4-1-8 Electrical Service

The electric power of Bolivia is divided largely into two systems: (1) La Paz and Oruro Departments and (2) the other departments.

At present, power to the facilities in the La Paz National Hospital is fed from the Avenida area and Caiconi area transformation substations of the Bolivia Electric Power Company (COBEE).

In the respective transformation substations, a power of 66KV fed from the Zongo Power Plant is reduced to 6.6KV which is then fed to the pole transformers in the hospital. At the pole transformer provided for the respective blocks, the 6.6KV is reduced to 220/110 V, 3 phases. A 4-wire system is then distributed to the respective buildings.

While the electrical equipment of the Research Center will be described later, the following points are to be noted in planning.

(a) In the absence of work connected with all existing facilities, the electrical service system of the Research Center will function independently.

(b) It is planned to use Japanese materials for almost all electrical work. Thus, in designing, importance is attached to safety and maintenance in order to prevent problems that may occur in maintenance, control or operation of the equipment.

(c) Regulations for electrical work are not well defined in Bolivia, and the regulations of the material exporting country have to be used, in such a case.

In the present design, the equipment will be designed to comply with the electrical regulations of Japan in

consideration of the Japanese standards for materials.

(d) Lightning seldom occurs in La Paz. Buildings as high as 20 stories have no lightning conductors provided.

(e) As La Paz has very few fires, any rules and regulations for fire defense are not satisfactory. As a result, buildings of 20 stories or more have no fire extinguishing equipment provided.

(1) Power Reception and Transformer Equipment

At present, pole transformers in the La Paz National Hospital are owned by the Bolivia Electric Power Company, and their maintenance is carried out by the company.

The service line to the Research Center will be derived from the high voltage overhead line, 6.6KV 50Hz, and will be received through an underground cable at the electric room.

A transformer with a load capacity estimated a 430KVA will be installed in the electric room to reduce the primary 6.6KV to the secondary 220V/110V for supply through switches in a low voltage power panel to the respective loads.

The load capacity is broken down as follows:-

Load	Capacity
For X-ray	90 KVA
For lighting outlet	140 "
For air conditioning power	170 "
Miscellaneous	30 "
Total	430 KVA

(2) Emergency Stand-by Generator Equipment

Current stoppage rarely occurs in La Paz, but for surgical operations, experiments, security lighting and elevator, an AC power generator will be provided as a source of power in emergencies.

From the total load, the generator will have a capacity of about 100KVA and be adapted for automatic start upon current stoppage and automatic stop upon resumption of the power supply.

For the engine, it is planned with considerations 1) that the La Paz district being situated at an altitude of about 3600 meters above sea level and scarce in oxygen content at about 2/3 of that at ground level, no output reduction should be produced on such account, 2) that for cooling, not water cooling but an air cooling system should be used, since it is intended to operate only in time of emergencies and 3) maintenance can be easily done.

(3) Power and Feeder

Power supply is sent from the low voltage power distribution panel in the electrical machine room to the power control panel board, lighting panel board, experiment power, X-ray power, elevator power and telephone exchange power. (Fig. 5 & Fig. 6)

For start and stop of power, a separate control system is planned for simplification and clarification.

(4) Lighting Outlet Equipment

Pipe wiring is used to the lighting panel board and to the subsequent lighting instruments, switches and outlets.

For the operating room, it is planned to install an exclusive panel board for the supply of electricity.

(5) Lighting Fixtures

Lighting will be mainly with fluorescent lamps, and depending on the function of the room, incandescent lamps, germicidal lamps or mercury lamps will be used.

For the operating room, shadowless lamps will be provided, in addition to overall illumination.

For the auditorium, a circuit enabling a stepwise illumination using incandescent lamps mainly and fluorescent lamps partly and also a rheostat control of illumination for some parts will be planned.

The intensities of illumination of the principal rooms are given as follows:-

Room	Illumination Level
Operating room	500 Lux
Laboratory	300 Lux ∿ 400 Lux
Radioscopic and endoscopic rooms	100 Lux
General Office	200 Lux ∿ 300 Lux
Auditorium	150 Lux ∿ 250 Lux
Wards	100 Lux ∿ 200 Lux
Passages and hallwarp	100 Lux ∿ 200 Lux
Storage	50 Lux ∿ 150 Lux

(6) Telephone Exchange

The telephone service in La Paz is undertaken by the La Paz Telegram and Telephone Corporation (ENTEL) for the local exchange and by the La Paz Telephone Company for the trunk exchange.

At present, the telephone lines to the facilities in the La Paz National Hospital are operated under a direct system with office lines introduced into the respective facilities.

As for the telephone exchange system in the Research Center, it is planned to install a crossbar switch exchanger, 10 circuits of office lines and 100 circuits of extensions and also apparatus permitting 5 circuits of interconnection of extensions and apparatus permitting 4 circuits of exchange and transfer at the nurse station at night in the event of an exchanger being installed in the La Paz National Hospital in the future. (Fig. 7)

For the extensions, about 60 units of dial type handsets are planned.

(7) Public Address System

The public address system in the Research Center will consist of two systems, auditorium system and hospital system. (Fig. 8)

The main purpose of these systems is:-

a) Auditorium system for smooth execution of lectures, conferences, etc., and

b) Hospital system for smooth execution of liaison, call, etc.

They are planned as independent acoustic systems respectively.

(8) Nurse Call Equipment

It is planned to install a system permitting mutual communication between the respective beds in the sickroom and the nurse station so that satisfactory care is insured. (Fig. 9)

(9) Interphone Equipment

This equipment is provided for communication between the inside and the outside of a room (for example, dark room, operating room) required for operation of the hospital and for communication to a place required for the sake of security (for example, elevator, dumbwaiter, etc.) (Fig. 10)

(10) Alarm Equipment

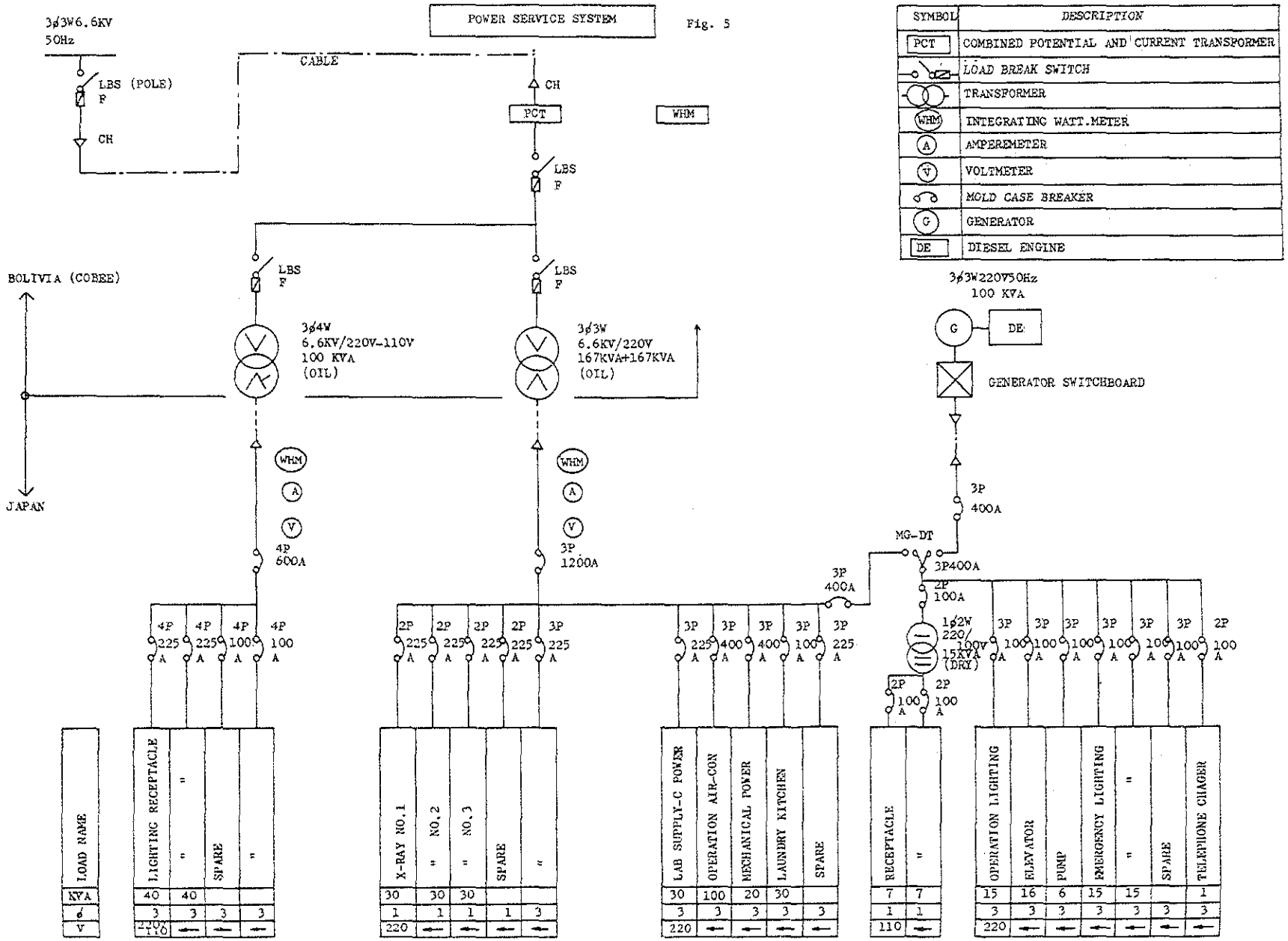
In La Paz, fires seldom break out. As contributing factors, the following two points may be cited, (1) the oxygen content in the atmosphere at about 2/3 of that of the lowland, and (2) absence of inflammable objects.

Currently, there are no rules provided for fire defense, and automatic fire detecting apparatus is seldom installed.

In the Research Center, it is planned, assuming the possibility of fire, to install pushbutton switches near the installation of fire extinguishers on the respective floors to sound an alarm. (Fig. 11)

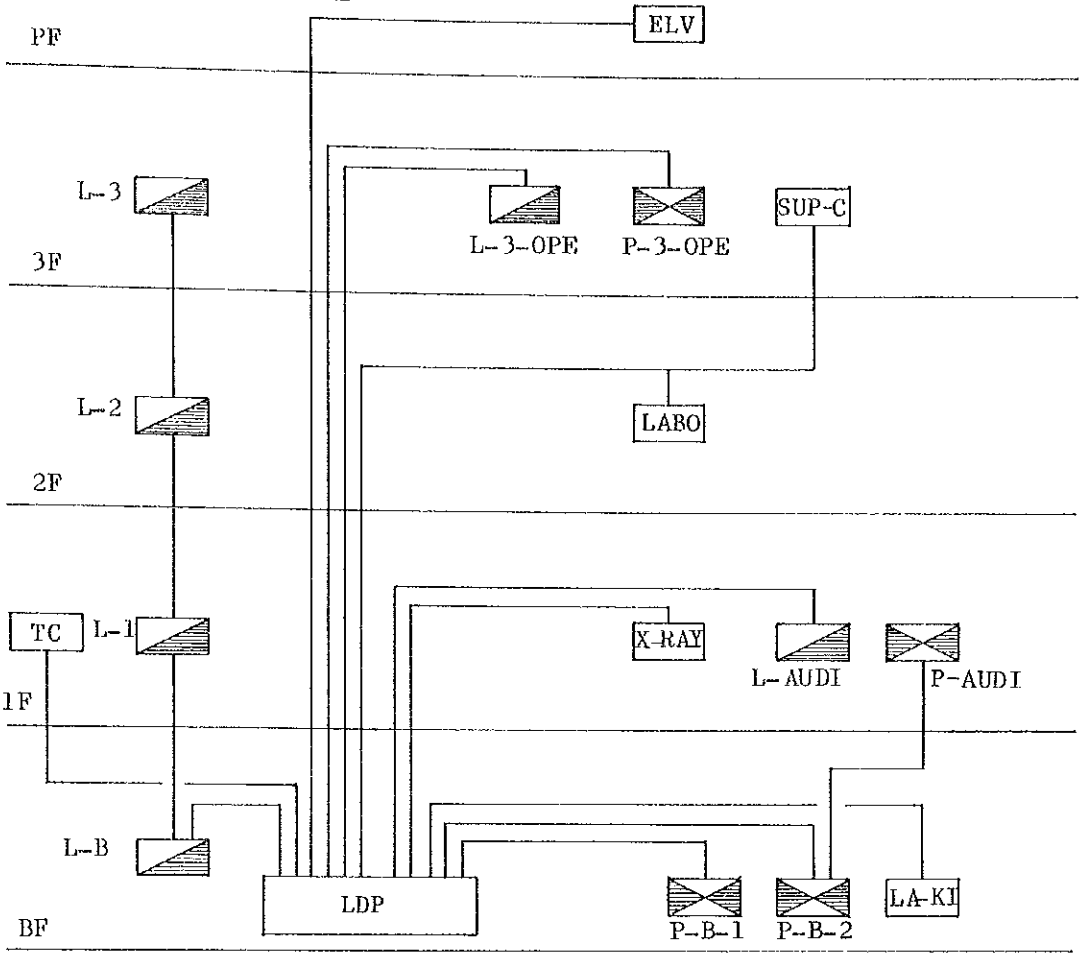
POWER SERVICE SYSTEM

Fig. 5



SYMBOL	DESCRIPTION
PCT	COMBINED POTENTIAL AND CURRENT TRANSFORMER
	LOAD BREAK SWITCH
	TRANSFORMER
WHM	INTEGRATING WATT.METER
A	AMPEREMETER
V	VOLTMETER
	MOLD CASE BREAKER
G	GENERATOR
DE	DIESEL ENGINE

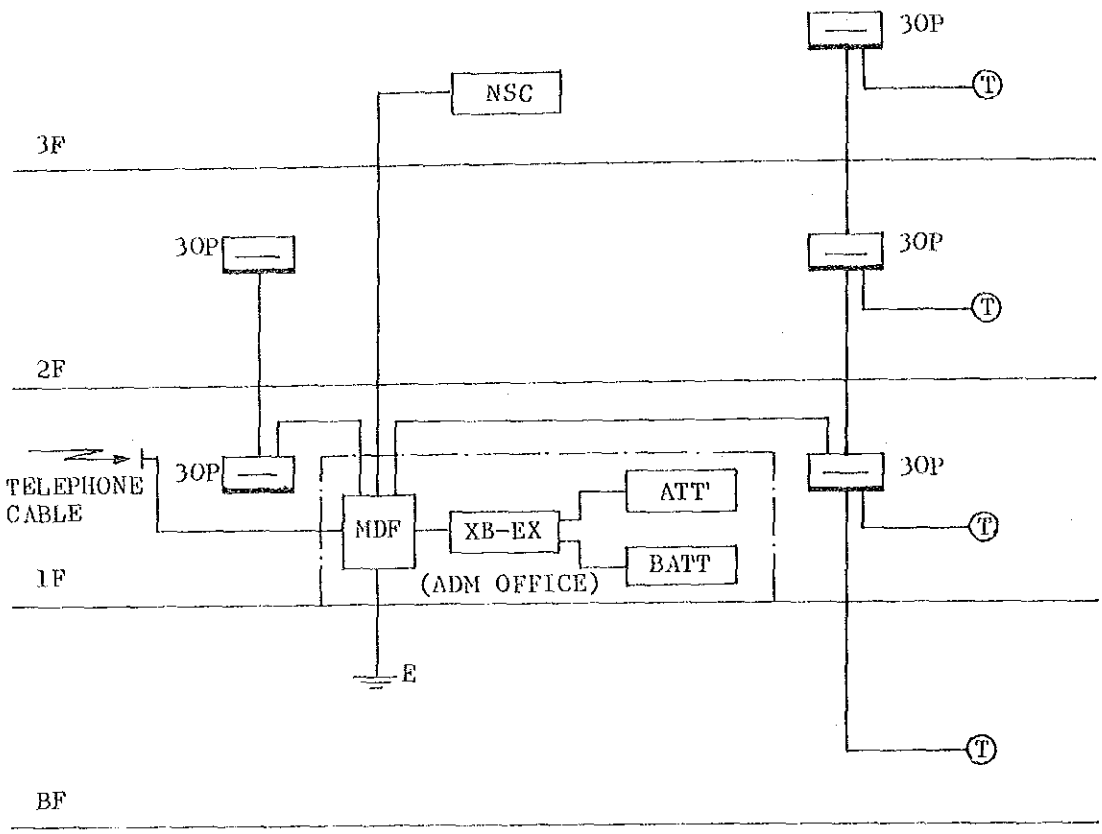
MAIN FEEDER SYSTEM (Fig. 6)



LEGEND

SYMBOL	DESCRIPTION
	POWER PANEL BOARD
	"
	LIGHTING PANEL BOARD
TC	TELEPHONE CHARGER
LDP	POWER DISTRIBUTION PANEL
ELV	ELEVATOR PANEL BOARD

TELEPHONE SYSTEM (Fig. 7)

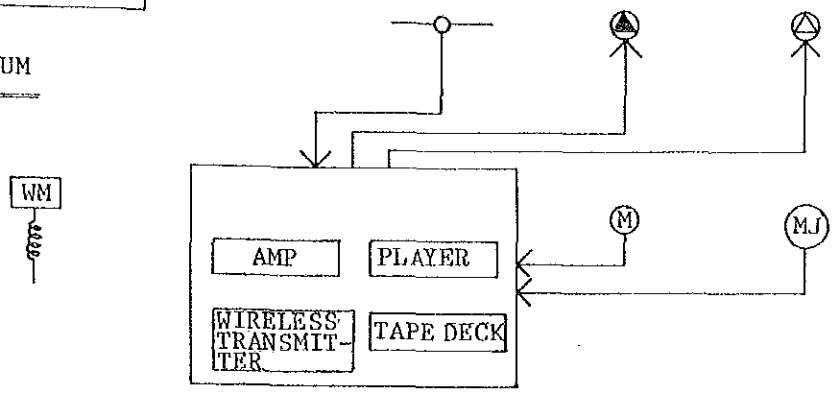


LEGEND

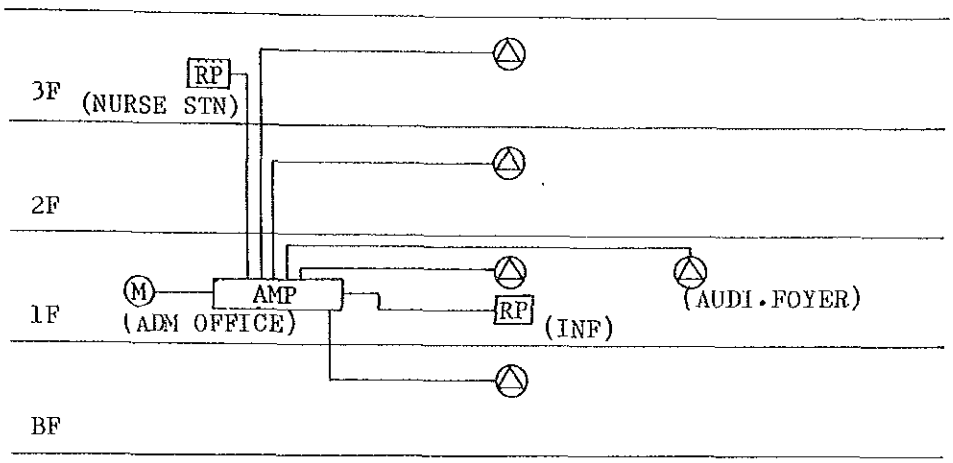
SYMBOL	DESCRIPTION
MDF	MAIN DISTRIBUTION FRAME
XB-EX	CROSSBAR SWITCH EXCHANGE CABINET-TYPE
ATT	ATTENDANT CONSOLE
BATT	CHARGER AND BATTERY
NSC	NIGHT SERVICE CONSOLE
—	TELEPHONE TERMINAL
T	TELEPHONE OUTLET BOX

PUBLIC ADDRESS SYSTEM (Fig. 8)

AUDITORIUM



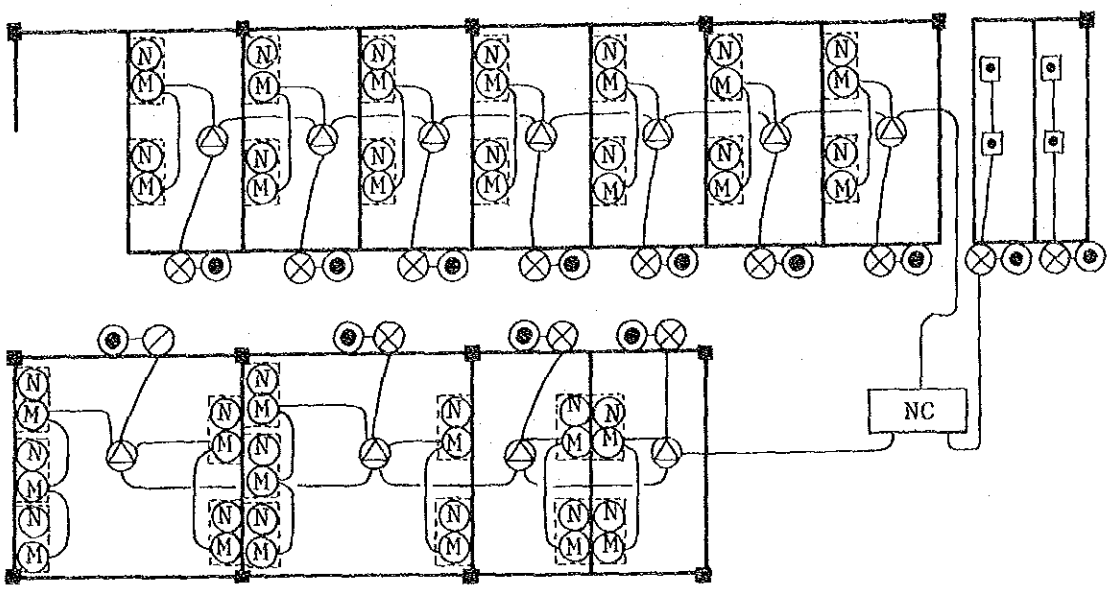
HOSPITAL



LEGEND

SYMBOL	DESCRIPTION
AMP	AMPLIFIER
RP	REPEATER
M	MICROPHONE
	SPEAKER (CEILING)
	" (WALL)
	WIRELESS ANTENNA
MJ	MICROPHONE JAC
WM	WIRELESS MICROPHONE

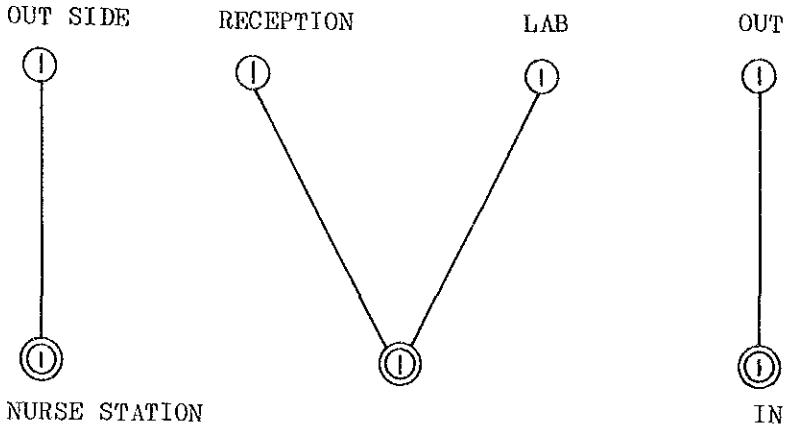
NURSE CALL SYSTEM (Fig. 9)

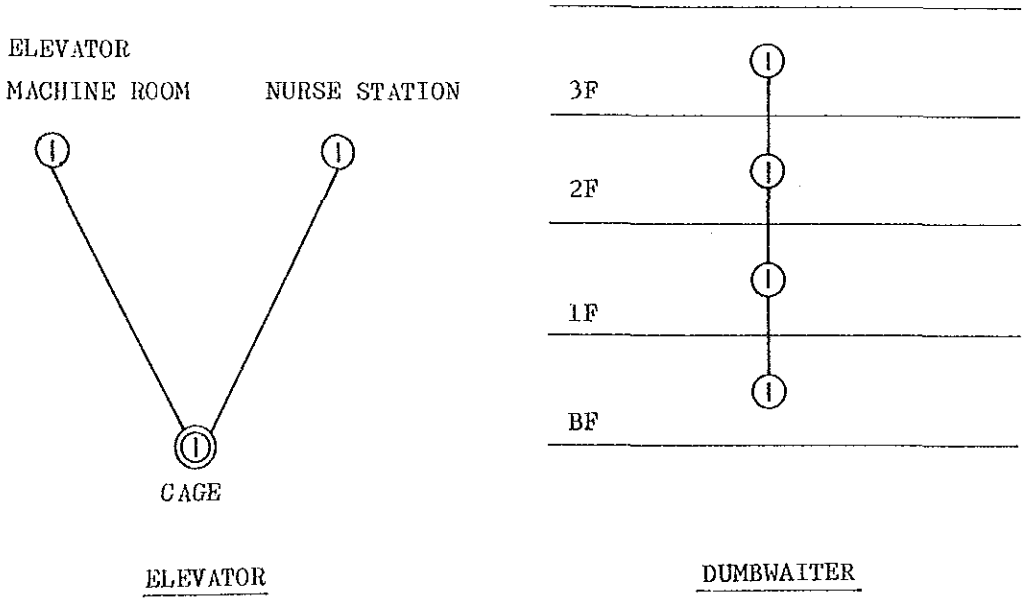


LEGEND

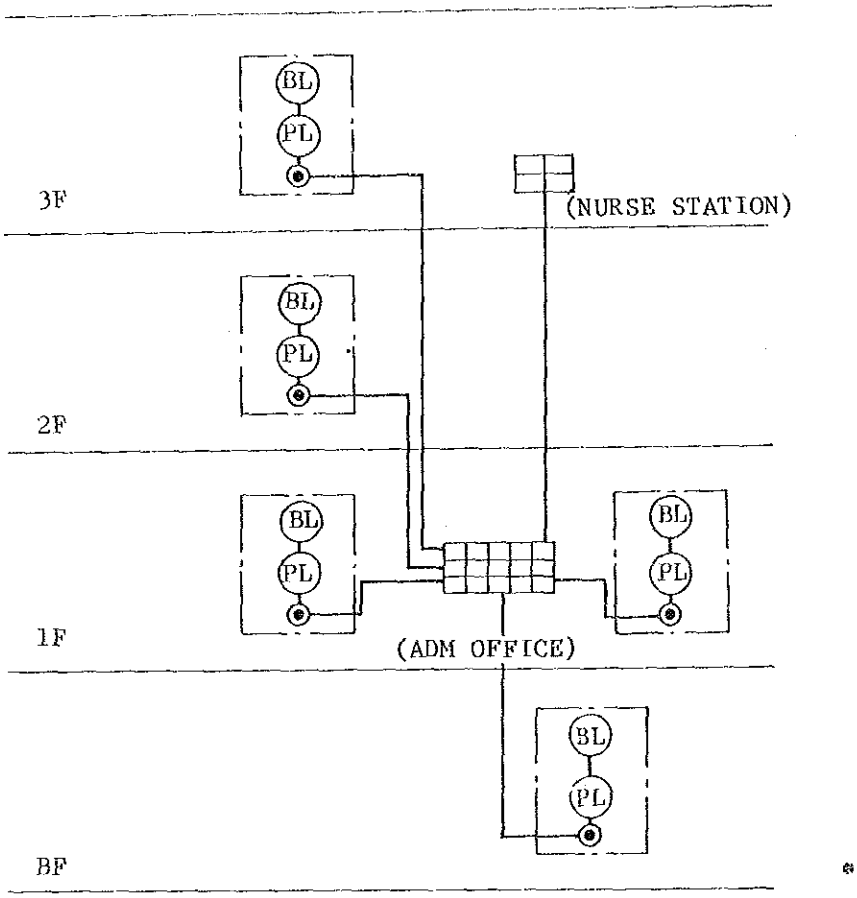
SYMBOL	DESCRIPTION
NC	NURSE CALL
△	SPEAKER
N	PUSH BUTTON SWITCH
M	MICROPHONE
⊗	INDICATION LAMP
◉	RESET BUTTON SWITCH
▣	PUSH BUTTON SWITCH (LAMP)

INTERPHONE SYSTEM (Fig. 10)





ALARM SYSTEM (Fig. 11)



LEGEND

SYMBOL	DESCRIPTION
▦	ALARM PANEL (MAIN)
⊞	" (SUB)
(BL)	BELL
(PL)	SIGNAL LAMP
◉	PUSH BUTTON SWITCH

4-1-9 Heating and Air-conditioning

The buildings in La Paz seldom have an air conditioning system; some are heated by hot water or steam but the greater part are heated by propane or electric stove. With the temperature ranging from 5° to 20°C throughout the year, it often feels cold in summer if there is no sunlight, so that cooling is not required.

In winter, the humidity is generally about 10 percent, and it is very dry. The buildings existing in the National Hospital in which the present project is to be carried out, have gas stoves provided only in the office rooms but nothing in the hospital wards, and ventilation depends mainly on the natural flow of air through windows.

(1) Operating Room Air-conditioning System

All fresh air conditioning will be provided for operating rooms. With the handling unit placed near the operating rooms, space heating will be done by hot water if it is available in winter or electric heaters in summer or when the hot water system is not operating. For humidity control, it is planned to use a steam generator. The cooling to be done in summer is of the type not employing a refrigerator, so that control of dehumidification is not practicable. Thus, the humidity will rise to 40 percent or higher in summer. In winter, it is possible to control the humidity to 40±5 percent. (Fig. 12)

(2) General Room Heating System

A direct heating system will have two hot water boilers and another boiler for the respective heating systems. For the source of heat, kerosene, light oil, heavy oil, propane gas or electricity may be considered. But, from the standpoint of availability, running cost and safety, it is planned to use heavy oil.

The heating will be divided into five systems in consideration of the elements governed by time and the presence of intensive sunshine, that is,

1. East ward system,
2. West ward system,
3. Outpatient department system,
4. General Office and Laboratory system, and
5. Auditorium

These systems will be operated or suspended under fully automatic operation by means of electric manipulation, and it is planned basically to simplify the procedure and electric circuit to permit easy corrective action in the event of a failure.

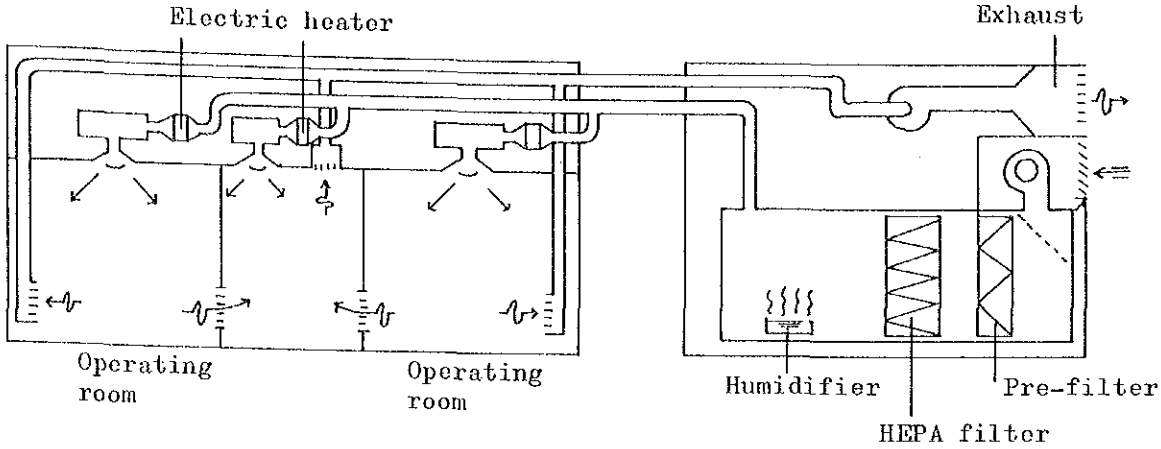
Temperature control can be done by means of a valve installed in the respective rooms.

For humidity control, a system of placing an evaporation dish on the radiator in a room and introducing water into the dish individually will be employed to eliminate failure due to scaling in a humidification system. The lobby, etc. will have heating but no humidification. (Fig. 13)

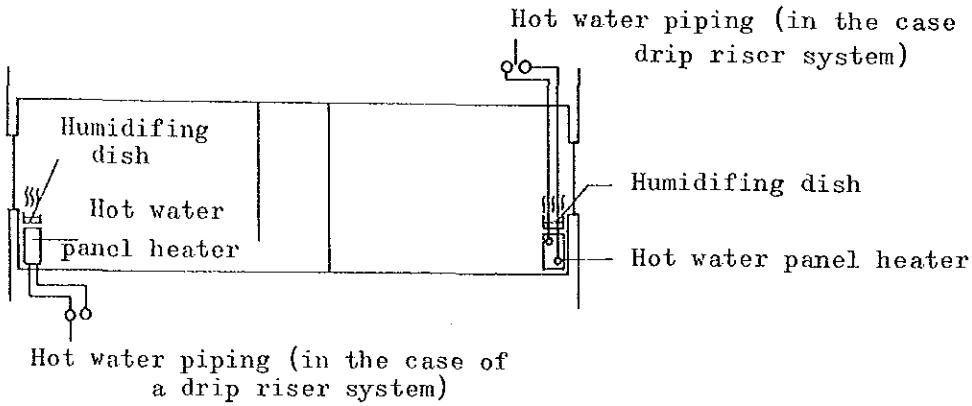
(3) Ventilation

Natural ventilation will be used for the rooms in which such ventilation is practicable such as, for example, the toilet of each ward which is located on 3rd floor. For the rooms which do not face the open air, kitchen and laundry, forced ventilation will be used by means of a sirrocco fan. Where an experimental toxic gas is generated, forced ventilation will be done with a draft chamber provided. Where air exhaust is required, a switch is provided, and the room occupant sets the switch to ON or OFF. (Fig. 14)

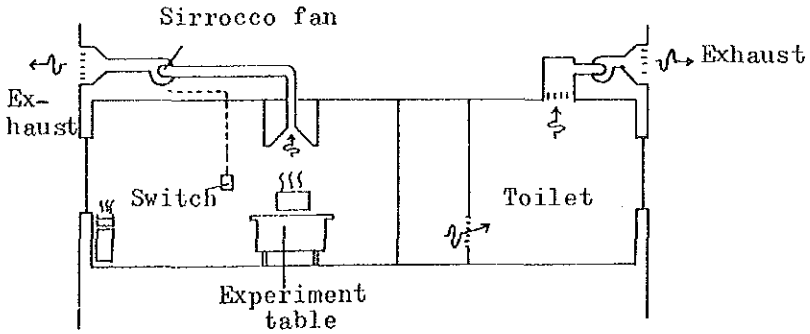
OPERATING ROOM AIR CONDITIONING SYSTEM (Fig. 12)



GENERAL HEATING SYSTEM (Fig. 13)



GENERAL VENTILATING SYSTEM (Fig. 14)



(4) Temperature and Humidity Design Conditions

		Operating room	General room	Outdoor air
Winter	Temperature	24°C±2°C	22°C±3°C	0°C
	Humidity	49%±5%	-	15%
Summer	Temperature	25°C±2°C	-	20°C
	Humidity	49% Up	-	73%

(5) Auditorium Heating/Ventilation System

Ventilation will be a mechanical system for air supply as well as exhaust, and dust precipitation, heating and humidification will be done by air supply.

4-1-10 Water Supply, Drainage and Sanitation

What is to be noted particularly in planning the equipment, including air conditioning is: 1) The service water is extremely hard, 2) Machines and ferrous materials are not produced domestically, 3) The equipment itself is not so complicated and 4) There is doubt involved in maintenance. Thus, simplification of the equipment system and interchangeability of parts were contemplated so that maintenance would be facilitated.

(1) Water Supply System

The water supply equipment presently installed in the hospital has only a limited capacity, and thus it is required to introduce city water from the water main buried underneath the public road. The introduced water will be stored in an assembly-type water tank for half-day use and be pumped from the tank up to a similar assembly-type water tank provided on the roof. From there, water will be fed to supply plants by gravity.

About 10% of the total amount of supply water will be softened through an ionic water softener, and will be supplied to the X-ray photograph developer, distilled water producer and operating room air conditioning humidifier. (Fig. 15)

PVC pipes have come to be used recently. In the present plan, PVC pipes, PVC coating pipes and PVC lining pipes will be used to prevent rust contaminated water.

The quantity of water used at the Center is estimated at about 50 m^3 a day, and for intake of water, 50A pipes with a water pressure higher than 1 kg/cm^2 will be required.

(2) Hot Water Supply System

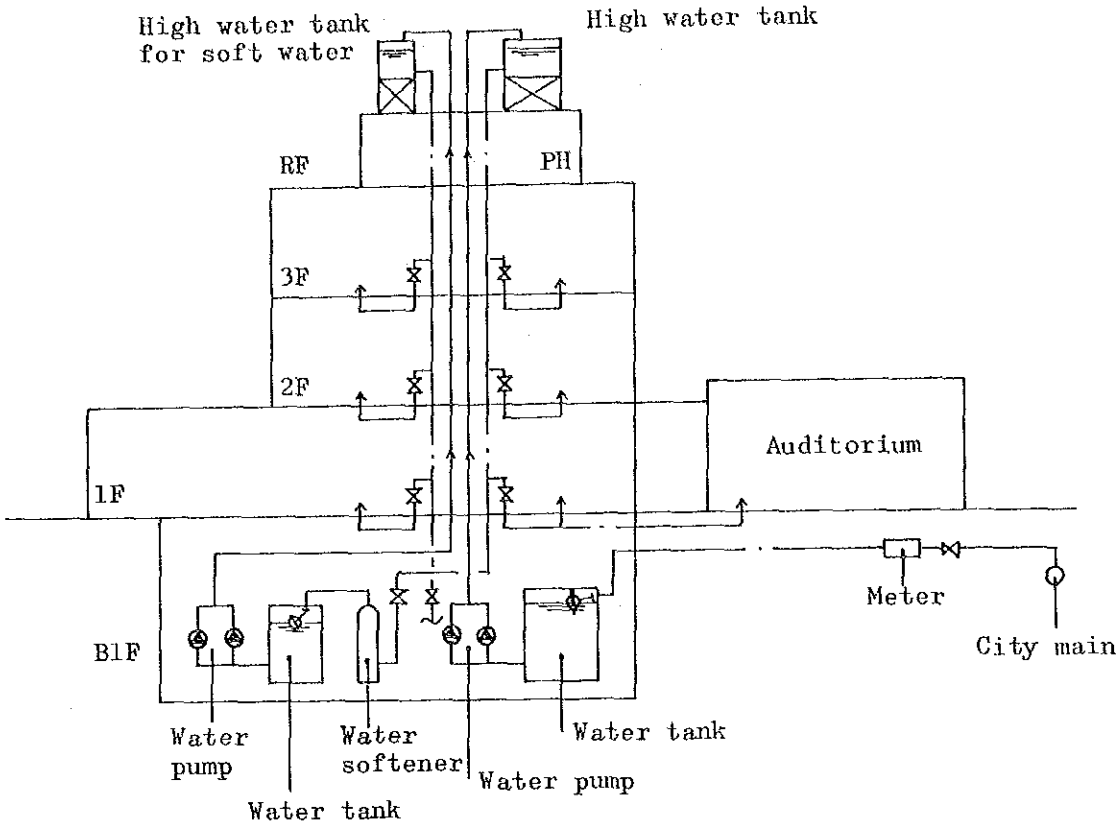
Because of extremely hard water, scale will adhere to the heating section. Thus, water supply boilers or electric water heaters with a direct heating system should be avoided. Instead, a central water system will be employed -- two hot water boilers with an indirect heating system and to hot water boilers with an indirect heating system and two hot water tanks with a heat exchange system. Piping will be of copper. (Fig. 16)

For potable hot water supply, no special equipment will be provided, but an electric heater will be provided at each of the required locations.

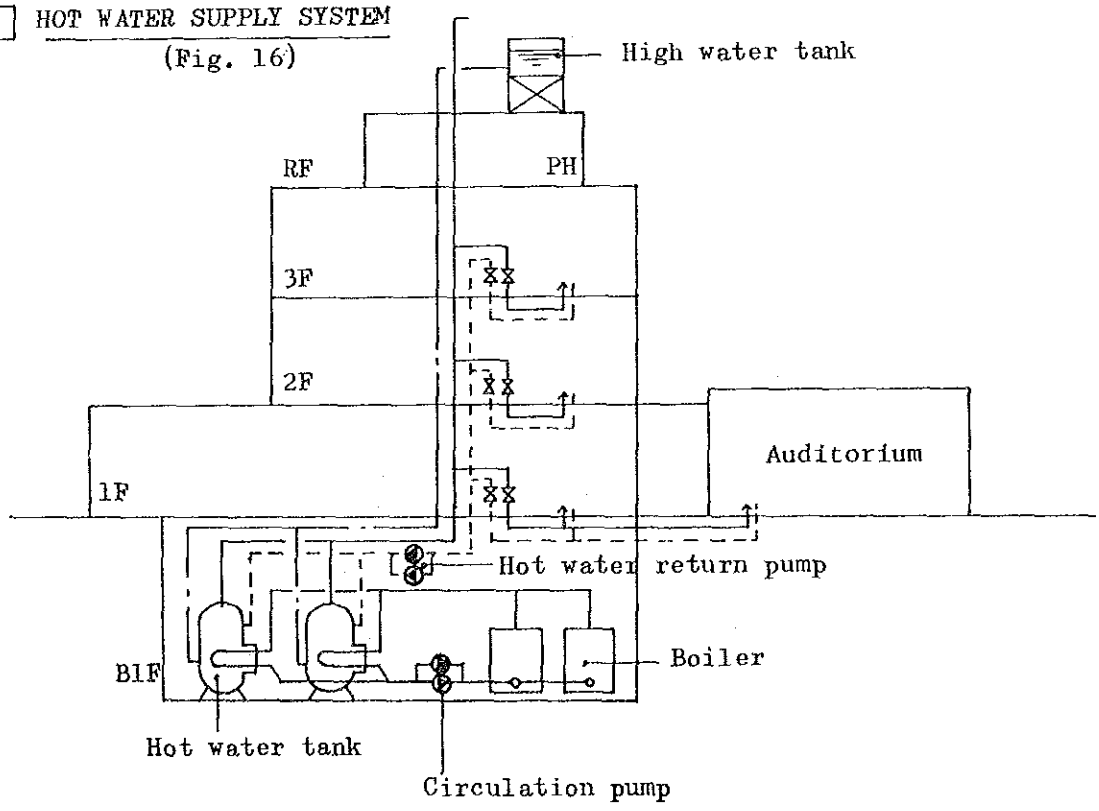
(3) Drainage and Vent Equipment Plan

The city of La Paz in Bolivia has no sewage disposal facility, and the buildings as well as houses discharge waste water into the public sewer pipe at the terminal of which the waste water is discharged directly into the river flowing through the city. According to city regulations, the waste water of this hospital is dischargeable without any treatment except

WATER SUPPLY SYSTEM (Fig. 15)



HOT WATER SUPPLY SYSTEM (Fig. 16)



surgical special waste water (chemical waste water incident to surgical operations and experiments). In the present case, it was contemplated, in consideration of morale and also of the future, that apparatus for treatment of all sorts of waste water should be provided, and the possibility was examined. But, as there is no vacuum car available for extracting the concentrated active sludge nor place of treatment necessary for such treatment apparatus, it is concluded that no benefit but only inconvenience would be caused in the event of a disposal plant provided for the present case alone. Thus, in the present case, all waste water will be discharged into the public sewer system or river except for surgical waste water and chemical waste water which are subject to sterilization and pH adjustment.

The drainage in the building will be of three systems for said treated waste water, living waste water and rain water.

The pipes will include PVC pipe, white gas pipe, cast iron pipe, lead pipe and concrete pipe which are suitable to specific applications.

(4) Sanitary Fixtures

Sanitary fixtures are not produced domestically but are imported from America, Brazil and Argentina; imports from America constituting the greater part. But metal fixtures are not readily available. In this respect, acquisition from Japan is desirable. With interchangeability and standardization of the types of fixtures and delivery of 10 percent spare parts, maintenance will be no problem.

(5) Fire Extinguishing

La Paz is situated at an altitude of 3600 meters with an oxygen content at 2/3 of that in Tokyo. A lit cigarette seldom leads to a fire, and fires are scarcely seen.

Accordingly, there are no fire regulations nor fire extinguishing equipment except small fire extinguishers. In the present case, installation of carbon dioxide fire extinguishers at required locations is contemplated.

(6) Gas

La Paz has no city gas service. Thus, generally a propane gas cylinder is brought into a room for use. The gas is a highly pure liquefied propane or butane gas, and toxication seldom occurs. However, it is highly hazardous so that in the present case, a central gas supply system is planned with the gas cylinders concentrated outdoors.

(7) Oxygen Supply and Suction

Oxygen inhalation is required in the operating room, X-ray room etc., and a central system will be used. A vacuum pump for suction will be installed in the machine room, and oxygen cylinders will be placed outdoors near the machine room.

4-2 Architectural Drawings

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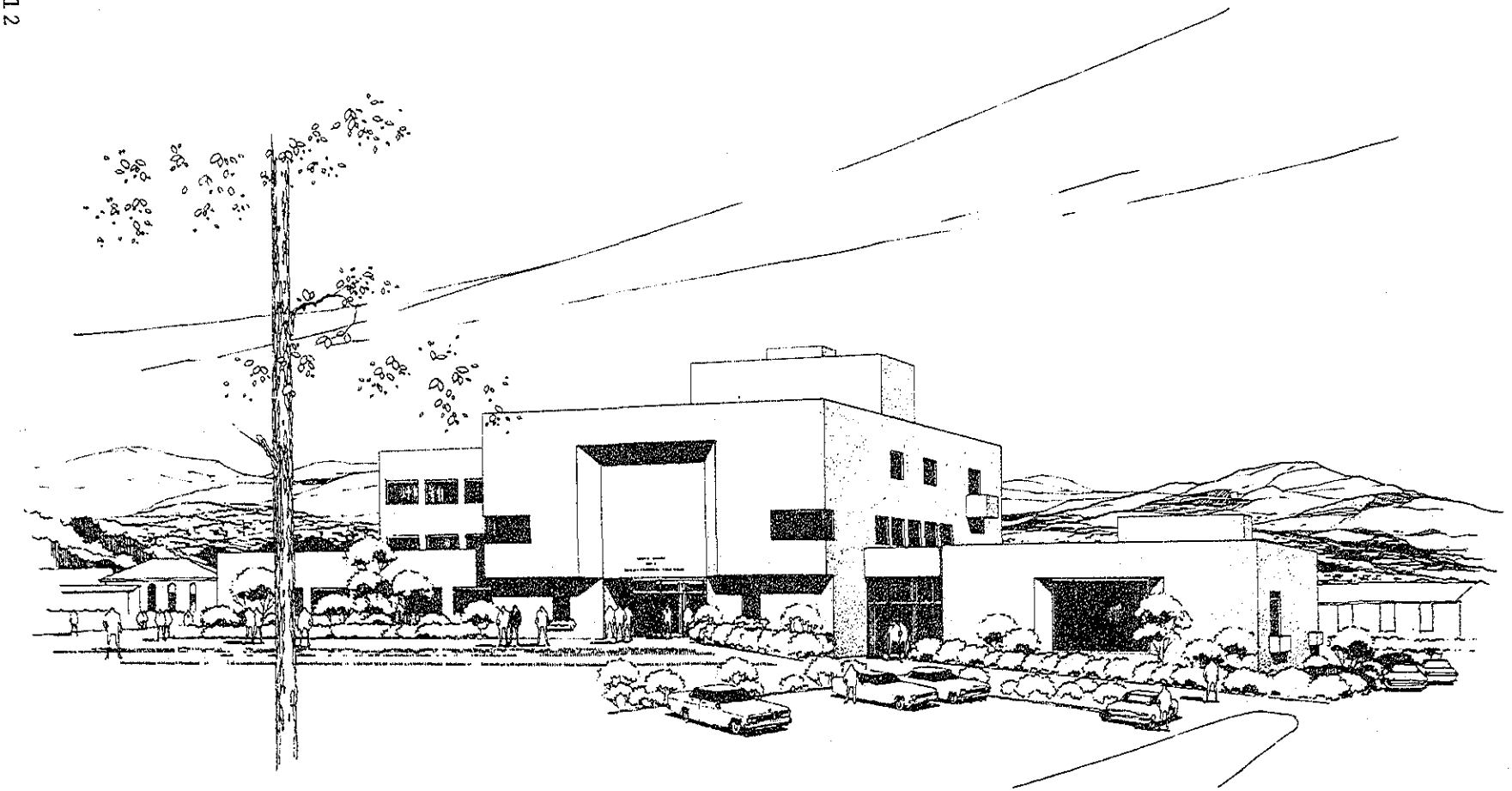

PERSPECTIVE 1

GASTRO-ENTEROLOGICAL
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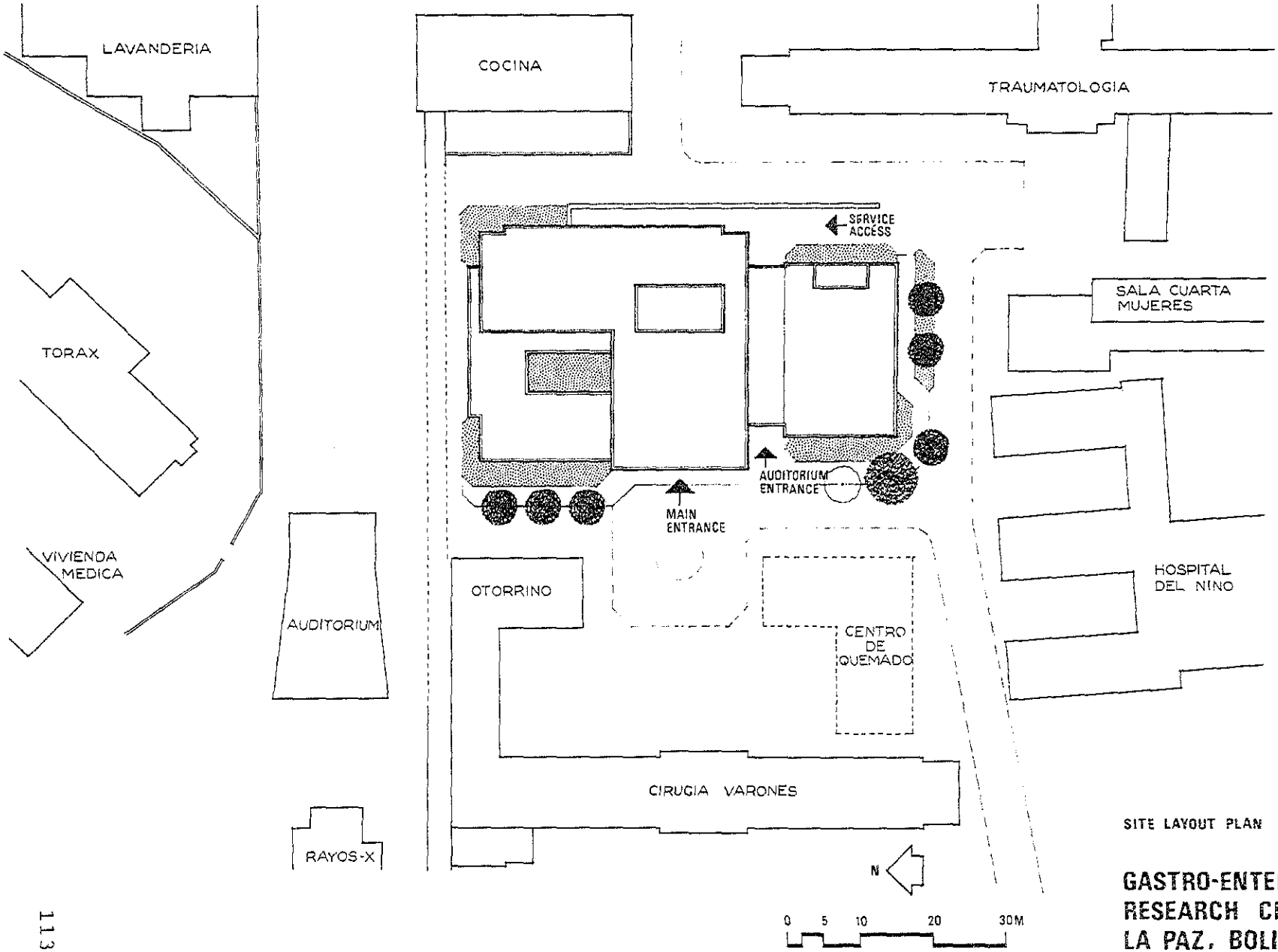
LA PAZ, BOLIVIA



SITE LAYOUT PLAN 2

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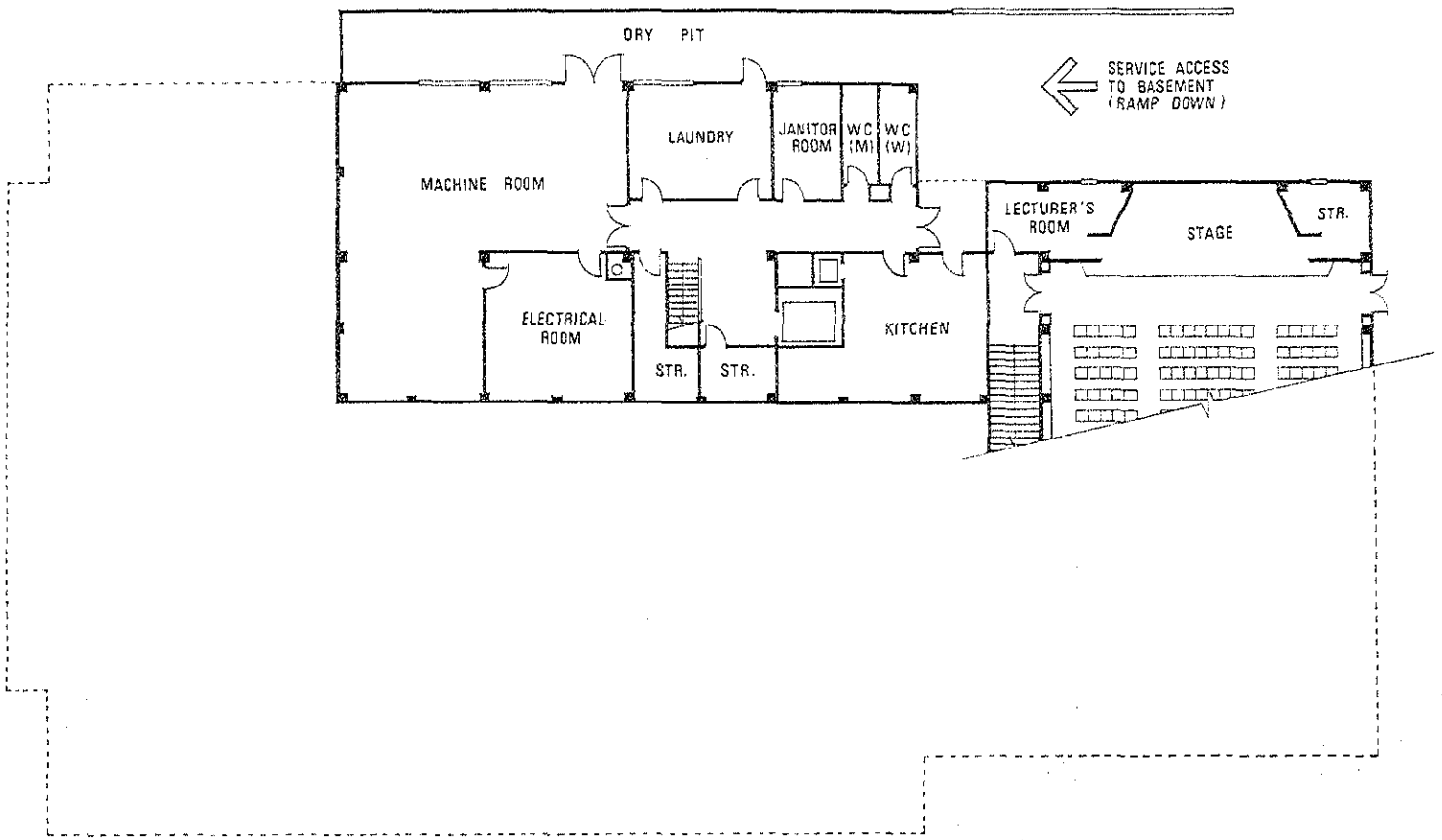

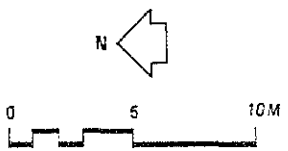

BASEMENT FLOOR PLAN 3

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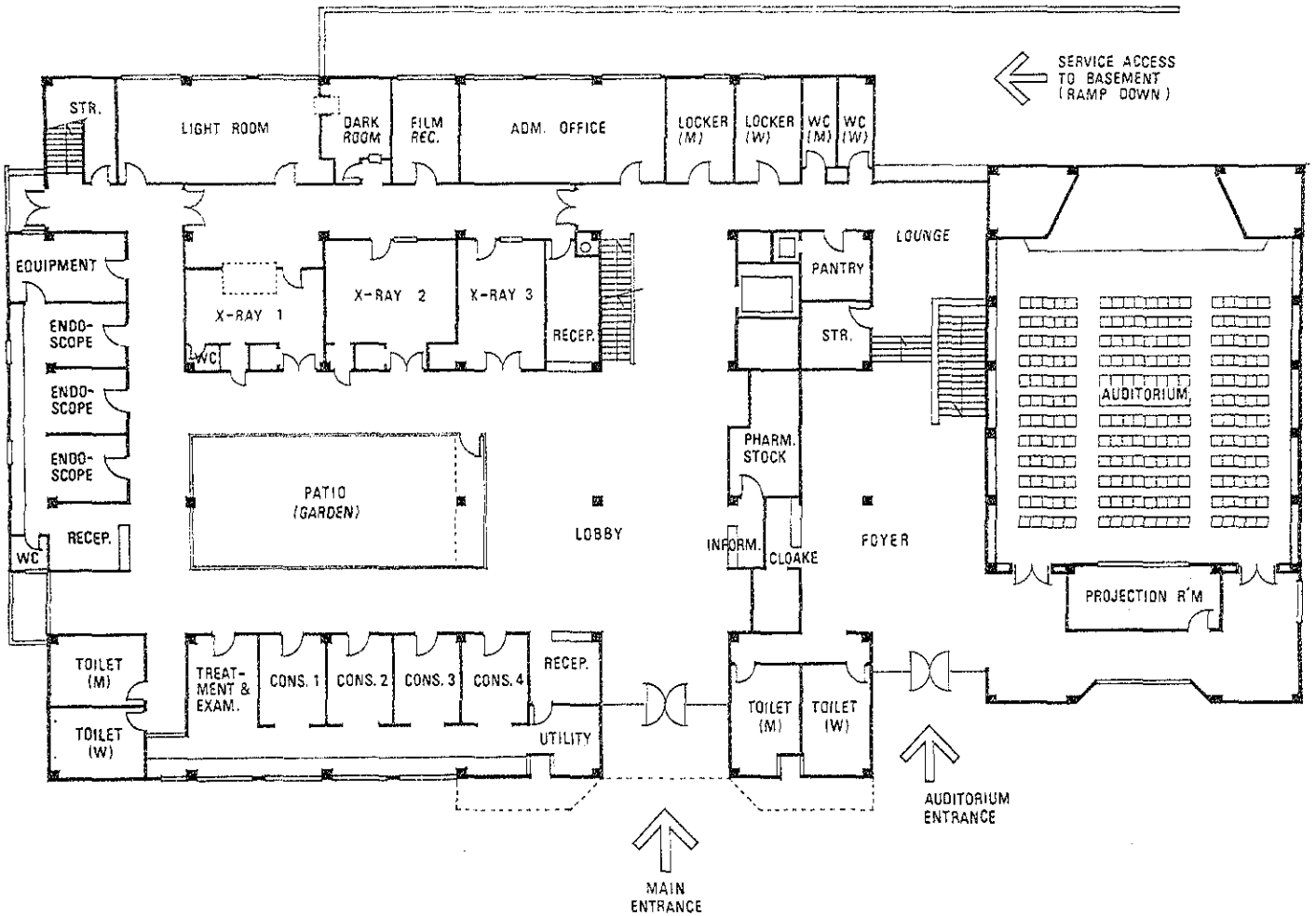

1ST FLOOR PLAN

4

N

0 5 10M

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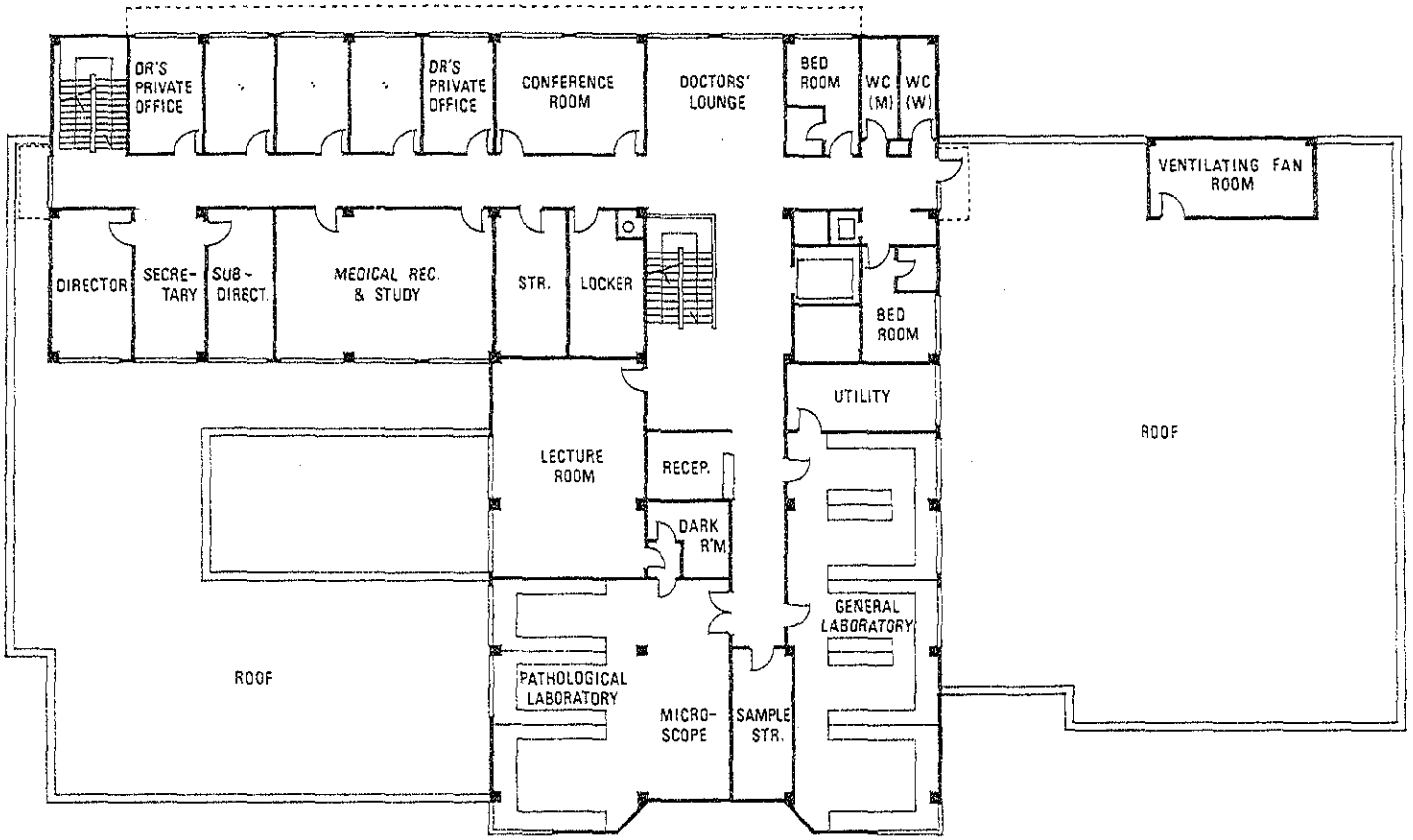

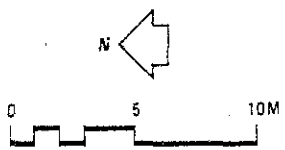

2ND FLOOR PLAN

5

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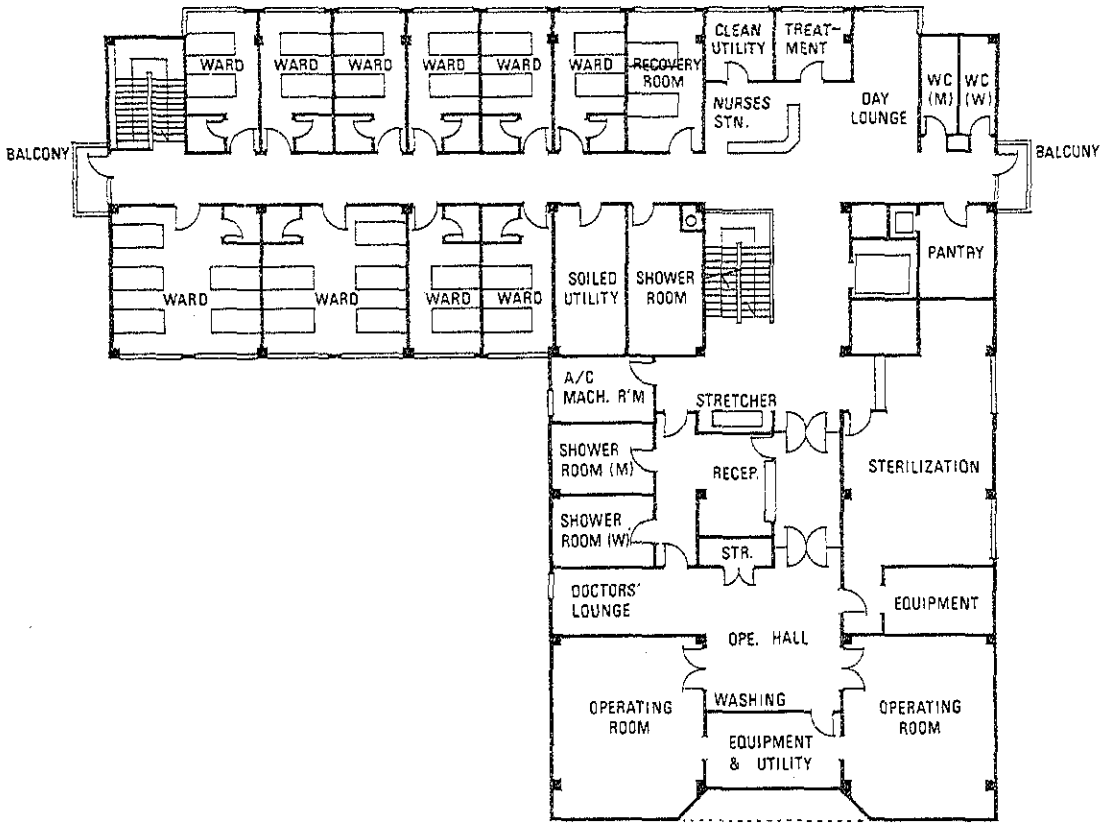

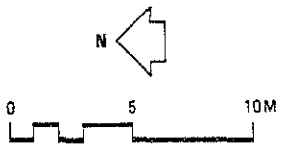

3RD FLOOR PLAN

6

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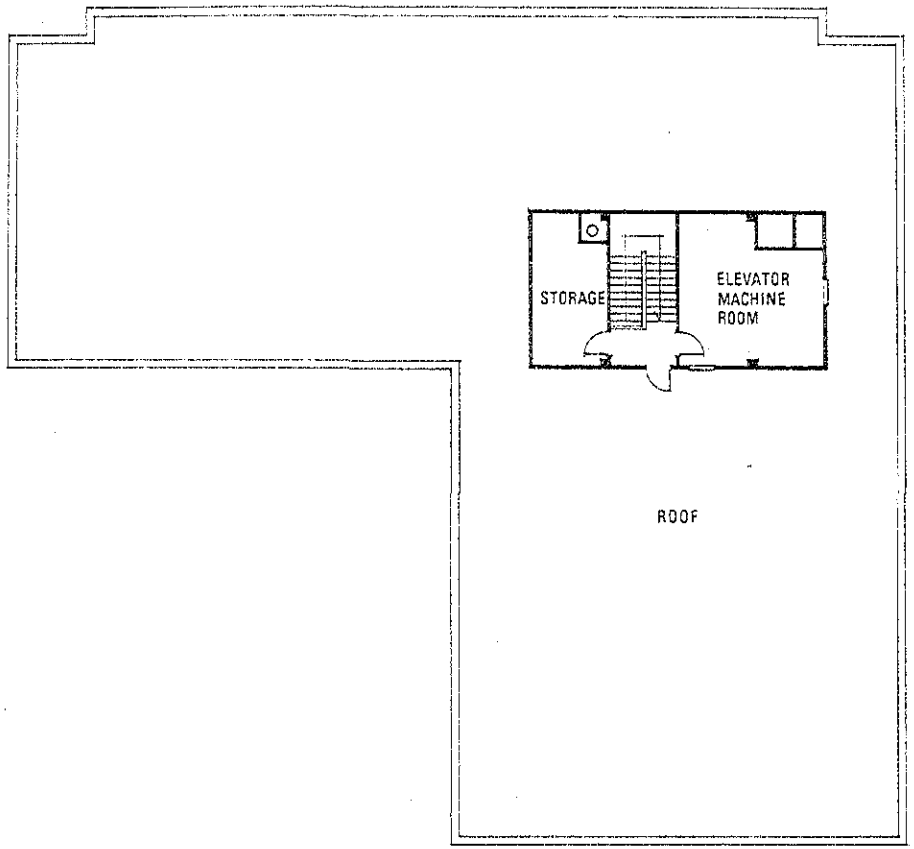

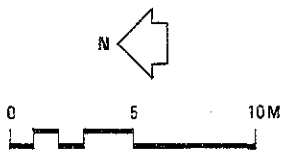

PENTHOUSE PLAN 7

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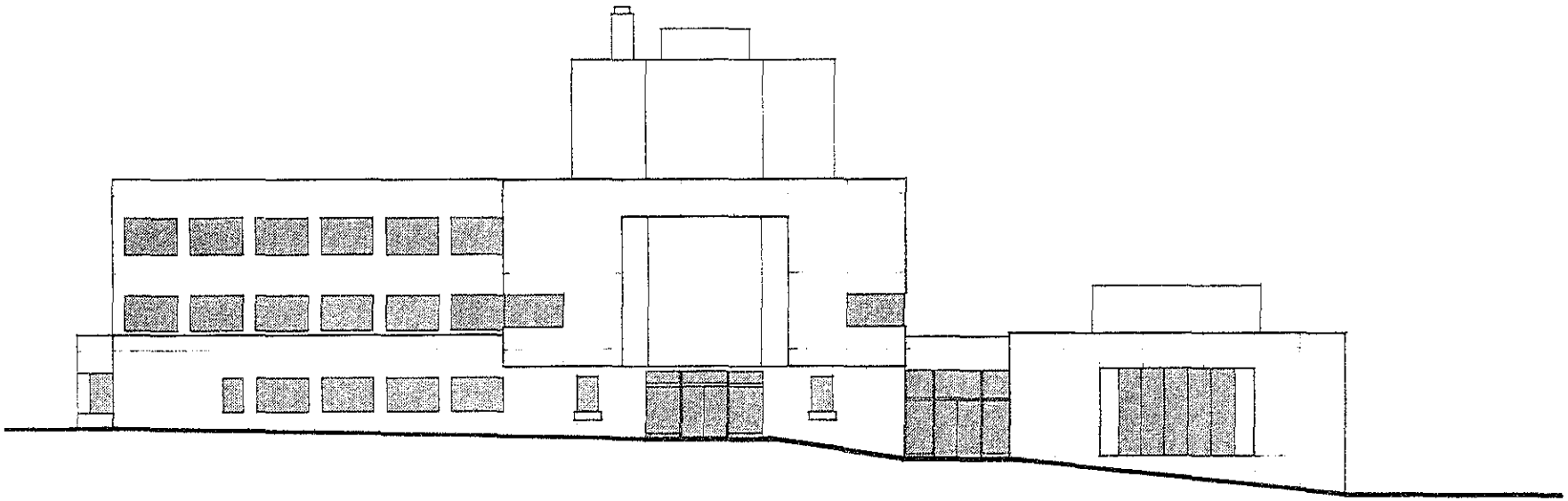

WEST ELEVATION 8

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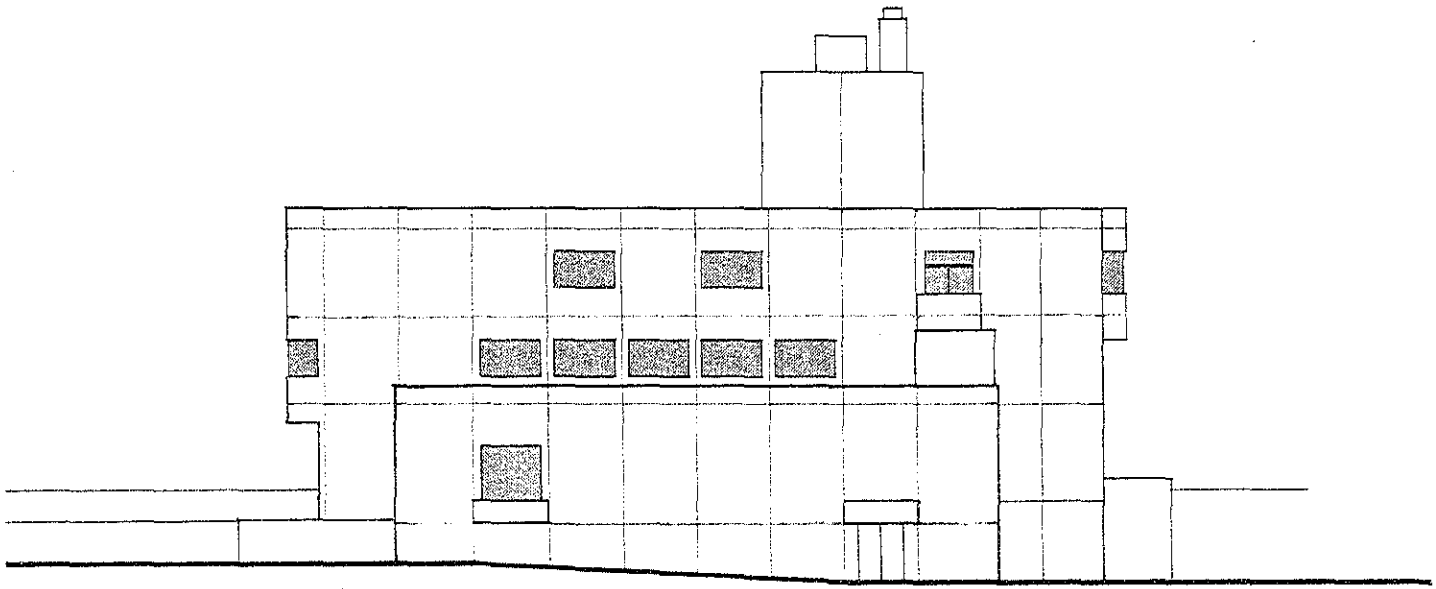
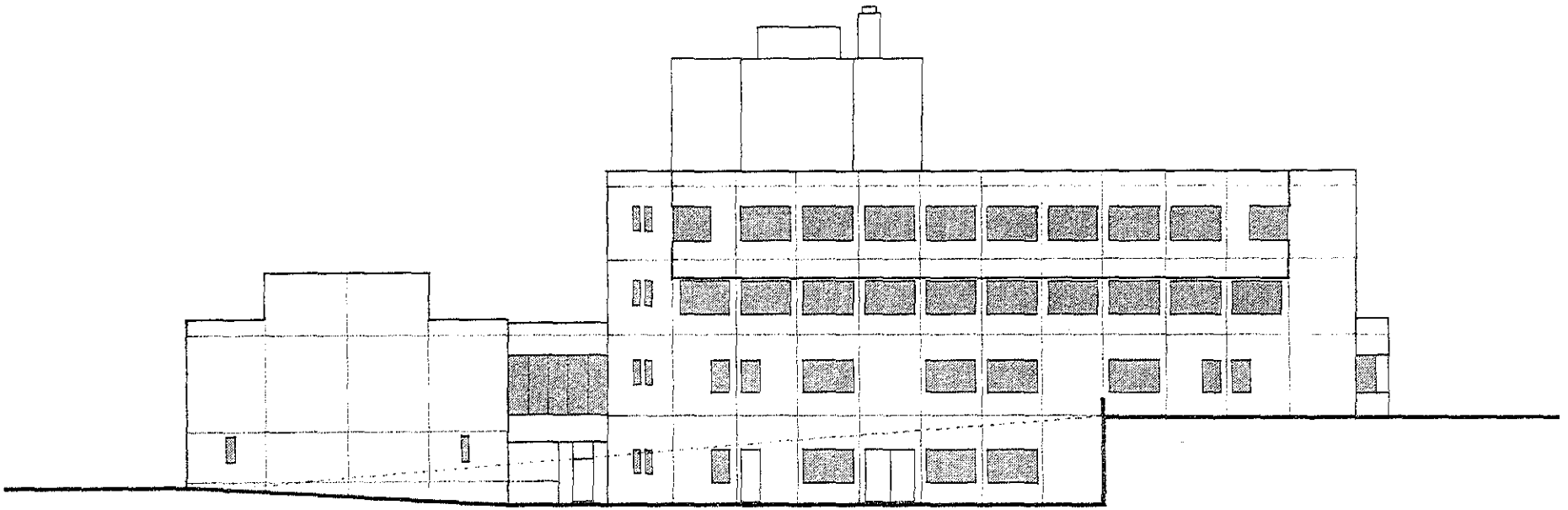


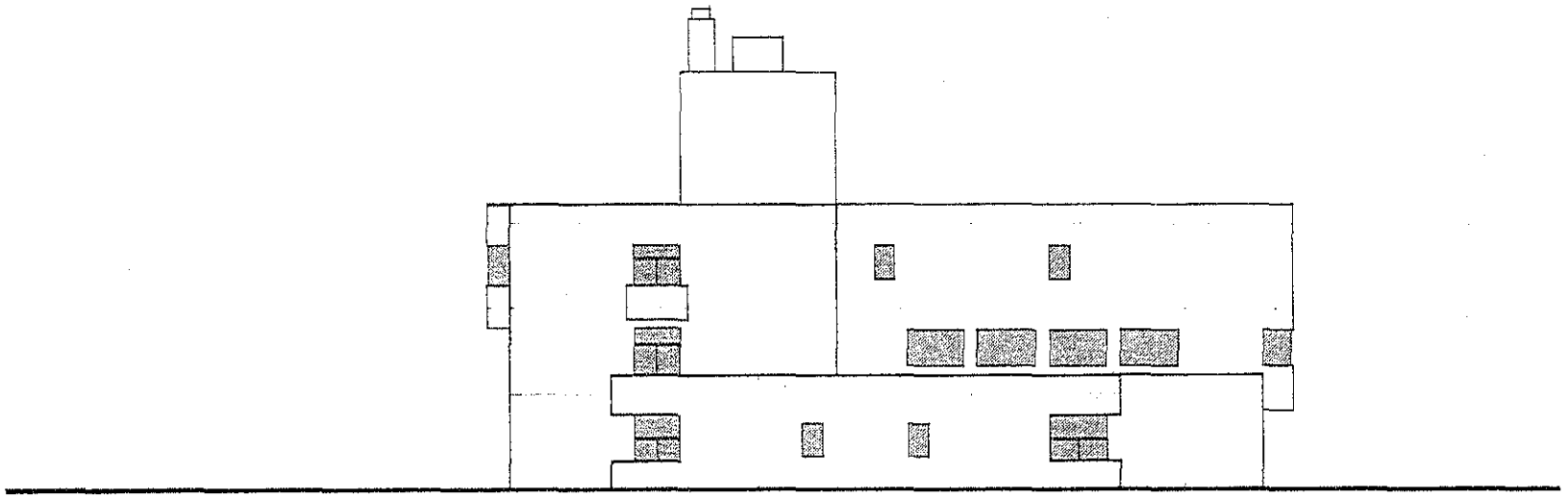
SOUTH ELEVATION 9

GASTRO-ENTEROLOGICAL RESEARCH CENTER LA PAZ, BOLIVIA



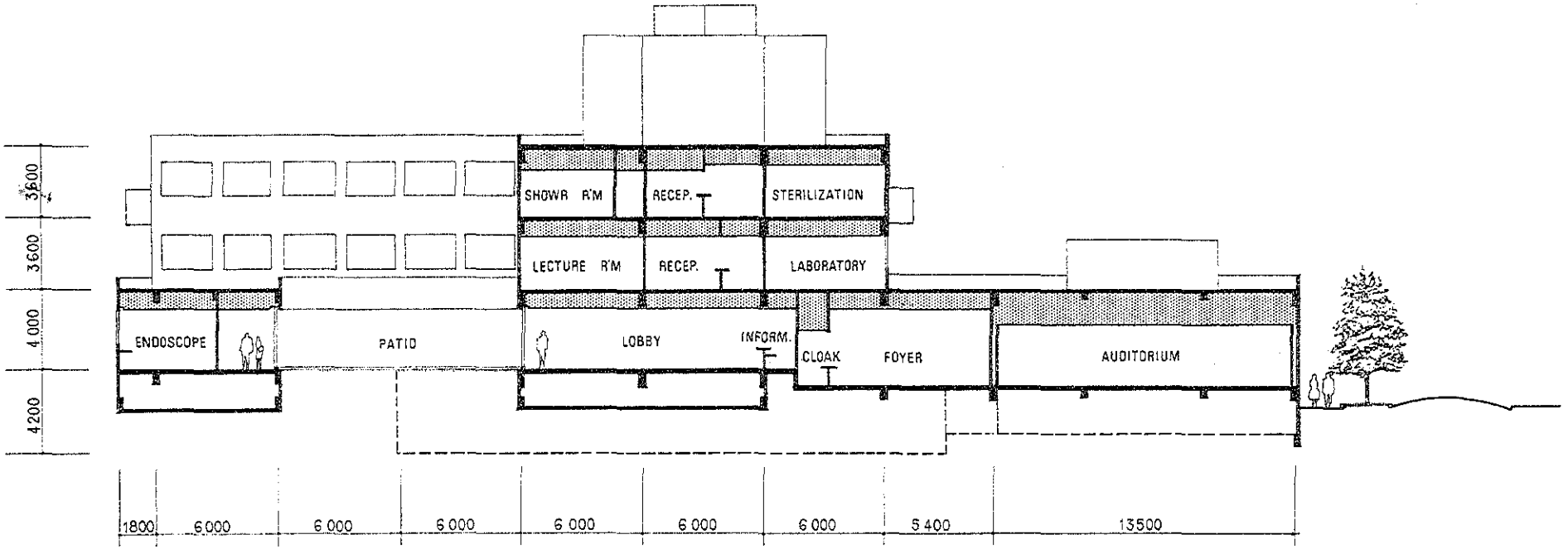
EAST ELEVATION 10

GASTRO-ENTEROLOGICAL RESEARCH CENTER LA PAZ, BOLIVIA



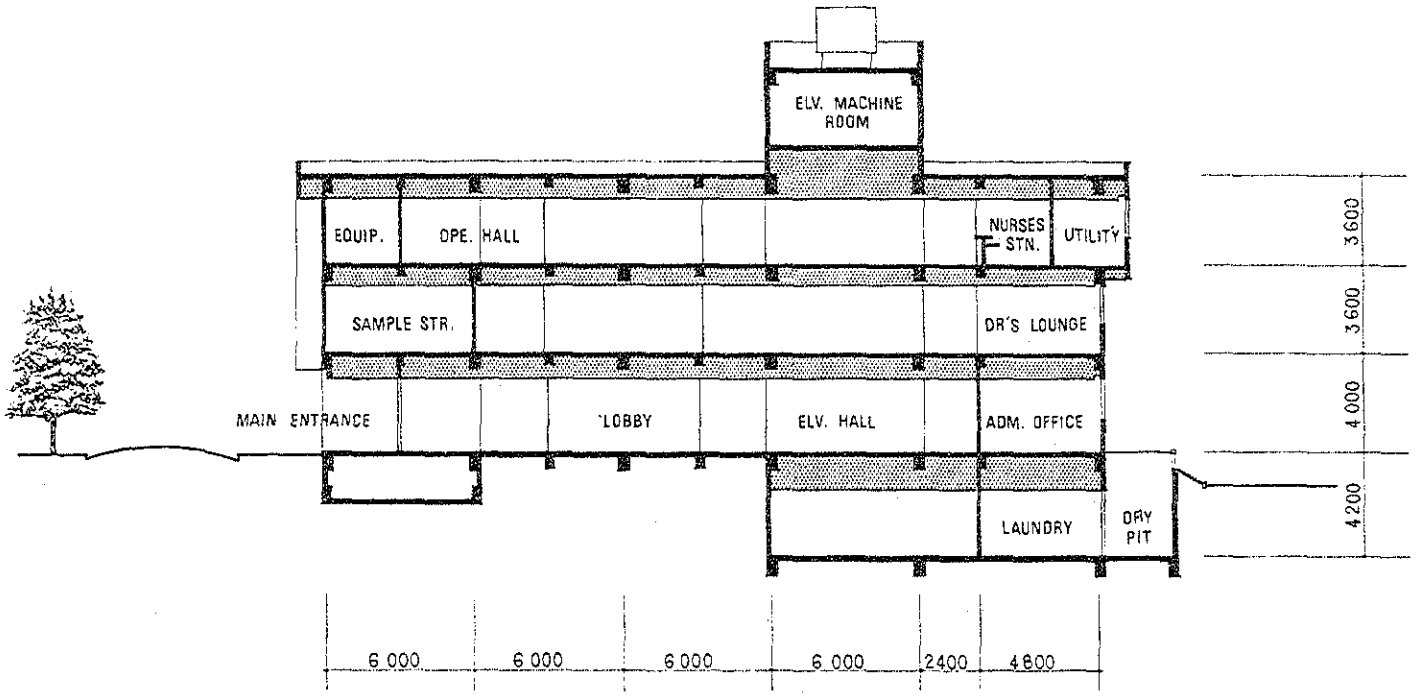
NORTH ELEVATION 11

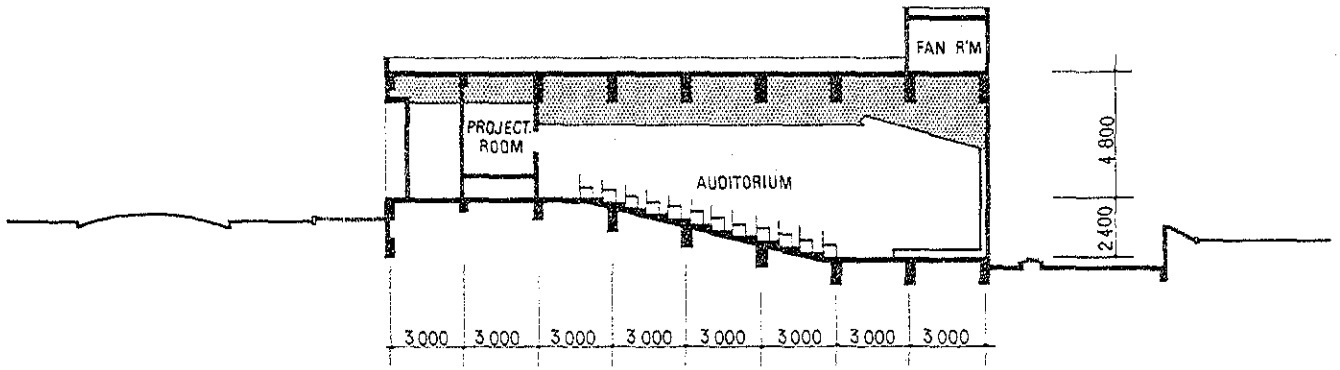
GASTRO-ENTEROLOGICAL
RESEARCH CENTER
LA PAZ, BOLIVIA



SECTION (1) 12

GASTRO-ENTEROLOGICAL RESEARCH CENTER LA PAZ, BOLIVIA





SECTION (2)

13

GASTRO-ENTEROLOGICAL RESEARCH CENTER LA PAZ, BOLIVIA

(14) Floor Area Summary

Total Floor Area		3,760 m^2	(Excl. Garden)
1st Floor	Outpatient Consultation	120 m^2	
	Endoscope Dept.	78 m^2	
	X-ray Dept.	232 m^2	
	Administrative Area	149 m^2	Incl. Lounge, Pantry
	Public & Service Area	449 m^2	Excl. 72m of Garden
	Auditorium	302 m^2	Incl. Stage, Stage-sides, Projection Room
	Public & Service Area	234 m^2	for Audi. only
	Total (1F)	1,564 m^2	
2nd Floor	Doctors' Study Area	230 m^2	
	Laboratory Area	270 m^2	Incl. Dark Room
	Lecture Room	56 m^2	
	Bed Rooms	32 m^2	Two Bed Rooms
	Administrative Area	58 m^2	Directors' Offices
	Public & Service Area	221 m^2	Incl. Ventilating Machine Room for Audi.
	Total (2F)	867 m^2	
3rd Floor	Hospital Ward Area	347 m^2	Incl. Nurses Stn., Day-lounge
	Operating Dept.	270 m^2	
	Sterilization	64 m^2	
	Public & Service Area	194 m^2	
	Total (3F)	875 m^2	
Basement Floor	Machine Room	148 m^2	
	Laundry	31 m^2	
	Kitchen	49 m^2	
	Janitor's Area	31 m^2	
	Miscellaneous	117 m^2	Elv., Staircase & Circulation
	Total (BF)	376 m^2	
Penthouse		78 m^2	

4-3 Construction Cost Estimate

Work Classification	Description	Amount (¥)
Architectural Work	Reinforced concrete frame work, Architectural finish incl. standard fixtures.	335,400,000
Electrical Work	Transformation, stand-by generator, distribution panels, lighting, telephone, public address system, nurse call, interphone, etc.	117,200,000
Water Supply, Drainage and Sanitation	Water and hot water supply, drainage system, sanitary fixtures and gas supply, etc.	47,000,000
Heating and Ventilation System	Heating and ventilation system for the general area and ward area.	65,200,000
Air-conditioning System	Air-conditioning system for the operating rooms.	8,400,000
Elevator Installation	Elevator for stretcher and dumbwaiter.	9,500,000
Special Equipment	Autoclave, shadowless light, kitchen and laundry appliances, hard water softening equipment, septic tank, fire extinguishers, etc.	28,300,000
Sub Total (Total Construction Cost)		611,000,000
Design Fee and Supervisory Service Expense		89,000,000
Total		700,000,000

The Construction Cost Estimate of the Research Center is based on the following terms:-

1) The figures are those of June 1977.

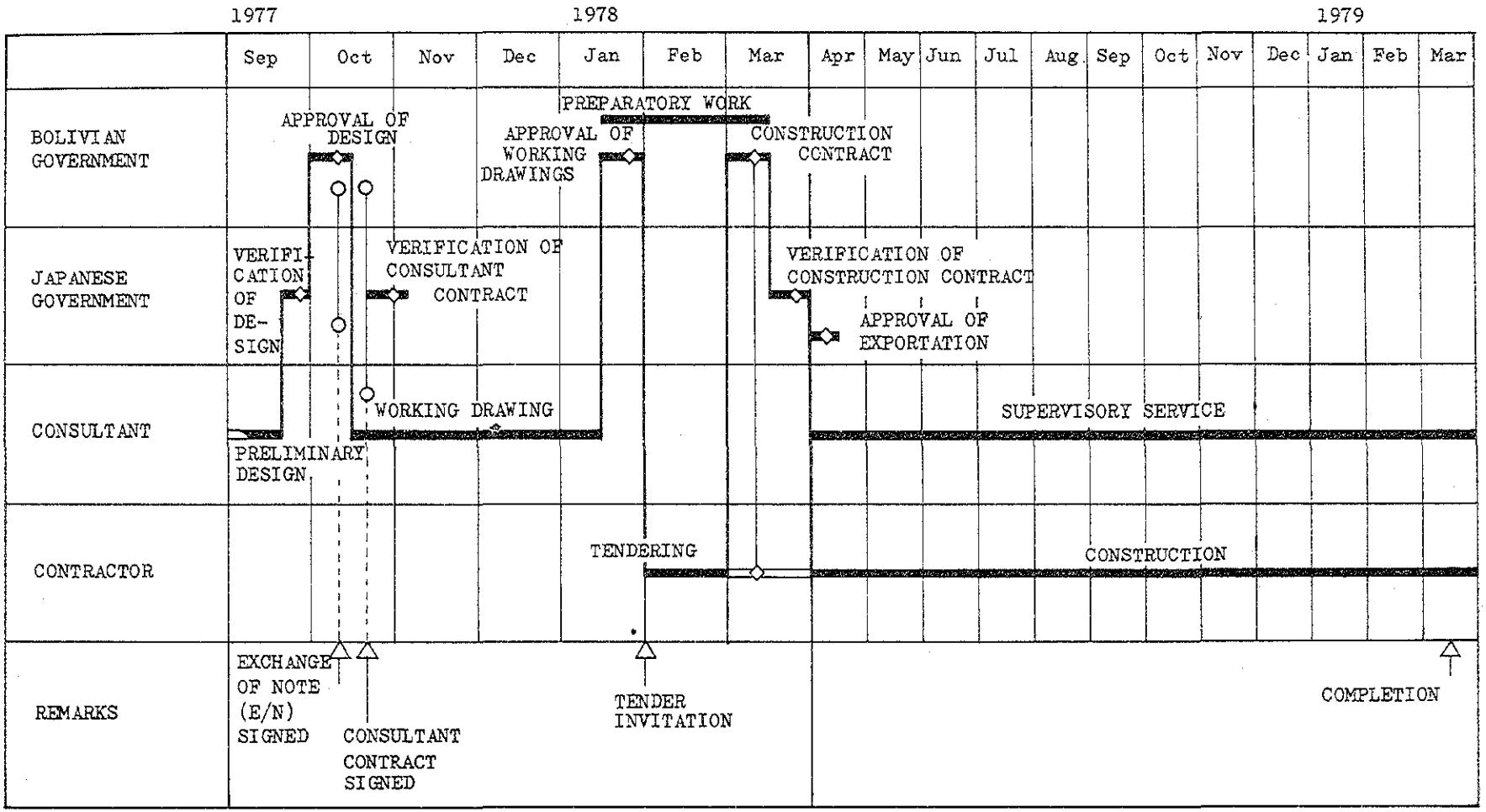
2) The exchange rate is assumed to be:

US$ 1.00 = $b 20 = 280 yen

3) Concerning prices of building materials and wages of construction workers, information obtained from la Camara Boliviana de la Construccion and Ministerio de Urbanismo y Vivienda has been used.

4) Japanese personnel and contractor directly concerning with the construction are assumed to be tax exempt.

4-4 TIME SCHEDULE



4-5 Scope of Work

In the construction of the Research Center, the scope of work to be done by the Bolivian side is as follows:-

(1) Preparation of the building site:-

Removal of the existing fence and buried obstacles if any, transplanting of the existing trees, relocation of the electrical poles and cable (incl. electrical cable underground if required), etc.

(2) Construction of temporary road for the construction work.

(3) Maintenance of temporary electricity required for the construction work.

(4) Maintenance of temporary water supply and sewage piping required for the construction work.

(5) Provision of electricity --

Leading up to the transformer in the electrical room.
(Plus the guarantee fee)

(6) Provision of telephone service --

Leading up to the MDF. in the administrative office.
(Plus the guarantee fee)

(7) Provision of city water --

Leading up to the exterior wall of the building.

(8) Provision of the sewage piping --

Leading up to the exterior wall of the building.

(9) Exterior work --

Tree planting, paving, etc. in the periphery of the building.

(10) Construction of the main access road (from Avenide Saavedra), the peripheral road and the parking area.

Any registration and clearance, concerning this construction activity, required under the Bolivian domestic law and regulation should be undertaken by the Bolivian side.

Reference Material

LIMS Ingenieros Consultores

ESTUDIO GEOTECNICO

CLIENTE : J.I.C.A.

OBRA : ESTUDIO GEOTECNICO

UBICACION: HOSPITAL DE CLINICAS (MIRAFLORES)

1.- El presente estudio geotécnico ha sido efectuado a solicitud del Dr. Toshihiko Kamegai, Jefe de la Misión J.I.C.A. del Japón a fin de investigar las propiedades mecánicas del sub-suelo del área ubicada / en el Hospital de Clínicas donde se proyecta la / construcción de un Centro Médico de Gastroenterología.

2.- Se realizó la investigación por medio de la excavación de 2 pozos a cielo abierto (ver plano de ubicación) de acuerdo a las especificaciones detalladas a continuación:

Pozo	Profundidad
1	5.50 mts.
2	4.50 mts.

3.- En los mencionados pozos se tomaron muestras cada metro y cambio de material para realizar ensayos / de laboratorio; asímismo, se efectuaron ensayos de penetración dinámica (Standard Penetration Test) de acuerdo a las siguientes normas de trabajo.

Peso del martinete : 65 Kg.
Altura de caída : 75 cm.
Penetración : 30 cm.
Punta de cono : 15 cm2.

/2.-

4.- Adjuntamos cuadros de resúmenes de ensayos, perfiles individuales de cada pozo con diagrama de penetración así como un corte de correlación geotécnica.

5.- Los pozos de investigación muestran una excelente correlación (ver perfil A-A'), encontrandose material clasificado como grava arenosa correspondiente a la denominada "Grava Miraflores", un sedimento de origen fluvio-glacial y cuyo espesor en esta zona es apróximadamente 20 mts, se trata de un suelo de excelentes propiedades mecánicas con porcentaje de asentamientos muy bajos; se encuentran clastos sub-redondeados de / composición predominantemente granítica y con / diámetros de hasta 50 cm..

Los ensayos de penetración dinámica clasifican su compacidad como suelta.

6.- En ninguno de los pozos hasta la profundidad investigada, se encontró nivel freático.

7.- En consideración a todos los análisis efectuados recomendamos, ubicar las fundaciones sobre pasando la zona de relleno o sea a una profundidad de 2.00 mts. utilizando una fatiga admisible de 2.2 kg/cm2.

La Paz, 1°de Julio de 1977

Ing. Carlos Abán Gutiérrez
G E R E N T E

CUADRO DE ENSAYOS

CLIENTE: J.I.C.A.

UBICACION: Av. Saavedra (Hospital de clínicas)

OBRA: EDIFICIO DE GASTROENTEROLOGIA

POZO	PROF. MTS.	HUMEDAD NATURAL	TAMICES % QUE PASA										LL	IP	GOLPES/30	FATIGA ADMISIBLE Kg/Cm2
			2	1 1/2	1	3/4	3/8	4	10	40	100	200				
1	1.00			R	E	L	L	E	N	O						
	2.00		100	90	72	55	46	39	34	26	22	18	NP	NP	10	2.2
	3.00		100	92	63	50	39	25	16	6	3	2	NP	NP	10	2.2
	4.00			100	88	82	61	42	27	10	5	3	NP	NP	12	2.5
	5.00		100	98	86	74	62	56	39	20	12	2	NP	NP	14	2.7
2	1.00			R	E	L L	E	N	O							
	2.00		100	92	80	74	56	40	26	9	3	2	NP	NP	18	3.2
	3.00			100	89	84	72	59	46	18	6	3	NP	NP	10	2.2
	4.00		100	91	71	60	43	30	21	6	2	1	NP	NP	12	2.5
	4.50		100	90	70	50	42	40	25	18	12	2	NP	NP	12	2.2.

LIMS

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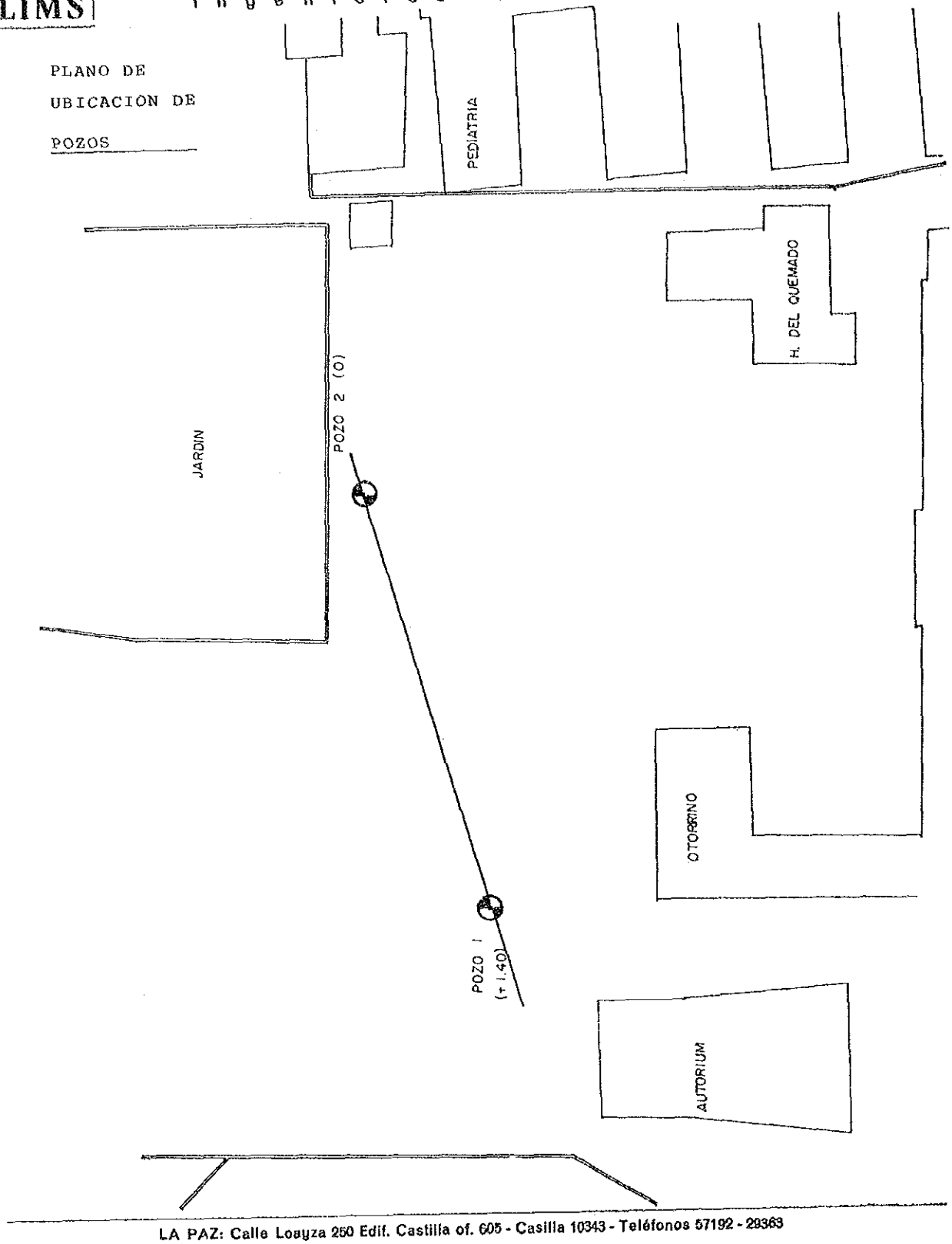
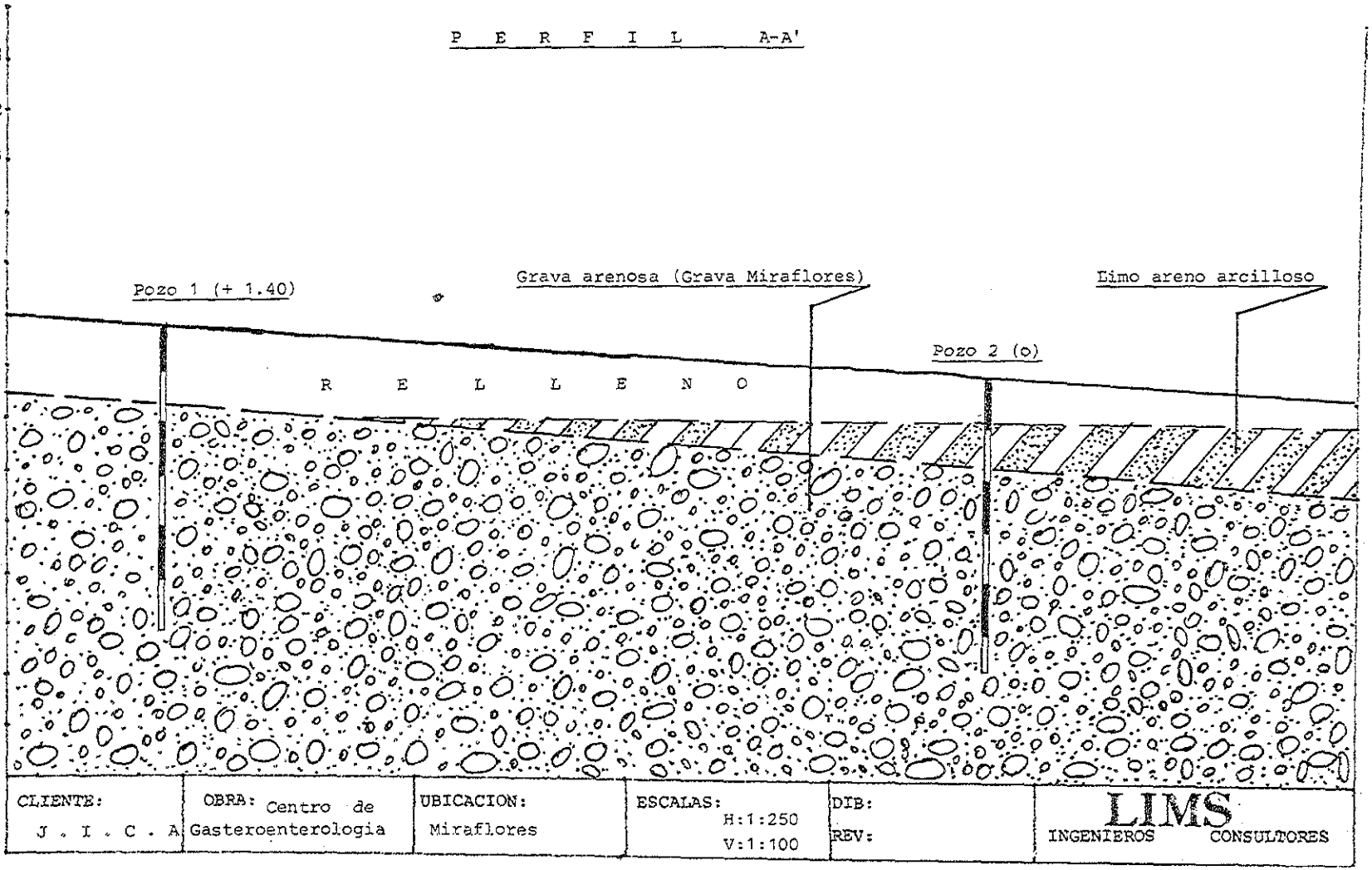
PLANO DE
UBICACION DE
POZOS



LA PAZ: Calle Loayza 250 Edif. Castilla of. 605 - Casilla 10343 - Teléfonos 57192 - 29363


P E R F I L A-A'
1
2
3
4
5
5
7
8
9
10
11
12
13
14
Pozo 1 (+ 1.40)
Grava arenosa (Grava Miraflores)
Limo areno arcilloso
Pozo 2 (o)
R E L L E N O
CLIENTE:
J . I . C . A
OBRA: Centro de Gasteroenterologia
UBICACION:
Miraflores
ESCALAS:
H:1:250
V:1:100
DIB:
REV:
LIMS
INGENIEROS CONSULTORES

LIMS
Ingenieros Consultores

PERFIL DE SONDAJE

Local: HOSPITAL DE CLINICAS
Tipo de Obra: ESTUDIO GEOTECNICO

Inicio: 24/6/77
Tipo de Pozo: Excavado

FECHA:
Fin: 27/6/77
Cota: (+ 1.40)

Cliente: J.I.C.A.
Inicial: NO SE

Pozo Nº : I
N.A. 24 hrs.:
Final: ENCONTRO

Prof.	Golpes 1	2	3	Esp. Horiz	Perfil Geol.	mts	Penetración/30 4 8 12 16 20	CLASIFICACION DEL MATERIAL
				1.70		1		R E L L E N O
1.70								
	5	5	7			2		Grava arenosa, amarillenta, suelta, poco húmeda, clastos de 20 cm. de diámetro. Desde los 3.00 mts. los clastos son hasta de 40 cm. de diámetro de composición granítica y cuarcítica.
	4	6	7	5.50		3		
	5	7	10			4		
	8	6	9			5		
5.50						6		
						7		
						8		
						9		

LIMS
Ingenieros Consultores

PERFIL DE SONDAJE

Local: HOSPITAL DE CLINICAS

Tipo de Obra: ESTUDIO GEOTECNICO

FECHA: Inicio: 24/6/77

Tipo de Pozo: EXCAVADO

Fin: 27/6/77

Cota: (+ 1.40)

Cliente: J.I.C.A.

Inicial: NO.SE

Pozo Nº : II

N.A. 24 hrs.:

Final: ENCONTRO

Prof.	Golpes 1	2	3	Esp. Horiz	Perfil Geol.	mts	Penetración/30 4 8 12 16 20	CLASIFICACION DEL MATERIAL
0.70				0.70				R E L L E N O
1.80				1.10		1		Limo areno arcillosa, segrusca, semi compacta, clastos de 2 cm. de diámetro un poco húmeda, plastica (relleno)
	9	9	16			2		Grava arenosa, amarillenta, suelta, clastos de hasta 30 cm. de diámetro de composición granítica y cuarcítica.
	5	5	7			3		
	5	7	8			4		
4.50	6	6	9					
						5		
						6		
						7		
						8		
						9		

Reference Material - II

Building Data Sheet

HOJA DE DATOS DE EDIFICIO

Nombre del Edificio				
Sitio				
Uso				
Proyectista				
Contratista				
Duracion de la Obra		Comi Termi Total meses		
Clase de Edificio	Area Total de Piso	m^2		
	Area de Piso Tipico	m^2		
	Pisos	Subterraneo Numero de Plantas		
	Altura	Altura Alero m Profundidad m		
	Acabado Exterior			
	Acabado Interior			
Caracteristicas de la Estructura	Tipo de Construccion			Observaciones
	Esfuerzo Admisible del Suelo			
	Tipo de Fundacion			
	Cantidad Hormigon	m^3	m^3 por m^2	
	Cantidad Encofrado	m^2	m^2 por m^2	
	Cantidad Barras de Refuerzo	tons	tons por m^2	
Costo de Construccion	1. Construccion			
	2. Instalacion Electrica			
	3. Instalacion Sanitaria			
	4. Instalacion Calefaccion			
	Costo Total			

ULTIMA HORA, sábado 11 de junio de 1977 Pág. 9

Con aporte del Japón de $us 5 millones se instalarán 3 centros de gastroenterología

Con 5 millones de dólares aportará el gobierno del Japón para la construcción y equipamiento de 3 centros o pabellones de gastroenterología en las ciudades de La Paz, Cochabamba y Chuquisaca, dentro de un plan de intercambio de relaciones entre Bolivia y el Japón.

Esta información fue revelada ayer durante la entrevista que sostuvo una comisión médica japonesa, presidida por el Dr. Toshihiko Kamegai, Profesor de la Escuela de Medicina de la Universidad de Toho, e integrada por los señores Shintaro Kuramoto, Profesor Asistente de la Escuela de Medicina.; Takayoshi Terai, Arquitecto Jefe del Departamento Médico; Isao Arikawa, Jefe de Información de la Oficina Médica del Ministerio de Salud; Yoichi Seki, Consejero de la Agencia Japonesa de Cooperación Internacional, y Hajime Murate, Mayoshi Funatsu, Masato Oakano, Shohei Katsumata, y Kohsaku Sera, de la firma Consultores, Ingenieros y Arquitectos de Nihon.

Durante la reunión de ayer el Dr. Kamegai formalizó los términos del convenio que sobre intercambio y asistencia técnica fuera firmado en noviembre del año pasado.

El Dr. Kamegai formuló los siguientes compromisos

1.- El gobierno del Japón proporcionará los fondos para construcción y equipamiento de los centros de gastroenterología a construirse en Cochabamba, La Paz y Chuquisaca, destinando 3 millones a la construcción y 2 millones al equipamiento.

2.- El gobierno del Japón se dispone a recibir a 2 médicos bolivianos becados por el gobierno del Japon, por el espacio de 3 años, pudiendo éstos ser ampliados si acaso se requiere de más conocimientos y experiencia.

3.- En lo posible, el gobierno del Japón está dispuesto a ampliar el número de becas, según las disponibilidades del gobierno de Bolivia.

4.- Del mismo modo, el gobierno del Japón enviará expertos japoneses durante los meses de noviembre o diciembre del presente año

5.- El gobierno del Japon vería con agrado que el Subsecretario de Salud Pública, Dr. David Gorena, realice una visita al Japón, para conocer los principales centros de investigación de la especialidad de gastroenterología y otros centros de salud.

6.- Similar al Comité Mixto formado en Bolivia, presididos por los doctores Hugo Palazzi, Juan Aliaga y Luis Salazar, el Japón formará otro Comité médico, con el objetivo de intercambiar experiencias e ideas sobre temas relacionados con las obras a realizarse en estos centros de gastroenterología.

Finalmente, el Dr. Kamegai ofreció la colaboración de la firma Consultores Ingenieros y Arquitectos Ninon para la realización de los planos y diseños de los mencionados centros.

Por su parte, el Ministro de Salud, Tcnl. Guido Vildoso, agradeció en elogiosos conceptos la asistencia que presta el gobierno del Japón y prometió agotar todos sus esfuerzos para proporcionar la ayuda y asistencia técnica que de parte de Bolivia se puede ofrecer para el cumplimiento de los planes anteriores.

Encomendó el ministro a los doctores Palazzi, Aliaga y Salazar la misión de trabajar al máximo con el proyecto, con la recomendación de que los médicos que logren las becas al Japón obligadamente retornarán al país para trabajar en los centros de gastroenterología a crearse.

Al concluir la entrevista, el Ministro Vildoso prometió seguir conversando sobre temas referentes al Convenio en cualquier momento disponible y deseó una grata permanencia en el país a la misión japonesa.

El ministro Guido Vildoso, el Dr. Hugo Palazzi y los miembros de la misión médica japonesa que visita La Paz.

La Paz, Bolivia, sábado 25 de junio de 1977

En La Paz

Japón construirá centro de gastroenterología

El Gobierno de Japón construirá y equipará gratuitamente en La Paz un Centro de Gastroenterología, según convenio suscrito ayer en la mañana entre el Ministerio de Previsión Social y Salud Pública y la Japan International Cooperation Agency (JICA).

La firma de los documentos se llevó a efecto a la 9,30 horas, en acto cumplido en el despacho del Ministro Guido Vildoso, quien lo hizo a nombre del gobierno, y el Dr. Toshihico Kamegai, en su condición de jefe de la misión que JICA envió a Bolivia para cumplir esa finalidad.

Los firmantes destacaron la importancia del acuerdo. El Ministro refirió que esa obra hará posible la formación de más y mejores recursos humanos en la especialidad de gastroenterología.

Dijo que el hecho es un motivo más en favor de las relaciones entre los médicos y los pueblos de Bolivia y Japón.

El Dr. Kamegai, catedrático de la Facultad de Medicina de Toho, coincidió con aquellos conceptos y añadió que su gobierno se sentía complacido por la concreción de un convenio de este tipo, en favor del avance de ambos pueblos.

El acuerdo se remonta al año pasado, cuando otra delegación del gobierno de Japón suscribió con autoridades bolivianas un documento de intenciones sobre planes de cooperación técnica.

La delegación de JICA, ahora presidida por el Dr. Kamegai, inició su visita a Bolivia el 9 de este mes. Desde entonces, se abocó a estudios destinados a la construcción del referido Centro de Gastroenterología.

Parte de esas actividades se refirieron a intercambio de ideas con autoridades gubernamentales, lo que ha permitido la firma de ese acuerdo.

LA OBRA

Los documentos firmados ayer expresan que el futuro Centro de Gastroenterología tendrá como objetivo básico servir a la investigación y a la docencia, a través de asistencia clínica en la especialidad, lo que se desarrollará a través de las labores docentes de la Facultad de Ciencias de la Salud de la UMSA y de los programas que para el efecto establezca el Ministerio de Previsión Social y Salud Pública.

El Centro de Gastroenterología será construido en terrenos cedidos por ese Ministerio, ubicados en el Hospital de Clínicas, dentro de condiciones técnicas modernas que garantizarán la armonía arquitectónica en el lugar.

Se ha especificado que ese centro contará con secciones de consulta externa, radiología, endoscopía, laboratorios, de cirugía, hospitalización y administración, además de sala de conferencias, de médicos, de equipos de calefacción y otras dependencias como ser cocina, lavandería y depósitos.

El gobierno de Bolivia se compromete, por su parte, a cumplir con los trámites legales que exija la construcción de la obra, preparar el terreno donde se hará la edificación, facilitar el desarrollo de la misma mediante la provisión de almacenes, vías de acceso, corriente eléctrica, agua y otros.

Para noviembre próximo, se ha fijado que llegarán a Bolivia los primeros equipos destinados al Centro de Gastroenterología y varios técnicos que tendrán a su cargo la dirección técnica de la obra.

CONVENIO DE COOPERACION.- El Ministro de Previsión Social y Salud Pública, Tcnl. Guido Vildoso, y el jefe de la misión de Japan International Cooperation Agency (JICA), Dr. Toshihico Kamegai (segundo y tercero desde la izquierda), firman el acuerdo por el que el gobierno del Japón se compromete a construir en La Paz un centro de Gastroenterología, sin cargo de reembolso. Otros componentes de la misión japonesa observan el acto.