each task on the Japanese side is roughly as follows:

Table 3-1-6 Period of Implementation and content of Works

Content of Works	Phase
1. Conclusion of consultancy agreement and discussion of detail design	Approx.1.3 month
2. Preparation of detail design and of tender documents	1.8
3. Approval of tender documents	0.8
4. Tendering, Conclusion of Contract and Approval	1.3
5. Manufacture of equipment	3.0
6. Transportation	0.5
7. Installation (includes initial test, adjustment, operation guidance, training, maintenance instruction and confirmation of hand-over)	3.0
Total	11.7 month

Fig. 3-1-6 Work execution



3-1-7 Obligation of Recipient Country

In the implementation of this Project, the Republic of South Africa is required to undertake necessary measures such as the following:

(a) to provide a temporary office in the site during the implementation of the Project,

(b) to provide facilities for distribution of electricity, water supply, drainage, etc. and clear the facilities to install new equipments.

(c) to ensure prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchase under the Project.

(d) to exempt Japanese nationals engaged in the project from customs duties, internal taxes and other fiscal levies which may imposed in South Africa,

(e) to accord Japanese nationals whose services may be required in connection with supply of the products and services under the verified contracts, such facilities as may be necessary for their entry into South Africa and stay therein for the performance of their work,

(f) to bear the following commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement (B/A) namely,

- the advising commission of the "Authorization to Pay (A/P)" and
- the payment commission;

(g) to assign appropriate budget and staff members for proper and effective operation and maintenance of the equipment purchased under the Grant Aid (including maintenance costs).

(h) to maintain and use properly and effectively the equipments purchased under the Grant Aid and report its condition to the Government of Japan on regular basis,

(i) to bear all the expenses other than those to be borne by the Grant Aid within the scope of the Project.

3-2 Project Cost Estimation

1) Equipment

The maintenance for equipment is one of the very important factors for stable activities of the facilities. Since some medical equipments are fragile, vulnerable to temperature and humidity and easily affected by the environment, systematic maintenance management is necessary. In general, maintenance needs daily inspection which is carried out by personnel in charge of equipment operation, and emergency inspection at the time of failure which is carried out by engineers who have skills and expertise as well as the regular inspection which is carried out once or twice a year. For daily inspection, person in charge of each equipment should be assigned and carries out the inspection with responsibility according to the inspection manuals which specified the inspection items and frequency.

The following table shows the sample of maintenance management:

Equipment	Description	Internal Management	Outside Order	Durable Year
ME Equipment	Bedside Monitor, Electrocardiograph, Defibrillator	Regular cleaning, Inspection 1/month	Annual contract, Regularly	7
General Equipment (Theater)	Anaethesia machine, Ventilator, Operating table, Operating lamp, etc.	Regular cleaning, Inspection 2/month	On call base, 2 times/year	7
Lab. Equipment	Blood gas analyzer, CO_2 Incubator, Centrifuge, etc.	Regular cleaning, Inspection 4/month	Annual contract, Regularly	6
X-ray, ultrasound Concerned Equipment	X-ray unit, Ultrasound, etc.	Regular cleaning, Inspection 2/month	Annual contract, Regularly	10
Instruments	Stethoscope, Sphygmomanometer, Operating instruments, Bed, Sterilizer, etc.	Regular cleaning, Inspection 1/month	On call base	2
Optical Concerned Equipment	Endoscopy, Microscope, etc.	Regular cleaning, Inspection 1/month	On call base, 2 times/year	4
Maintenance Equipment	Washing machine, Instrument set, etc.	Regular cleaning, Inspection 1/month	On call base, 1 time/year	5
Others	Ambulance, etc.	Regular cleaning, Inspection 1/month	On call base, 1 time/year	10

2) Consumables and spare parts

The inventory management of the consumables and medicines for the designated facilities should be carried out with joint efforts of clinical/laboratory department and administrative department. The clinical/laboratory department checks the stock inventory for proper use, and the administrative department orders and supplies each department without delay. Basically consumables and spare parts can be procured in South Africa.

3) Estimate of maintenance expenses

Estimate of yearly maintenance expenses at each designated facility is as tabulated below:

Hospital	Unit: US Dollar	Exchange into J. Yen (¥110/US$)
1. Themba Hospital	$40,761.-	¥4,483,710.-
2. Umtata Hospital	$12,349.-	¥1,358,390.-
3. George Hospital	$45,872.-	¥5,045,920.-
4. Tshwaragano Community Hospital	$41,947.-	¥4,614,170.-
5. Boksburg-Benoni Hospital	$29,622.-	¥3,258,420.-
6. Qwa-Qwa Hospital	$51,767.-	¥5,694,370.-
7. King Edward VIII Hospital	$28,391.-	¥3,123,010.-
8. Kimberley Hospital	$49,790.-	¥5,476,900.-
9. Penge Hospital	$18,731.-	¥2,060,410.-
Total	$319,230.-	¥35,115,300.-

Detailed Maintenance Cost in each designated hospital:

1) Themba Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
1-16 Anaesthetic Machine without Ventilator	66	811	-	877	2	1,754
1-29 Ventilator	272	1,473	-	1,745	2	3,490
1-37 Ventilator, Infant	272	1,473	-	1,745	1	1,745
1-47 Ultrasound Machine	575	3,340	-	3,915	1	3,915
1-61 Ambulance	734	-	-	734	3	2,202
1-88 C-Arm & Image Intensifier	1,733	-	450	2,183	1	2,183
1-89 X-Ray Unit, Portable Type	1,697	3,364	-	5,061	1	5,061
1-90 Processor	182	924	-	1,106	1	1,106
1-105 X-Ray Unit	3,193	11,620	450	15,263	1	15,263
Processor	182	924	-	1,106	1	1,106
1-122 Mobile Clinic Vehicle	734	-	-	734	4	2,936
					Total:	$40,761

2) Umtata Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
2-4 Blood Gas Analyzer (Compact Type)	649	3,218	-	3,867	1	3,867
2-18 ECG Monitor	268	525	-	793	2	1,586
2-36 ECG Monitor	268	525	-	793	2	1,586
2-56 Anaesthetic Machine with Ventilator	66	811	-	877	1	877
2-62 Electrocardiograph, 3 ch.	138	280	-	418	1	418
2-64 Anaesthetic Machine with Ventilator	66	811	-	877	1	877
2-70 Bedside Monitor	268	525	-	793	1	793
2-80 Anaesthetic Machine (Minor)	66	811	-	877	1	877
2-85 Mobile Clinic Vehicle	734	-	-	734	2	1,468
					Total:	$12,349

3) George Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
3-5 Patient Monitor (Similar to ICU)	268	525	-	793	4	3,172
3-30 X-Ray Unit	3,193	11,620	450	15,263	1	15,263
3-31 Ultrasound Machine, Colour Doppler	575	3,340	-	3,915	1	3,915
3-35 Patient Monitor and Central Station (with Printer)	268	525	-	793	7	5,551
3-36 Bedside Monitor (Rhythm, BP, Dat, Temp)	268	525	-	793	2	1,586
3-37 Ventilator, Adult (for ICU)	272	1,473	-	1,745	4	6,980
3-46 Electrocardiograph Machine, 3-ch.	138	280	-	418	2	836
3-48 Anaesthetic Machine with Ventilator	66	811		877	4	3,508
3-75 X-Ray Unit, Mobile Type	1,697	3,364	-	5,061	1	5,061
					Total:	$45,872

4) Tshwaragano Community Hospital (Unit: US Dollar)

Equipment		Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
4-1	Mobile Clinic Vehicle	734	-	-	734	3	2,202
4-2	Ultrasound Machine	52	1,340	-	1,392	2	2,784
4-3	C-Arm	1,733	-	450	2,183	1	2,183
4-4	Processor	182	924	-	1,106	1	1,106
4-5	X-Ray Unit, Mobile Type	1,697	3,364	-	5,061	1	5,061
4-7	X-Ray Unit	3,193	11,620	450	15,263	1	15,263
4-11	Ventilator	272	1,473	-	1,745	1	1,745
4-19	Anaesthetic Machine	66	811	-	877	1	877
4-20	Bedside Monitor	268	525	-	793	3	2,379
4-22	Ventilator, Paediatric	272	1,473	-	1,745	2	3,490
4-71	Electrocardiograph, 1-ch.	100	230	-	330	3	990
4-94	Blood Gas Analyzer	649	3,218	-	3,867	1	3,867
						Total:	$41,947

5) Boksburg-Benoni Hospital (Unit: US Dollar)

Equipment		Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
5-10	Electrocardiograph Machine, 3-ch.	138	280	-	418	4	1,672
5-14	Ventilator	272	1,473	-	1,745	2	3,490
5-15	Blood Gas Analyzer	649	3,218	-	3,867	1	3,867
5-21	Ultrasound Machine	575	3,340	-	3,915	1	3,915
5-45	Ultrasound Machine, Portable (OBS+GYNAME)	52	1,340	-	1,392	1	1,392
5-47	ECG Monitor	268	525	-	793	1	793
5-48	CT Scan	6,460	5,460	450	12,310	1	12,310
5-49	C-Arm (Mobile)	1,733	-	450	2,183	1	2,183
						Total:	$29,622

6) Qwa-Qwa Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
6-1 X-Ray Unit, Screening Type	3,733	1,900	450	6,083	1	6,083
6-2 X-Ray Bucky Unit	3,193	11,620	450	15,263	2	30,526
6-3 Ultrasound Machine	575	3,340	-	3,915	1	3,915
6-4 X-Ray Unit, Portable Type	1,697	3,364	-	5,061	1	5,061
6-5 Film Processor, Daylight	182	924	-	1,106	1	1,106
6-6 Bedside Monitor	268	525	-	793	2	1,586
6-7 Ventilator	272	1,473	-	1,745	2	3,490
					Total:	$51,767

7) King Edward VIII Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
7-1 CT Scan	6,400	5,460	450	12,310	1	12,310
7-2 X-Ray Equipment for Screening Room	3,733	1,900	450	6,083	2	12,166
7-3 Ultrasound Machine, Colour Doppler	575	3,340	-	3,915	1	3,915
					Total:	$28,391

8) Kimberley Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
8-1 X-Ray Unit	3,193	11,620	450	15,263	1	15,263
8-2 X-Ray Unit, Tomography	3,360	2,340	450	6,150	1	6,150
8-3 X-Ray Unit, Mobile Type (30 kW)	1,697	3,340	-	5,061	1	5,061
8-13 ECG Monitor, 3-ch.	268	525	-	793	1	793
8-14 Blood Gas Analyzer	649	3,218	-	3,867	1	3,867
8-16 Ambulance	734	-	-	734	1	734
8-30 ECG Monitor	268	525	-	793	8	6,344
8-41 ECG Monitor	268	525	-	793	1	793
8-42 ECG Monitor	268	525	-	793	1	793
8-63 Ventilator, Mobile Type	78	812	-	890	1	890
8-105 Ventilator	272	1,473	-	1,745	2	3,490
8-106 Ventilator, Neonatal	272	1,473	-	1,745	1	1,745
8-130 Blood Gas Analyzer	649	3,218	-	3,867	1	3,867
					合計:	$49,790

9) Penge Hospital (Unit: US Dollar)

Equipment	Cost of Spare Parts	Cost of Consuma-bles	Cost of Mainte-nance Service	Unit Price	Qty.	Amount
9-1 Anaesthetic Machine	66	811	-	877	1	877
9-53 Mobile Clinic Vehicle	734	-	-	734	2	1,468
9-68 Electrocardiograph Machine, 1-ch.	100	230	-	330	1	330
9-107 X-Ray Unit	3,193	11,620	450	15,263	1	15,263
9-115 Bedside Monitor	268	525	-	793	1	793
					合計:	$18,731

CHAPTER 4 EVALUATION OF PROJECT AND RECOMMENDATION

4-1 Effects of Project (Demonstration, Verification and Benefit Effect concerning Appropriateness)

When this project is implemented, the correction of extreme racial differences will be achieved with respect to the supply of medical services at public medical facilities, which has been the negative heritage from apartheid (racial segregation) of the former regime. The implementation will be a powerful support for the important Reconstruction Development Programme (RDP) that the South African government is presently pushing forwards for the correction of racial differences in all fields. The following effects can be expected by the implementation of this project:

(1) Apartheid created a dual structure, that is to say, there is a medical level as high as that of advanced countries on one hand, and there is a low level of medical care in districts and black people's residential area on the other. Consequently, the racial differences in the public health indexes are extremely outstanding. The South African government is, therefore, confronting the urgent solution. Hence, the effects by the implementation of this project are expected.

Since Themba Hospital, Umtata Hospital, Qwa-Qwa Hospital, and Tshwaragano Hospital are the secondary medical facilities, the news of the implementation of this project itself is significant for the new South Africa's public health administration and will give positive influence to the medical facilities for black people.

(2) Easy access to medical care will be possible for black people and the poor class by improvement of the district core hospitals (secondary medical facilities) for black people's living area in cities and villages in the former homelands together with the thorough implementation of the PHC that the new South African government is developing with the top priority.

(3) Themba Hospital, Boksburg Hospital, Qwa-Qwa Hospital, and Kimberley Hospital among the designated hospitals will receive the implementation of this project including the improvement of some equipments (mobile clinic vehicles and medical equipments essential

to basic diagnosis and treatment) for the affiliated health centers and clinics. This intends to support the designated hospitals so that they, as the core district hospitals for the secondary medical facilities, can supervise their subordinate medical facilities, so that they can function as the referral hospitals, i.e., they can perform their functions of mobile medical activities and the role as the referral hospitals through the improvement in the medical equipments.

(4) The reduction in the diagnosing function due to obsolescence of the existing equipments will be stopped by the procurement of new medical equipments, and at the same time, the procurement will give motivation to doctors and nurses and other people engaged in medical services, revitalize whole hospitals.

(5) Absolute shortage of doctors in South Africa is an important issue of administration for the future public health care. The impact of revitalization of the district core hospitals by the implementation of this project will contribute to a stable assurance of medical staff especially at district hospitals including the employment of doctors from foreign countries.

As mentioned above, much effect can be expected by the implementation of this project, and since this project is sufficiently feasible in the aspects of demand, technology, maintenance, and financial management of the designated facilities, it is judged that the implementation of this project is duly appropriate.

The request for medical equipments to this project mainly intends to renew the existing equipments, what is more, no special requirements are included in terms of demand and technology, and therefore, it is considered that the South African side has sufficient staff and funds for management and control.

4-2 Recommendation

In order to implement this project smoothly and to fulfill the effective and continuous utilization of the procured medical equipments, we propose as follows:

1) For the purpose of promoting correction of racial differences in the medical facilities, which is the aim of this project, the PHC that has already been carried out by the cooperation of the Department of Health of the central government and the Department of Health of the provincial government should be promoted thoroughly, and the improvement plan (reconstruction, improvement and expansion) for the district core hospitals should be implemented without delay.

Supervision of the process of facility improving work being implemented at the designated hospital of this project should be conducted, and considerations should be paid so that there should not be any hindrance to the implementation period of this project.

2) Although this project mainly intends to renew the existing medical equipments and has been designed not to require additional staff and management cost for the new equipments (including maintenance cost), it is expected that introduction of equipments revitalize medical service. Therefore, in order to supplement the accompanying expenses (parts, consumables, maintenance contracts with agents, etc.), some budget measures should be taken by appropriating the incomes from cost sharing for medical treatments for the expenses.

3) In order to clarify the effects and problems after the implementation of this project, reports on the state of activity at each designated facility (transitions of the number of outpatients, inpatients, inspections (CT, X-ray), and operations), on the financial state of the facilities (including maintenance cost), and on the state of operation of the procured medical equipments (frequency of use, maintenance, etc.) should be made mandatory to each of the objective facilities, and it is desired to submit the reports to the Japanese side for a specified period of time.