

2-3-2 Basic Design

(1) 2nd-4th Floors: Lavatories, Shower Rooms, etc.

1) Lavatories

Architectural Design

The patient ward lavatories, which are the most worn out, are transferred to two locations on the external wall side of the building (between (A) - (B) and (1) - (3)) to achieve better ventilation and also to allow easy maintenance in the future. Each Lavatory consists of: Toilet for Men: 2 western-style toilet stool; Toilet for Women: 4 western-style toilet stools (out of which 2 is for infants) and 4 Arab-style toilet stools. The soiled water travels through horizontal piping under the floor up to the verandah area outside the building, where it is discharged below.

Electrical System Design

Damp-proof 40 W fluorescent lighting fixtures and one receptacle for vacuum cleaners are provided in each Lavatory. Power source is supplied to the ventilation system in each Lavatory.

Ventilating System Design

Exhaust fans are newly installed in the Lavatories. Air is exhausted through exhaust ducts connected to the louvers on the external walls of the Lavatories.

Plumbing System Design

Water supply and drainage systems are added in line with the construction of new Lavatories.

* Sanitary Fixtures: Toilet stool for men: 2 western-style

Toilet stools for women and infants:

4 western-style

(2 for infants)

4 Arab-style

Faucets

The vertical pipes for water supply, drainage and ventilation are exposed outdoors as a rule, thereby minimizing the use of horizontal piping concealed in the ceiling space. Soil water pipes are connected on the 1st floor level to the newly provided catch basin through the existing soil water pipes buried in the site.

2) Shower Rooms

Architectural Design

As in the case of Lavatories, the Shower Rooms are relocated to Axis (2) - (3) / (E) - (F) along the external walls of the building. 5 booths are installed. Soiled water is discharged from the verandah area, in the same manner as that for Lavatories.

Electrical System Design

Damp-proof 40 W fluorescent lighting fixtures are installed. 1 receptacle for vacuum cleaners and 3 receptacles for dryers are provided. Power source is supplied to the ventilating system for Shower Rooms.

Ventilating System Design

Exhaust fans are newly installed in the Lavatories and Shower Rooms. Air is exhausted through exhaust ducts connected to the louvers provided on each floor.

Plumbing System Design

Water supply, drainage and hot water supply systems are added in line with the newly constructed Shower Rooms.

- * Sanitary Fixtures: Shower faucets: 5

Drainage outlets are provided in each booth. Drainage pipes are horizontally drawn in the ceiling space and are connected outdoors to the exposed drainage stacks.

The vertical pipes for water supply, drainage and ventilation are exposed outdoors as a rule, along the external walls of the building, thereby minimizing the use of horizontal piping concealed in the ceiling space.

Drainage pipes are connected below the 1st floor level to the newly provided catch basin, through the existing soil water pipes buried in the site.

3) Play Rooms

Architectural Design

In accordance with the relocation of Laundry and Drying Room, the Play Rooms in (1) - (2) / (E) - (F) are relocated to (2) - (3) / (C) - (F).

Electrical System Design

40 W fluorescent lighting fixtures (D42pp) are installed in the Play Rooms to conform to the existing ones. Receptacles for vacuum cleaners etc. are provided where necessary in conformance with existing ones. Power source is supplied to the ventilating system in the Play Room.

Ventilating System Design

A new ventilating system is provided for the Play Rooms. Exhaust fans are installed on the Rooftop. Exhaust ducts descend from the Rooftop through the duct space between (C) and (D) of Axis (2), to the Play Rooms on the 2nd, 3rd and 4th floors.

Fresh air comes in from the louvers on the external walls on the Axis (5) side, and hanging air supply fans are provided in the ceiling space. The duct extends to the Play Rooms.

4) Mothers' Rooms

Architectural Design

Scale down the Mothers' Rooms to approximately one-half the former size, in view of the current usage frequency of the rooms, and relocate them so that they are situated

back-to-back with the Play Rooms.

Electrical System Design

40 W fluorescent lighting fixtures (D42pp) are installed in the Mothers' Rooms to conform to the existing ones. Receptacles for vacuum cleaners etc. are provided where necessary in conformance with existing ones. Power is supplied to the ventilating system in the Mothers' Rooms.

Ventilating System Design

Exhaust fans are installed on the Rooftop. Exhaust ducts descend from the Rooftop, through the duct space between (C) and (D) of Axis (2), to the Mother's Rooms on the 2nd, 3rd and 4th floors. Fresh air comes in from the louvers on the external walls on the Axis (5) side, and hanging air supply fans are provided in the ceiling space. The duct extends to the Mother's Rooms.

5) Nurse's Rooms

Architectural Design

The rooms, each having an area of 5.8 m x 5.8 m, are provided as resting space for nurses. The Japanese side installs the sinks whereas the Egyptian side provides the rest of the furniture.

Electrical System Design

40 W fluorescent lighting fixtures (D42pp) are provided in the Nurses' Changing Rooms. Receptacles for vacuum cleaners etc. are provided where necessary. Power source is supplied to the ventilating system in the Nurses' Changing Rooms. Panels that indicate emergency calls from Patient's Lavatories and Shower Rooms are installed in the Nurses' Changing Rooms.

Ventilating System Design

A new ventilating system is provided. Exhaust fans are installed on the Rooftop. Exhaust ducts descend from the Rooftop, through the duct spaces between (C) and (D) of Axis (2), to the Nurse's Rooms on the 2nd, 3rd and 4th floors.

Fresh air comes in from the louvers on the external walls on the Axis (5) side, and hanging air supply fans are provided in the ceiling space. The duct extends to the Nurse's Rooms.

Plumbing System Design

New sinks, as well as additional water supply and drainage systems, are provided. The vertical piping route for water supply, drainage and ventilation utilizes the pipe space between (C) and (D) of Axis (2), branches out on each floor, horizontally drawn in the ceiling space, and extended to necessary locations. The drainage pipes horizontally drawn below the 1st floor are connected to the existing catch basin located between (C) - (D).

6) Patient Wards

Architectural Design

The space vacated by the relocation of Shower Rooms, 2 Lavatories and Laundry is utilized as patient wards. Two Patient Wards (each with 6 beds) are located between Axis (4) - (5) / (B) - (E). The Patient Wards on the 3rd and 4th floors take advantage of the natural lighting from the Large Court.

Ceiling lighting fixtures, receptacles and detectors are installed in conformance to those in the existing Patient Wards. No nurse call devices are provided this time.

7) Laundry/Drying Room

Architectural Design

Relocate the Laundry/Drying Room to Axis (1) - (2) / (E) - (F) of the outward part of the building to achieve easier ventilation and maintenance.

Electrical System Design

Damp-proof 40 W fluorescent lighting fixtures are installed. Receptacles are provided in three locations each for washing machines and for dryers. Power is supplied for the ventilating system of the patients' Laundry.

Ventilating System Design

Additional ventilating systems are provided in the Laundry/Drying Room. As to air supply fans, ventilating fans are provided on the window side of Axis (F) of each floor, whereas exhaust fans are provided in the form of indoor exposed ceiling hanging fans. Indoor exposed exhaust ducts are provided to allow air to be exhausted from each floor.

Plumbing System Design

Additional water supply and drainage systems are provided in the Laundry/Drying Room. Vertical pipes for water supply, drainage and ventilation are exposed outdoors, along the external walls of Axis (F), thereby minimizing the use of horizontal piping concealed in the ceiling space.

Drainage pipes are reconnected below the 1st floor level to the newly provided catch basin, through the existing soil water pipes buried in the site.

8) Treatment Rooms

Architectural Design

The current layout of the facilities has 2 Nurse Stations, one on the Axis (B) side and another on the Axis (E) side, with a Treatment Room (one room) behind them. The new layout proposes 2 integrated Nurse Stations/Treatment Rooms so that treatment can be provided for each ward. The Japanese side installs the counter tables, hand-wash sinks, sinks and soil sinks, whereas the Egyptian side provides all other fixtures.

Electrical System Design

40 W fluorescent lighting fixtures (A42pp) are installed in the Treatment Rooms to

conform to the existing ones. Receptacles for medical devices are provided where necessary in conformance with existing ones. Power is supplied to the ventilating system in the Treatment Rooms.

Plumbing System Design

Water supply, hot water supply, and drainage systems are provided for the sinks and hand-wash sinks. Plumbing for water supply, drainage and ventilation are extended from the Nurses Room in Axis (5) to the Treatment Rooms. The vertical piping route for hot water supply utilizes the pipe space between (C) and (D) of Axis (2), branches out on the 2nd, 3rd and 4th floors, and are horizontally drawn in the ceiling space and extended to necessary locations.

Outlets for medical gas are provided. The existing plumbing is recycled as plumbing for medical gas.

9) Others

Architectural Design

Renovation work is carried out also for Lavatories other than (1) - (8).

Electrical System Design

Lighting fixtures and switches are renovated in accordance with the renovation of the ceiling.

Ventilating System Design

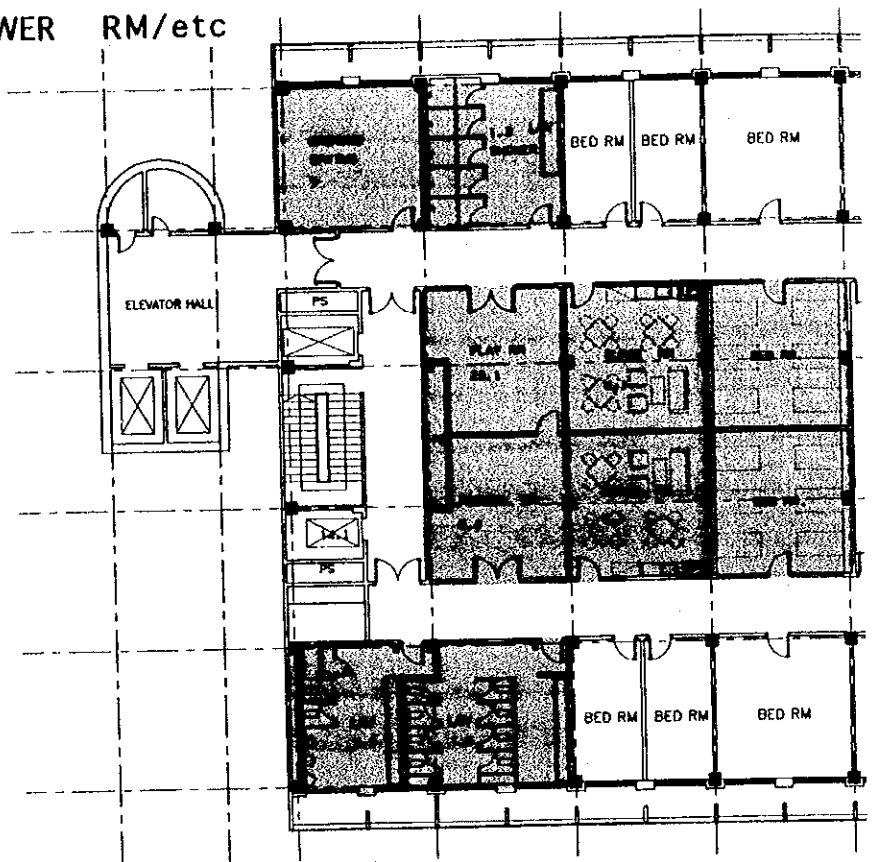
The air supply/exhaust fans and ducts for the Lavatories along Axis (12) - (13) are renovated. The capacity of the renovated air supply and exhaust fans is to conform to that of existing ones.

Plumbing System Design

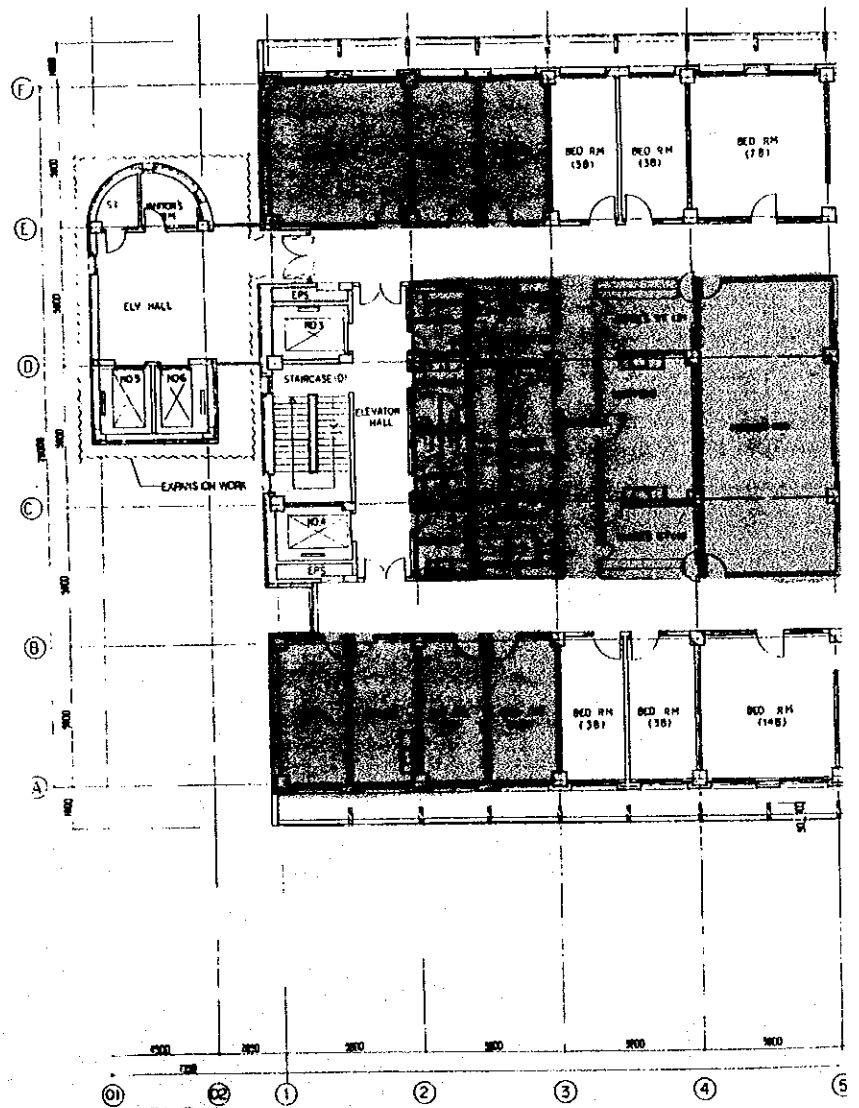
The sanitary equipment and piping for the Lavatories along Axis (12) - (13) are renovated.

2ND~4TH FL:LAVATORY/SHOWER RM/etc

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



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Plumbing System Design

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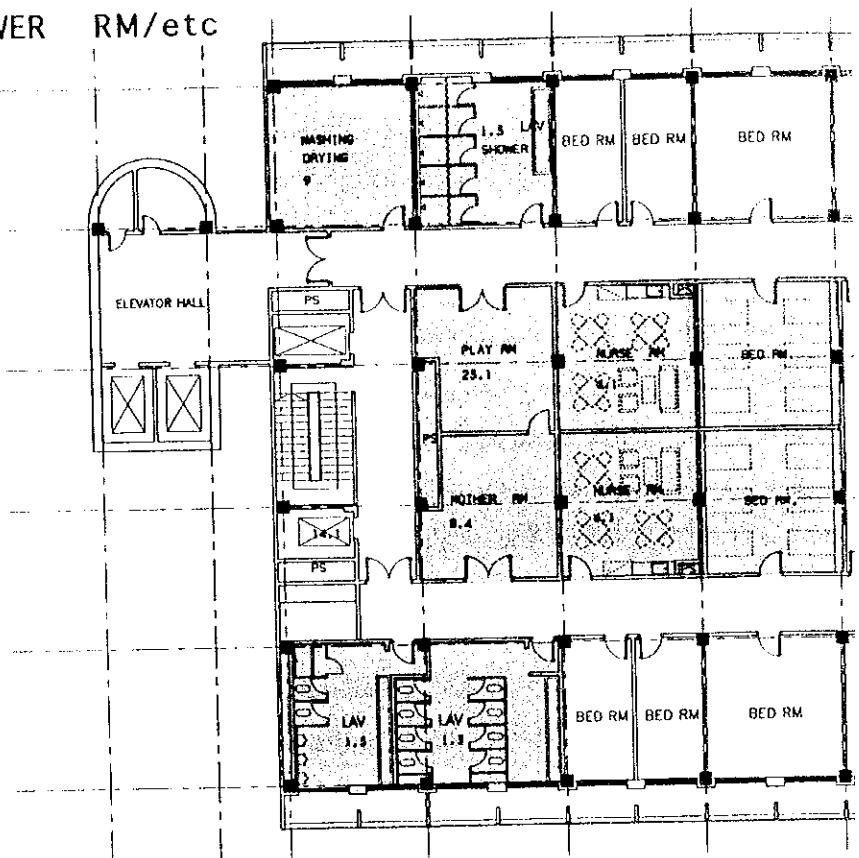
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Plumbing System Design

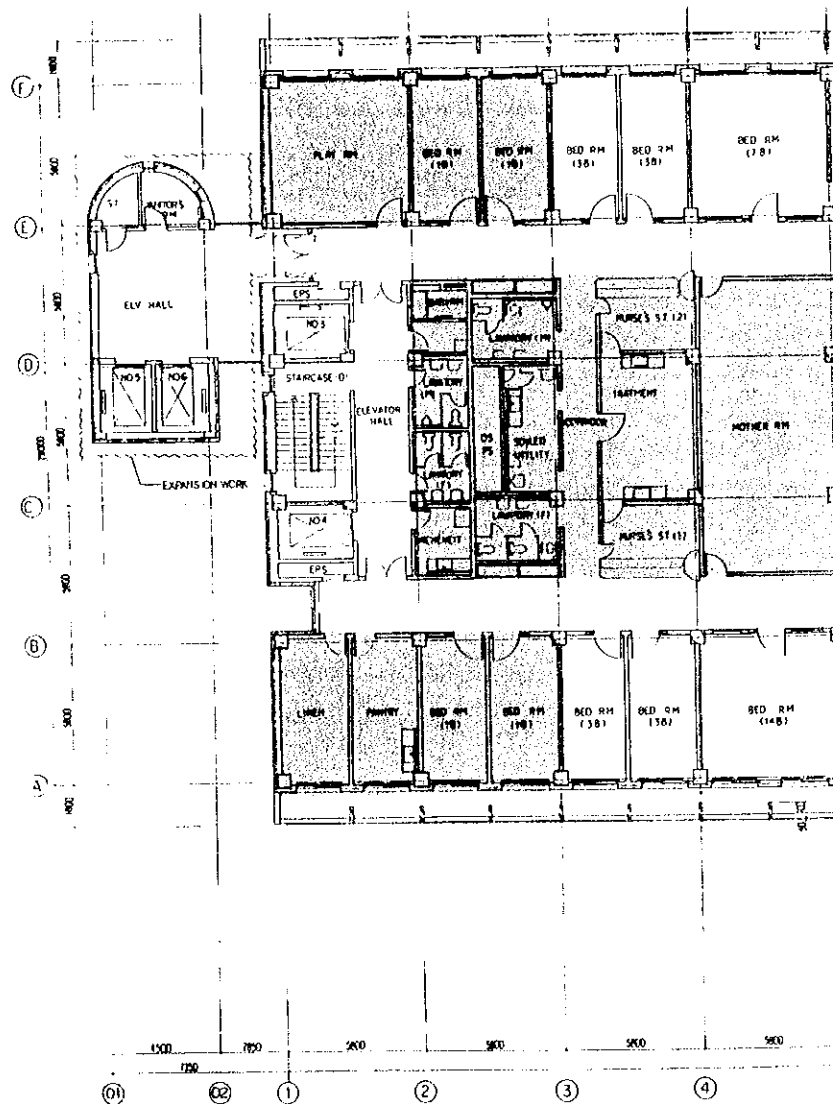
The sanitary equipment and piping for the Lavatories along Axis (12) - (13) are renovated.

2ND~4TH FL:LAVATORY/SHOWER RM/etc

[RENOVATED PLAN 1/300]

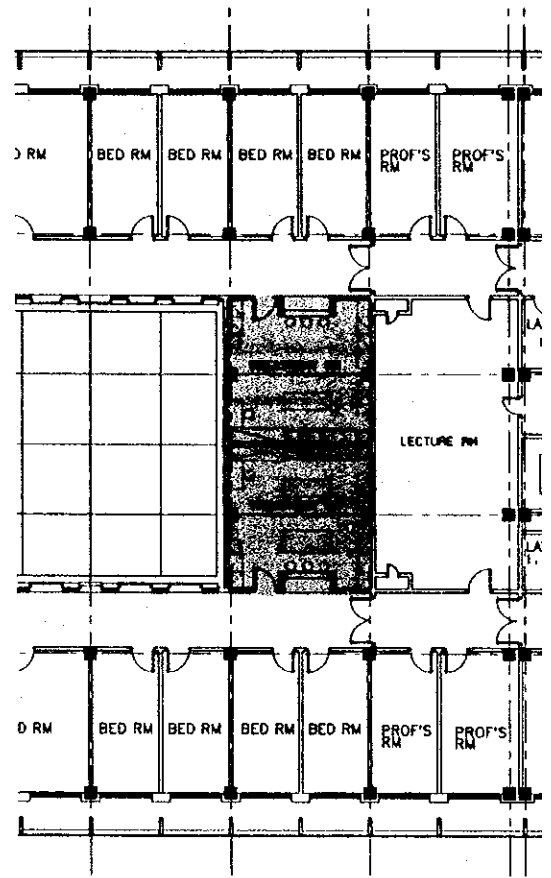


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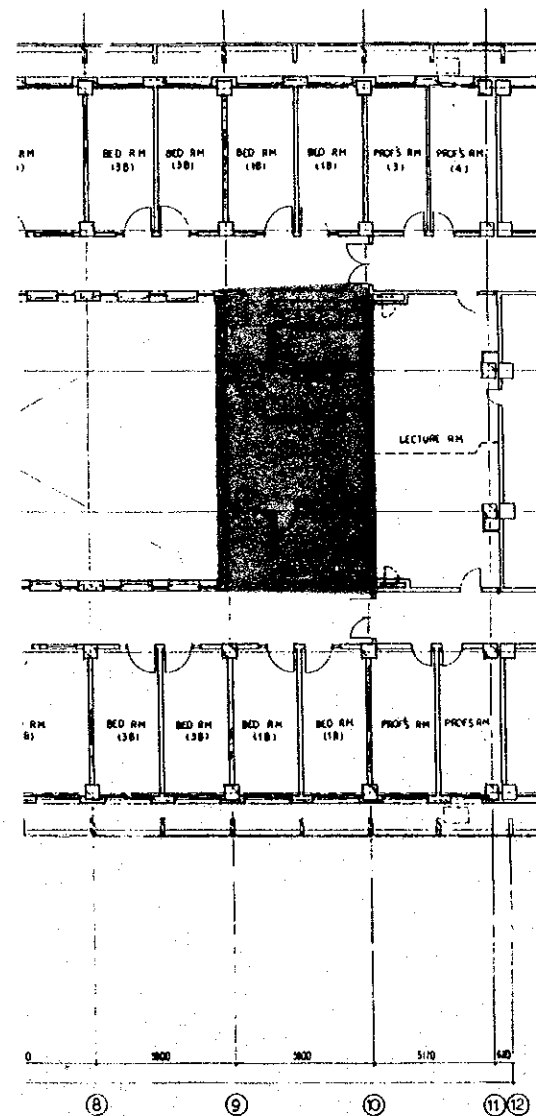


2ND~4TH FL: TREATMENT ROOM

[RENOVATED PLAN 1/300]

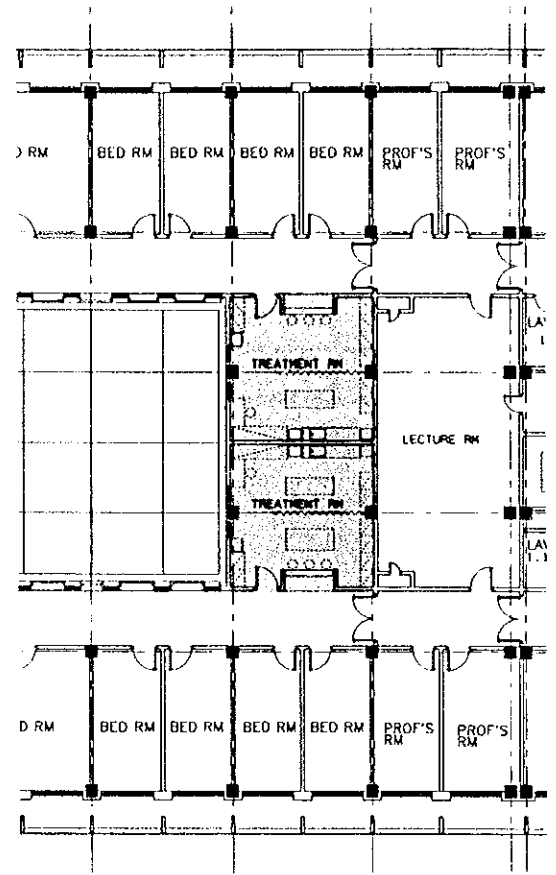


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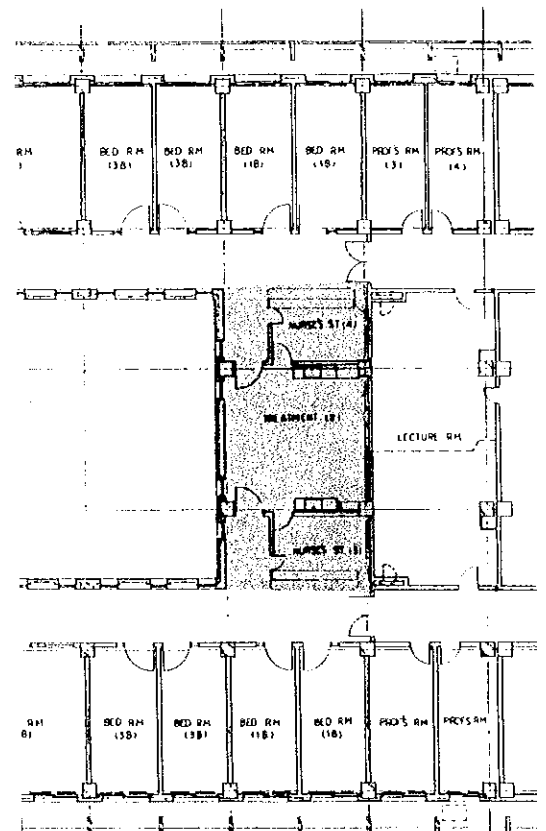


2ND~4TH FL: TREATMENT ROOM

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



(2) 1st Floors: Kitchen, Laundry

1) Kitchen

Architectural Design

No relocation of walls, etc. is required. However, the Japanese side undertakes cleaning of the ducts and refurnishing of the ceilings necessitated by the renovation works.

Electrical System Design

Lighting fixtures are renovated in accordance with the renovation of the ceiling.

Ventilating System Design

New air supply and exhaust fans (having the same capacity as the existing ones) are installed. All the air supply and exhaust ducts are cleaned up. Those that are too soiled with grease etc. for cleaning are removed and replaced with new ones.

2) Laundry

Architectural Design

The Japanese side undertakes refurnishing of the ceilings necessitated by renovation of ducts.

Electrical System Design

Lighting fixtures are renovated in accordance with the renovation of the ceiling

Ventilating System Design

New air supply and exhaust fans (having the same capacity as existing ones) are installed. The air supply and exhaust ducts are renovated, hoods are installed above the drying machines and press machines, and the existing route of the air supply and exhaust ducts is changed.

3) Storage (1)

Architectural Design

The space vacated by the relocation of Sterilization to the 4th floor is utilized as storage space.

(3) Basement Pit

Architectural Design

Steps for inspection are installed within the Basement Pit.

Electrical System Design

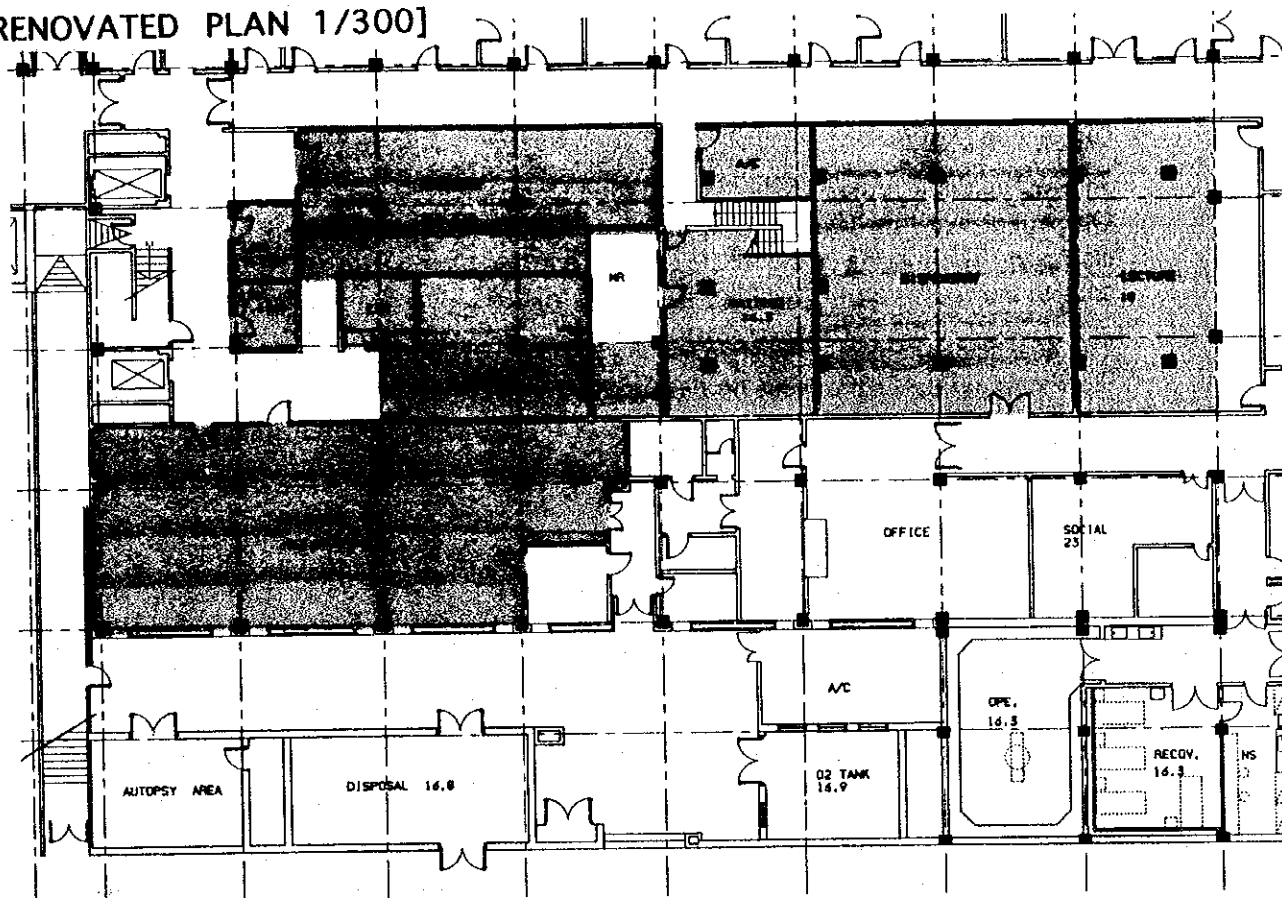
Lighting fixtures for inspection are installed within the Basement Pit.

Plumbing System Design

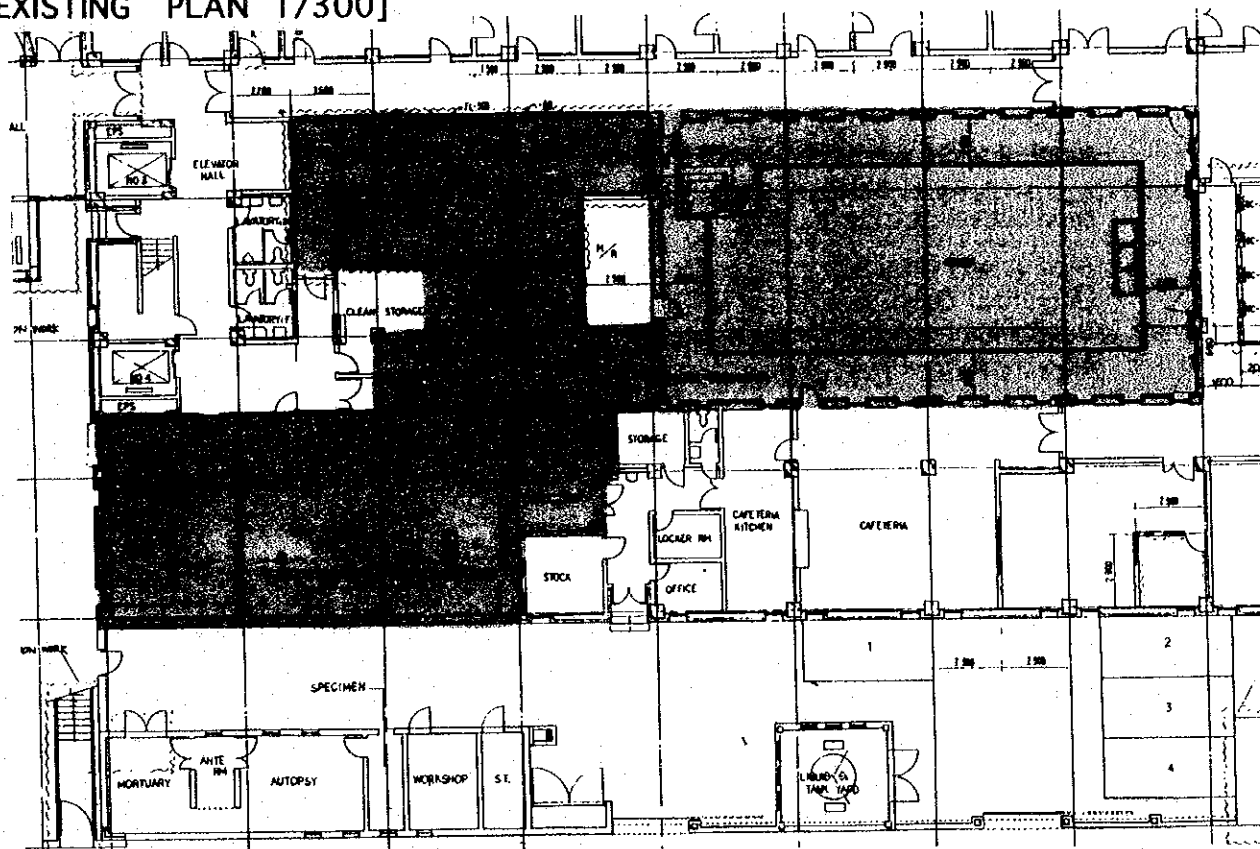
Underwater pumps for drainage are installed within the Basement Pit. The pumped up drainage are sent, through a catch basin, to the existing drain pipes buried in the site.

1ST FL:KITCHEN/LAUNDRY

[RENOVATED PLAN 1/300]

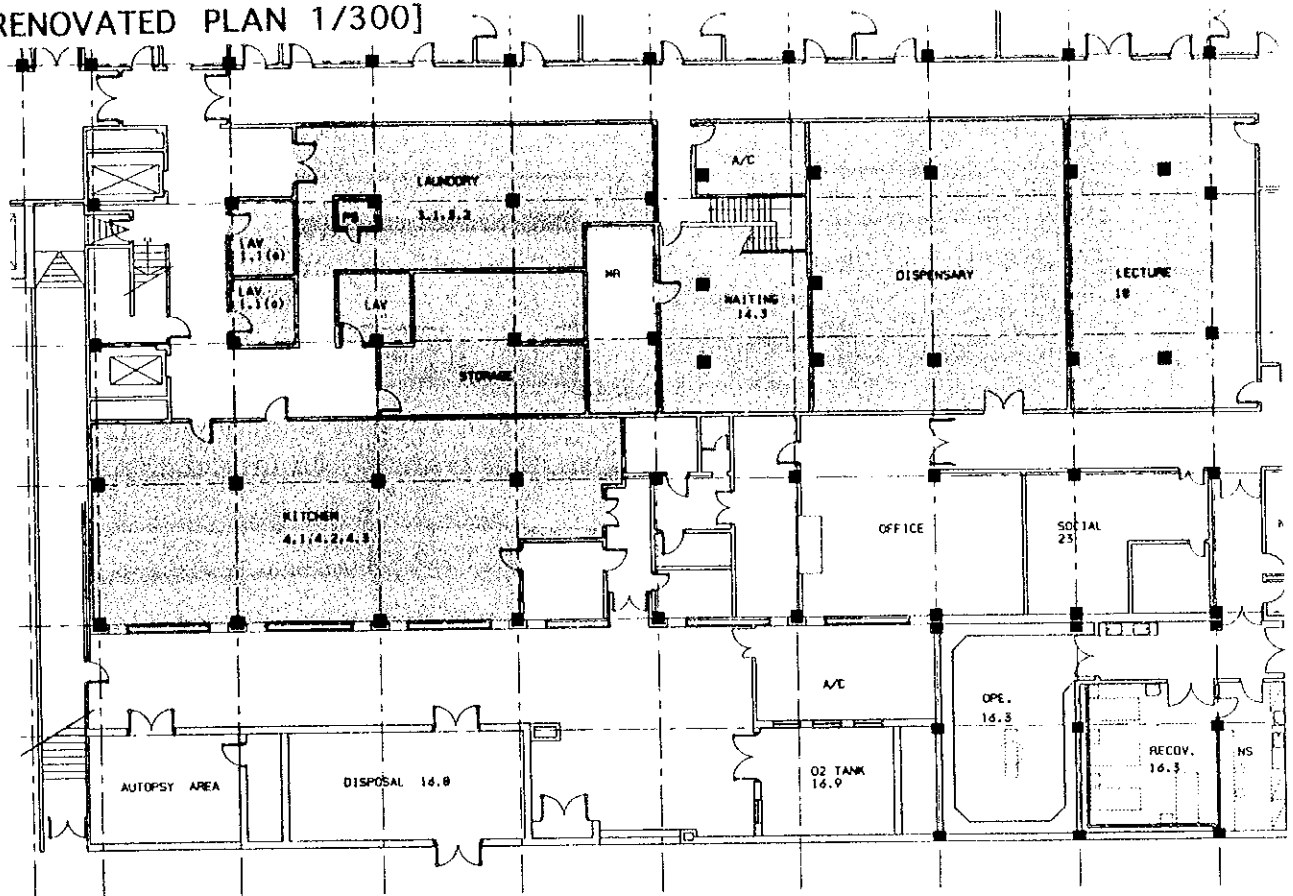


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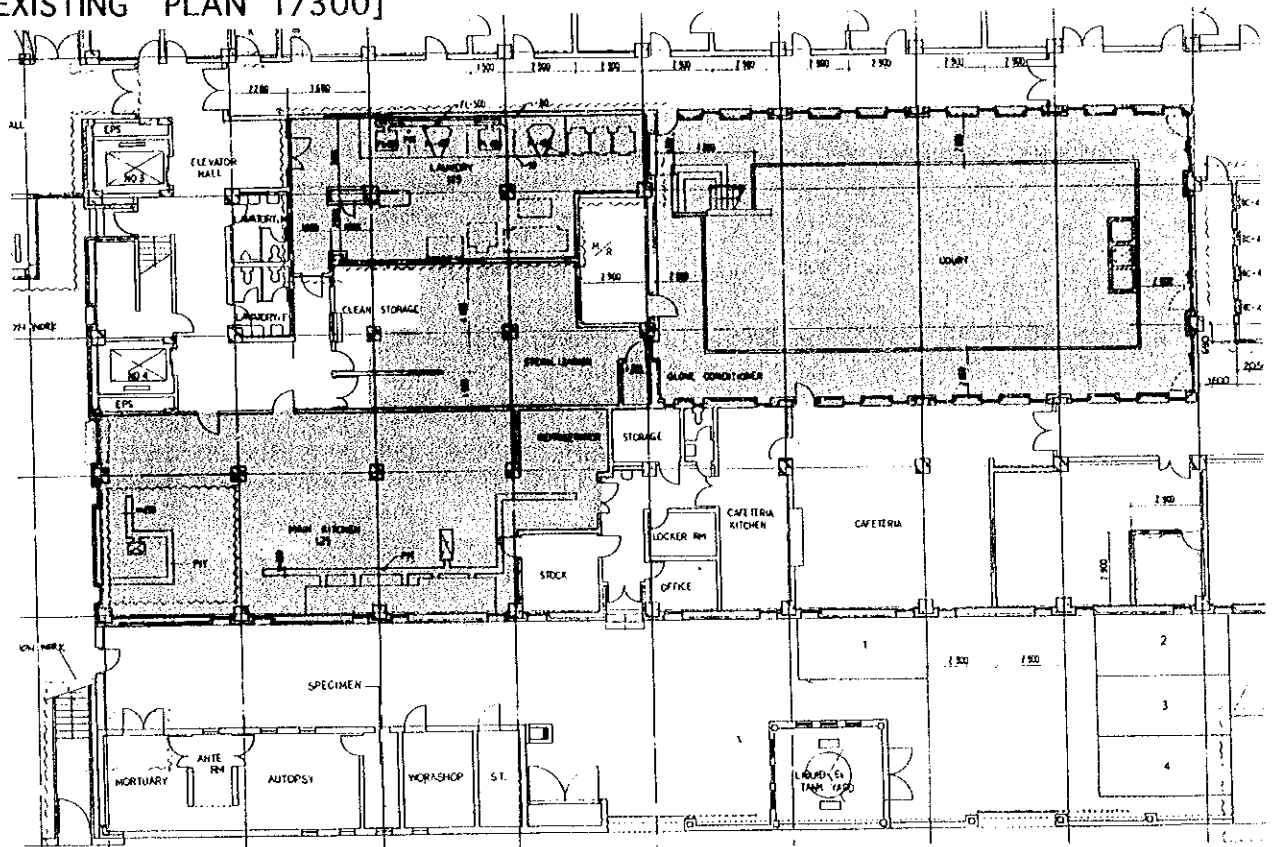


1ST FL: KITCHEN/LAUNDRY

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



(4) Outpatient Waiting Hall and Stairs to the Examination Department

Circulation Design

At present, one approaches the Examination Department on the 3rd floor by entering the Outpatient Waiting Hall, passing through the (14) / (C) door, and using the central staircase. The mixing of the traffic lines of doctors, nurses, students and visitors further adds to the confusion.

The new design relocates the staircase to (15) - (16) / (C) - (D) and directly connects it to the Examination Department on the 3rd floor, thereby separating the traffic lines and alleviating the congestion. A smooth flow is anticipated by providing stairs of sufficient width to connect the 1st and the 2nd floors that tend to be particularly overcrowded.

Architectural Design

(a) Outpatient Waiting Hall of the 2nd Floor

The (15) - (17) area of the (15) - (18) / (D) - (D) atrium is covered with a floor so that the Waiting Hall can be expanded.

(b) Outpatient Waiting Hall of the 3rd Floor

The current roof of the 2nd floor atrium is removed and a new floor is added so that the area can be used as an Outpatient Waiting Hall and Endoscope Room.

(c) Examination Department

Based on the reappraisal of the Examination Department between (14) - (16) / (D) - (E), an EEG/ECG Room is provided in (14) - (15) / (D) - (E) and a Bacterial Examination Room and Staff Room is secured in (14) - (16) / (E) - (F).

Electrical System Design

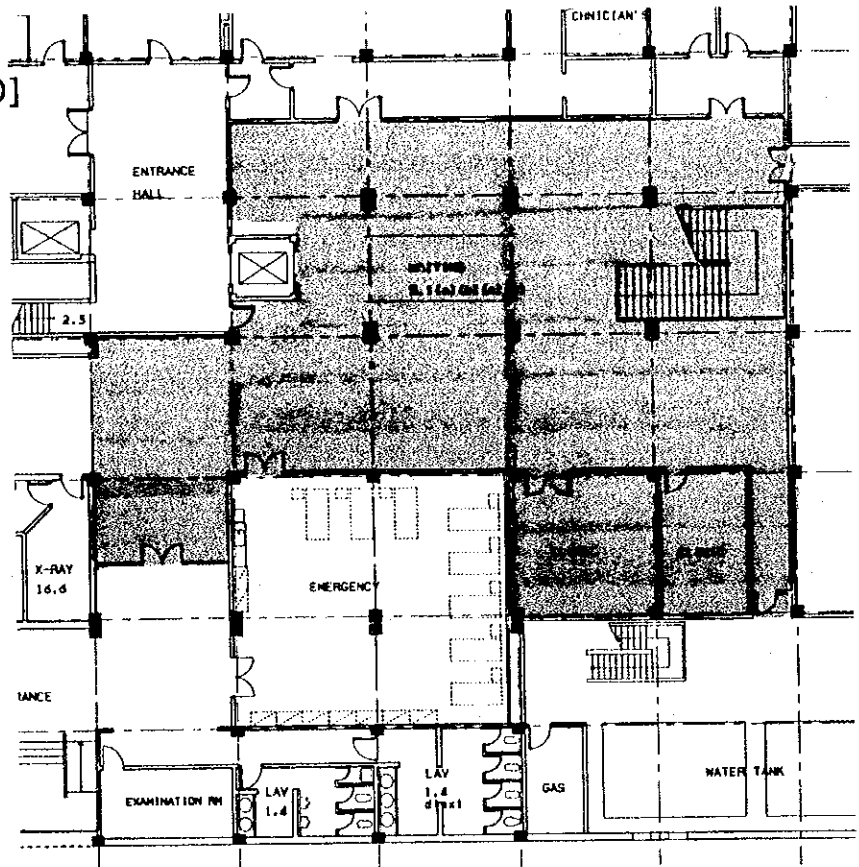
40 W fluorescent lighting fixtures are installed to conform to the existing ones. Receptacles for vacuum cleaners are provided where necessary. Power source is supplied to the ventilating system in the Waiting Hall.

Airconditioning System Design

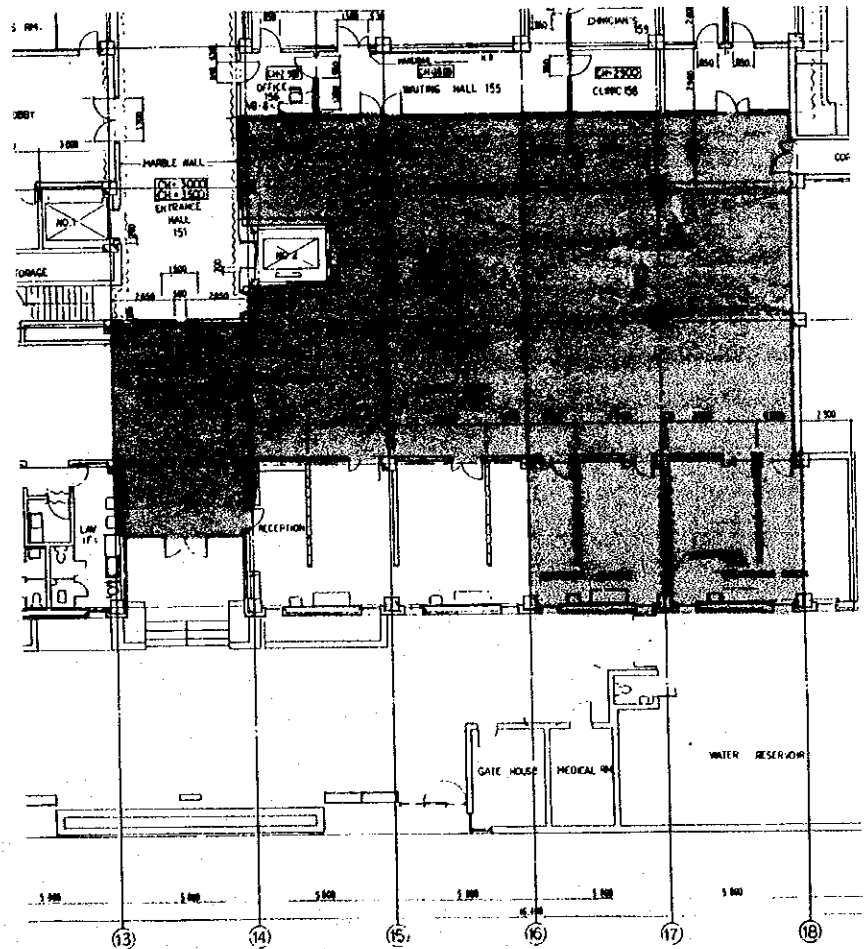
Air-cooled heat pump package air conditioners (to be shared by the 1st and 2nd floor Outpatient Departments) are newly installed in the Machine Room on the 2nd floor. Ventilation is carried out through ducts etc. installed for the 1st and 2nd floor Outpatient Waiting Halls. The outdoor unit is installed on the Rooftop of the 3rd floor, and the refrigerant pipe connecting it to the indoor unit is exposed outdoors, along the external walls of the building. Fresh air is directly taken in from the louver provided on the external wall of the Machine Room. Filters that exceed 80% in dust-collecting efficiency are used on the air conditioners.

1ST FL:WAITING HALL

[RENOVATED PLAN 1/300]

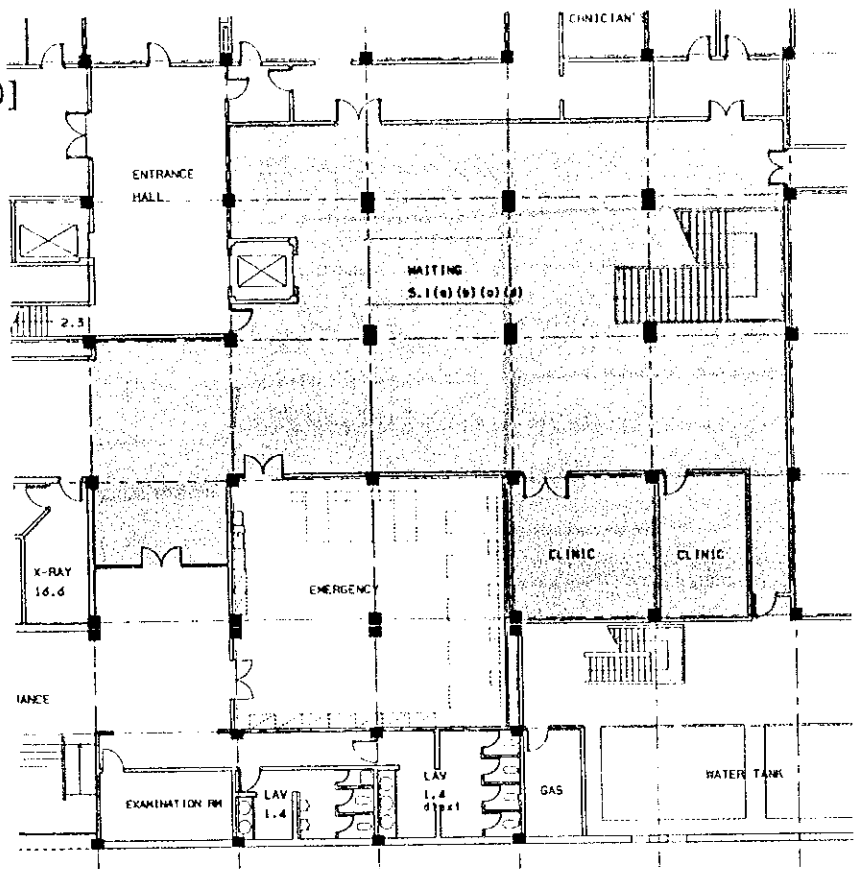


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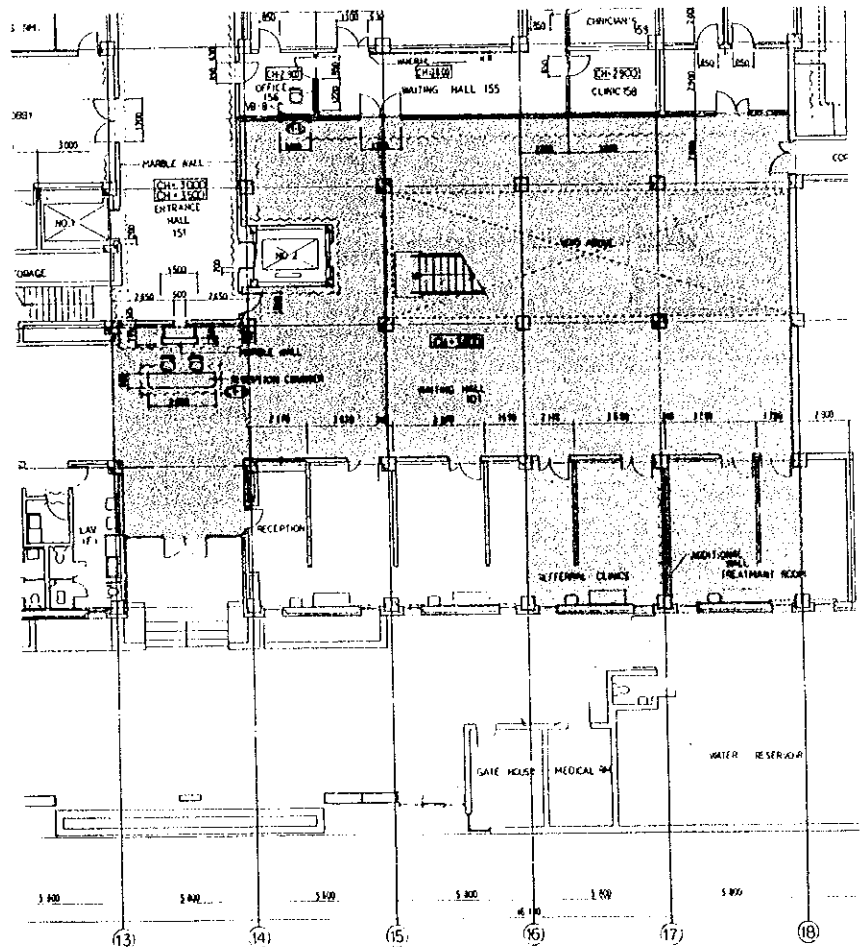


1ST FL:WAITING HALL

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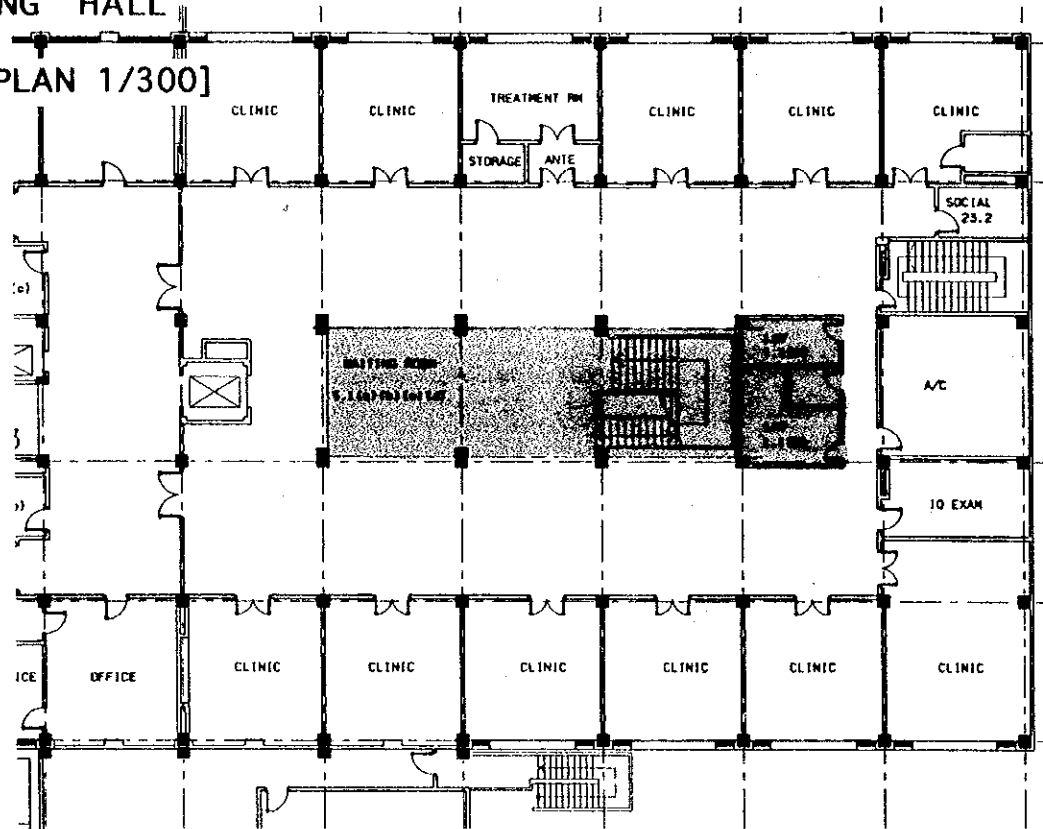


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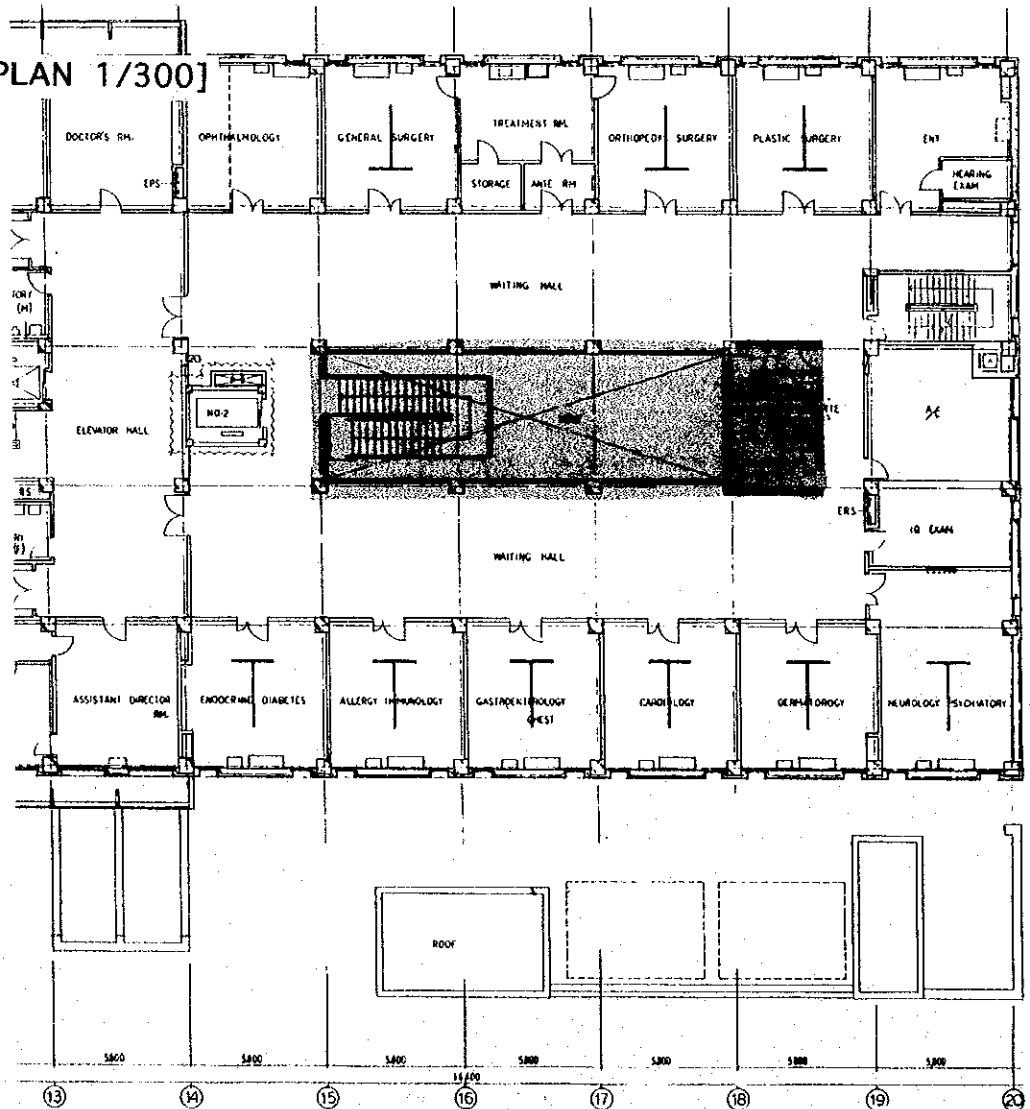


2ND FL:WAITING HALL

[RENOVATED PLAN 1/300]

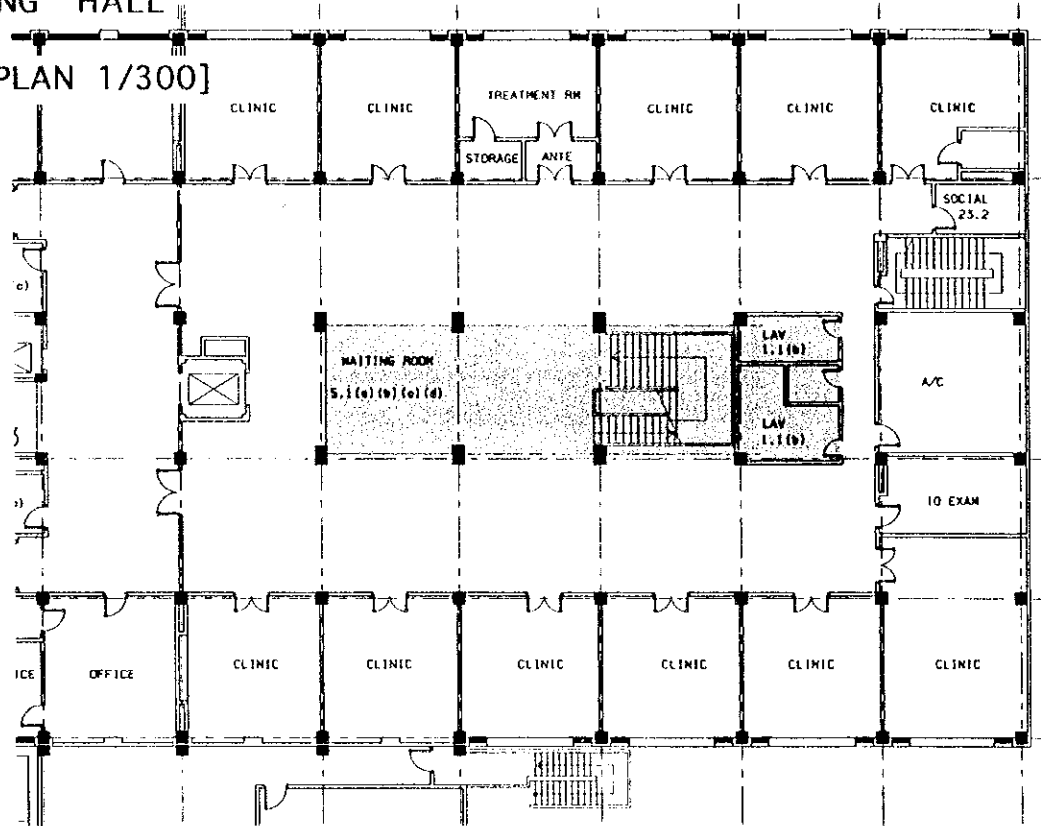


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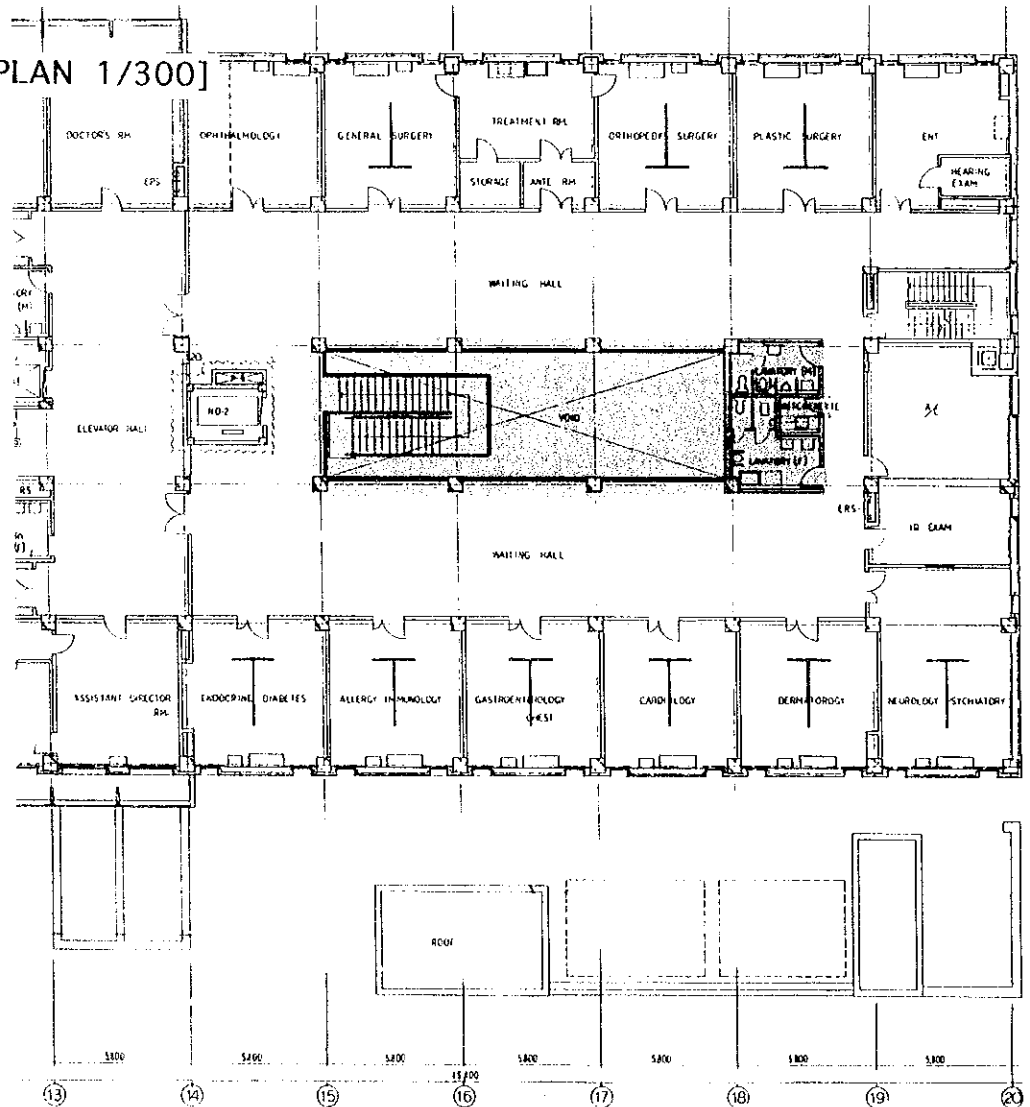


2ND FL:WAITING HALL

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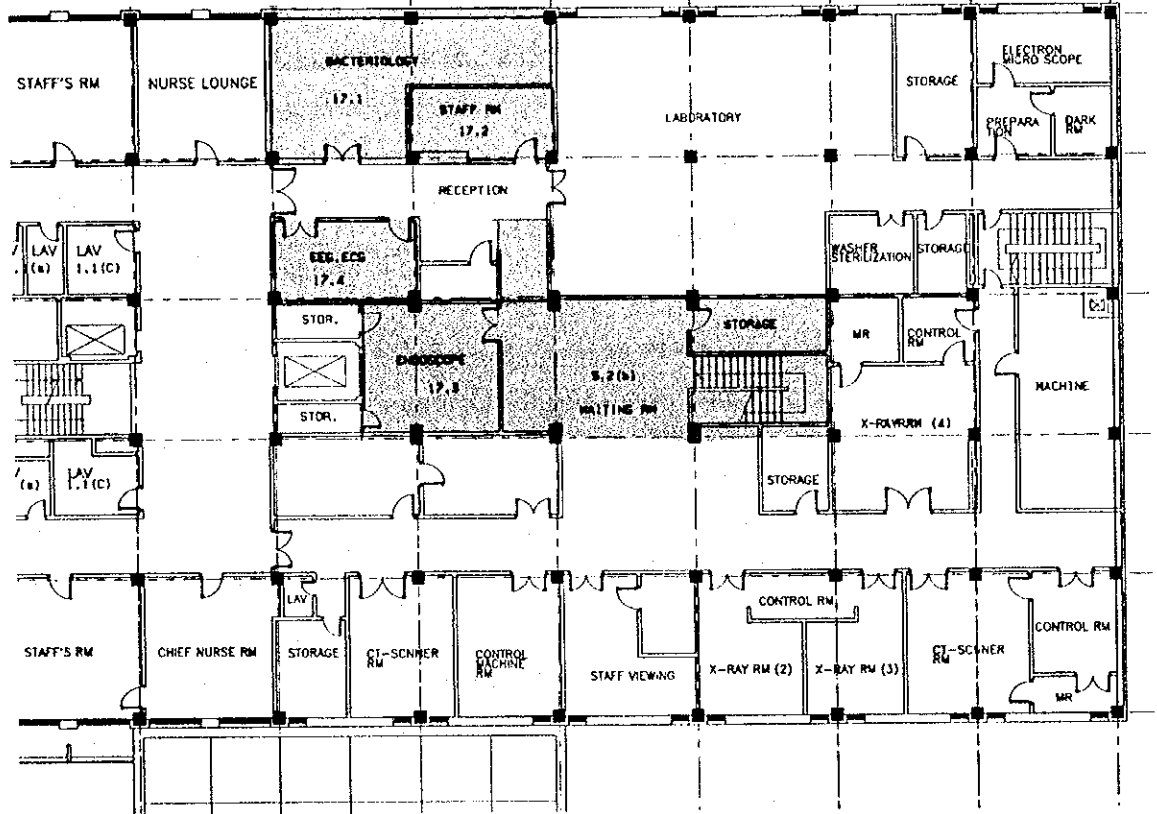


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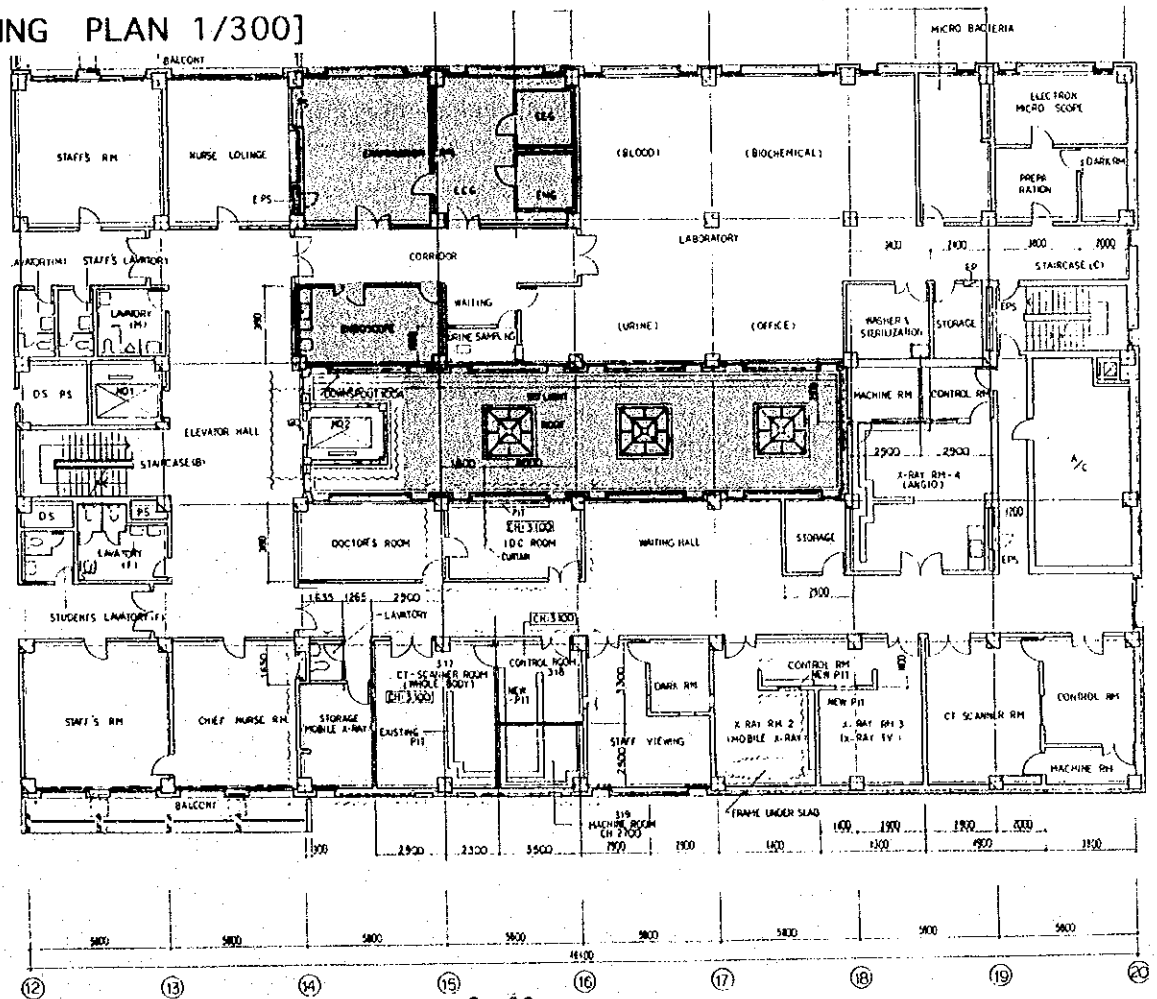


3RD FL: WAITING HALL

[RENOVATED PLAN 1/300]

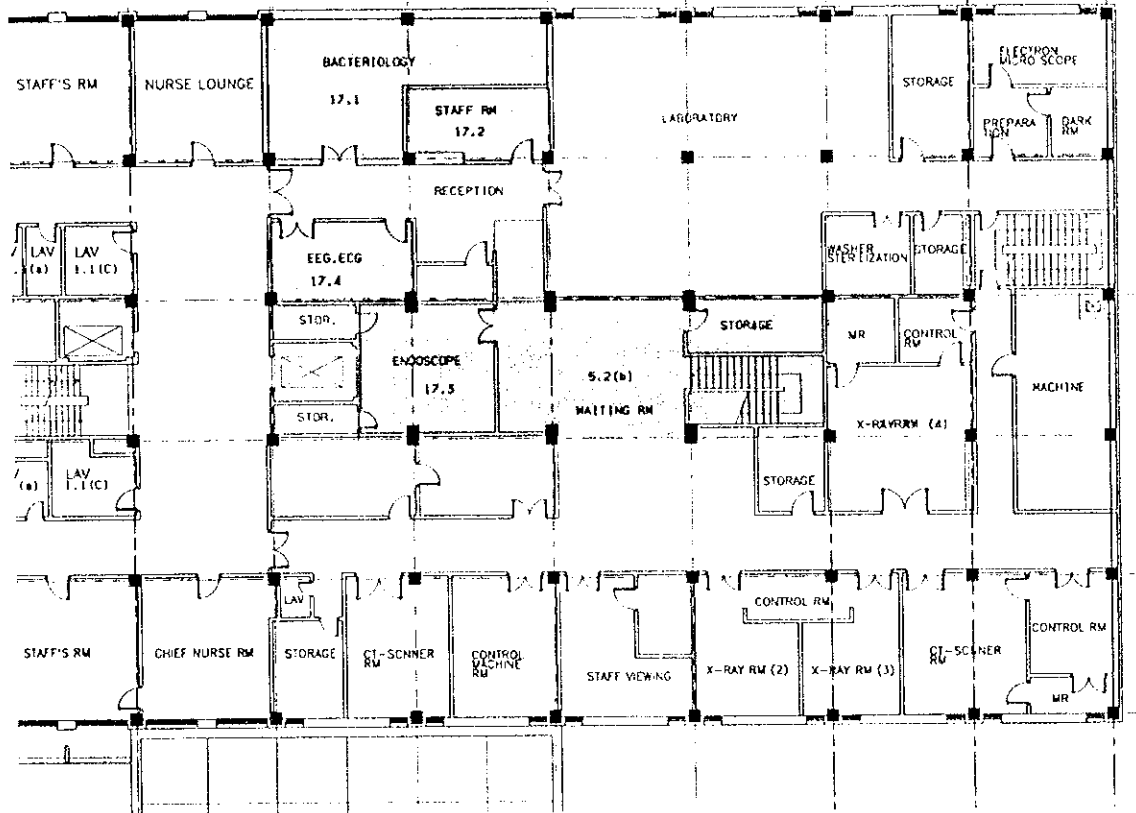


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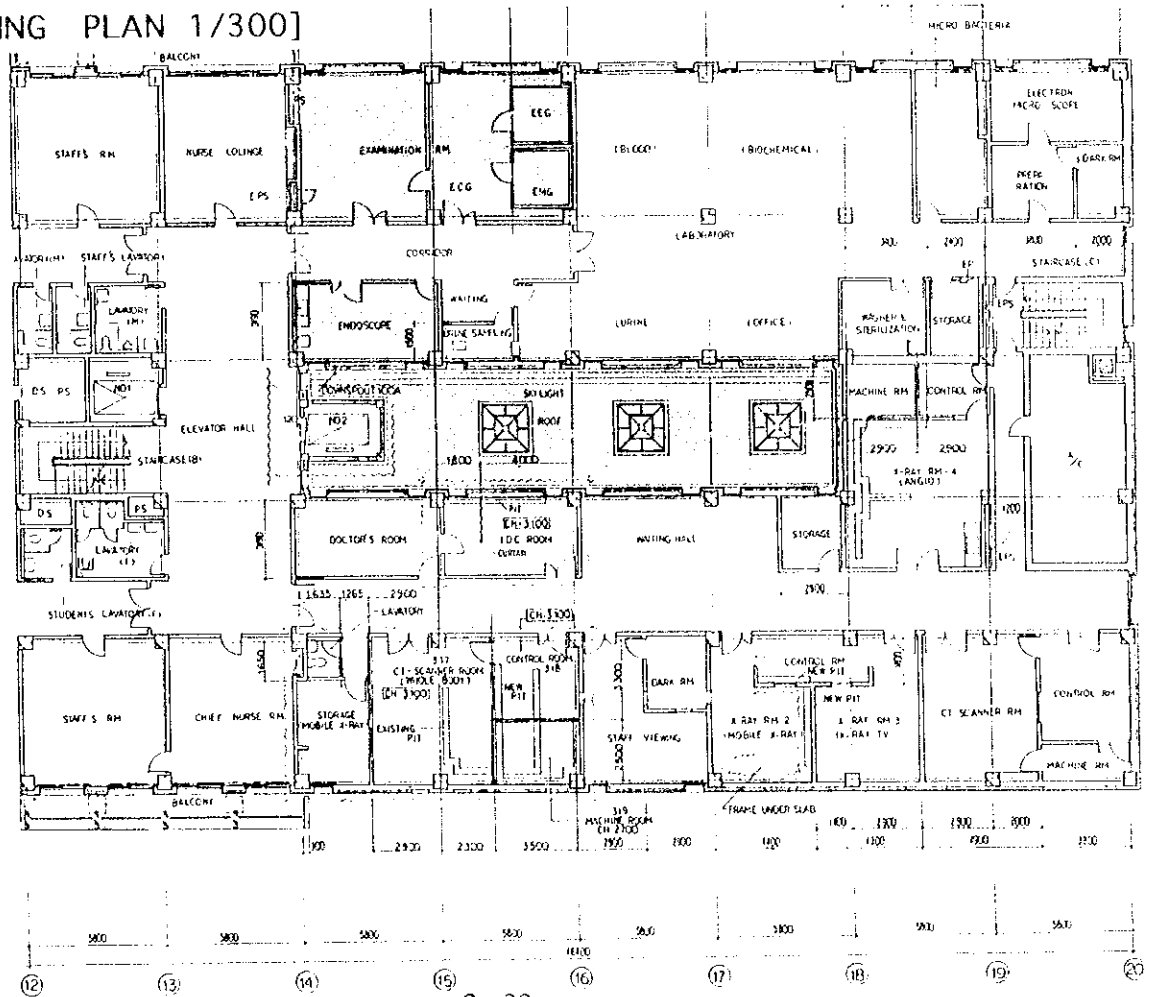


3RD FL:WAITING HALL

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



(5), (6) 4th Floor Operation Theatre, Sterilization, ICU

(a) Traffic Line for Patients

Patients are transferred to a new stretcher in the Ante Room at (14) - (15) / (B) - (C) before they enter the Operation Theatre. After the operation, they are temporarily moved to the Rehabilitation Unit in (16) - (17) / (A) - (B) and later transferred to the Patient Ward or ICU. The circulation is designed to ensure a straight-line transfer to ICU.

(b) Traffic Line for Doctors and Nurses

Doctors and nurses enter the Operation Theatre from the changing Room (with Lavatories and Shower Rooms) in (12) - (15) / (A) - (B), passing through Corridors (1) and (2).

(c) Traffic Line to and from Sterilization

Equipment used for operations, soiled materials/equipment from ICU, and soiled materials/equipment from the patient Wards are delivered from (15) / (D) to Sterilization, where they are cleaned, assembled and sterilized in 3 autoclaves and subsequently sent to the Storages or returned to the respective departments that they had come from. A passing type of autoclave is selected to avoid the intermingling of sterilized and unsterilized materials and equipment.

Architectural Design

(a) Operation Theatre (1), (2), (3)

The existing parallel corridor is replaced with a side corridor to make optimum use of the limited space. The door to the Operation Theatre is replaced with an automatic door. The medical equipment is provided by the Egyptian side as a rule. However, the astral lamps which are closely connected to the construction works are installed by the Japanese side.

(b) Rehabilitation Corner

The Rehabilitation Unit is located between the Operation Theatre and ICU so that patients who have undergone sudden deterioration or changes in condition following operations can be taken care of. The corner is equipped with 3 beds for patients.

Electrical System Design

(a) Operation Theatre (1), (2), (3)

- * Fluorescent lighting fixtures (4-lamp type, D44), with concealed acrylic cover to maintain cleanliness, are installed in Operation Theatres.
- * Receptacles for medical devices etc. are installed where necessary.
- * Power is supplied to film viewer etc.
- * Shadowless lamps are provided. (Existing ones will be reused.)
- * The shadowless lamp is equipped with vacant conduit for a TV camera in OT (3).
- * Power is supplied to the airconditioning system for Operation Theatres.

(b) Sterilization

Sterilization is equipped with 40 W 2-lamp type fluorescent lighting fixtures with concealed acrylic cover to maintain cleanliness. Receptacles for medical devices, vacuum cleaners, and for other purposes are provided where necessary.

Power is supplied for sterilization equipment as well as for the air supply/exhaust systems of those equipment. Power source is also supplied to the air conditioners (2 systems) for Sterilization.

Airconditioning System Design

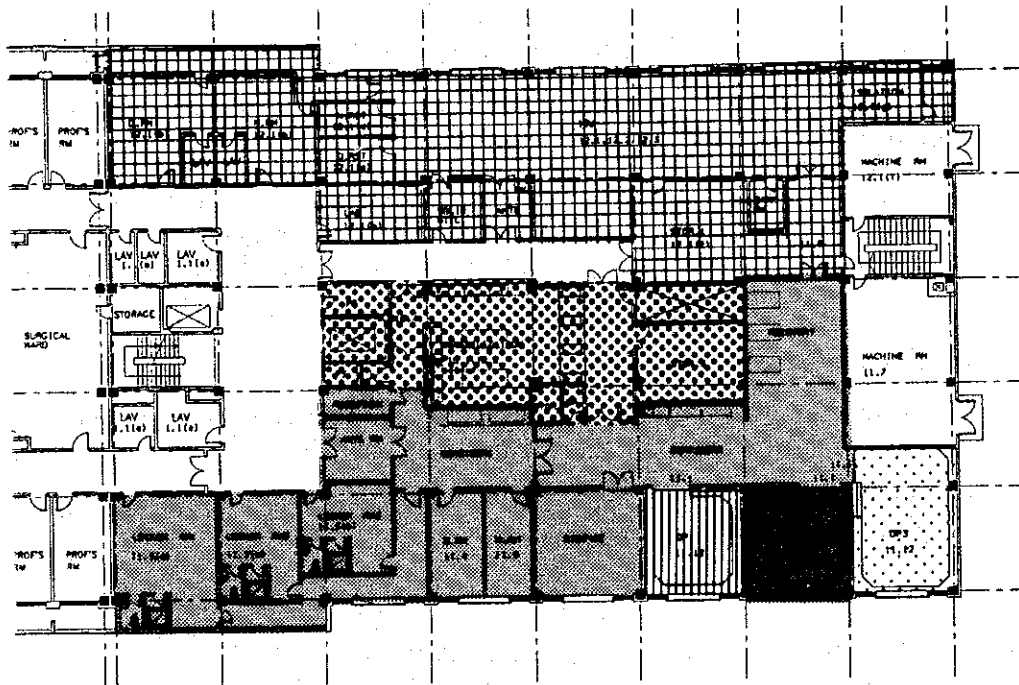


Diagram for Airconditioning Zoning

- ||||| System for ICU
- XXXX System for Sterilization
- System for General Operation Zone
- ||||||| Operation Theatre (1)
- Operation Theatre (2)
- \\\\\\\\ Operation Theatre (3)

- * All existing air conditioners, return fans and ducts are removed.
- * Air-cooled package type air conditioners are newly installed in Sterilization, General Operation Zone and each Operation Theatre. Return fans for each system and air conditioning ducts for each room are provided.
- * Supply fans for each Operation Theatre are installed in the Machine Room.

(b) Sterilization

Sterilization is equipped with 40 W 2-lamp type fluorescent lighting fixtures with concealed acrylic cover to maintain cleanliness. Receptacles for medical devices, vacuum cleaners, and for other purposes are provided where necessary.

Power is supplied for sterilization equipment as well as for the air supply/exhaust systems of those equipment. Power source is also supplied to the air conditioners (2 systems) for Sterilization.

Airconditioning System Design

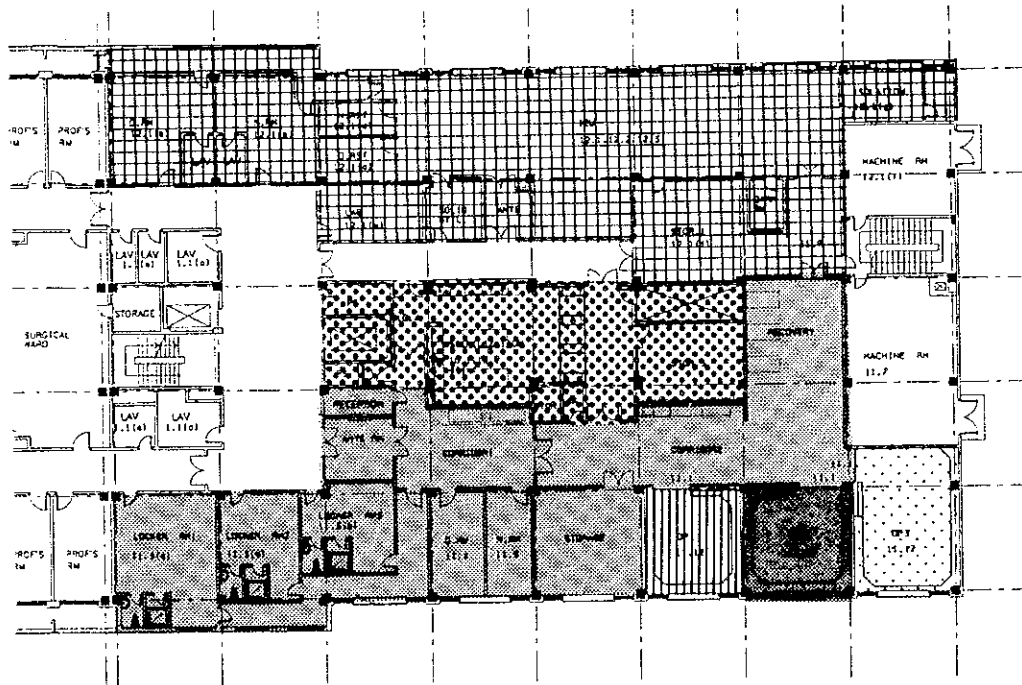


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- ||||||| Operation Theatre (1)
- Operation Theatre (2)
- Operation Theatre (3)

- * All existing air conditioners, return fans and ducts are removed.
- * Air-cooled package type air conditioners are newly installed in Sterilization, General Operation Zone and each Operation Theatre. Return fans for each system and air conditioning ducts for each room are provided.
- * Supply fans for each Operation Theatre are installed in the Machine Room.

- * Package air conditioners incorporating electric heaters are used in the Operation Theatres. The heat pump type is adopted for other rooms.
- * The outdoor unit of the air conditioner is installed on the Rooftop, and the refrigerant pipe that connects it to the indoor unit is exposed outdoors, along the external walls of the building.
- * Fresh air is sent out collectively from the sand separator installed on the Roof top to each air conditioning unit so that the cleanliness of the indoor air is maintained and the life span of filters is maximized. The air is drawn in from the outdoor exposed ducts provided along the external walls of the building.
- * Filters with dust-collecting efficiency of over 90% are used on all the air conditioners.
- * HEPA-filters are provided in all Operation Theatres to maintain a cleanliness level of class 10,000.
- * Exhaust fans are provided locally, in the Lavatories in each Locker Room, and for exhausting the heat generated by the autoclaves. Air exhausted from the autoclaves is sent out to the exhaust fan installed on the Rooftop and subsequently brought down to the atrium of the Court through exposed air exhaust ducts.

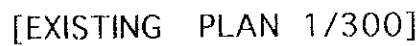
Plumbing System Design

- * Additional water supply, hot water supply and drainage systems are provided for the sinks and hand-wash sinks in Sterilization, Rehabilitation Unit and Nurse's Room.
- * Additional water supply and drainage systems are installed for the slop sinks and sinks in the General Operation Zone Corridor.
- * Outlets for medical gas are installed in ICU:
 - Oxygen..... 13 locations
 - Vacuum suction..... 1 location
 - Compressed air 1 location
- * Sterilizers are installed in sterilization:
 - 2 Steam type sterilizers
 - 1 Electric type sterilizer
 - 1 small gas type sterilizer

[RENOVATED PLAN 1/300]



[RENOVATED PLAN 1/300]



(7) 5th Floor Operation Theatres, Sterilization (medical gas)

Ventilating System Design

A steam exhaust device is installed in Sterilization for localized air exhaust. Exhaust fans are provided on the Rooftop allowing exhaust to be brought down through the exposed duct along the external wall of the building to the indoor steam exhaust device.

Plumbing System Design

Devices for exhausting excess anaesthetic gas are installed in Operation Theatres and ICU.

(8) Emergency Outpatient

(1) 1st Floor Operation Room

Circulation Design

(a) Traffic Line for Doctors and Nurses

The circulation design allows doctors and nurses to proceed from the indoor side of (9) - (10) / (B) to their respective Changing Rooms, pass Corridor (1) and reach the Operation Theatre, Rehabilitation Unit and Treatment Room, thereby avoiding the congested Entrance area.

(b) Traffic Line for Patients

Patients move from the Entrance to Ante Room and further to Operation Theatre.

Architectural Design

(a) Operation Theatre

An operation Theatre with an effective floor area of 4,600 mm x 7,000 mm is provided in (7) - (8) / (AC - (A)). The medical devices are provided by the Egyptian side in principle. However, fixtures that are closely connected with construction works, including astral lamps, hand-wash sinks for operations, and devices built into the walls (warming and cooling storages, outlets for medical gas), are provided by the Japanese side.

(b) Rehabilitation Unit, Nurse's Room

The safety of patients following operations is enhanced by providing a Rehabilitation Unit (4 beds) and Nurse's Room next to Operation Theatre.

(c) Treatment Room

Two Treatment Rooms are provided for diagnosing patients prior to operations.

Electrical System Design

* Lighting fixtures, receptacles and detectors are provided in Operation Theatres, Corridors and Rehabilitation Units, etc.

* Fluorescent lighting fixtures, with concealed acrylic cover to maintain cleanliness, are installed in Operation Theatres.

* Receptacles for medical devices and for vacuum cleaners are provided where

necessary.

- * Insolation transformers are provided on the receptacles in Operation Theatres. A generator serves as a stand-by power source.
- * Power is supplied to film viewer etc.
- * Astral lamps are installed in Operation Theatres.
- * Power is supplied to the air conditioning system for Operation Theatres.

Airconditioning System Design

- * An air-cooled package type air conditioner (incorporating an electric heater and a humidifier), supply fans and return fans are newly installed in the Machine Room. Ducts are used for air conditioning.
- * Filters with dust-collecting efficiency of more than 90% are provided on the air conditioner.
- * The outdoor unit of the air conditioner is installed on the Rooftop of the 3rd floor, and the refrigerant pipe that connects it to the indoor unit is exposed outdoors along the external wall of the building.
- * Fresh air is taken in from the sand separator installed on the 3rd floor Roof top to the air conditioner so that the cleanliness of the indoor air is maintained and the life span of filters is maximized. The air is drawn in from the outdoor exposed ducts provided along the external wall of the building.
- * Hepafilter is provided in Operation Theatre to maintain a cleanliness level of class 10,000.

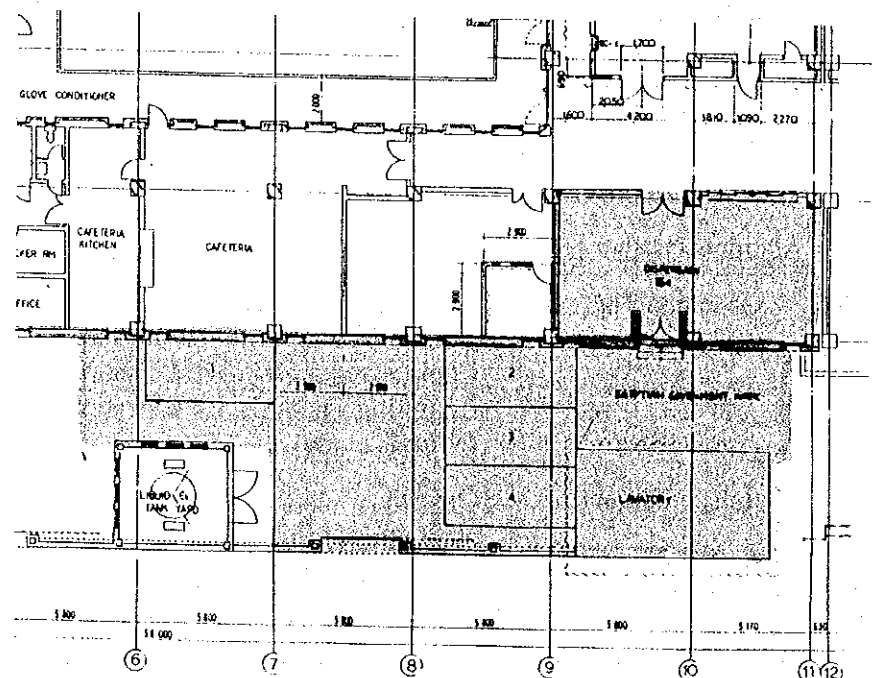
Plumbing System Design

- * Systems for water supply, hot water supply and drainage are added to the sinks and hand-wash sinks in Operation Theatre Corridor, Rehabilitation Unit, Nurse's Room, Treatment Room and Reception.
- * Additional outlets are installed for medical gas:

Operation Theatre:	Oxygen	2 locations
	Vacuum suction.....	2 locations
	Compressed air	2 locations
	Laughing gas.....	2 locations
	(Nitrous oxide)	

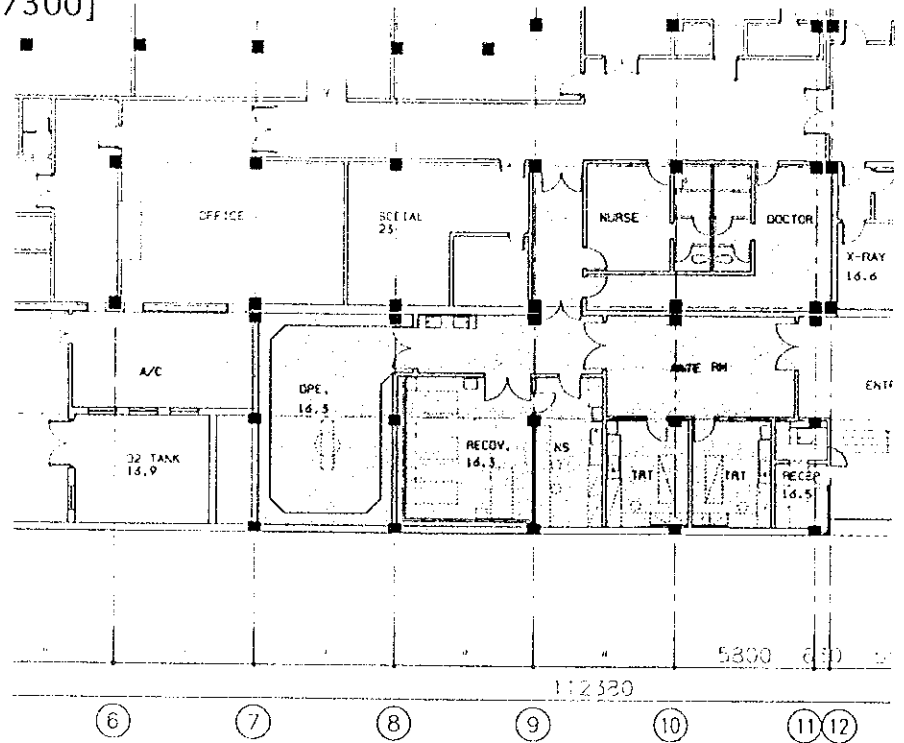
Rehabilitation Unit	Oxygen	4 locations
	Vacuum suction.....	4 locations
	Compressed air	4 locations

[RENOVATED PLAN 1/300]

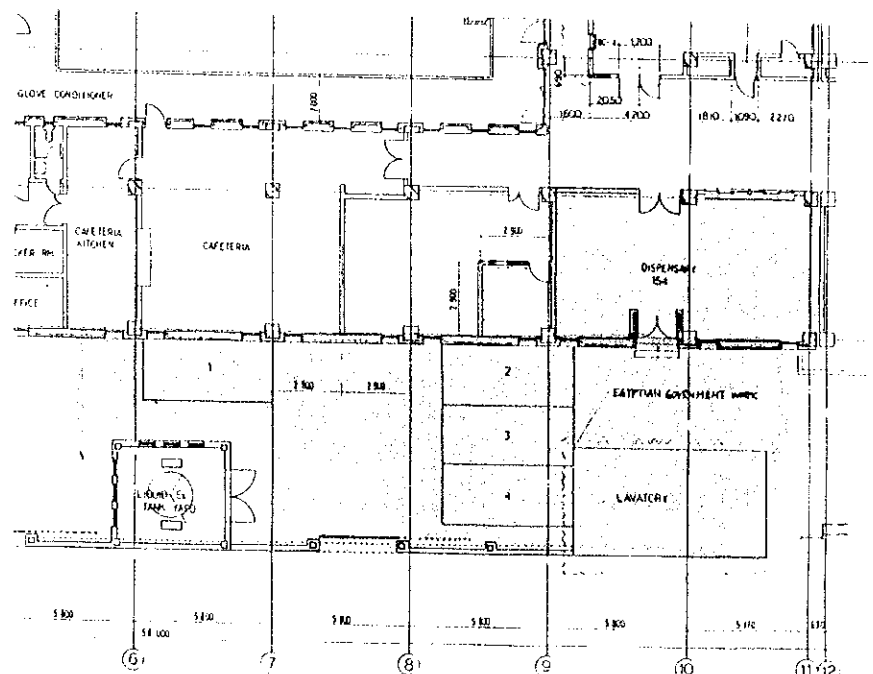


1ST FL: OPERATION ROOM

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



(2) 1st Floor Emergency Department

Architectural Design

(a) Treatment Room, Rehabilitation Unit

Patients brought to Emergency Outpatient Department e.g. first have their bodies washed in Ante Room, undergo treatment or minor operation in Treatment Room, and convalesce in the adjacent Rehabilitation Unit under the care of nurses. The circulation design allows patients who require hospitalization to be delivered from Rehabilitation Unit to Patient Ward through the Waiting Hall.

(b) X-Ray Rooms

X-ray rooms (2 rooms) are provided in (12) - (13) / (A) - (B) to reinforce the function of the Emergency Department.

(c) Waiting Hall

A Waiting Hall is provided in (13) - (14) / AC - (A) for the families of emergency outpatients and outpatients visiting the hospital for operations.

Electrical System Design

- * Lighting fixtures, receptacles and detectors are installed in Emergency Outpatient Waiting Hall, Waiting Hall and Lavatories.
- * Power source is supplied to the air conditioners for Outpatient Diagnostic Unit, and to exhaust fans in Lavatories.

Air conditioning System Design

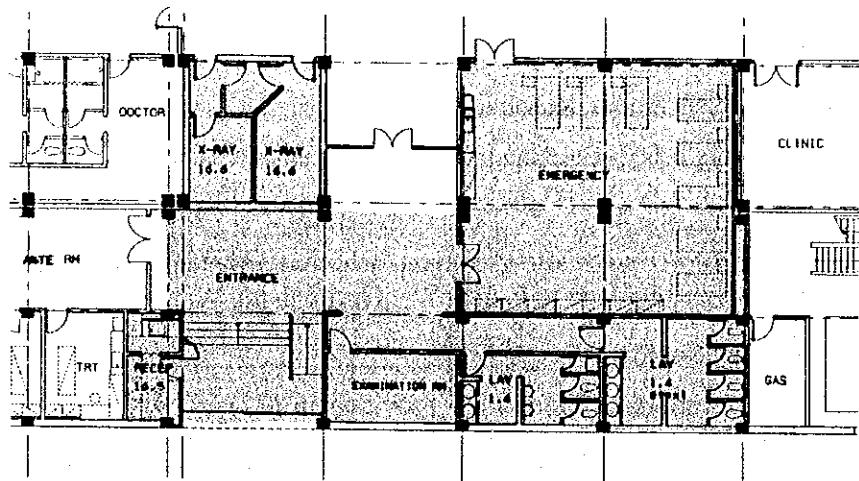
- * An air-cooling packaging type air conditioner (incorporating an electric heater and a humidifier) and return fans are newly installed in the 2nd floor Machine Room. Ducts re used for air conditioning.
- * The outdoor unit of the air conditioner is installed on the 3rd floor rooftop, and the refrigerant pipe connecting it to the indoor unit is exposed outdoors.
- * Fresh air is taken in from the sand separator installed on the 3rd floor rooftop to the air conditioner, through outdoor exposed ducts provided along the external wall of the building.
- * Filters with dust-collecting efficiency of over 90% are provided on the air conditioner.
- * Exhaust fans are installed in Lavatories for ventilation.

Plumbing System Design

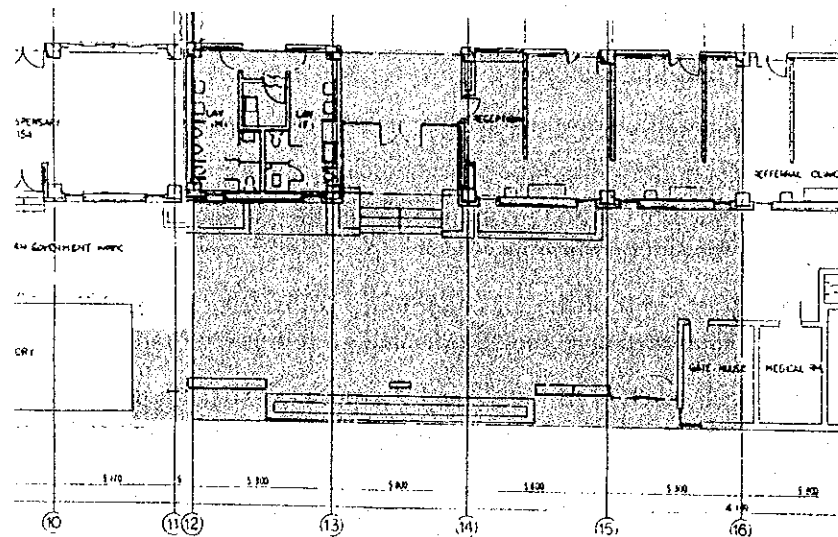
- * Sanitary fixtures consisting of toilet stools, urinals, hand wash sinks and slop sinks are newly installed in the Lavatories. Additional systems for water supply and drainage are provided.
- * Additional systems for water supply, hot water supply and drainage are provided in the sinks and hand-wash sinks of the Diagnostic Unit and Ante Room of the Emergency Outpatient Department.
- * Outlets are installed for medical gas: Oxygen, Vacuum suction, Compressed air 8 locations each.

1ST FL:EMERGENCY DEPARTMENT

[RENOVATED PLAN 1/300]

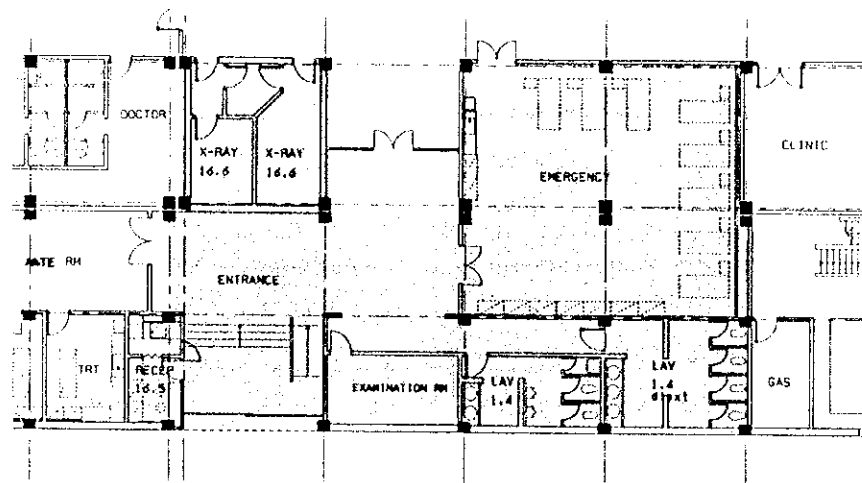


[EXISTING PLAN 1/300]

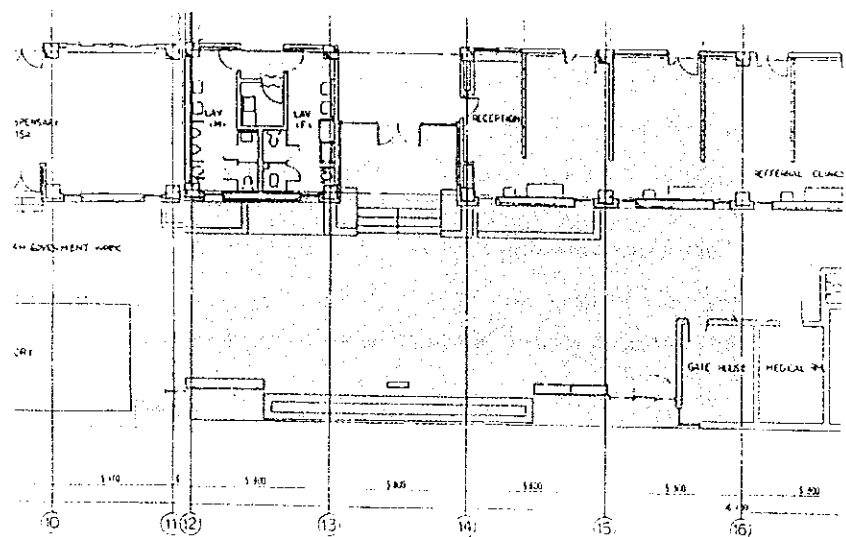


1ST FL:EMERGENCY DEPARTMENT

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



(9) 2nd Floor NICU

Circulation Design

(a) Traffic Line for Doctors and Nurses

The traffic line allows doctors and nurses to proceed from their respective Changing Rooms to NICU.

(b) Traffic Line for Equipment and Materials

Equipment and materials are tentatively brought into Storage from Ante Room, and are then delivered to NICU. Soiled equipment and materials are taken outdoors from Soiled Utility through the Corridor at the back of NICU.

Architectural Design

A total of 13 incubators are installed in equal distances from the Nurse's Resting Room. Outlets built into the walls are used for supplying medical gas.

Electrical System Design

- * 40w fluorescent lighting fixtures (-lamp type, D42), with the lower part protected with acrylic cover to maintain cleanliness, are installed on the ceiling.
- * Receptacles for medical devices and vacuum cleaners are provided where necessary.
- * A generator is used to supply power to the receptacles.
- * Power source is supplied to air conditioners for NICU, and fans for air supply and exhaust.
- * Plumbing is provided for medical monitors.

Airconditioning System Design

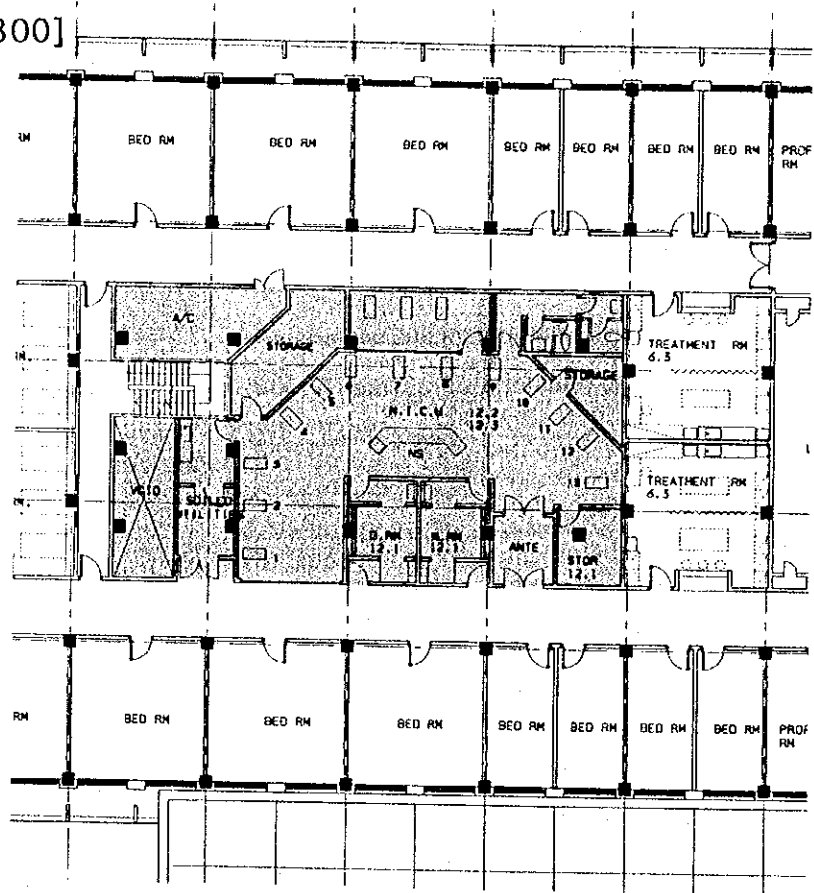
- * An air-cooling packaging type air conditioner (incorporating an electric heater and a humidifier), supply fans and return fans are newly installed in the Machine Room. Ducts are used for air conditioning.
- * The outdoor unit of the air conditioner is installed on the Rooftop, and the refrigerant pipe that connects it to the indoor unit is exposed outdoors, along the external wall of the building.
- * Fresh air is delivered from the sand separator installed on the Rooftop to the air conditioner through the outdoor exposed duct.
- * Filters with dust-collecting efficiency of more than 90% are installed on the air conditioner.
- * HEPA filter is provided in NICU to maintain a cleanliness level of class 10,000.

Plumbing System Design

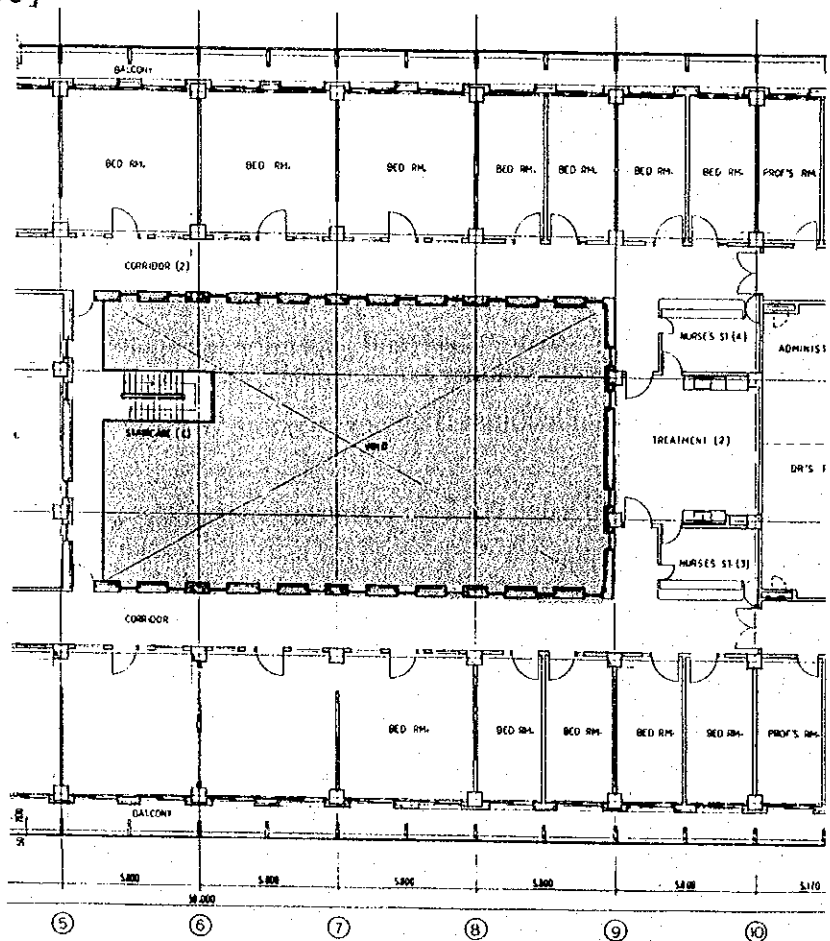
- * New systems for water supply, hot water supply and drainage are provided in the hand-wash sinks of Doctor's Room and Nurse's Room.
- * Additional outlets are installed for medical gas:
 - Liquid oxygen.....26 locations (2 locations/bed)
 - Vacuum suction.....13 locations
 - Compressed air13 locations
 - Laughing gas.....13 locations (only the plumbing is provided)
 - (Nitrous oxide)

2ND FL:NICU

[RENOVATED PLAN 1/300]

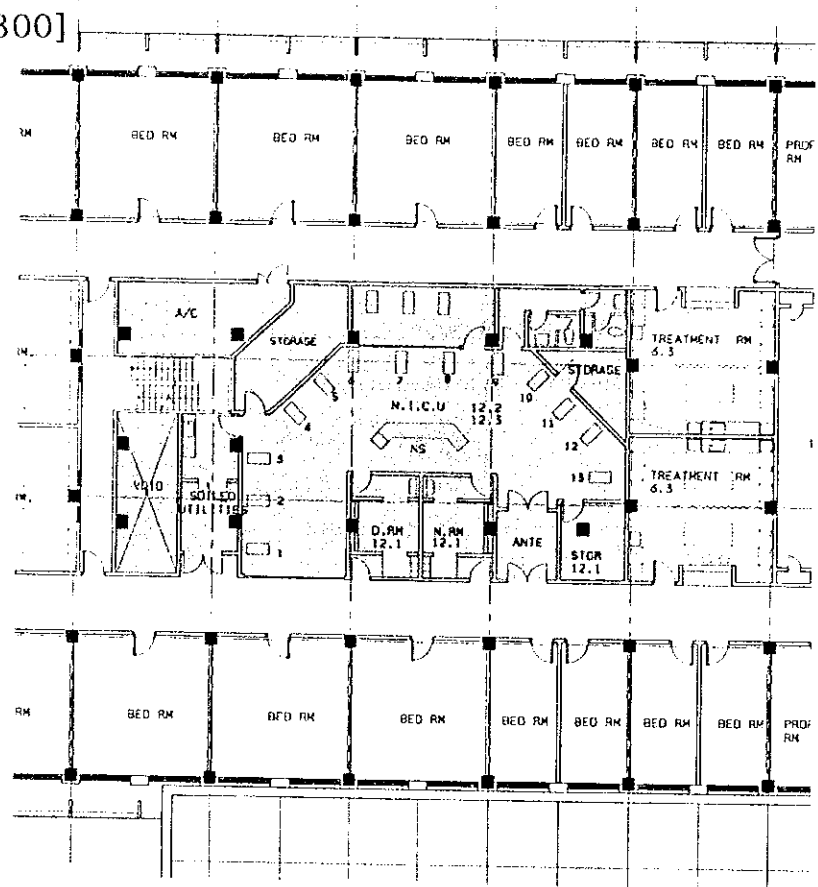


[EXISTING PLAN 1/300]

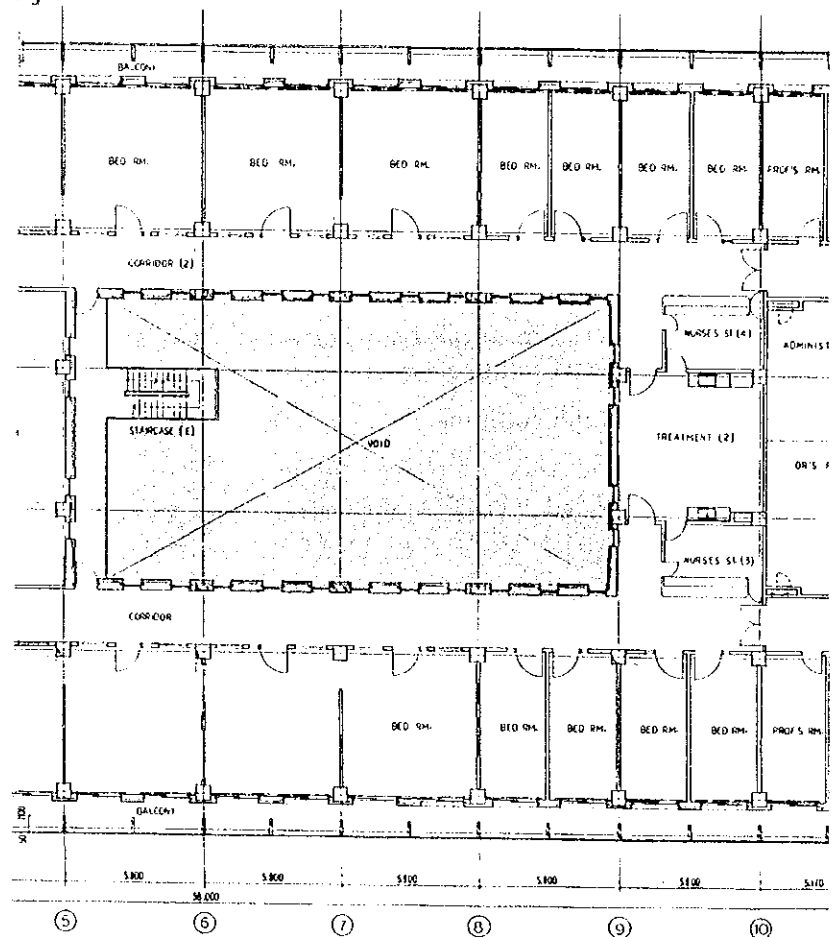


2ND FL:NICU

[RENOVATED PLAN 1/300]



[EXISTING PLAN 1/300]



(10) Relocation of Pharmacy

Architectural Design

The area between (B) and (E) of (5) - (8) on the 1st floor is used as Pharmacy. The room vacated by the relocation of the Pharmacy from the 6th floor to the 1st floor is used as Resting Room for Engineering Staff (with Storage to the south of Axis (A) on the 2nd floor (13) - (15), and Workshop between (A) and (B)).

Electrical System Design

40 W 2-lamp type fluorescent fixtures with reflection shades hanging with pipes are provided. As to receptacles, 4 receptacles (for 2 circuits) per span are provided on the 6th floor and 4 each are provided in the Storage area of the 2nd floor. Power sources are newly supplied for cooling/heating devices and ventilating fans.

Airconditioning System Design

An air-cooled heat pump package air conditioner (floor mounted type) with ducting for pharmacy is provided for air conditioning, and also an air-cooled heat pump package air conditioner (floor type, direct-flow style) is provided for cooling and heating the Workshop area on the 6th floor. An outdoor unit is installed on the Rooftop and a refrigerant pipe connecting them is exposed outdoors along the external wall of the building.

(11) Lecture Room

Architectural Design

Floor slab is provided in the Light Court area of (8) - (9) of the 1st floor, between (B) and (E). A lecture Room taking the style of a staircase classroom is newly provided.

Electrical System Design

40 W 2-lamp type fluorescent lighting fixtures with mirror surface louvers are provided. A total of 4 receptacles are installed.

Airconditioning System Design

An air-cooled heat pump package type air conditioner (floor type, direct flow style) is newly provided for heating and cooling. the outdoor unit is installed outdoors, along the external walls of the building on the 1st floor level.

(12) Renovation of Boiler

Airconditioning System Design

At present, one boiler is sufficient in terms of capacity and another one is used as a backup. However, since both are manufactured in Japan, they cannot easily undergo regular checkups or maintenance at times of breakdown. So, it is desirable to be replaced with locally produced boilers in near future.

(13) Renovation of Generators and Electrical Rooms

The branched-out circuits are added and altered in the Electrical Rooms on the 1st and 6th floors, to conform to the newly required power loads.

The following renovation is desirable to be done in future.

The existing generator on the 1st floor is removed and an outdoor cubicle type generator is newly installed outdoors in the space formerly occupied by an incinerator. A low-noise generator with a capacity of 300 KVA is installed.

Power capacitors for power factor correction are installed in the Electrical Rooms on the 1st and 6th floors. For each transformer bank, 2 units of 200 KVA power capacitors with automatic control devices are installed.

(14) Sanitary, Airconditioning and Plumbing System

No renovation work is carried out this time since the analysis of test pieces showed no evidence of rusting. As a rule, the Egyptian side does the repair works for water leakage. (It has been confirmed that the Egyptian side has sufficient expertise to repair the plumbing).

(15) Repair and Painting of Doors

(16) Renovation of Elevators

Otis has already been commissioned to repair Elv. No. 3. Hence, no renovation work or inspection by the Japanese side is required.

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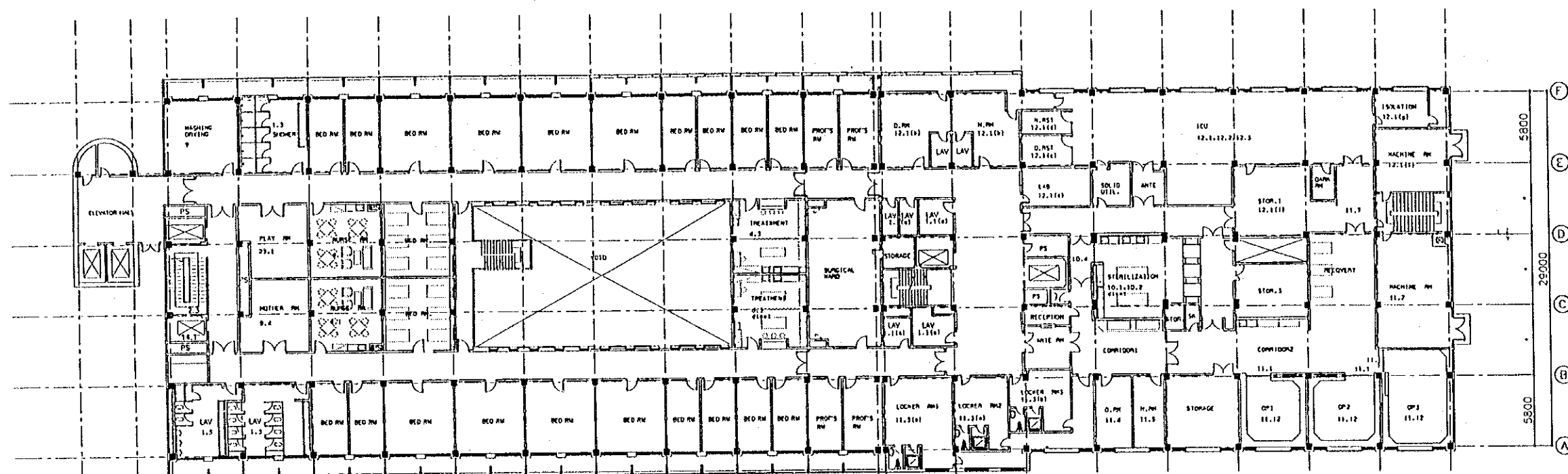
2ND FLOOR PLAN 1/200

1ST FLOOR PLAN 1/200

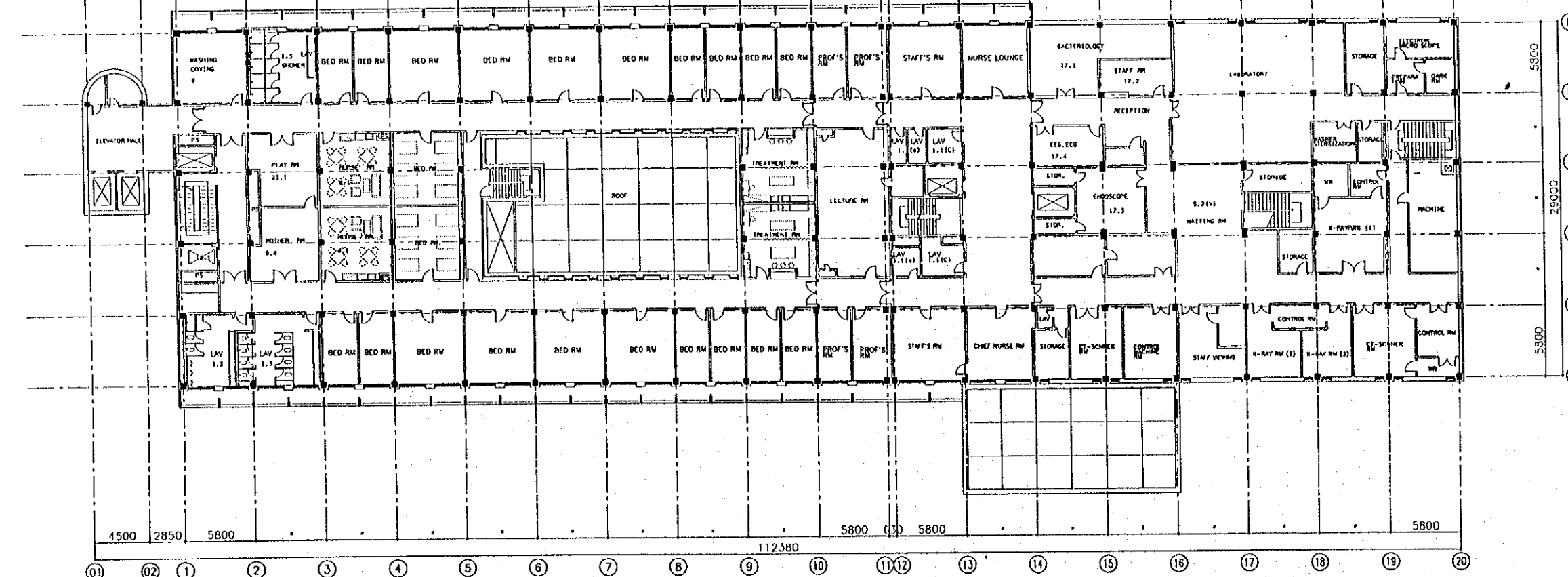
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1ST FLOOR AND 2ND FLOOR PLAN	
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4TH FLOOR PLAN 1/200



3RD FLOOR PLAN 1/200

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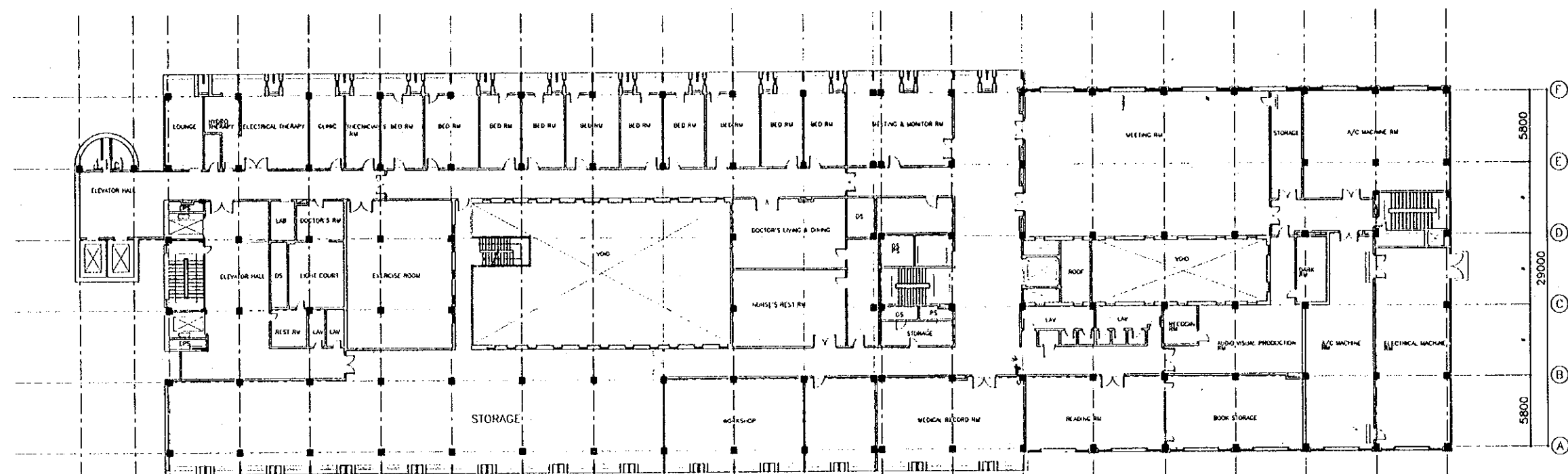
3RD FLOOR AND
4TH FLOOR PLAN

SCALE 1/200

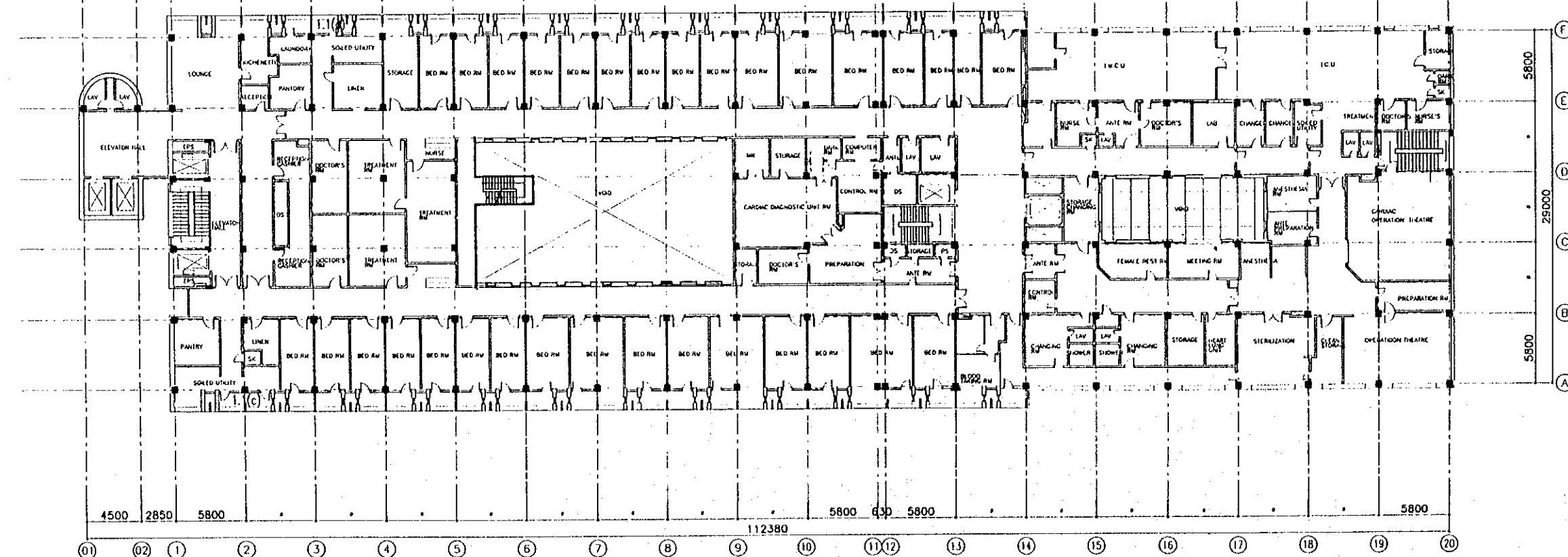
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6TH FLOOR PLAN 1/200



5TH FLOOR PLAN 1/200

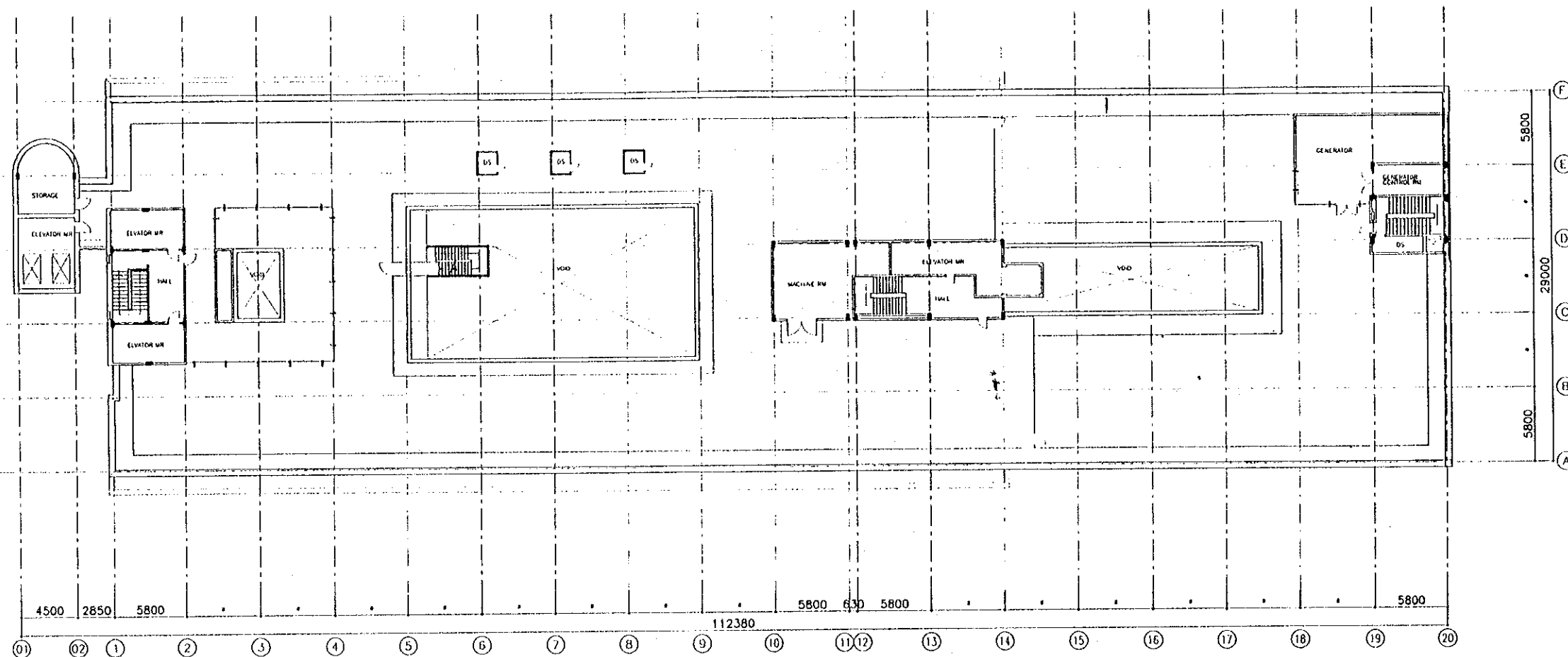
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5TH FLOOR AND
6TH FLOOR PLAN

SCALE 1/200
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ROOF FLOOR PLAN 1/200

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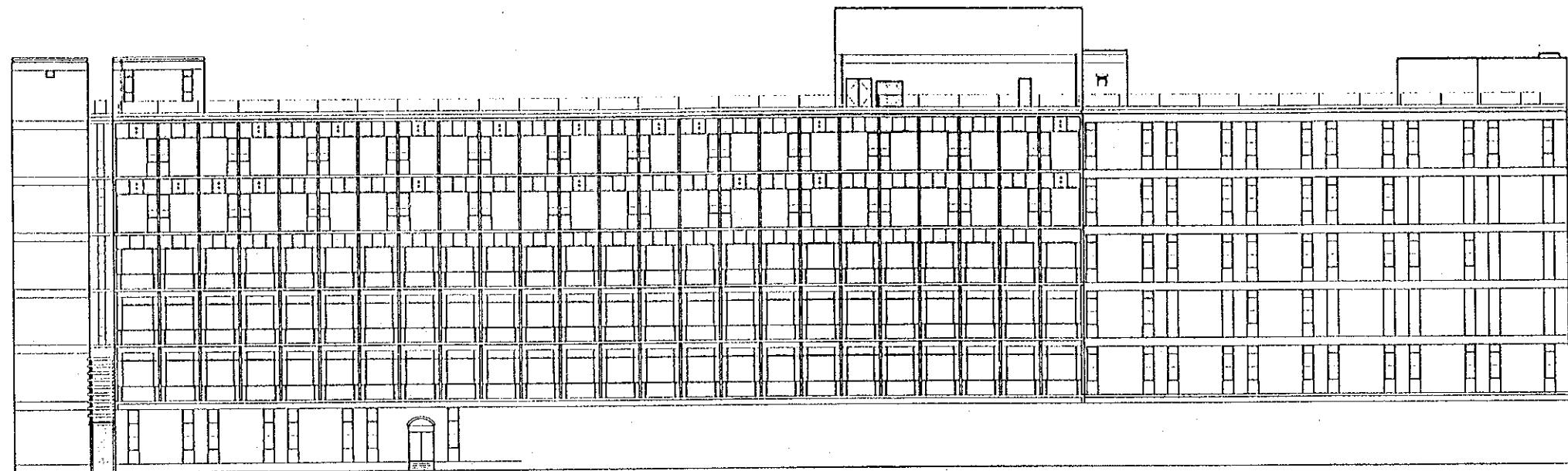
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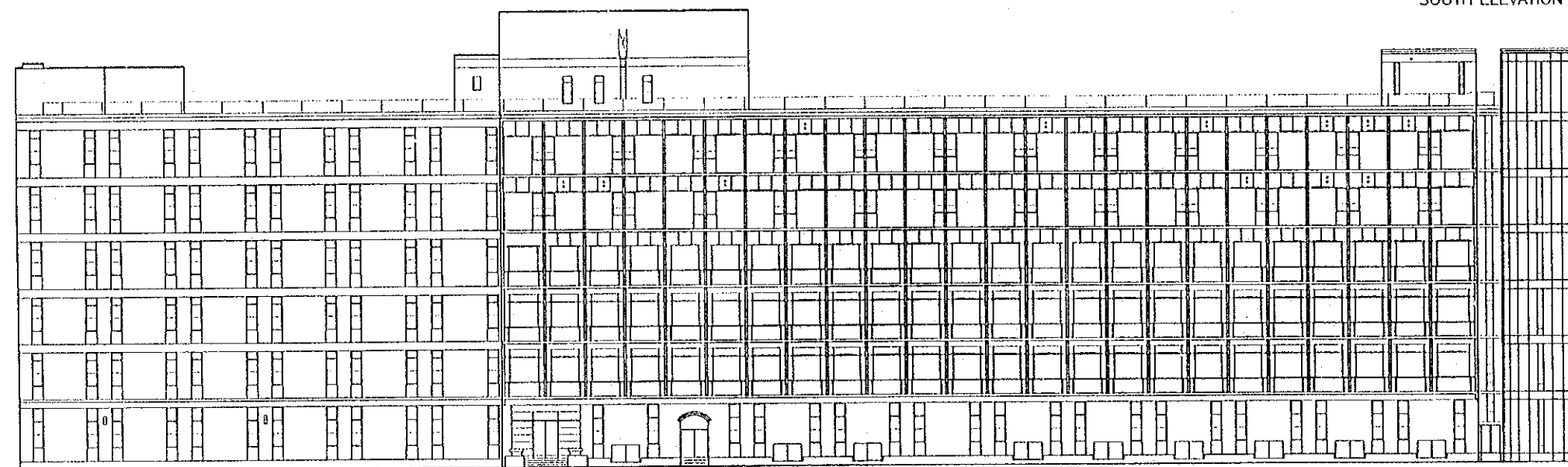
ROOF FLOOR PLAN

SCALE 1/200

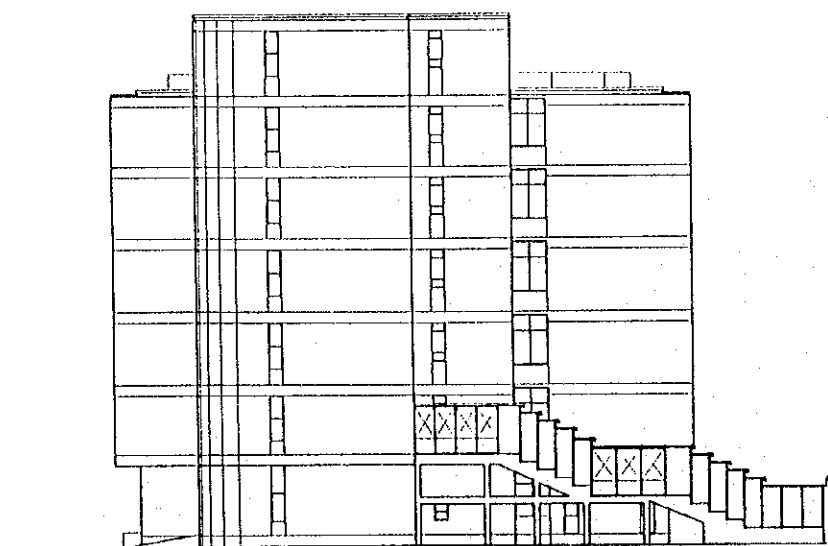
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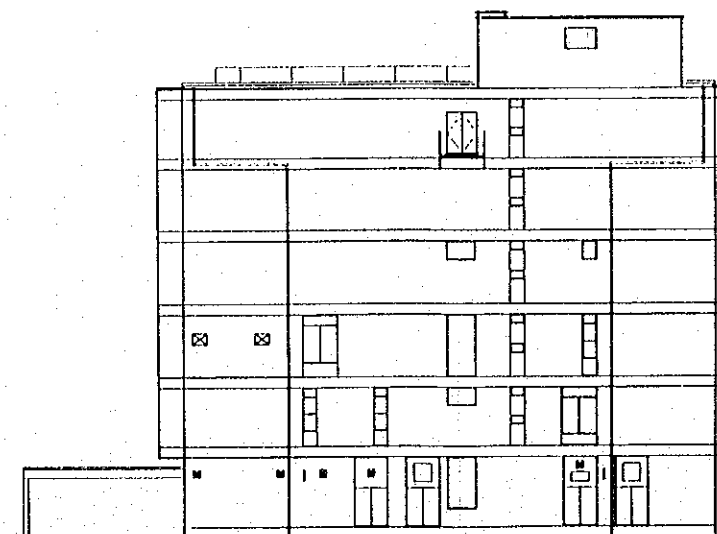
SOUTH ELEVATION 1/200



NORTH ELEVATION 1/200



WEST ELEVATION 1/200



EAST ELEVATION 1/200

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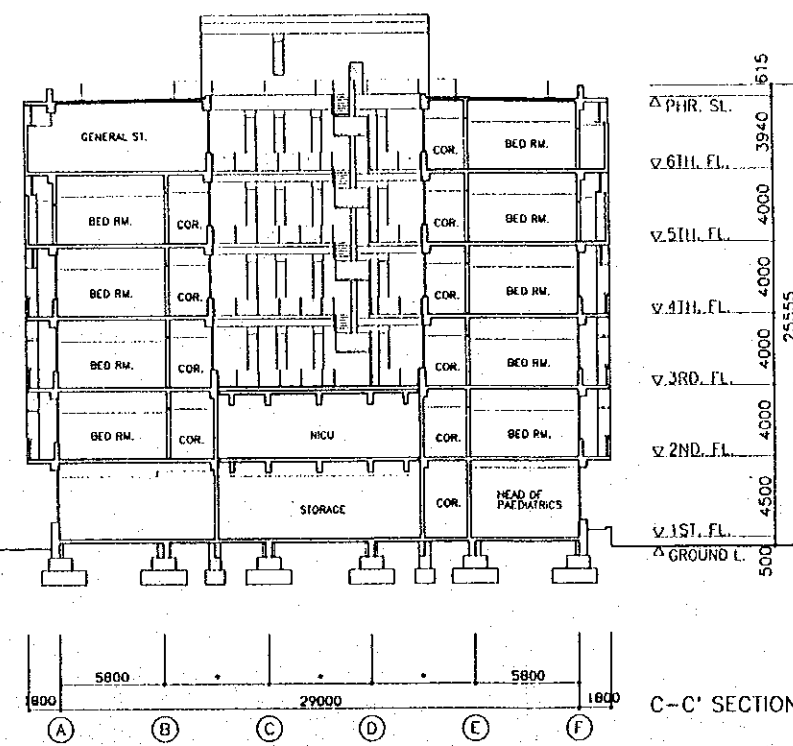
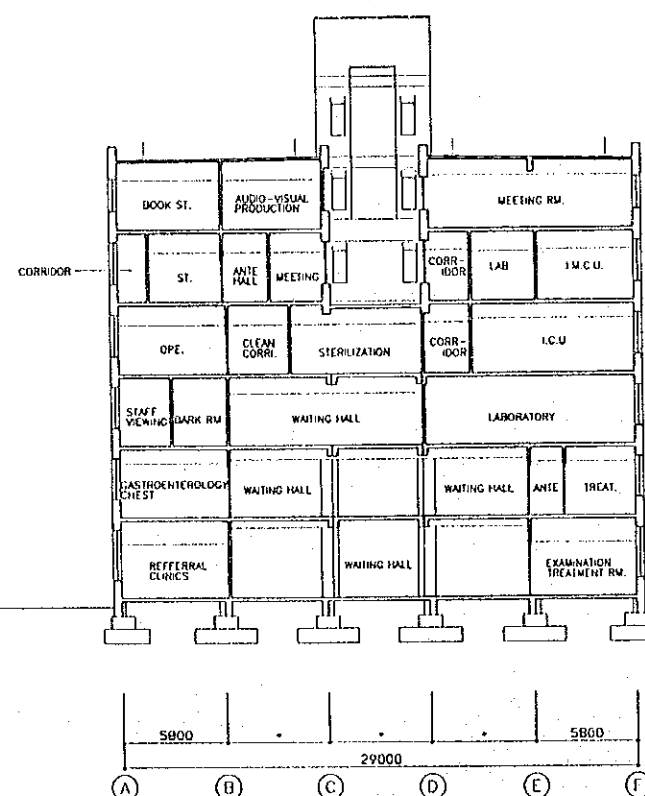
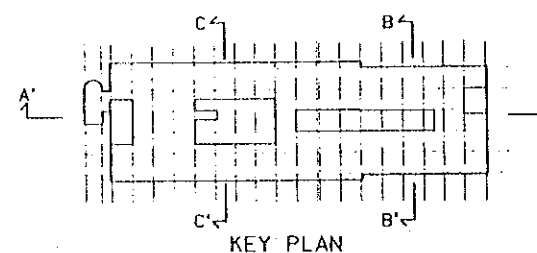
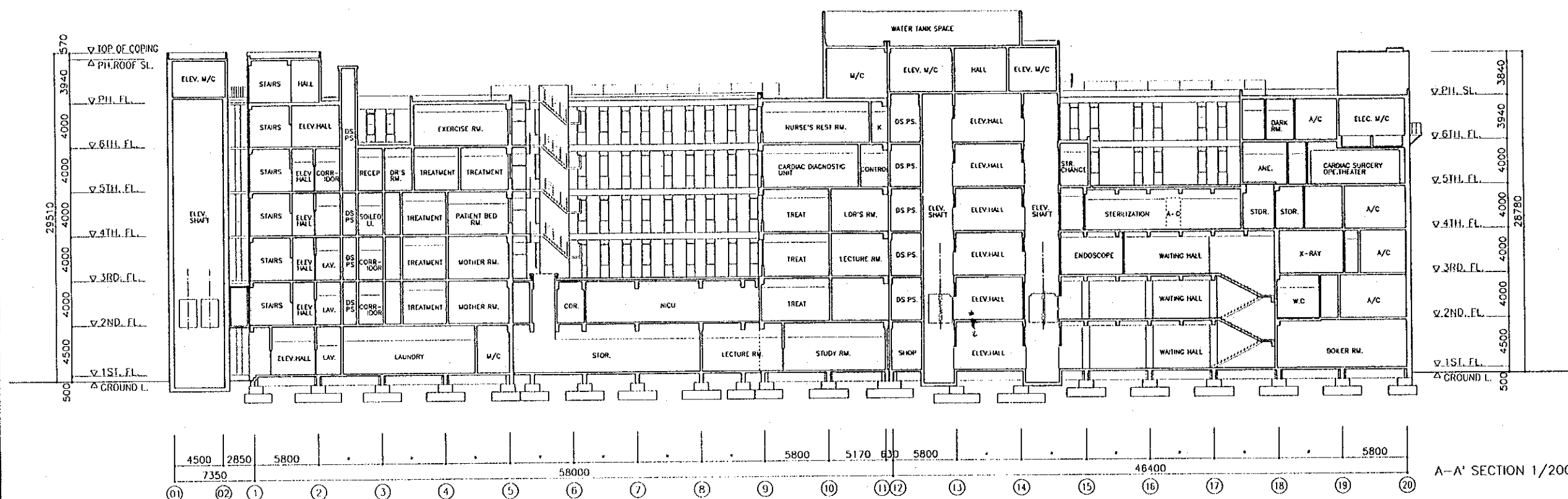
ELEVATION

SCALE 1/200

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CHAPTER 3 IMPLEMENTATION PLAN

CHAPTER 3: IMPLEMENTATION PLAN

3-1 IMPLEMENTATION PLAN

3-1-1 Implementation Concept

This complex construction will consist, in part of the expansion, removal, renovation and repair of the existing hospital while the hospital continues to operate. The construction will be undertaken so as to cause the least possible disturbance to the hospital's daily operation; although at times certain sections will be closed for a short time. This work will be carried out as follows:

(1) Passageway Allowance

Passageway will be allocated for the construction staff and the materials into and from the work area which will not conflict with the medical service passageways.

(2) Detailed Meetings With The Hospital Staff

During this construction period a temporary closure of certain areas of the hospital cannot be avoided. Detailed meetings with hospital personnel will be conducted in order to obtain approval regarding the work detail, time schedule and safety precautions before construction begins.

(3) Optimizing the Hadji Holiday Period

During the Hadji Holiday period many Islam in-patients will return home temporarily reducing the number of patients. This holiday period will be used effectively for construction scheduling.

3-1-2 Implementation Conditions

(1) Minimize the Disturbance to the Hospital

1) Traffic Line for the Visitors to the Hospital

The front entrance is used by the medical students, professors, doctors, nurses and visitors, and the back entrance is used by the out-patients and their accompanying parent(s), however, this may be temporarily closed/changed.

2) In-Hospital Traffic Line

The construction work plan will be made giving priority to the traffic line for the patients, the medical staff, and stretchers.

3) Traffic Line for Deliveries and Disposals

Traffic line for deliveries of medical gas, medical supplies and food supplies and disposal of medical waste, garbage, etc. will be secured at all times.

4) Security for Mechanical and Electrical System Operation

Strict precaution will be taken to avoid accidents which may result in temporary stoppage in electricity, medical gas, air conditioning, water supply and drainage

which may cause irreparable damage to a patient life.

5) Security for all Hospital Facility

During the renovation work period certain facilities will have to be temporarily moved to a different location or relocated to a temporary site. This will be discussed thoroughly with the hospital personnel and construction executed for temporary sites for medical treatment to be continued. (Sterilization room, operating theater, toilet).

(2) Prevention of Environmental Pollution during Construction

1) Prevention/Reduction of Construction Noise and Vibration

In order to cause the minimum disturbance to in-patients, construction which may create noise/vibration at times will be limited and machinery and construction methods selected for this purpose.

2) Prevention of Dust and Stench

Dust and stench caused by construction will be eliminated as much as possible by providing an exhaust system.

3) Reduction of Construction Pollution to the Neighborhood

A temporary fence will be built around the construction site in order to reduce construction noise, for the protection of the neighboring apartment.

(3) Maintenance Consideration

1) To Provide Exhaust and Drainage Routes

This route will bear in mind an easy inspection and maintenance by the hospital maintenance person after construction completion.

2) To Establish Self-Maintenance

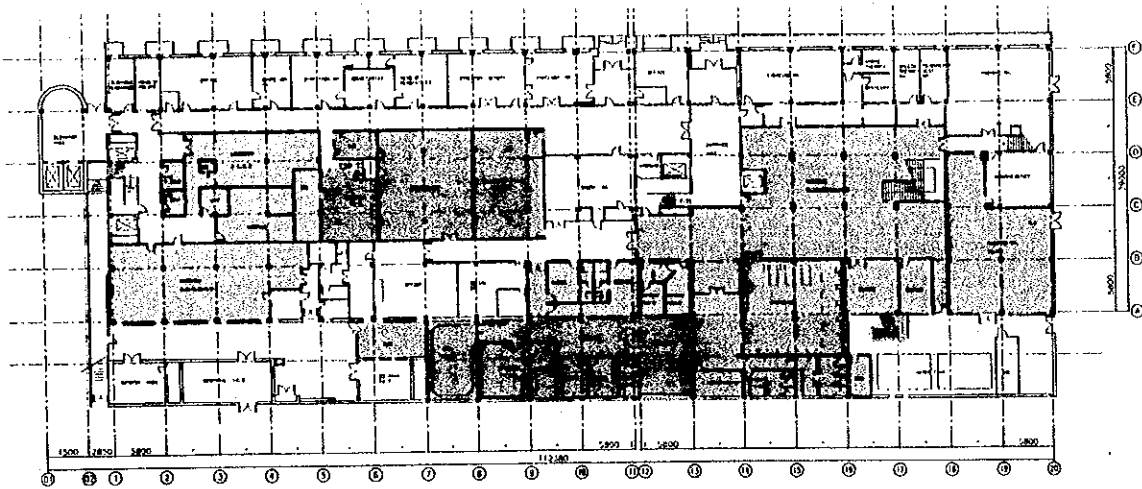
In order for the hospital to self-maintain facilities after completion, materials and equipment will be selected locally. Imported items will be selected only if agents are available locally for maintaining and replacing of parts.

3-1-3 Scope of Works

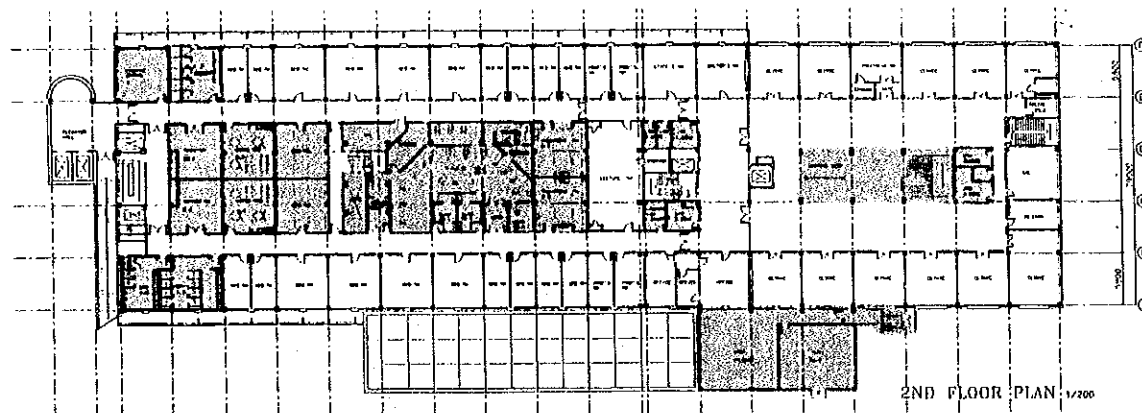
The area covered by Japanese Grant

Of the facilities and machine parts included in the project, those of which are considered necessary for medical treatment and those constructions which are difficult to be proceeded by the Egyptian technology.

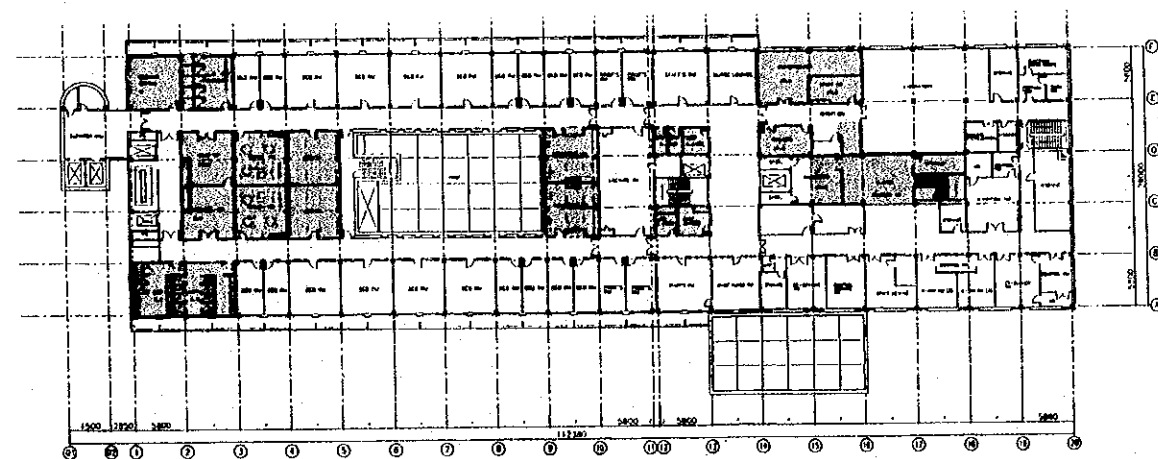
- (1) The expansion sections, renovation, construction of the Mechanical/Electrical sections, and the dismantlement of the sections shown in the following table.



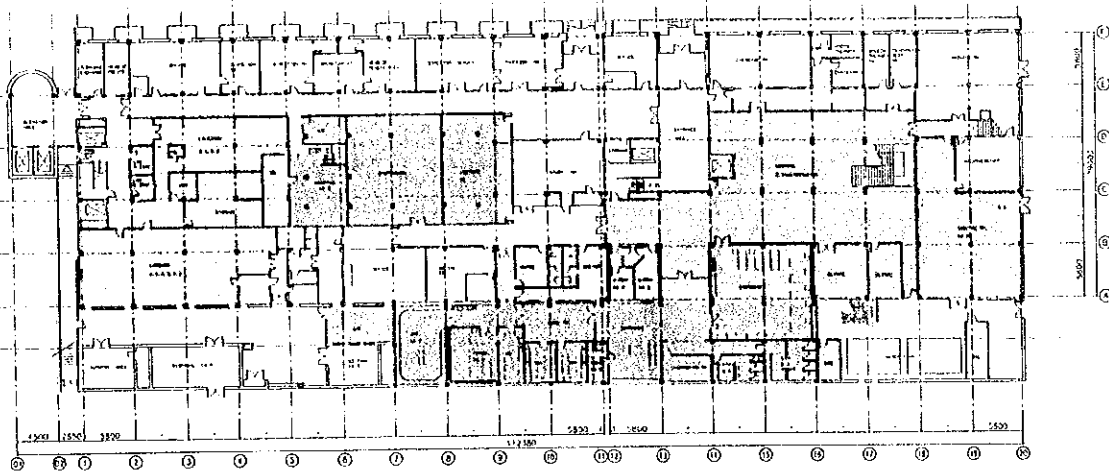
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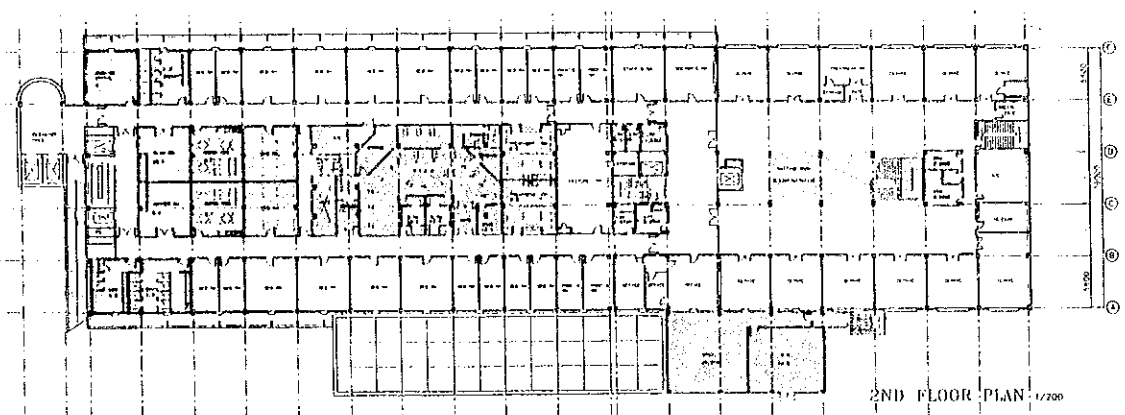
2ND FLOOR PLAN 1/800



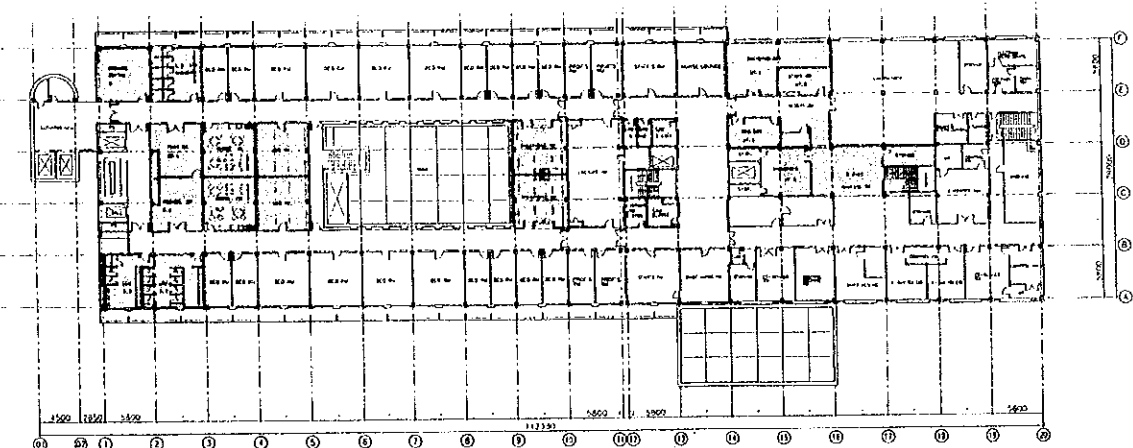
3RD FLOOR PLAN 1/800



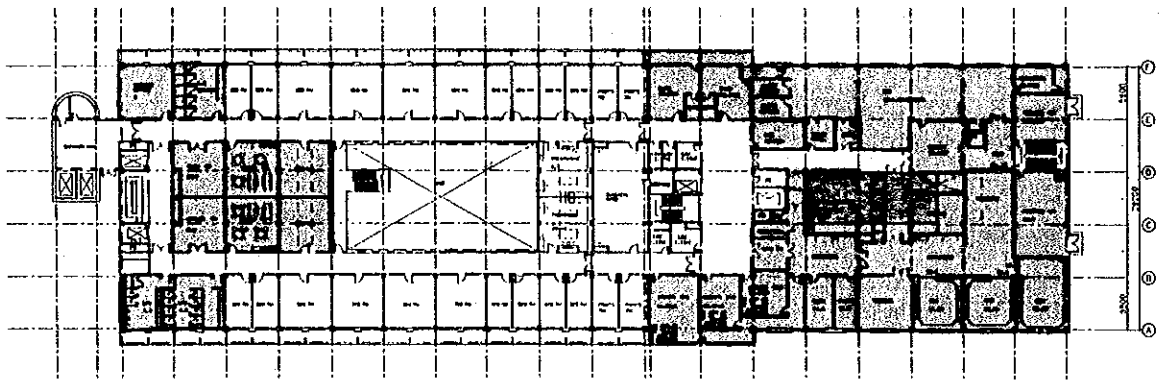
1ST FLOOR PLAN 1/800



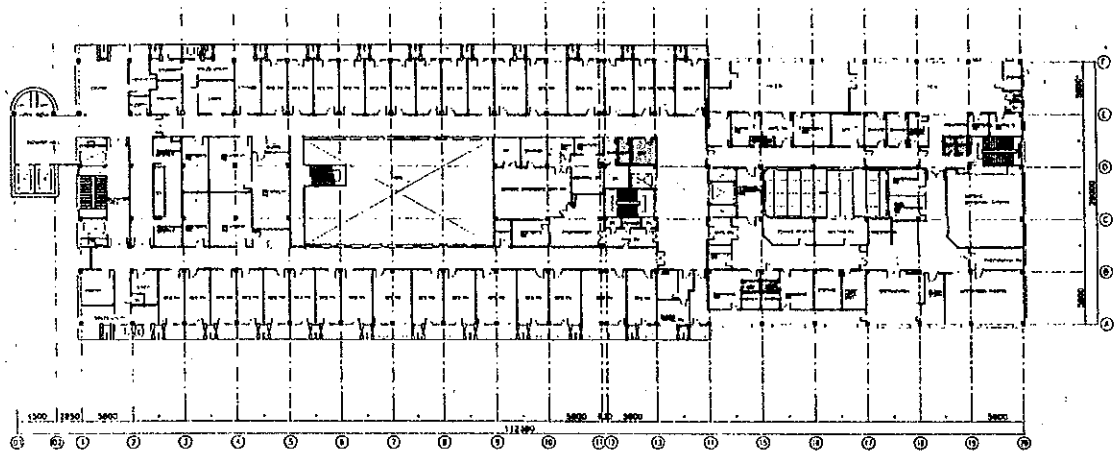
2ND FLOOR PLAN 1/800



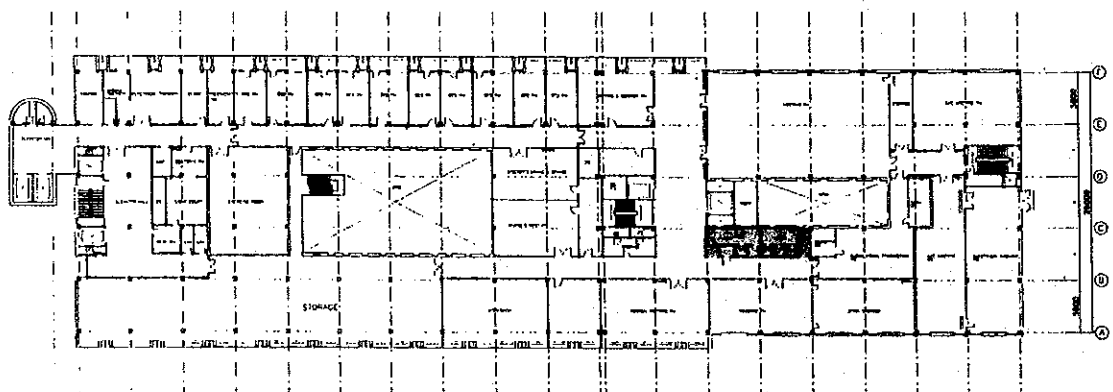
3RD FLOOR PLAN 1/800



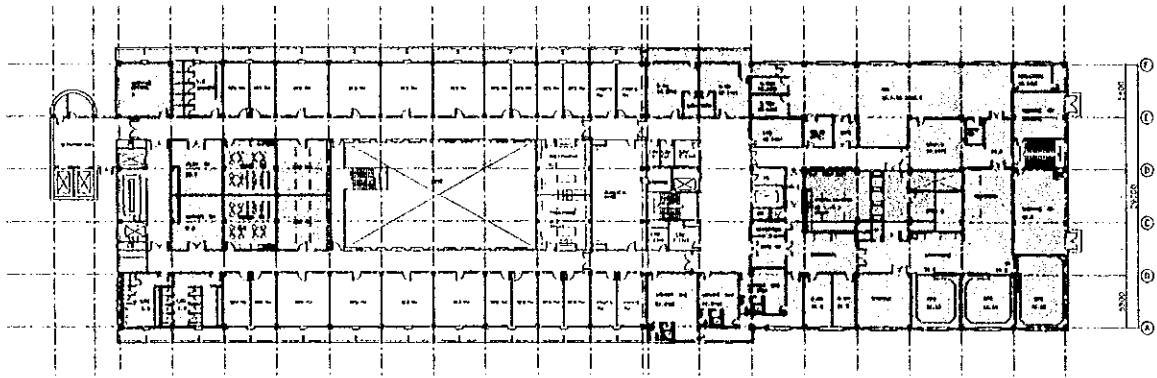
4TH FLOOR PLAN 1/800



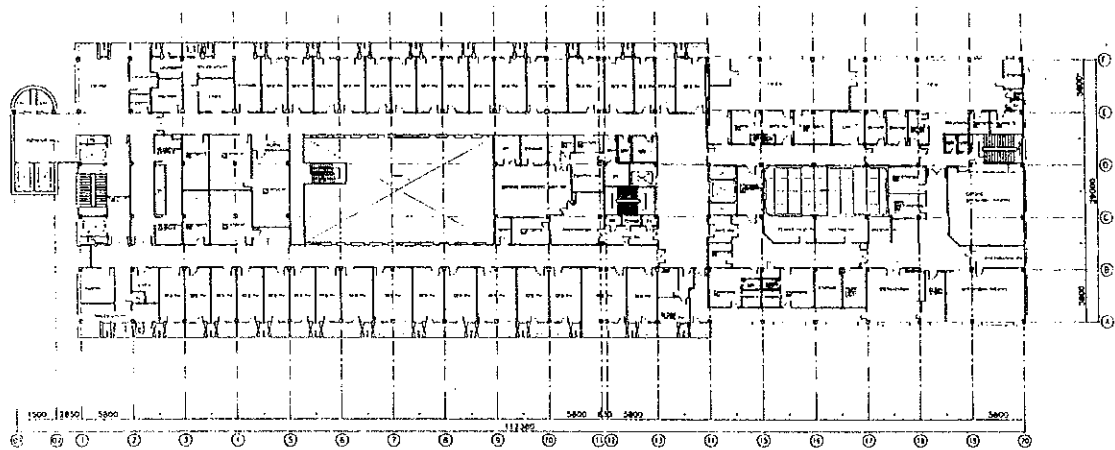
5TH FLOOR PLAN 1/800



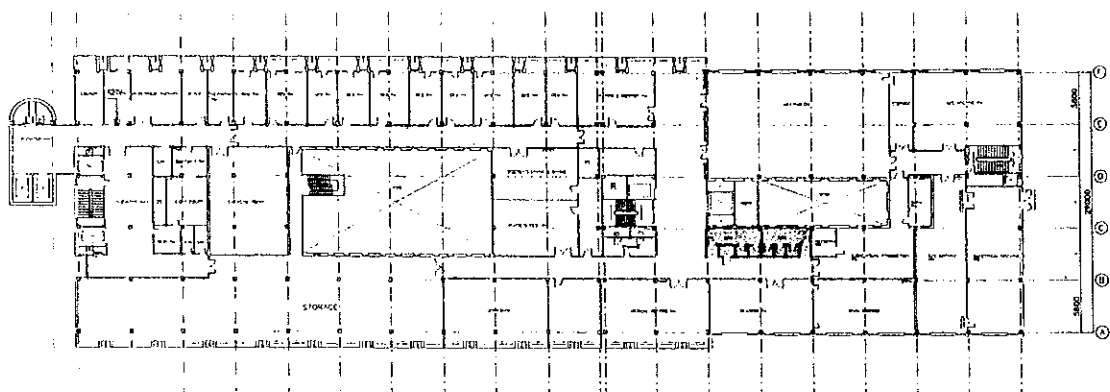
6TH FLOOR PLAN 1/800



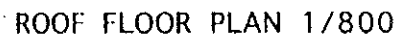
4TH FLOOR PLAN 1/800

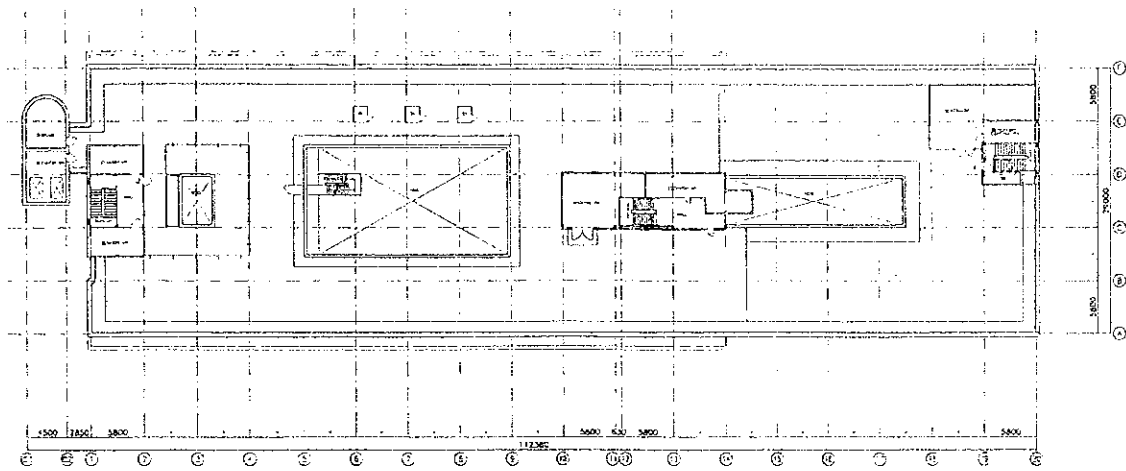


5TH FLOOR PLAN 1/800

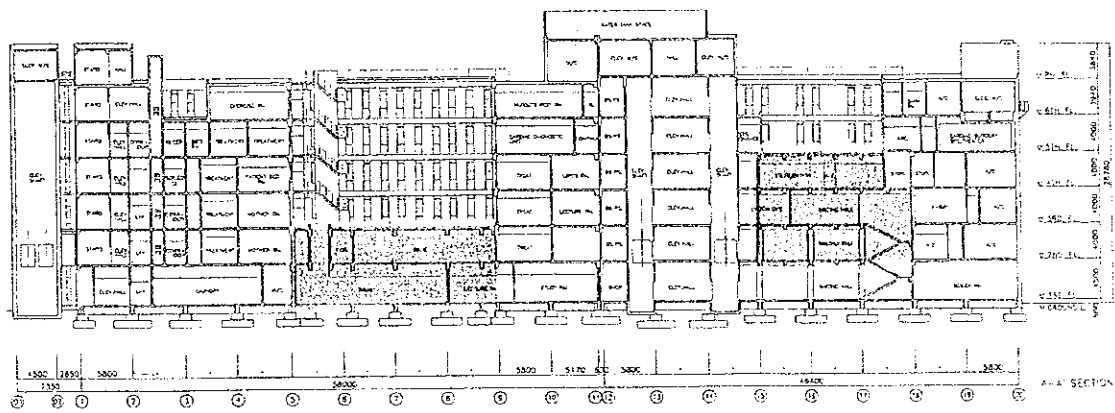


6TH FLOOR PLAN 1/800





ROOF FLOOR PLAN 1/800



SECTION 1/800

3-1-4 Consultant Supervision

Based on the policies of the government of Japan for carrying out the provision of grant aid, and with due consideration to the aim of the basic design, the consultant will organize a comprehensive project team for conducting the detail design and construction supervision stage of the Project. This will ensure a smooth implementation of related work. In the construction supervision stage, the consultant will dispatch staff in charge of design to supervise construction, instruction, communication and inspection.

(1) Main Policies for Supervision

- 1) Close communication shall be maintained, and frequent reports shall be made to, the related organizations of The Arab Republic of Egypt and Japan as well as with the persons in charge, so that the project can be completed on schedule without delay.
- 2) Speedy and appropriate advice shall be provided to the contractor to make sure that facilities conforming to the design documents will be constructed.
- 3) Locally procured materials and equipment and locally practiced construction methods shall be adopted wherever possible.
- 4) As construction will proceed while the Hospital is in operation, construction will be carried out with ample safety measures and prevention of pollution.
- 5) Adequate advice and guidance shall be provided for maintenance of the facilities to promote their smooth operation after they have been completed and handed over to the Egypt side.

(2) Contents of Consultant's Supervisory Service

- 1) Assistance on construction contract work

To undertake selection of the contractor, determination of the style of the construction contract, preparation of the agreement for the construction contract, item-by-item verification of the contents of the bill of quantities, and witnessing of the conclusion of the construction contract.

- 2) Inspection and confirmation of construction drawings, etc.

To conduct inspections, etc., of the construction drawings, materials, finish samples and utility equipment submitted by the Contractor.

- 3) Hospital Operation and Construction Schedule Adjustment

Construction Schedule will be planned with minimum disturbance to Hospital Operation

- 4) Guidance on the construction work

To inspect the plans and processes for the construction work, provide guidance to the Contractor and report on the progress of the work to the Client.

- 5) Assistance on the certificate for interim payment

To verify the contents of invoices, etc., related to the construction cost to be paid

during and after the completion of construction work, and to assist in the procedural work.

6) Presence at inspections, Reports

As this work will be divided into partial construction with inspections to be made upon the completion of each phase.

Inspections will be carried out in specific stages and areas of the construction work as required and provide instructions to the contractors through the period of the work. Upon confirming that the construction work has been completed and the terms of the contract have been duly carried out, the Consultant witnesses the handing over of the facilities of the Contract, receives the approval of the Client, and completes its mission. The Consultant is also required to report on the progress of construction work, and provide the related parties in Japan with relevant information on the payment procedures and handing over of the facilities.

These points have been taken into account in the system of construction supervision and related organizations demonstrated in Chart 2-1-1.

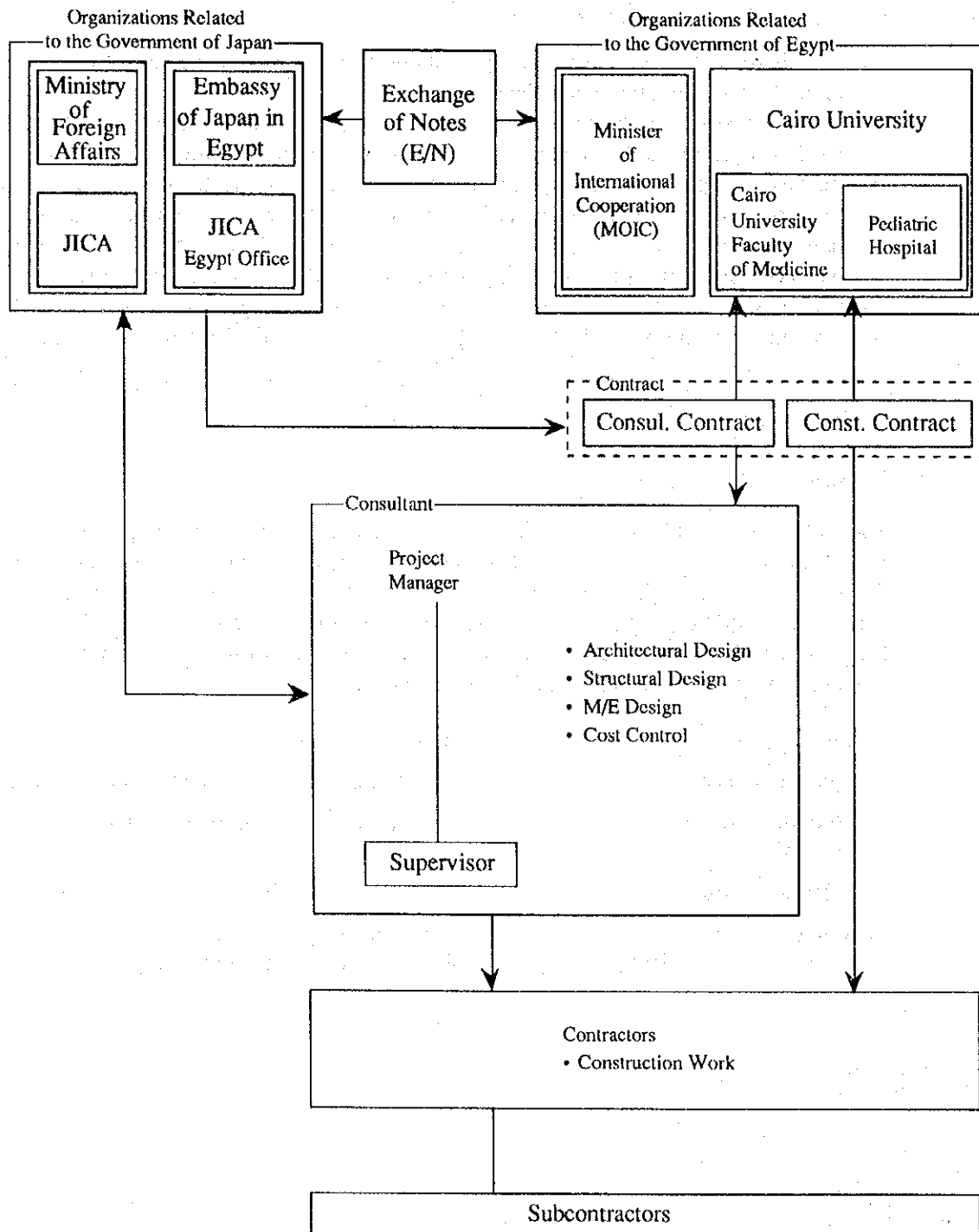
(3) Construction Supervisor

The ability to smoothly implement joint work with local construction companies in The Arab Republic of Egypt and the ability to provide adequate technical consultations to the local companies in Egypt are required for the construction of facilities in conformity with the design documents and within the time schedule.

Judging from the scale and contents of the facilities of this Project, the number and functions of construction supervisors are as follows.

Superintendent	:	1	Overall management
Architectural/construction drawings supervisor	:	1	Construction management and supervision of production of construction drawings
M/E supervisor	:	1	Supervision on M/E work
Administration equipment, supervisor	:	1	Management of imported materials and labor and administrative management

Chart 3-1-1 System of Supervision of the Construction



3-1-5 Procurement Plan

The general rule for material procurement is to procure locally whatever material is available as long as they satisfy the requirements in quality, quantity, delivery time and cost.

The Project is basically an expansion project, so it is essential to select materials and equipment that are compatible to those of the existing facilities. Manufacturers that have service bases in Egypt should be selected, to ensure a smooth maintenance and supply of spare parts in future.

Procurement plan for the materials and equipment is as follows:

Table 3-1-2 Procurement Schedule

Kinds of Work	Country of Procurement		
	Egypt	Japan	Others
Construction Work	steel frame, cement, round steel bars, asphalt water-proofing material, cement tile, terrazzo block, carpet, timber for temporary construction (thin type), bricks, steel bars for temporary construction (thin type), mosaic tile	steel fittings	temporary scaffold, form lumber, gypsum board
Electrical Work	receptacle Switch wire, lighting distribution panel, generator lighting fixture	communications equipment,	motor control panel, shadowless lamp, lighting fixture, cable
Air-conditioning & Ventilation Work	duct, diffuser, boiler	All other items to be procured in Japan	—
Plumbing Work	pipe, sanitary fittings	All other items to be procured in Japan	—

3-1-6 Implementation Schedule

The expected work schedule in which the Project is to be implemented is given on the following page.

In the event that the Project for the Rehabilitation of C.U.P.H. is implemented under the grant aid of the Government of Japan, the construction of facilities and provision of equipment will be conducted in the following three stages after the Exchange of Notes (E/N) between the two nations: preparation of detail design documents, tendering and contract for construction, and the actual construction work.

(1) Detail Design Stage

Tender documents based on the basic design will be drawn up. The documents will include detail design drawings, specifications, estimated costs and budget plans. Thorough consultation with the related organizations in Egypt will be carried out in the initial, intermediate and final stages of the detail design, and tendering activities will be launched only after approval has been received on the final product.

The expected period required for this stage is 3 months.

(2) Tendering and Contracting Stage

The tendering stage will start when the public announcement is made in Japan for pre-qualification (P/Q) for participation in the tendering for the construction work, after the completion of the detail design. Based on the results of the pre-qualification, the Executing Agency will invite companies to participate in the tendering. The tendering will be conducted in the presence of related parties. When the tenderer who has submitted the lowest bid is judged to have submitted an adequate and qualified bid, he will be named as the successful tenderer. The contract for construction work will be made between the government of Egypt and the successful tenderer. The expected period required from tender call to the contract for the construction work is 2.5 months.

(3) Construction work for Facilities and Provision of Equipment

After the contract for the construction work and provision of equipment has been signed by the parties concerned and verified by the Government of Japan, the construction work will start. Judging from the scale and contents of the facilities for the Project, the period required for construction work for the Project is expected to be 20 months, on the understanding that the schedule & operation are agreed to by the Hospital.

(3) Optimizing the Hadji Holiday Period

During the Hadji Holiday period many Islam in-patients will return home temporarily reducing the number of patients. This holiday period will be used effectively for construction scheduling.

3-1-7 Obligations of Recipient Country

As written on the minutes of meetings of April 2, and July 18, 1995, the following items are covered by Egyptian side.

Items for construction

- ceramic tile for walls of stairs and treatment room
- chairs for outpatient waiting hall
- video monitors
- storage system in the treatment room
- electrically controlled doors for operation theater
- paint & repair door
- repair of the damaged elevators
- improvement of section of bacteriology
- interior work for lecture room
- allocate a space of 80 - 100 m² inside the Hospital

Items for hospital operation

- additional running cost for NICU and emergency unit.
- maintenance cost for boilers, refrigerating machines, air-conditioners, generators, elevators

Others

- custom duties

3-2 PROJECT COST ESTIMATION

The area covered by the Egyptian side:

The constructions possible by the Egyptian technology, and the machine parts which are considered to be able to be attained locally. Also the following areas in which would not give fatal influences to the functions covered by the Japanese side although the tasks remain unfinished.

- (1) Medical instruments
- (2) Modification and coating of doors
- (3) Renovation of the elevators
- (4) Affixation of ceramic tiles (Staircase, Treatment rooms)
- (5) Audio Visual Monitors (1st, 2nd floor Waiting rooms, 4th floor Operation room)
- (6) Furniture
- (7) Electrically - controlled doors for operation theater
- (8) Interior work for lecture room

Details of covering areas for each are shown in the table.

And special considerations for construction as follows:

- (1) Site office (150 - 100 sq. meters) to be located within the hospital building.
- (2) To negotiate with the authorities for the use of the south side road for temporary storage area.
- (3) Moving cost of all equipment and materials within the rooms to be removed before renovation construction date.
- (4) To bear all electrical, water and gas charges incurred for the construction.

Table 3-2-1

Items		to be covered by Japanese Grant	to be covered by Egyptian side
1. Expansion Work (Architectural, Mechanical and Electrical work)			
1st Floor	Lecture Room	○	
	Pharmacy	○	
	Waiting Room for out-patients	○	
	Emergency Unit	○	
	Toilet		
	Treatment Room		
	Nurse's Room		
	Recovery Room		
	Operation Room		
	Mechanical Room		
2nd Floor	NICU	○	
Floor	Storage Room	○	
	Mechanical Room	○	
	Waiting Lobby	○	
3rd Floor	Waiting Lobby	○	
4th Floor	Central Sterilization Room	○	
2. Renovation of the facilities			
1st Floor	Renovation of the Dispensary	○	
	New X-rays	○	
	Renovation of the Emergency Unit	○	
	Renovation of the Clinical Department	○	
	Relocation of Staircases	○	
	Renovation of Main Kitchen	○	
	Renovation of Laundry	○	

Items		to be covered by Japanese Grant	to be covered by Egyptian side
2nd 3rd 4th Floor	Relocation of toilets in two parts	○	
	Relocation of Shower Rooms	○	
	Relocation of Washing Space	○	
	Relocation of Playrooms	○	
	Relocation of Mother's Room	○	
	New Construction of Nurse's Room	○	
	Relocation of Sick Rooms	○	
	Renovation of Treatment Room	○	
	Renovation of toilets in 7 sections (5 sections in 3, 4th floor)	○	
	Renovation of Bacteriology room (3rd floor)	○	
	Relocation of E.C.G. and E.E.G	○	
	New Construction of Staff room (3rd floor)	○	
	New Construction of Locker room (4th floor)	○	
	Renovation of Operation room (4th floor)	○	
	Renovation of ICU (4th floor)	○	
	Renovation of Mechanical room (4th floor)	○	
5th Floor	Renovation of toilets in 7 sections	○	
6th Floor	Renovation of toilets in 2 sections	○	
Roof Top	New Construction of the Machinery Shed	○	
3. All necessary demolition work for expansion, renovation and modification work for above.		○	

Items		to be covered by Japanese Grant	to be covered by Egyptian side
4. Supply and installation of non-medical equipment and furniture			
	Furniture and shelves in each rooms		○
	Sinks, Washbasins, and bed pan sinks	○	
	Nurse station counter	○	
	Affixation of ceramic tiles on Staircase (1st to 6th floor)		○
	Affixation of wall ceramic tiles of Treatment room		○
	Flooring of Treatment room (2nd to 4th Floor)		○
	Drainage of Treatment room (2nd to 4th Floor)		○
	Electric door of 4th floor Operating room		○
	Re-Painting of each section, and modification of doors		○
	Audio Visual Monitors (Waiting room 1st, 2nd floor, Operation room 4th floor)		○
5. Supply and Installation of Medical Equipment			
	(1) Basic equipment		○
	(2) Shadowless lamp	○ (1 unit)	
	(3) Sterilizer	○	
6. Consulting Services			
	(1) Detailed Design for whole project (the work to be undertaken by the both sides.	○	
	(2) Supervisory Services (including tendering) for the work to be undertaken by the Japanese.	○	
	(3) Supervisory Services (including tendering) for the work to be undertaken by the Egyptians.		○

Items		to be covered by Japanese Grant	to be covered by Egyptian side
7. The measures required regarding the implementation of the project			
	(1) To ensure prompt unloading, tax exemption, customs clearance at port of disembarkation in Egypt and prompt internal transportation of the products purchased under the Grant.		○
	(2) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Egypt with respect to the supply of products and services under the verified contracts.		○
	(3) To accord Japanese nationals whose service may be required in connection with the supply of the products and the service under the verified contract such facilities as may be necessary for the entry into Egypt and the stay for the performance of their work.		○
	(4) To bear advising commission for authorization to pay and payment commission to the Japanese foreign exchange bank for the banking services based upon the banking arrangement.		○
	(5) To bear all expenses other than those to be borne by the Grant, necessary for construction of the facilities and the installation of the equipment.		○
	(6) To secure the import of materials, equipment and products to be used in the project in connection with the import ban.		○
	(7) To exempt Japanese contractors from social insurance fee imposed on the project.		○