5-6 MECHANICAL FACILITIES DESIGN

5-6-1 Design Concept

The design policy of the air conditioning system plan is made up as shown below, based on the actual situation of air conditioning system and present condition of maintenance in Egypt together with discussions with ERTU.

- To save energy
- To provide a confortable working environment
- To prevent the dust from entering into rooms through air ducts
- To prepare a stand-by system
- Easy maintenance and operation

5-6-2 Design Ambient Air Conditions

(1) Outside and inside design air conditions

a. Outside air design conditions

In summer

Temperature: 105 deg.F (D.B.)
Humidity : 77 deg.F (W.B.)

In winter

Temperature: 45 deg.F (D.B.)
Humidity : 40 deg.F (W.B.)

b. Inside air design conditions
(Mainly TV studios and control rooms)

In summer

Temperature: 72 (*74) deg.F (D.B.) ±5%
Humidity : 50% (R.H.) ±10%

In winter

Temperature: 64.4 deg.F (D.B.) ±5%
Humidity : 50% (R.H.) ±10%

* Administration zone

(2) Allowable Target Noise Value of Duct System

The allowable target noise value of the air conditioning and ventilation duct system shall be determined as follows in accordance with 5-3-5 Acoustic Design.

Table 5-13 ALLOWABLE TARGET NOISE VALUE

Name of Room	NC Value
TV Studio	25 - 30
TV Studio Control Room	30
Effective Sound Recording Studio	20 - 25
Rehearsal Room	35
Office	35

(3) Air Conditioning Area and Ventilation Area

All buildings shall be provided with the air conditioning system in order to ensure comfortable work environment.
However, corridors shall be partially air-conditioned, while the decor workshop, assembly shall, store, pantry, toilet, parking area, etc. shall be only ventilated with no air conditioning.
Fig. 5-21 shows rooms to be air-conditioned and rooms to be ventilated.

5-6-3 Outline of Air Conditioning System

(1) Cooling Source System

The heat recovery system (by use of the double handle type centrifugal refrigerating machine) was reviewed according to the basic policy, but heat recovery with the cooling source system is not carried out because of the shorter room heating period in winter season and of increased equipment cost.

a. Cooling source system

The TV Studio Building features a larger heat gain as compared with common buildings.
This requires a refrigerating machine with a large capacity.
Therefore, the centrifugal refrigerating machine is employed, partly because ERTU engineers responsible for refrigerating machine operation control are acquainted with the above centrifugal refrigerating machine.
The cooling source equipment shall be provided with stand-by equipment considering the function of the TV Production Center as well as the present situation of the equipment maintenance system in Egypt.
Six centrifugal refrigerating machines shall be installed in the power house in order to reduce the capacity of stand-by equipment and to meet requirements during partial load operation.
Four out of six centrifugal refrigerating machines shares each 25% of the total load capacity while the other two shares each 12.5% of the total load capacity.
Therefore, the total capacity of refrigerating machines shall be 125% of the total load capacity, 25% of which shall be alloted to the stand-by refrigerating machines.

Stand-by equipment attached to the cooling source equipment and transport equipment includes the centrifugal refrigerating machine, cooling tower, chilled water supply pumps, and condensing water supply pump.
the cooling tower shall be an open type cooling tower, which involves de-sand device to protect the condensing water pipes and condenser.

b. Heating Source Equipment

The room heating system shall employ the electric heater system which is in wide use in Egypt. The central heating system is not considered.
The electric heater for room heating shall be attached to each air handling unit and fan coil unit.

(2) Air handling Unit and Ducting System

The air conditioning system shall employ the single duct system. The multi-zone unit system is not employed because of complicated control nor employed is the double duct system because of disadvantageous economy.
The TV control room shall be provided the VAV system which controls each room for better energy-saving.
Offices, etc. are provided with the air conditioning system consisting of the fan coil unit and single ducting system.
An air filter shall be provided on the outdoor air inlet in order to prevent sand dust, dirt, etc. from intruding into rooms through air duct and to keep the pressure in the building to a proper level.
Numbers of air handling units for the TV Studio, etc. shall be at least 2 units so that the TV Studio may be used during the maintenance of such air handling units.

(3) Piping System

The chilled water supply system shall employ the closed-circuit, variable flow rate system to reduce running cost.
Chilled water shall be delivered by the primary and secondary chilled water pumps from the centrifugal refrigerating machine to each air handling unit and fan coil unit through pipes laid in the tunnel connecting the power house with TV Studio Building.
Piping materials shall be galvanized steel pipe for chilled,condensing and drain water.

(4) Ventilation System

Decor workshop and assembly hall shall be provided with supply and exhaust air fans and ducts.
The frequency of ventilation is determined depending on the work function of each room. For example, the assembly hall, shall be ventilated 3 to 5 times per hour. The toilet, store, shower room, and pantry are provided with exhaust fans to remove ordors, etc.
In particular, each TV Studio shall employ the rapid ventilating system, which effectively exhausts dust, dirt, etc. occuring while scenery is assembled in the TV Studio.

(5) Automatic Control System

The automatic control system shall be of electric type, and controls the number of working refrigerating machines, the ON/OFF operation of the cooling tower fan by a condensing water temperature detector, and the number of working secondary chilled water supply pumps for the purpose of energy-saving.

Chilled water on the secondary side shall be controlled by the automatic 2-way valve while chilled water to the fan coil unit is controlled by the automatic ON/OFF valve and constant flow rate valve.

Each air handling unit shall be provided with a room heating electric heater, which shall be subjected to step control in several steps and overheat prevention control.

In particular, each TV Studio shall be provided with a rapid ventilating system which is remote controlled by the operation of the motor-driven damper. Fig. 5-23 shows rapid ventilating sysytem.

5-6-4 Work To Bo Done in Each Phase

(1) Phase-I

Cooling source equipment such as centrifugal refrigerating machine, cooling tower, pumps and so on, shall be provided retaining sufficient capacity for phase-I building.

Moreover, stand-by equipment shall be installed in phase-I.

Air conditioning system will be provided for phase-I building without any remaining works.

(2) Phase-II

Remaining cooling source equipment of full capacity for phase-II shall be provided in phase-II.

Upon completion of phase-II, entire air conditioning system of New TV Center will be achieved.

(3) Future expansion of New TV Center

ERTU will install its own air conditioning system in future expansion phase of New TV Center without any relation to phase-I and phase-II excluding the piping space.
Piping space from power house to future expansion building will be insured in the tunnel.
Above-mentioned phasing shall be shown in Fig.5-22.

(4) Surrounding building to be constructed by ERTU

Hotel, rest house and residence will be constructed by ERTU.
Cooling and heating facilities will be prepared by ERTU's own works without any relation to power house of New TV Center.

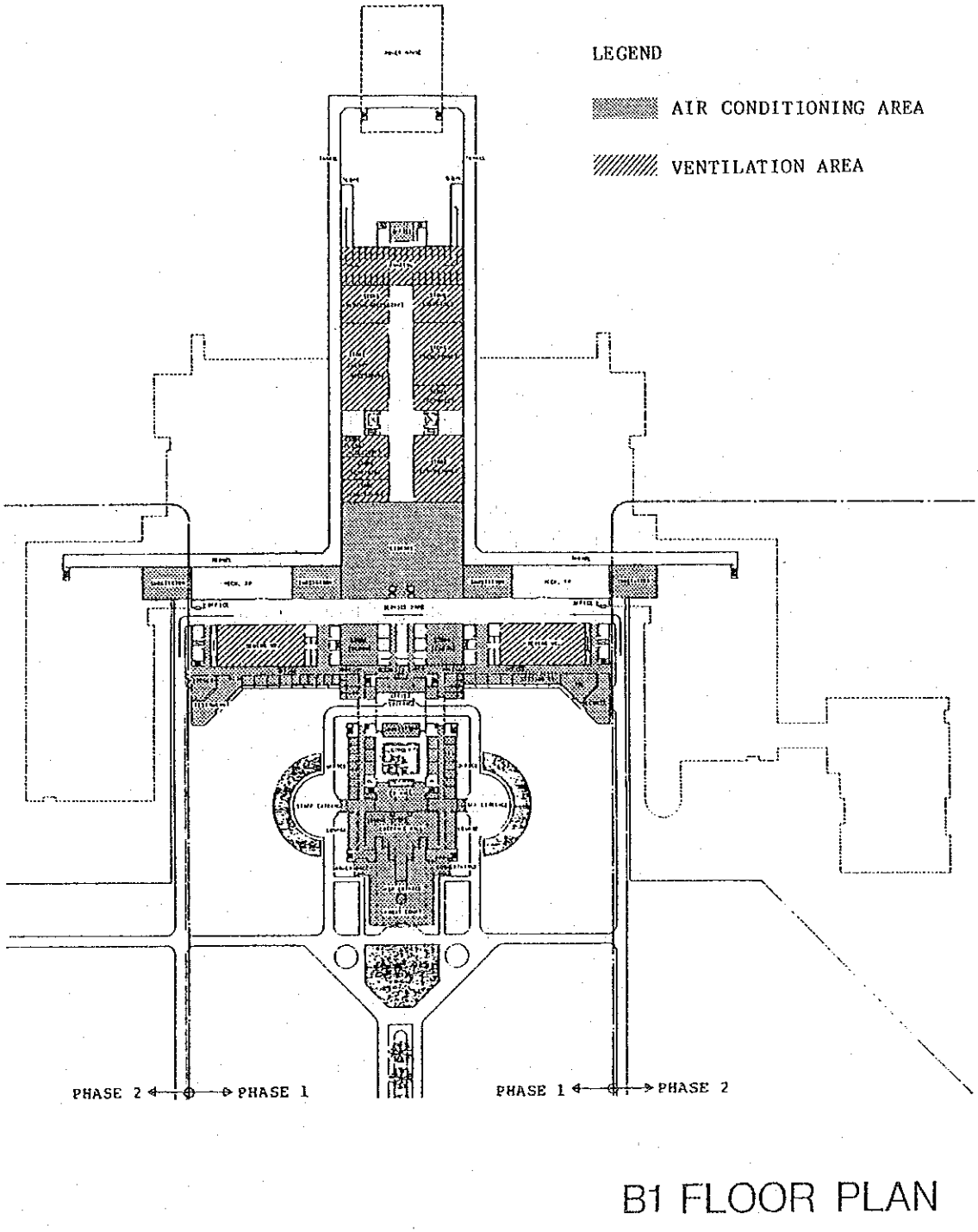
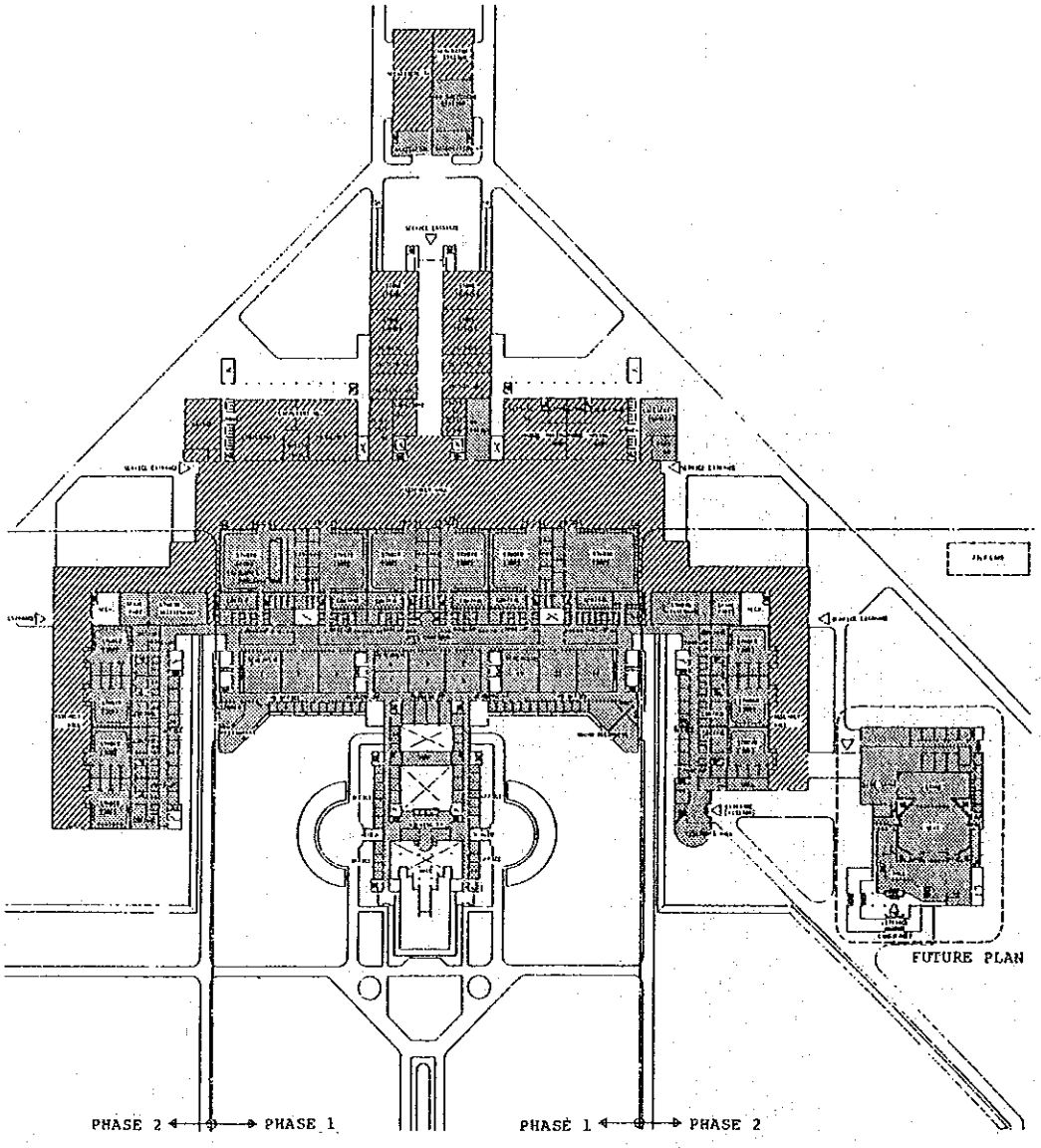
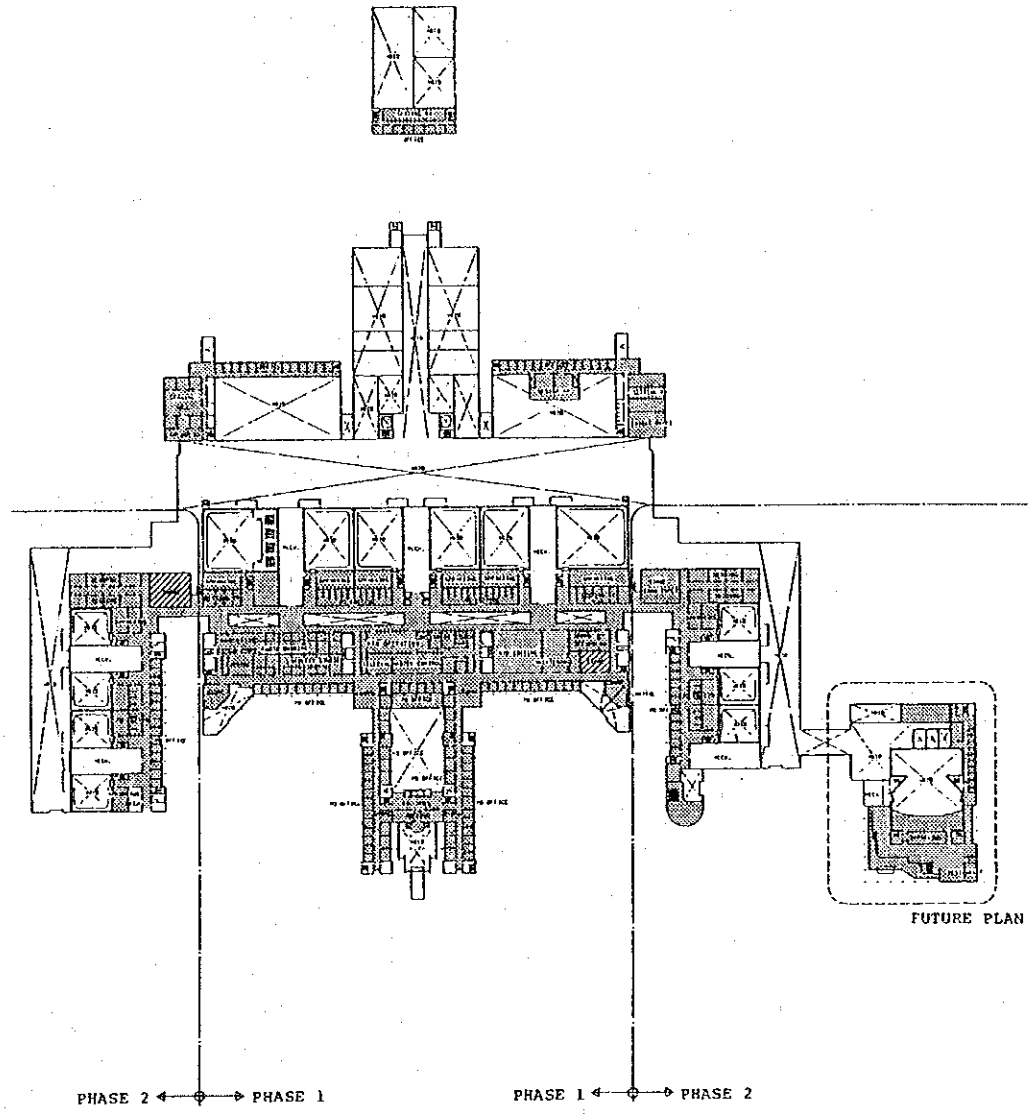


Fig. 5-21 AIR CONDITIONING AND VENTILATION AREA (1)



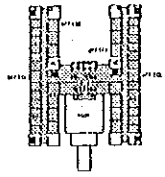
GROUND FLOOR PLAN

Fig. 5-21 AIR CONDITIONING AND VENTILATION AREA (2)

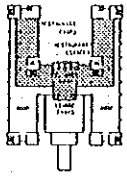


1ST FLOOR PLAN

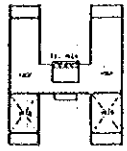
Fig. 5-21 AIR CONDITIONING AND VENTILATION AREA (3)



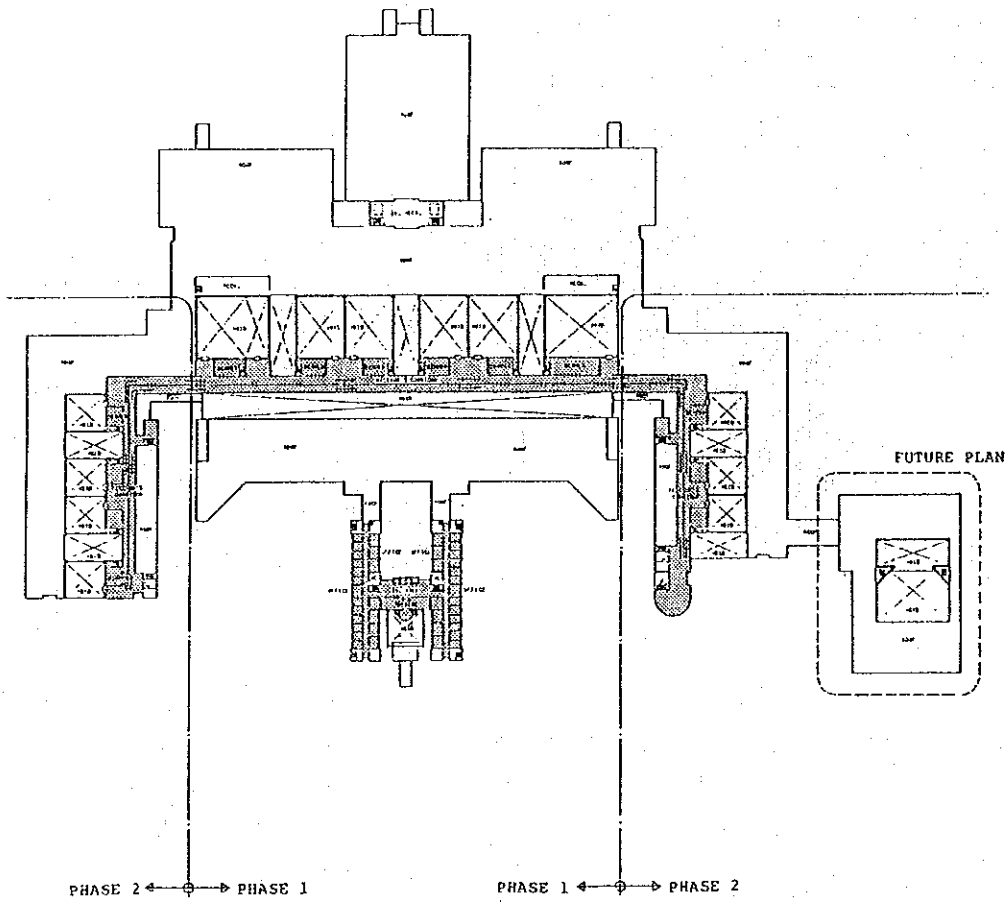
3RD • 4TH
FLOOR PLAN



5TH
FLOOR PLAN



ROOF PLAN



2ND~ROOF FLOOR PLAN

Fig. 5-21 AIR CONDITIONING AND VENTILATION AREA (4)

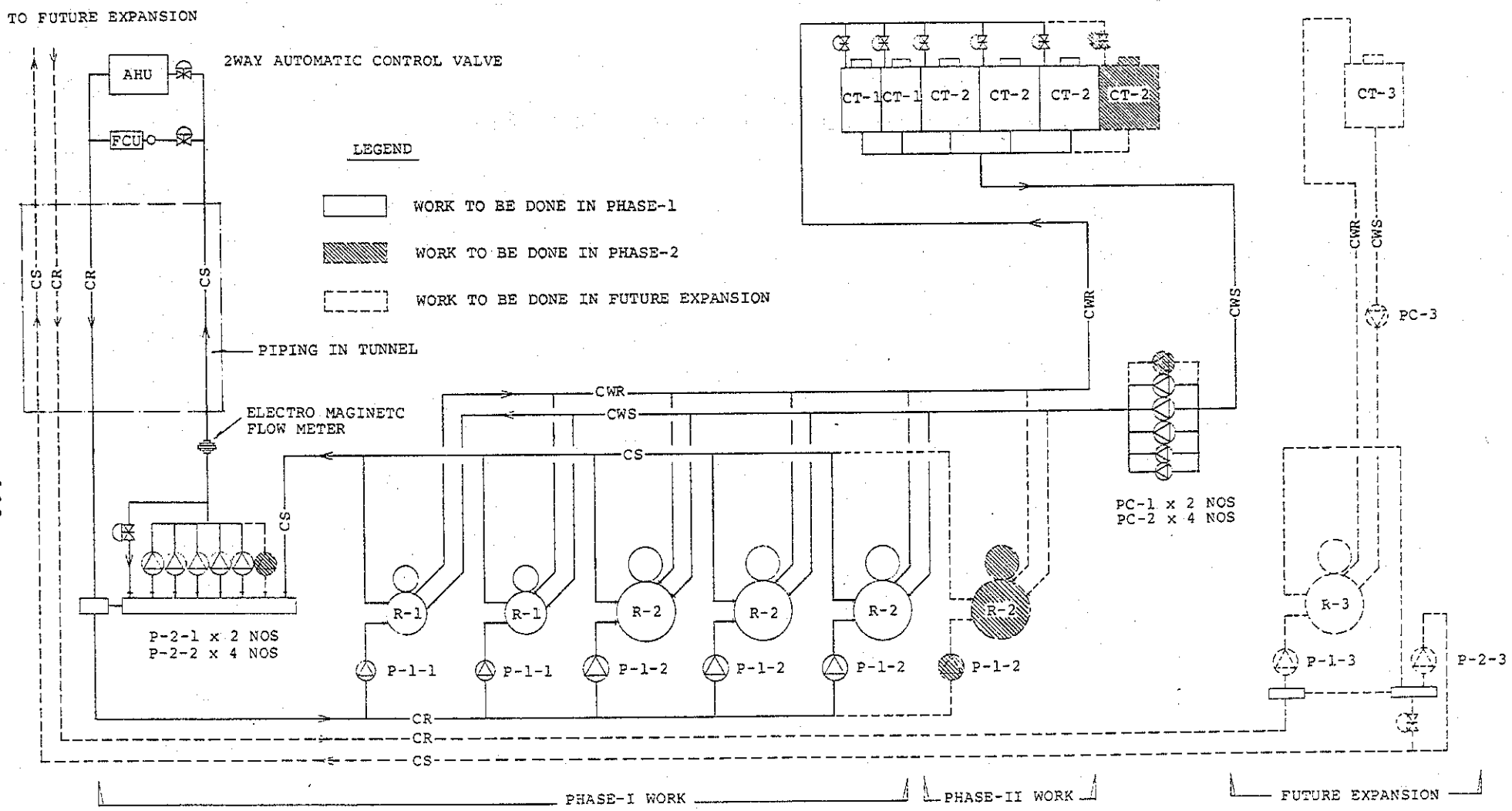
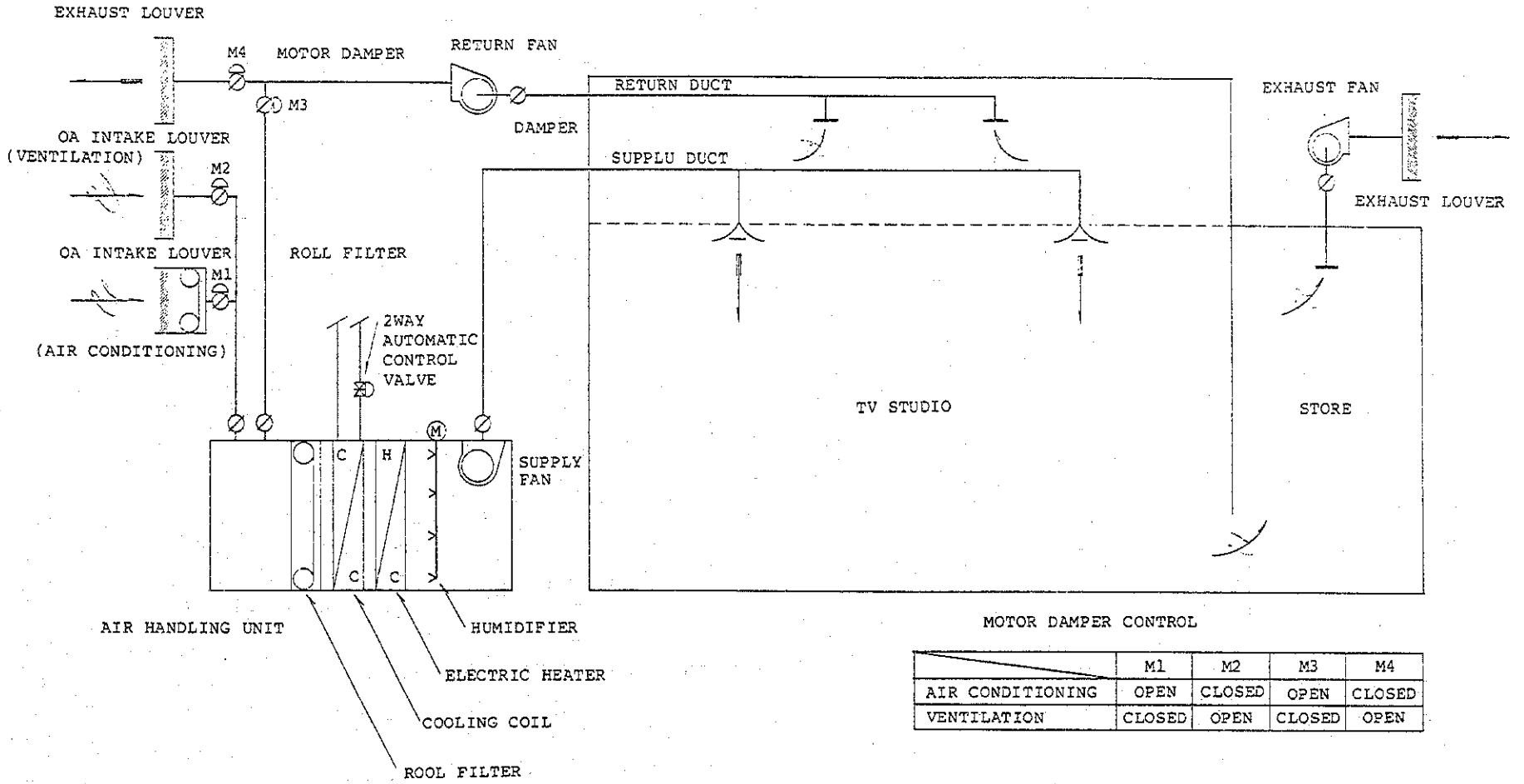


Fig. 5-22 CHILLED WATER PIPING DIAGRAM



MOTOR DAMPER CONTROL

	M1	M2	M3	M4
AIR CONDITIONING	OPEN	CLOSED	OPEN	CLOSED
VENTILATION	CLOSED	OPEN	CLOSED	OPEN

Fig. 5-23 RAPID VENTILATION SYSTEM FOR TV STUDIO

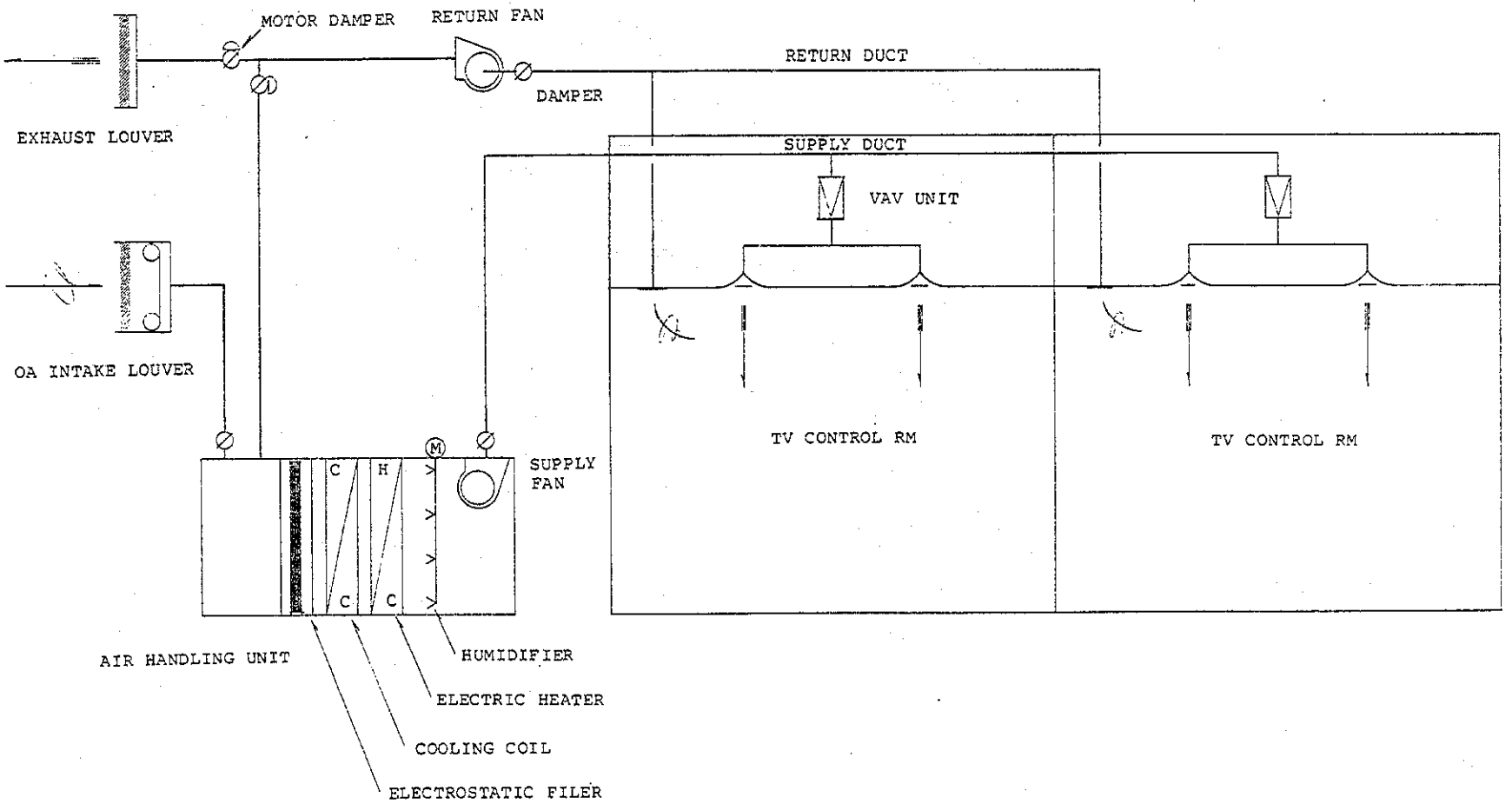


Fig. 5-24 VAV SYSTEM FOR TV CONTROL ROOMS

ATTACHMENT FOR MECHANICAL FACILITIES DESIGN

1. OPEN AND CLOSED CIRCUIT PIPING SYSTEM
2. HEAT RECOVERY SYSTEM

1. Study of open circuit system

Generally speaking, the following thermal characteristics of TV studio building must be considered.

1) large heat gain from TV studios and control rooms.
2) Occurrence of frequent change of thermal load.
3) Occurrence of partial load out of the standard operation period.

In case of the open circuit piping system, as the chilled water will be available anytime, when requirement arises.

And even though the load is small, it is able to meet such partial load easily.

We believe that the open circuit piping system is suitable for the TV studio building considering the above-mentioned thermal characteristics.

If we can sonstruct a reservoir underneath the building by utilizing the dead space of building structure, we should study the possiblity of the open circuit piping system.

But if it is impossible to utilize the building structure as reservoir, we must make an independent reservoir.

And at that time, we shall have to consider the cost of reservoir, insulation and waterproofing work and the maintenance of this system.

Hereunder, we report the actual accident and maintenance items of open circuit systems in Japan.

- Accident

  1) Condensation forms on the upper slab of reservoir due to imperfect insulation work
  2) Insulation is stripped
  3) Water leakage because of the imperfect waterproofing work.
  4) Rust forms

  Insulation work troubles account for 56% of accidents with this system.

  Moreovers, inthe case of water leakage, it is difficult to find the source of water leakage.

- Maintenance item

  1) Waste in the reservoir
  2) Rust
  3) Outbreak of harmful insects
  4) Condensation around the reservoir
  5) Water leakage

As the water quality in the reservoir becomes inferior, some troubles will occur.

  1) Rust
  2) Scale
  3) Slime

Water quality should be controlled as follows.

Table 5-14 WATER QUALITY

Item	value (figure)	characteristic	
		Rust	Scale
PH	6 - 8	o	o
Electrical conductance	110 /cm	o	
Alkalinity	100 ppm		o
Hardness	200 ppm		o
Chloride (cl)	200 ppm	o	
Sulfates (SO4)	100 ppm	o	
Iron (T-Fe)	1 ppm	o	

1-1 Comparison of open and closed (standard) curcuit piping system

1) Explanation of each system

a) Open circuit system

Open circuit system is called "heat storage reservoir system" in Japan.

Chilled and/or hot water is stocked in each heat storage reservoir, and with the corresponding heat gain, chilled and/or hot water is supplied to the air handling units and fan coil units by pumps.

The main characteristic of this system is that it meets partial load easily, maintains the high efficiency of refrigerating machines and allows a reduction in their capacity.

b) Closed ciruit piping system

Closed circuit piping system is usually adopted. Chilled and hot water is directly supplied to the air handling units and fac coil units by pumps.

2) Comparison of both systems

a) Merits and demerits

Merits and demerits of both systems are explained in the attached sheet.

b) Cost compariosn

Before cost compariosn, we assume the basic capacities of refrigerating machines and reservoir are as follows.

(i) Heat gain (per hour and per day)

q= 9,691,000 kcal/H

Q=97,777,000 kcal/H .... Please see next graph

(ii) Capacity of refrigerating machines

$$\text{cf. H} \times 1.05$$

Q-closed = 9,691,000 kcal/H x 1.05 - 3,024kcal/H.USRT

= 3,365 USRT - 3,400 USRT

Q-open = (97,777,000kcal/dayx1.05-18H/day) - 3,024kcal/H.USRT

= 1,886 - 1,900 USRT

(iii) Capacity of reservoir

$$V = \frac{25,553,644 \text{ kcal/day}}{7^{\circ}C \times 1,000 \times 0.7} = 5,215 \text{ m}^3 - 5,300 \text{ m}^3$$

Table 5-15 ROUGH COST COMPARISON

AHU: Air handling unit
R : Refrigerating machine
P : Pump

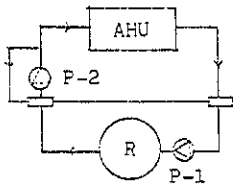
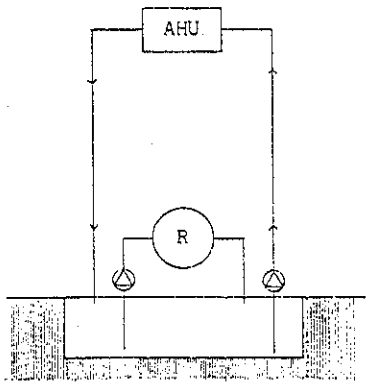
Diagram of chilled water piping system	Characteristic	Merit and demerit
Chilled water  	. Closed circuit piping (Standard piping) . Variable water supply system (by 2 way automatic control valve)	Merit; . Pump head will be small . Easy supply and maintenance system Demerit; . Not so easy to correspond to the partial load . Low efficiency of refrigerating machine at the partial load.
 	. Open circuit piping . Variable water supply system (by 2 way automatic control valve)	Merit; . Easy correspondence to the changeable thermal load and to the partial load with keeping high efficiency of ref, machine. . Decrease the capacity of refrigerating machine Demerit; . Heat loss from chilled water storage reservoir . Necessity of heat insulation and water proofing in the reservoir. . Pump head will be large . Maintenance of water in the reservoir

Table 5-16 ROUGH COST COMPARISON

System	Item	Cost	Remarks
Closed system (Standard system)	Main equipment	323,000,000 Yen	
Open system	Main equipment	195,700,000 Yen	
	reservoir	189,000,000 Yen	
		-|-	
		384,700,000 Yen	

Main equipment: Refrigerating machine, and cooling tower
Reservoir : Bottom concrete slab, insulation and waterproofing work.

Area of energy center ; 3,000 m2
Height of underground depth ; 2.5 m
Capacity of reservoir ; 5,300 m3

If the aera is changed, cost of reservoir will be changed.

Heat storage reservoir will be made under the energy center utilizing the building structure.

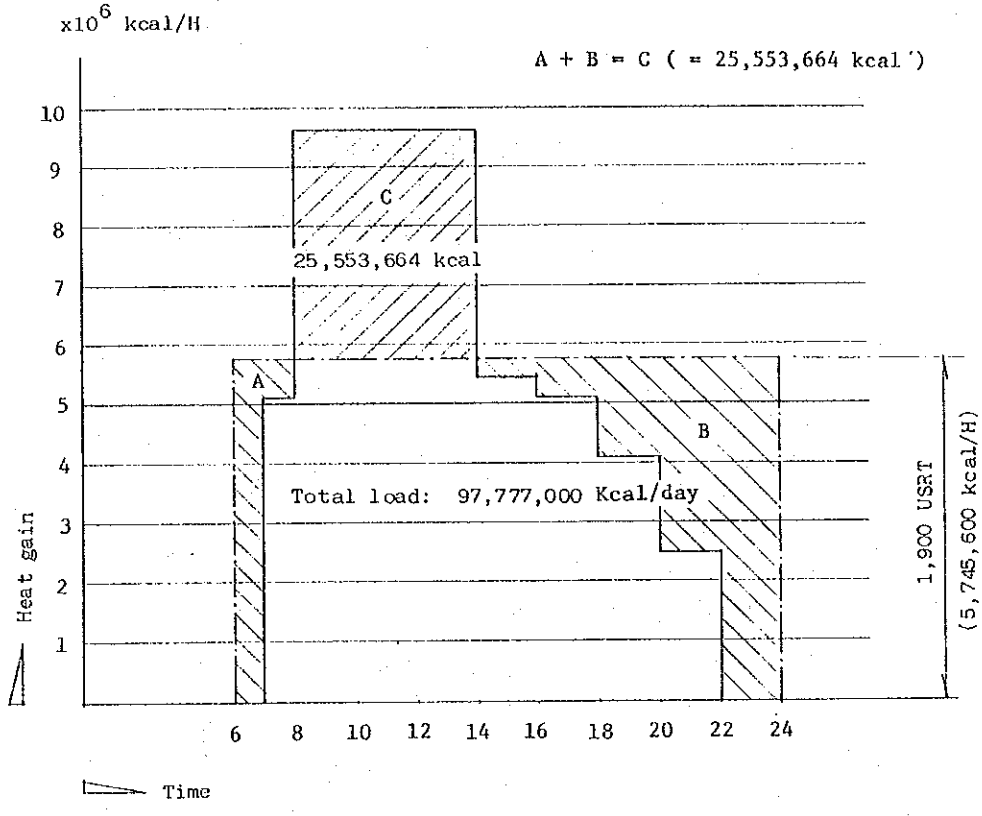


CHART OF HEAT GAIN PER DAY (Assumption)

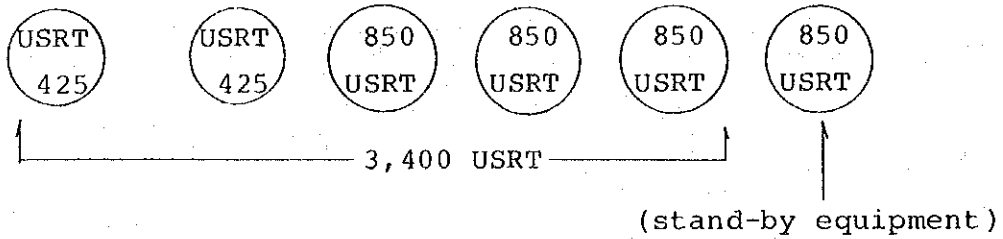
1-2 RECOMMENDATIONS

As we stated previously, open circuit piping system is suitable for TV studio building comparing with closed circuit system.
But considering the maintenance, risk of water leakage, and cost of insulation and waterproofing work, we should like to recommend the use of the closed circuit piping system.

In an emergency case, espacially the failure of city power, the most important zones, such as continuity studio, main control room, VTR room and so on, will be provided with air-conditioning.
Thus, to reduce the emergency power requirement for compressors of refrigerating machines in the closed circuit piping system, small capacity refrigerating machines will be adopted.
Assuming that total capacity of refrigerating machines will be aproximately 3,400 USRT.

(3,400 USRT - 4 NOS. = 850 USRT
850 USRT - 2 NOS. = 425 USRT)

Consequently, numbers and capacity of centrifugal refrigerating machines will be as follows.



Moreover, small capacity refrigerating machines will be able to meet the partial load.

2. Study of heat recovery system

Generally, heat from the building is coveyed to the atmosphere via the cooling tower in the cooling system.
This heat recovery type centrifugal refrigerating machine allows this escaping heat to be used as heat source in winter season.
We need a back-up boiler in case we can not obtain sufficient heat from cooling.
Considering the efficiency of heat exchange, low pressure steam will be used which will be generated by electric steam boiler.
Heat recovery type centrifugal refrigerating machines are 425 USRT x 2 NOS., because of the small heat loss from the building.
This system will be shown next page.

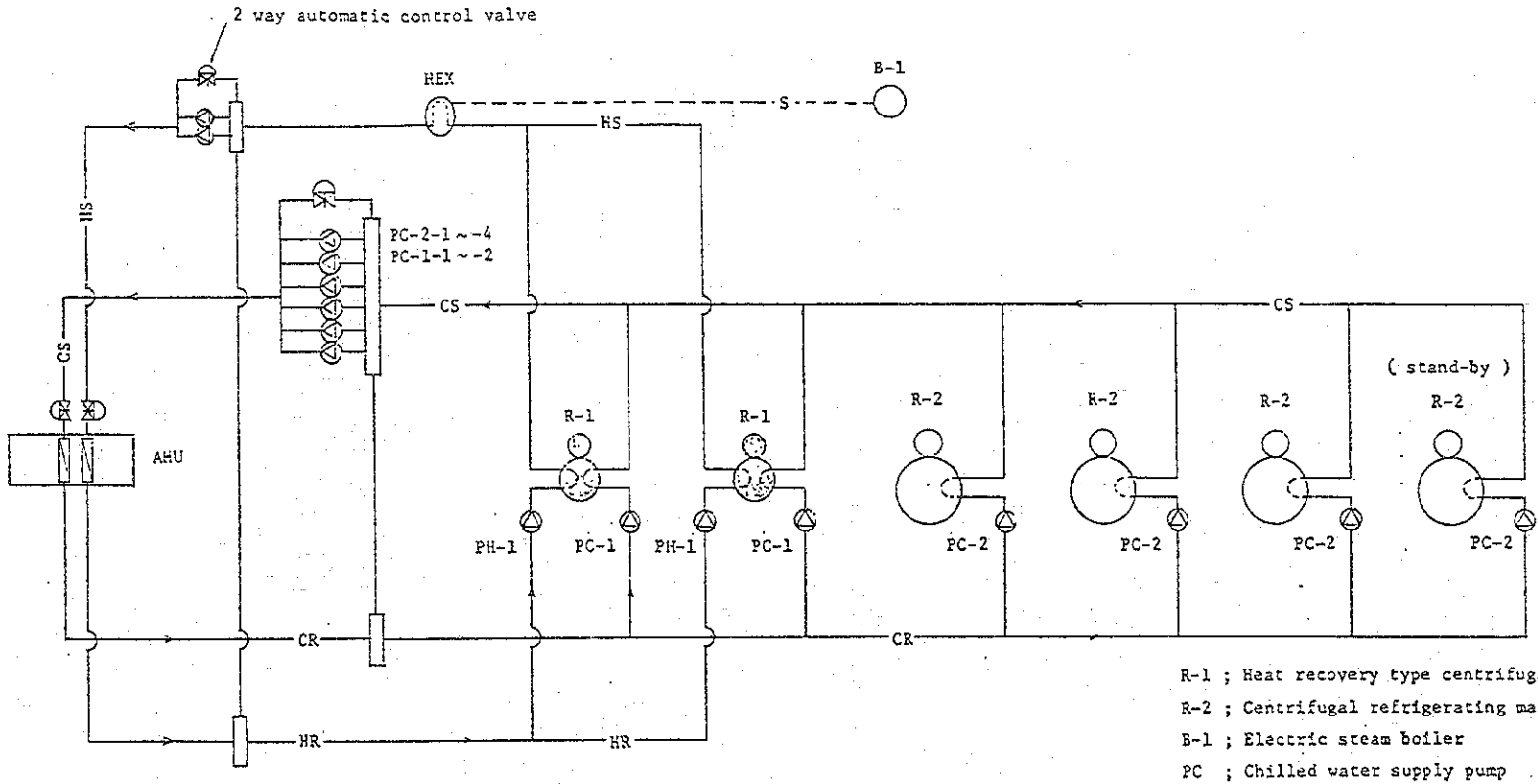
And additional cost of heat recovery system may be approximately 200,000,000 yen more than electric heater system.
The amount of heat recovery will be 730,000 kw per yeat.

Depreciation term (N) is

$$N = \frac{\log\left(M/S \cdot \frac{e - r}{1 + r} + 1 \right)}{\log \frac{1 + e}{1 + r}}$$

M: 200,000,000 yen
S: 733,000 kw x 0.015 EL/kW = 11,000 El (2,20,000 yen)
e: Inflation of electric power cost 40%
r: Interest 5%

N = 11 years



R-1 ; Heat recovery type centrifugal refrigerating machine
R-2 ; Centrifugal refrigerating machine
B-1 ; Electric steam boiler
PC ; Chilled water supply pump
PH ; Hot water supply pump
HEX ; Heat exchanger
AHU ; Air handling unit
CS ; Chilled water supply pipe
HS ; Hot water supply pipe
S ; Steam pipe

Fig. 5-25 HEAT RECOVERY SYSTEM

5-7 SANITARY AND PLUMBING FACILITIES DESIGN

5-7-1 Design Concept

The design policy of sanitary and plumbing system plan is made up as shown below.

- Utilization of waste drain water
- To prepare a stand-by system
- Easy maintenance and operation
- To consider the durability of pipes

5-7-2 Outline of Sanitary and Plumbing system

(1) Potable Water Supply System

City water pipes shall be laid underground of the northwest road near the site from 6th October City by the City's responsibility.
City water shall be led into the reservoir which shall be installed underground of the building structure of power house.
After the analysis of city water, treatment system will be decided.
Potable water shall be supplied to the building by booster pump unit directly, and then the potable water shall be sterilized by sterilizer pump unit automatically.
Numbers of booster pump units shall be 2 sets.
(One set is for stand-by)
Material of pipes shall be PVC lining galvanized steel pipe, in consideration of rust-proofing and durability.
Piping system is shown in Fig. 5-26.

(2) Drainage and Vent System

. Present situation of municipal sewerage

At present 6th October City has not established a sewerage plan to cover the site. ERTU is under negotiation with the City authories, insisting that the infrastructure shall be installed at the responsibility of 6th October City.

No assurance is obtained on the municipal sewerage at this stage. Therefore, the Project is progrossed with design that the facilities are provided with drainage treatment and processed water is re-used for watering.

However, in case where the municipal sewerage is extended to cover the site, the drainage treatment plan is cancelled and soil water is discharged directly into a sewer main. Furthermore, 6th October City lays a water supply main for watering in addition to the city water supply main.

. Drainage and vent system

Combined drainage piping system outdoors and indoors shall be applied.

Soil and waste drain water shall be discharged into the drainage treatment facilities.

Stack system for vent shall be employed.

Material of pipes shall be cast iron and steel galvanized pipe for indoors, and PVC pipes for outdoors.

Piping system is shown in Fig. 5-27.

(3) Drainage Treatment Facilities

Soil and waste drain water shall be treated by drainage treatment facilities unless city drainage pipe is provided.

Treated water shall be stored in the underground reservoir and supplied to the garden faucets and pond by booster pump unit which shall be installed on the underground reservoir.

Fig. 5-26 POTABLE WATER SUPPLY PIPING DIAGRAM

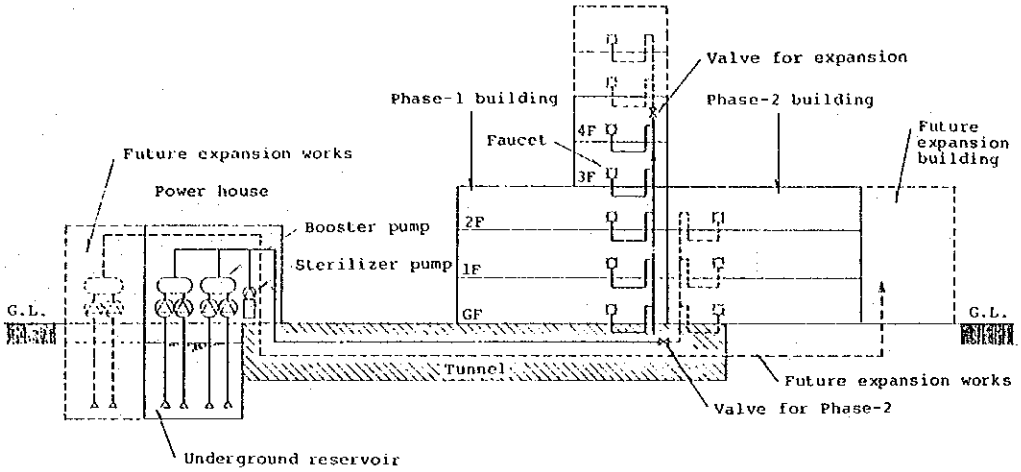
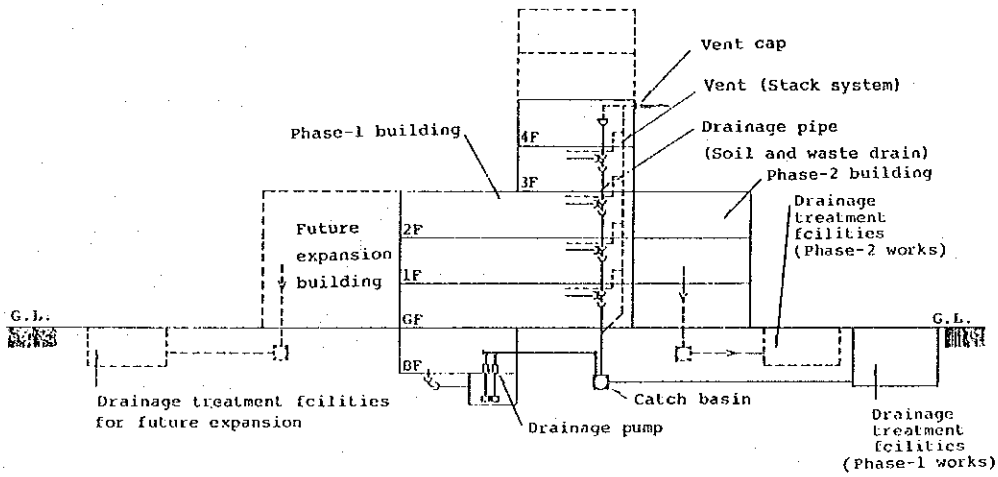


Fig. 5-27 DRAINAGE AND VENT PIPING DIAGRAM



Extended aeration system shall be applied for drainage treatment facilities.
The quality of treated water shall be as follows.

B.O.D. 10 ppm
SS 10 ppm

Fig. 5-28 shows flow of drainage treatment facility.

(4) Watering System

Booster pump unit shall be installed on the reservoir which shall store the treated water from drainage treatment facilities.
Numbers of booster pump units shall be 2 sets.
(One is for stand-by)
Piping and garden faucet installation work shall be included.
Piping material shall be steel galvanized pipe.

Fig. 5-29 shows watering system.

(5) Domestic Hot Water Supply System

Individual electric hot water boiler shall be used for the source of domestic hot water.
Domestic hot water shall be supplied to VIP rooms, make-up rooms and shower rooms for night duty.
Piping material shall be copper tube.
Utilization of solar heat for domestic hot water has been studied and mentioned on ATTACHMENT.

(6) Fuel Gas Supply System

Fuel gas (LPG) shall be supplied to kitchen by piping.
Furthermore, portable gas cylinder shall be used for practical science programs in TV studio.

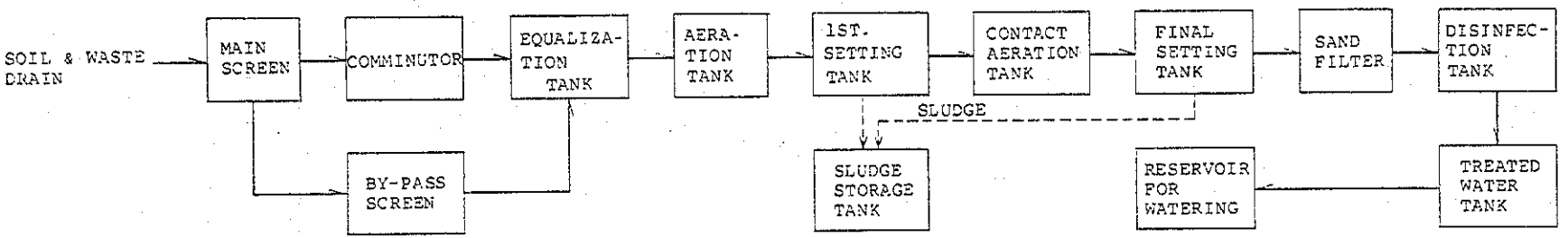


Fig. 5-28 FLOW OF DRAINAGE TREATMENT FACILITY

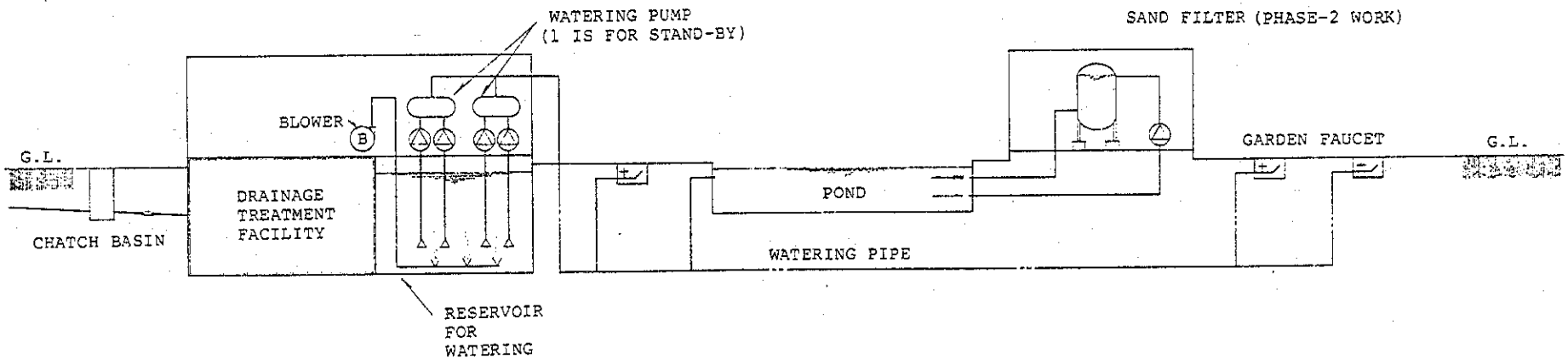


Fig. 5-29 SCHEMATIC PIPING DIAGRAM OF WATERING SYSTEM

(7) Dust Collecting System

Dust collecting system shall be provided to the control rooms to protect the control equipment from damage by sand and dust.
Dust collecting system shall be composed of inlet valve, tubes, accessories, filter, blower and control panel.
Wooden chip collecting system shall be provided to the carpentry workshop.

(8) Fire Extinguishing System

Fire extinguishing systems shall be as follows.

- Interior fire hydrant system
- Exterior fire hydrant system
- Co2 extinguishing system
- Sprinkler system
- Foam discharge system
- Portable fire extinguisher system

a. Interior and exterior fire hydrant systems

Interior and exterior fire hydrant boxes shall be installed at suitable locations for fire fighting.
Fire hydrant pump shall be common to interior and exterior fire hydrant systems.
The number of common pumps shall be 2 sets.
(One is for stand-by)

b. CO2 extinguishing system

Central CO2 extinguishing system shall be provided to the control rooms, electrical rooms and VTR tape stores.
CO2 extinguishing system is shown in Fig. 5-30 and area is shown in Fig. 5- 32.

c. Sprinkler system and foam discharge system

Sprinkler system shall be provided to decor workshop, assembly hall and stores for accessories.
Foam discharge system shall be provided to the parking area in building.
Pump for sprinkler and foam discharge system shall be common.
The numbers of common pumps shall be 2 sets.
(One is for stand-by)
Sprinkler and foam discharge system is shown in Fig.5-31 and area is shown in Fig.5-32.

d. Portable fire extinguisher

Powder type portable fire extinguisher shall be installed throughout the building.
CO2 portable fire extinguisher shall be installed mainly in electrical rooms and control rooms.

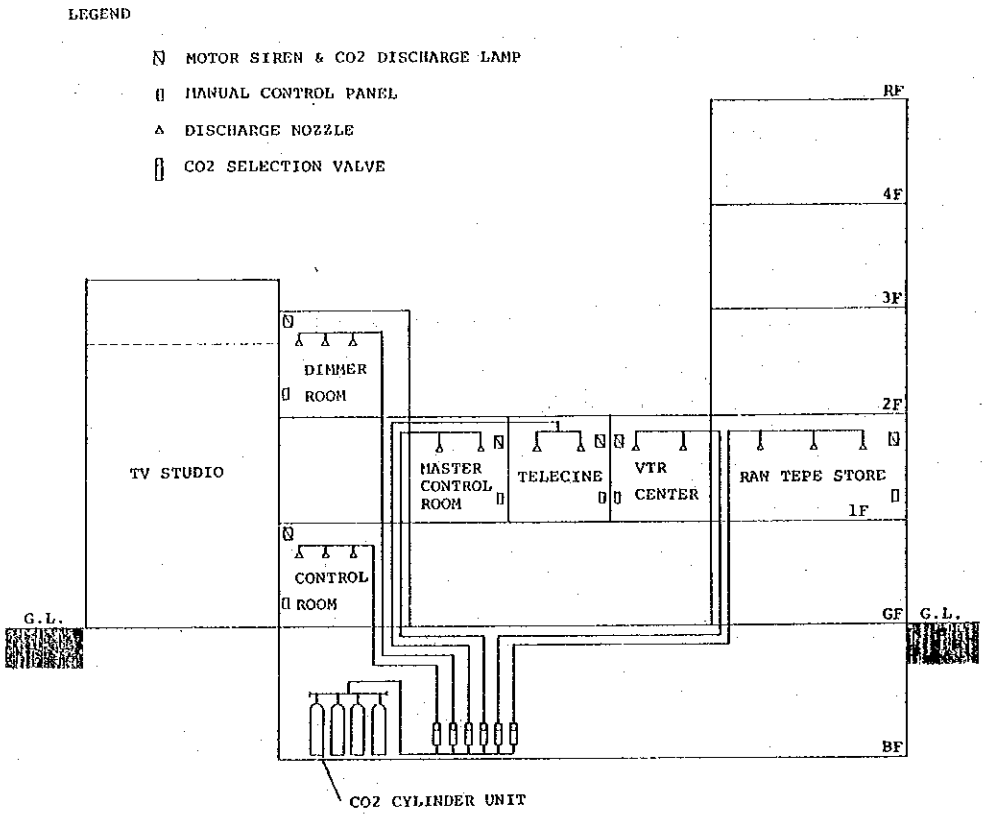
(9) Kitchen Equipment System

Kitchen equipment for meals and soft drinks shall be provided to cafeteria of artist block, administrative block and decor block.

(10)Laundry equipment system

Laundry equipment of wet system shall be installed for washing performers' clothes.

Fig. 5-30 SCHEMATIC PIPING DIAGRAM OF CO2 DICHARGE SYSTEM



PROCESS OF CO2 DISCHARGE SYSTEM

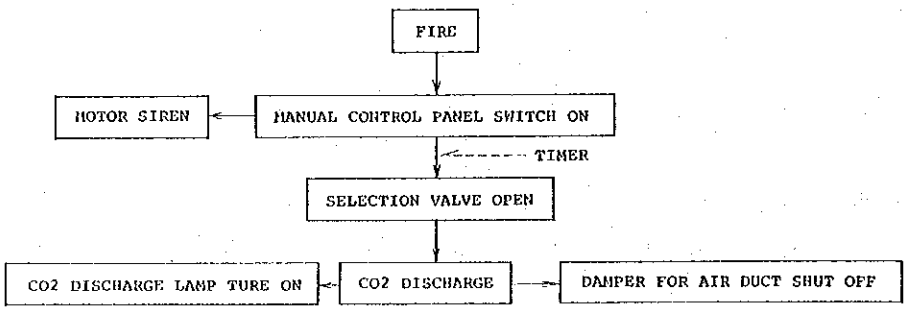
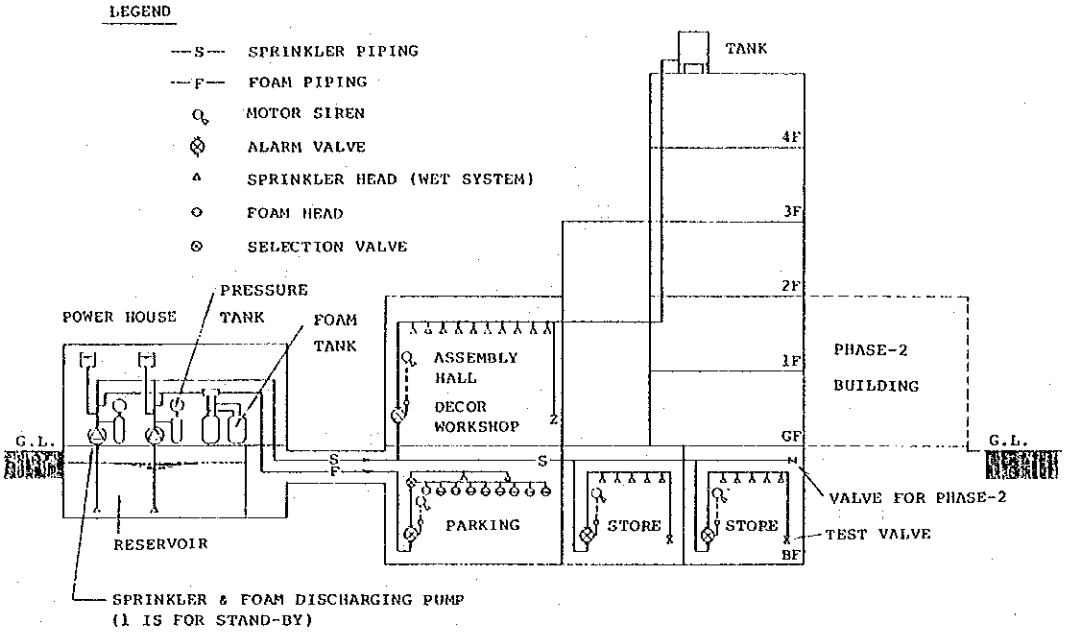
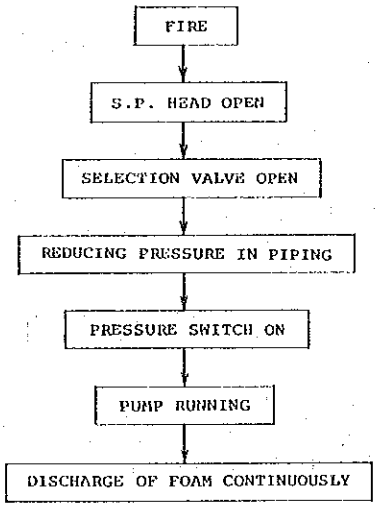


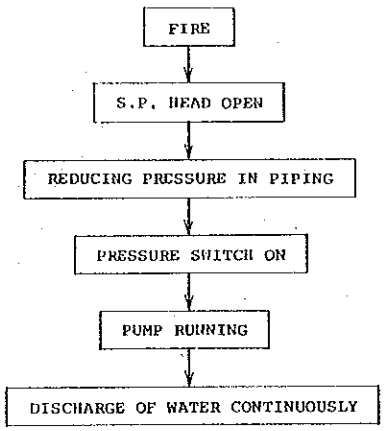
Fig. 5-31 SCHEMATIC PIPING DIAGRAM OF SPRINKLER & FOAM DISCHARGING SYSTEM



● PROCESS OF FOAM DISCHARGING SYSTEM



● PROCESS OF SPRINKLER EXTINGUISHING SYSTEM



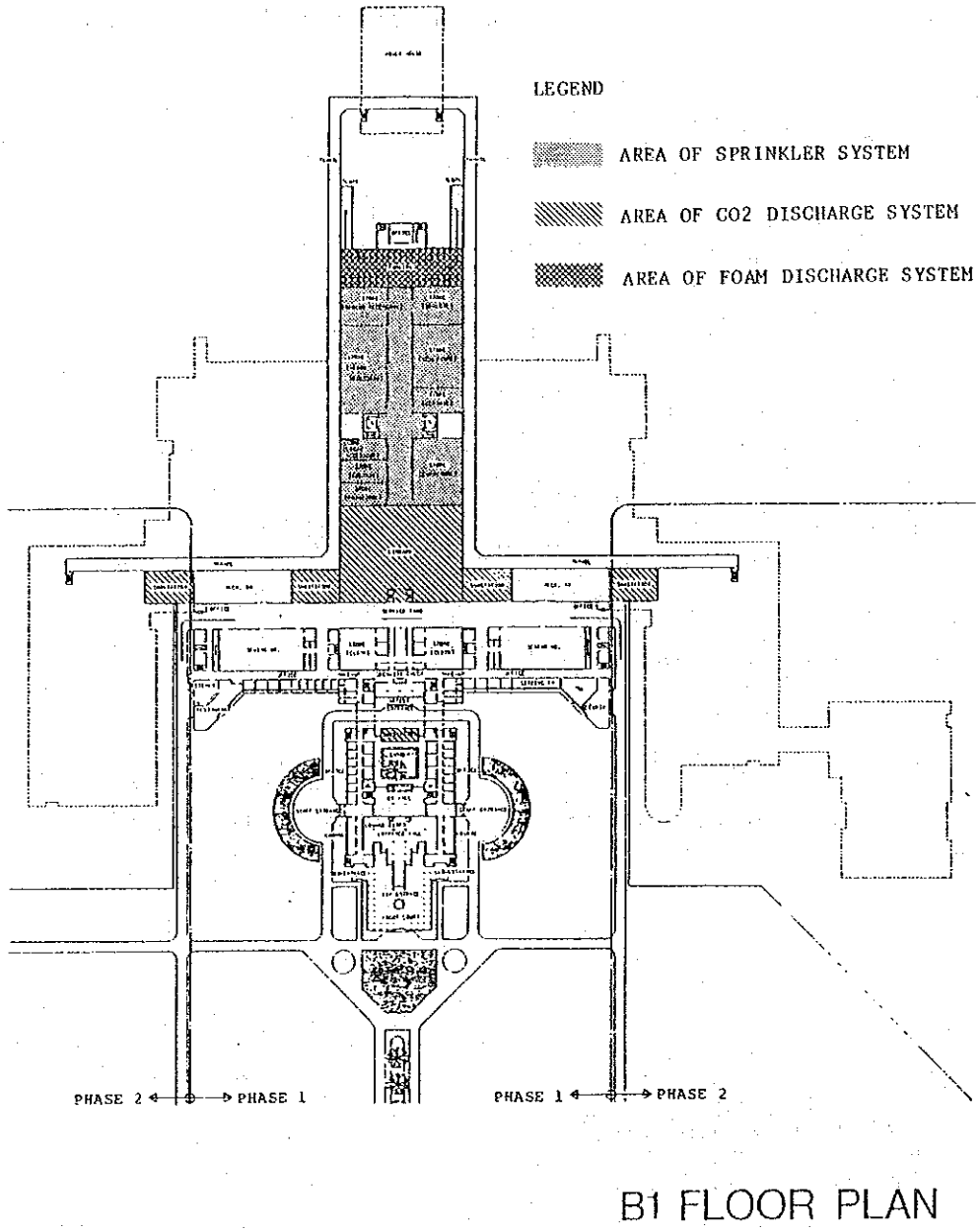
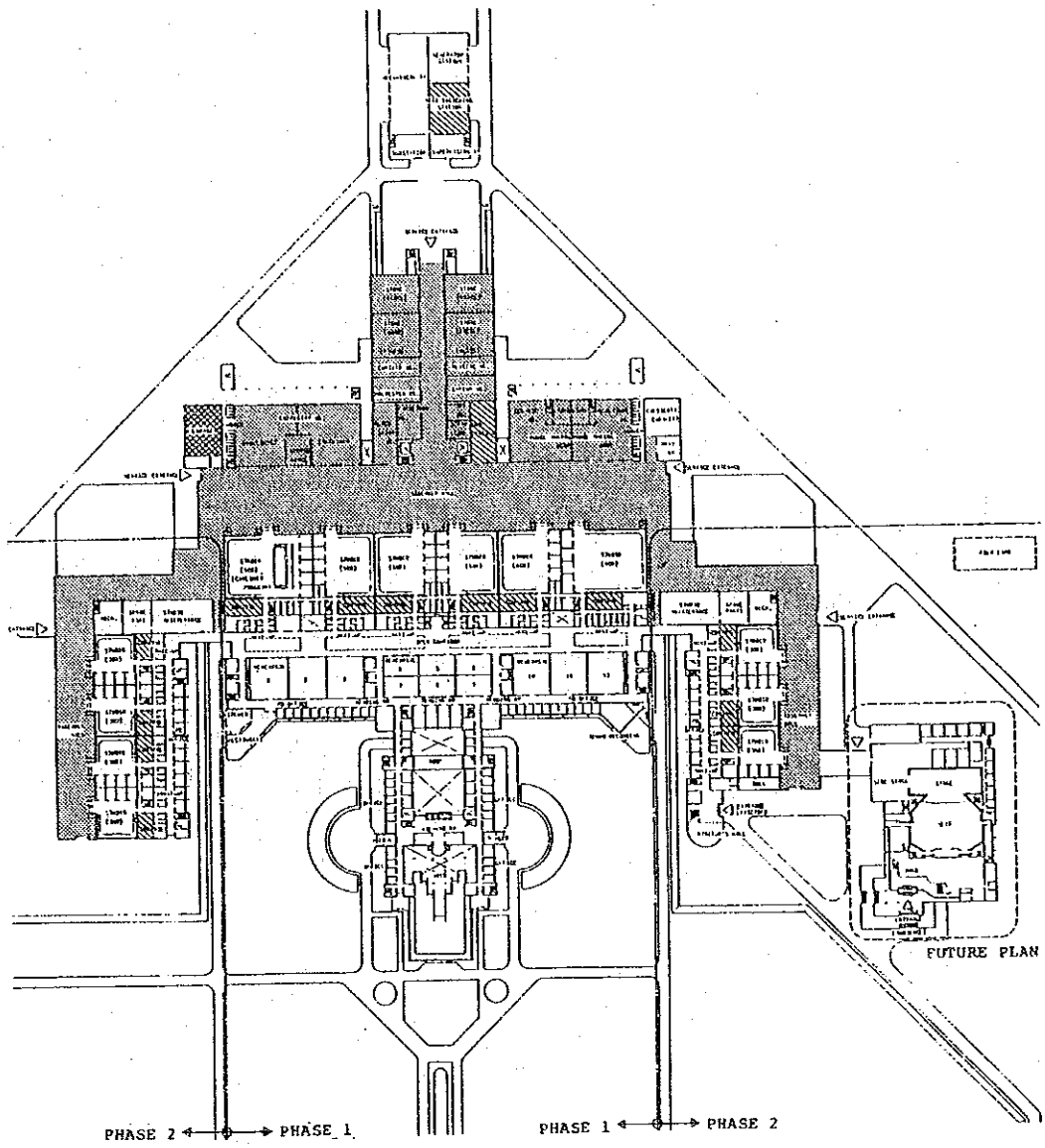
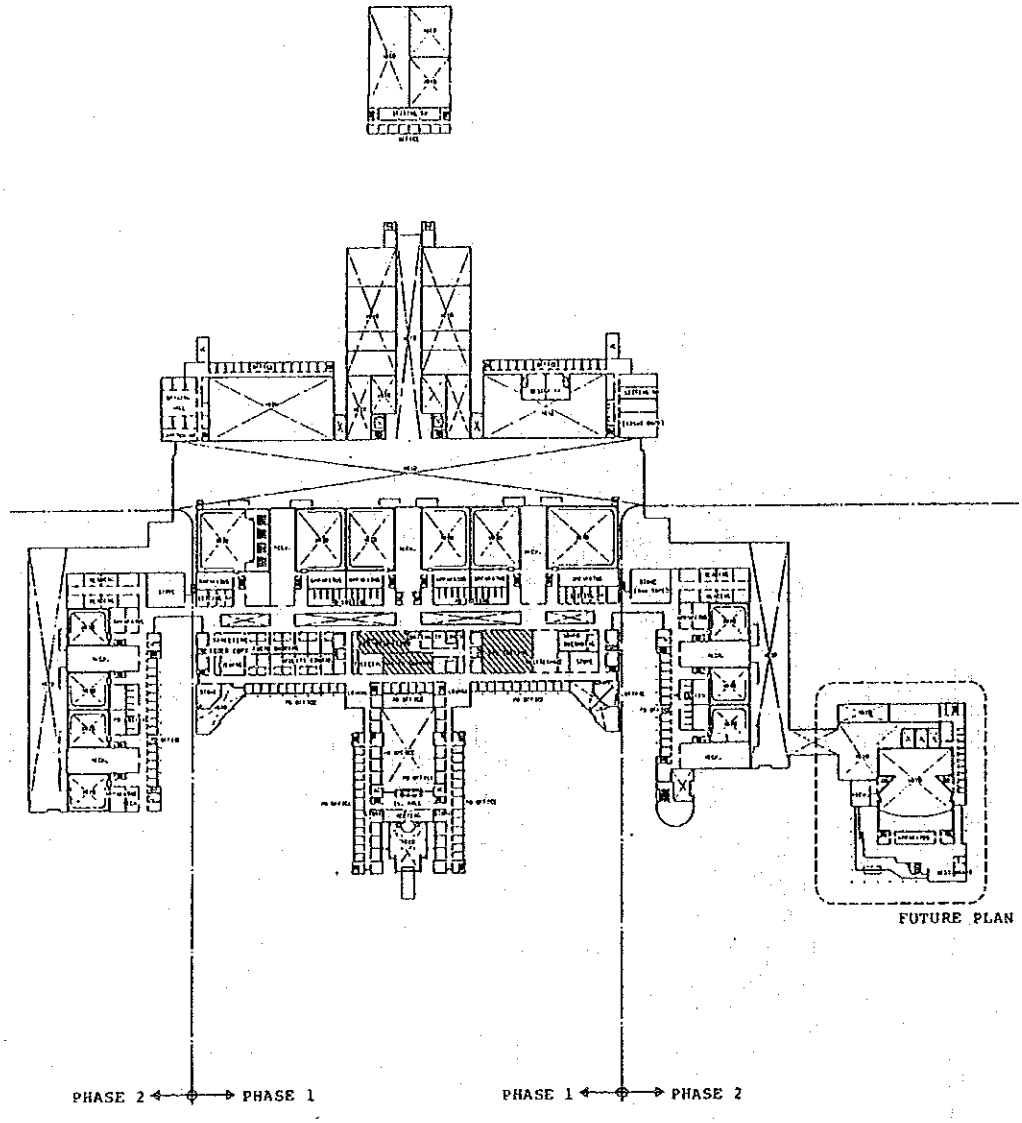


Fig. 5-32 FIRE EXTINGUISHING AREA (1)
(CO2, SPRINKLER & FOAM DISCHARGING SYSTEM)



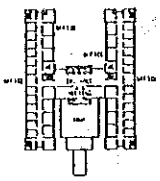
GROUND FLOOR PLAN

Fig. 5-32 FIRE EXTINGUISHING AREA (2)
(CO2, SPRINKLER & FOAM DISCHARGING SYSTEM)

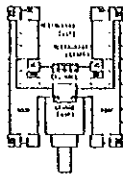


1ST FLOOR PLAN

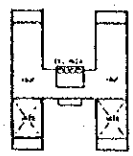
Fig. 5-32 FIRE EXTINGUISHING AREA (3)
(CO2, SPRINKLER & FOAM DISCHARGING SYSTEM)



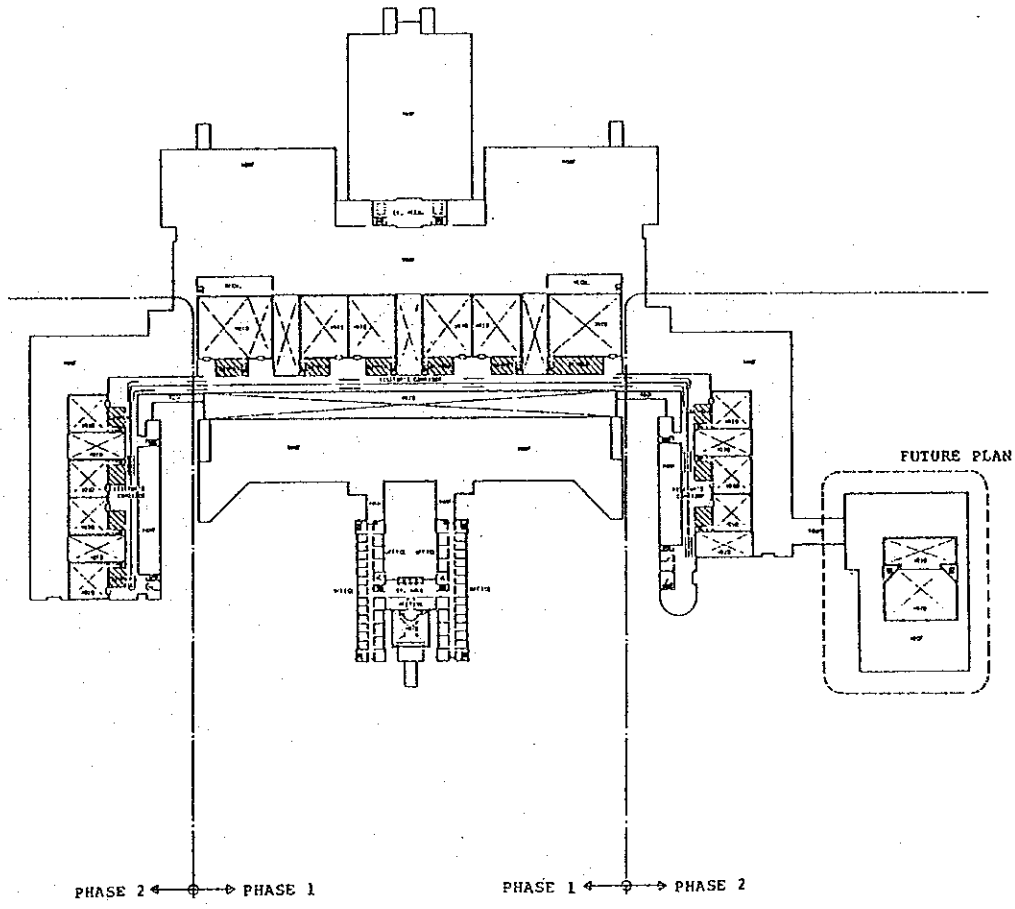
3RD • 4TH
FLOOR PLAN



5TH
FLOOR PLAN



ROOF PLAN



2ND~ROOF FLOOR PLAN

Fig. 5-32 FIRE EXTINGUISHING AREA (4)
(CO2, SPRINKLER & FOAM DISCHARGING SYSTEM)

ATTACHMENT FOR PLUMBING & SANITARY FACILITIES DESIGN

1. STUDY FOR UTILIZATION OF SOLAR SYSTEM

Study for utilization of solar system

. Conditions

1. Rough consumption of domestic hot water (l/day)

For performers;

. Lavatory	280 person x 7.5 l/person.c x 5 c/day x 0.7 = 7,350 l/day
. Shower	280 person x 7.5 l/person.c x 1 c/day x 0.7 = 9,800 l/day

For VIP

. Lavatory	20 person x 7.5 l/person.c x 5 c/day x 0.7 = 525 l/day

Total consumption; 17,675 l/day → **17,700 l/day**

2. Solar heat gain

Solar data is available on Jordan (Amman) which is located at 31° 57'N/35° 57'E.
As Cairo is at 29° 52'N/31° 20'E, we can use the solar data on Jordan.

3. Numbers of solar collectors.

Calculation is executed assuming that the number of solar collectors is 80.

4. Water temperature

City water

City water temperature will be same as air temperature.

Domestic hot water ..... **60°C**

Result of calculation is attached on the next page.

Table 5-17 SOLAR HEAT GAIN & DEPENDING FACTOR

	Holizontal solar intensity	Solar intensity of collector	Outside air temp.	Solar heat gain	Losses	Solar heat gain	Water temp	Hot water temp	Consumption of hot water	Heat for hot water	Solar heat gain	depending Back-up heat	depending factor	
JAN	68500	86800	14.0	9370000	.06	8810000	14.0	60.0	549000	25200000	8810000	16390000	0.35	
FEB	82900	103500	15.0	10970000	.06	10310000	15.0	60.0	496000	22300000	10310000	11990000	0.46	
MAR	136500	154800	17.0	16130000	.06	15160000	17.0	60.0	549000	23600000	15160000	8440000	0.64	
APR	169700	173600	22.0	17860000	.06	16790000	22.0	60.0	531000	20200000	16790000	3410000	0.83	
MAY	207000	198200	25.0	19960000	.07	18560000	25.0	60.0	549000	19200000	18560000	640000	0.97	
JUN	220000	204000	27.0	19210000	.09	17480000	27.0	60.0	531000	17520000	17480000	40000	1.00	
JUL	218000	204000	28.0	19250000	.09	17520000	28.0	60.0	549000	17560000	17520000	40000	1.00	
AUG	196600	195000	27.0	19100000	.08	17570000	27.0	60.0	549000	18110000	17570000	540000	0.97	
SEP	149700	161900	26.0	16840000	.06	15830000	26.0	60.0	531000	18050000	15830000	2220000	0.87	
OCT	108600	130000	24.2	13200000	.06	12400000	24.0	60.0	549000	19750000	12400000	7350000	0.63	
NOV	77300	95900	19.0	10350000	.06	9730000	19.0	60.0	531000	21800000	9730000	12070000	0.45	
DEC	67000	83700	14.9	9010000	.06	8470000	15.0	60.0	549000	24700000	8470000	16230000	0.34	
YEAR	1702000	1791000		181800000	.07	168630000			6463000	247970000	168630000	79360000	0.68	
UNIT	kcal/m2.month		°C	kcal/month		kcal/month	°C	°C	lit/month	kcal/month	kcal/month	kcal/month		

(1) This figure is calculated considering the efficiency of solar collector.
(Efficiency ; 0.67 - 0.77 , Avarage ; 0.72)
Efficiency depends on ambient air temperature.
Area of solar collector is 1.75 m2/no.
Numbers of solar collector have been decided concidering 100 % of depending factor of solar heat in summer.
(80 nos.)

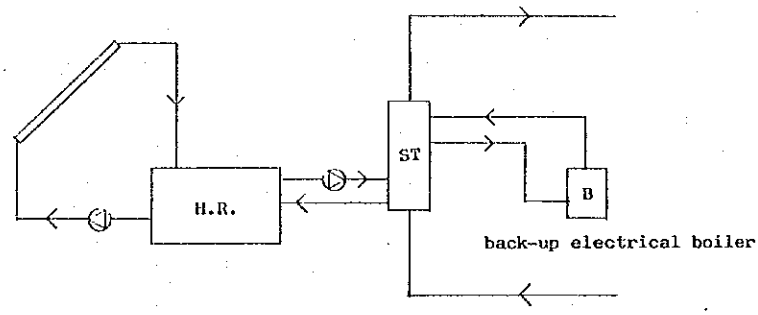
From the calculation sheet, we are able to obtain solar energy equivalent to **168,630,000 kcal/year. (19,000 kW/year).**
Furthermore, we need back-up energy of 79,360,000 kcal/year.
In the solar system, we must install the back-up equipment (electric boiler, storage tank etc.) to allow for sandstorm conditions and cloudy day.

. Comparison of cost estimation

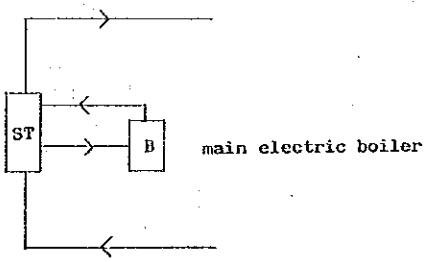
Solar system, central system and individual system are compared.

Each system is as follows.

Solar system



Central system



B : Boiler
ST: Storage tank
HR: Heat reservoir

Individual system

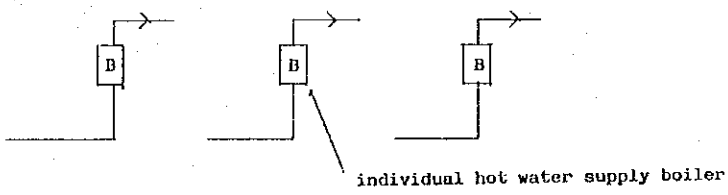


Table 5-18 ROUGH COST COMPARISON

	cost
Solar system	32,000,000 Yen (US$160,000)
Central system	5,500,000 Yen (US$27,500)
Individual system	7,500,000 Yen (US$37,500)

Comparison of cost is made for the heat source equipment.
Piping work for delivery to faucet and shower are excluded.
Transportation fee is also excluded.

In the case of solar system and central system, domestic hot water supply piping work will be added to above cost.
It will be approximately US$25,000.

. **Depreciation Term (N) of solar system**

$$N = \frac{\log(M/S \frac{e-r}{1+e}+1)}{\log \frac{1+e}{1+r}}$$

M: Initial cost of solar system
32,000,000 Yen (=US$160,000)

S: Saving money (electricity)
196,000 kW/year x 0.015 EL/kW = 2,940 EL
(=588,000 Yen/year)

e: Inflation of electric power cost 40%

r: Interest 5%

N= 9.3 year

SUGGESTION;

Utilization of solar system has been conceived and executed since a long time ago.
In Japan, solar systems have been installed in large public and commercial buildings since several years ago.
At that time, if the depreciation term was 8 years, we considered that it had merit.
Now, solar systems are employed mainly for domestic use.
The maintenance of solar collectors is not so easy, as they must be cleaned every day.
We shall need more background data if we are to consider the utilization of solar system, regarding the initial cost, maintenance, and break-down of solar collectors.

Considering Egypt's geographical and climatic conditions we do not believe it will be so easy to maintain 80 sets of solar collectors everyday.
Moreover, regarding the depreciation term (9.3 years), we doubt whether we can obtain cost merit from solar system.

5-8 CODE, STANDARDS AND REGULATIONS

5-8-1 Architectural and Structural Design

- Egyptian Codes and Standards
- Local Codes adopted by 6th Cctober City
- BS (British Standard)
- JIS (Japanese Industrial Standard)
- JIA (Japan Institute of Architects)
- ASTM (American Society for Testing & Materials)

5-8-2 Electrical Facilities Design

- Power supply equipment
  IEC (International Electrotechnical Commission)
  JIS (Japanese Industrial Standard)
  Other equivalant standard

- Lighting fixture
  CIE (Internationa Commission on Illumination)
  JIS (Japanese Industrial Standard)
  Other equivalant standard

- Telephone exchange
  CCITT (International Telegraph & Telephone
  Consultative Commission)
  JIS (Japanese Industrial Standard)
  Other equivalant standard

- Calbe & wire
  For power cable
  IEC (International Electrotechnical Commission)
  BS (British Standard)

For communication cable

IEC (International Electrotechnical Commission)

JIS (Japanese Industrial Standard)

Other equivalant standard

- Installation & wiring system

  IEE (Institution of Electrical Engineers)

  JEAC (Japan Electric Association Code)

  Other equivalant standard

- Fire alarm system

  JFC (Jaspan Fire Code)

5-8-3 Mechanical Facilities Design

- JIS (Japanese Industrial Standard)
- ASHRAE (American Society of Heating, Refrigeration and Air-Conditioning Engineers, Inc.)
- Other equivalant standard

5-8-4 Sanitary and Plumbing Facilities Design

- JIS (Japanese Industrial Standard)
- NPC (National Plumbing Code)
- JFC (Japan Fire Code)
- Other equivalant standard

Note: In addition to the above codes, standards and regulations, reliable manufacturer's standard will be applied to equipment and materials.

D R A W I N G s

01

OPEN-SET (D)
OPEN-SET (E)
OPEN-SET (F)
OPEN-SET (G)
OPEN-SET (H)
VISITER'S CENTER
OPEN-SET (C)
OPEN-SET (B)
OPEN-SET (A)
GARAGE
STORAGE
OPEN-THEATRE
POWER HOUSE
WORKER
SECURITY
ERTU
FIRE-MAN
FILM LABO
PLAY GROUND
HOUSING
HOTEL
HALL
COTTAGE
PARKING
PARKING
PARKING
FLAT
VISITER'S CENTER GATE
SERVICE GATE
MAIN GATE
SUB-GATE
N
0 50 100 200

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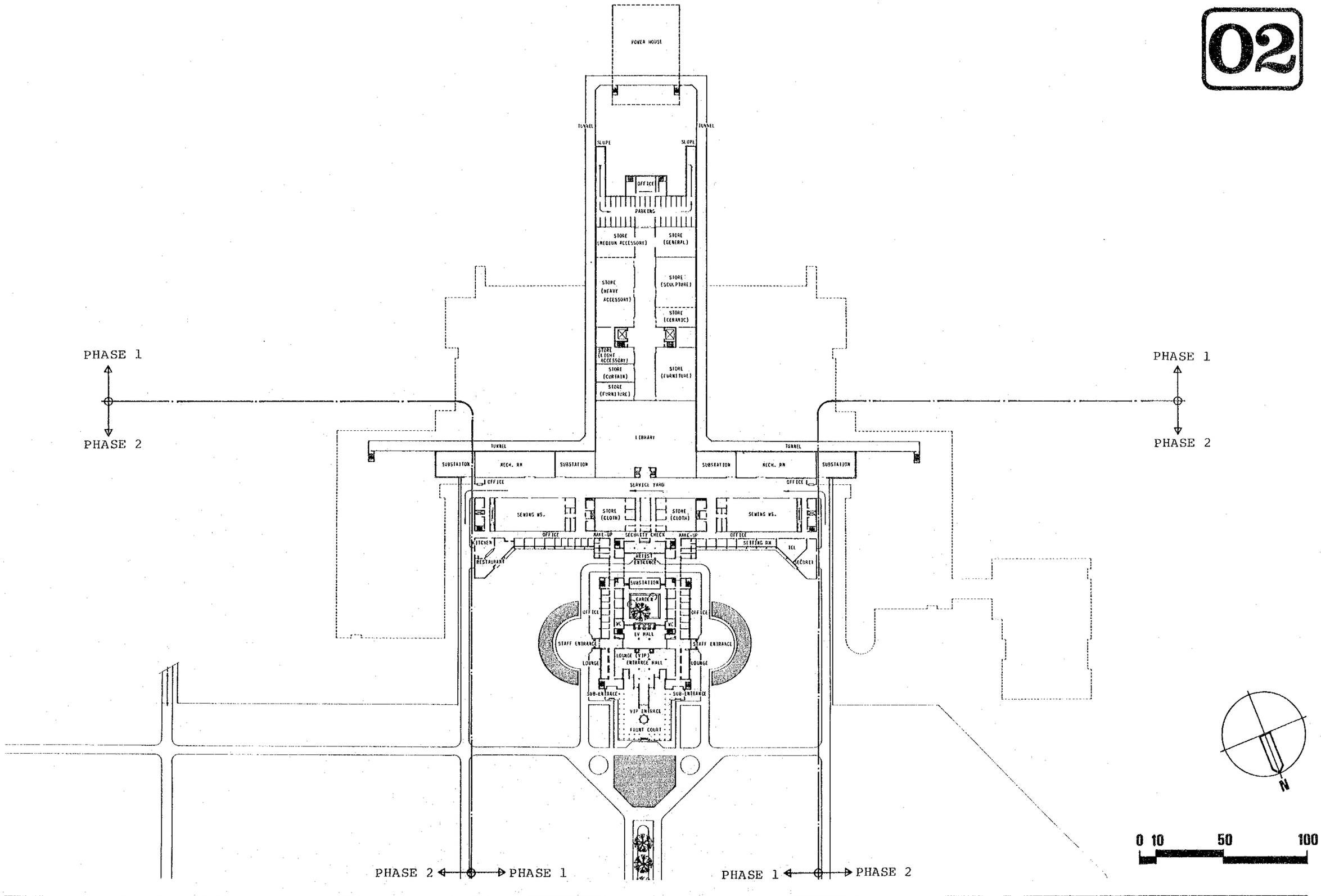
SITE PLAN

02



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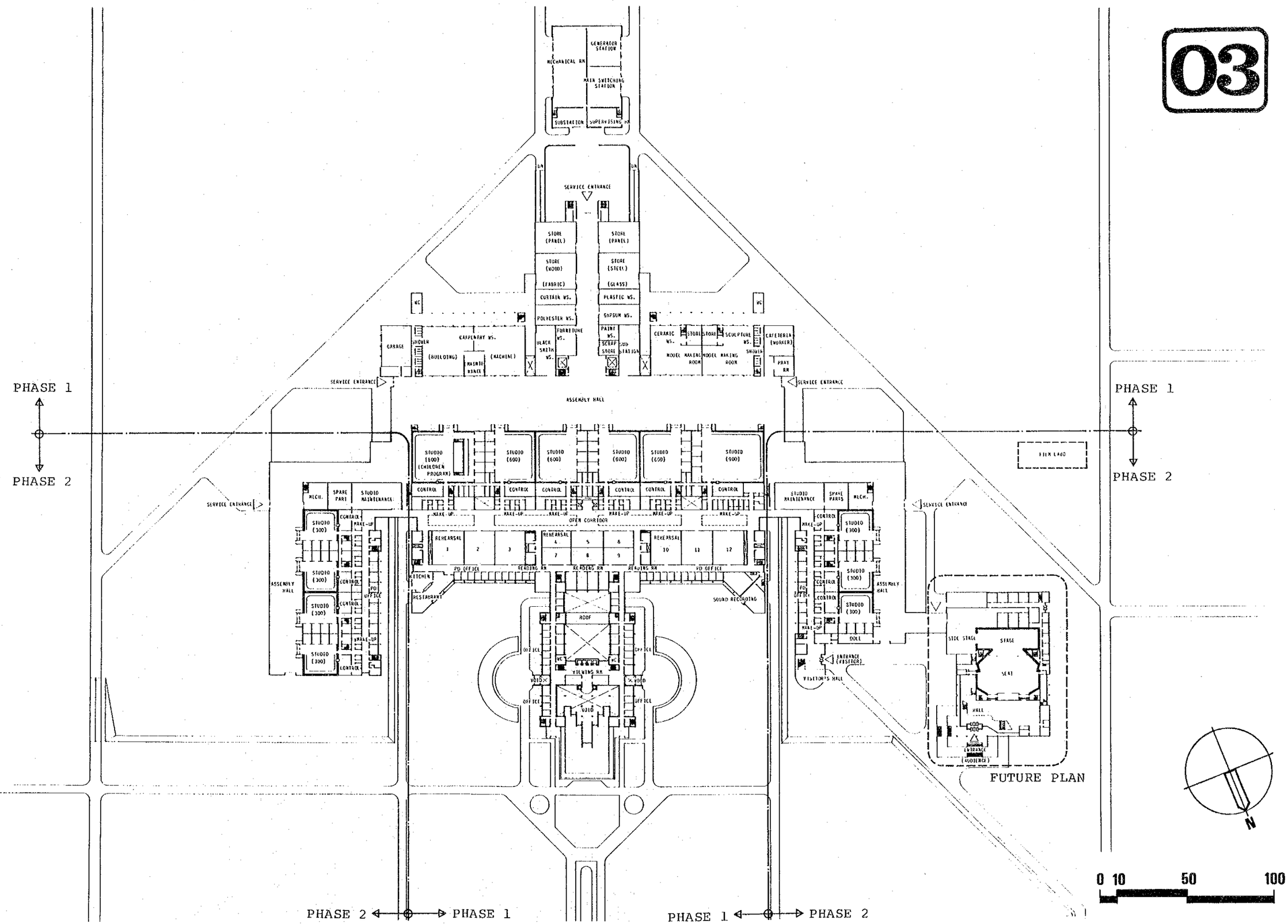
B1 FLOOR PLAN

03



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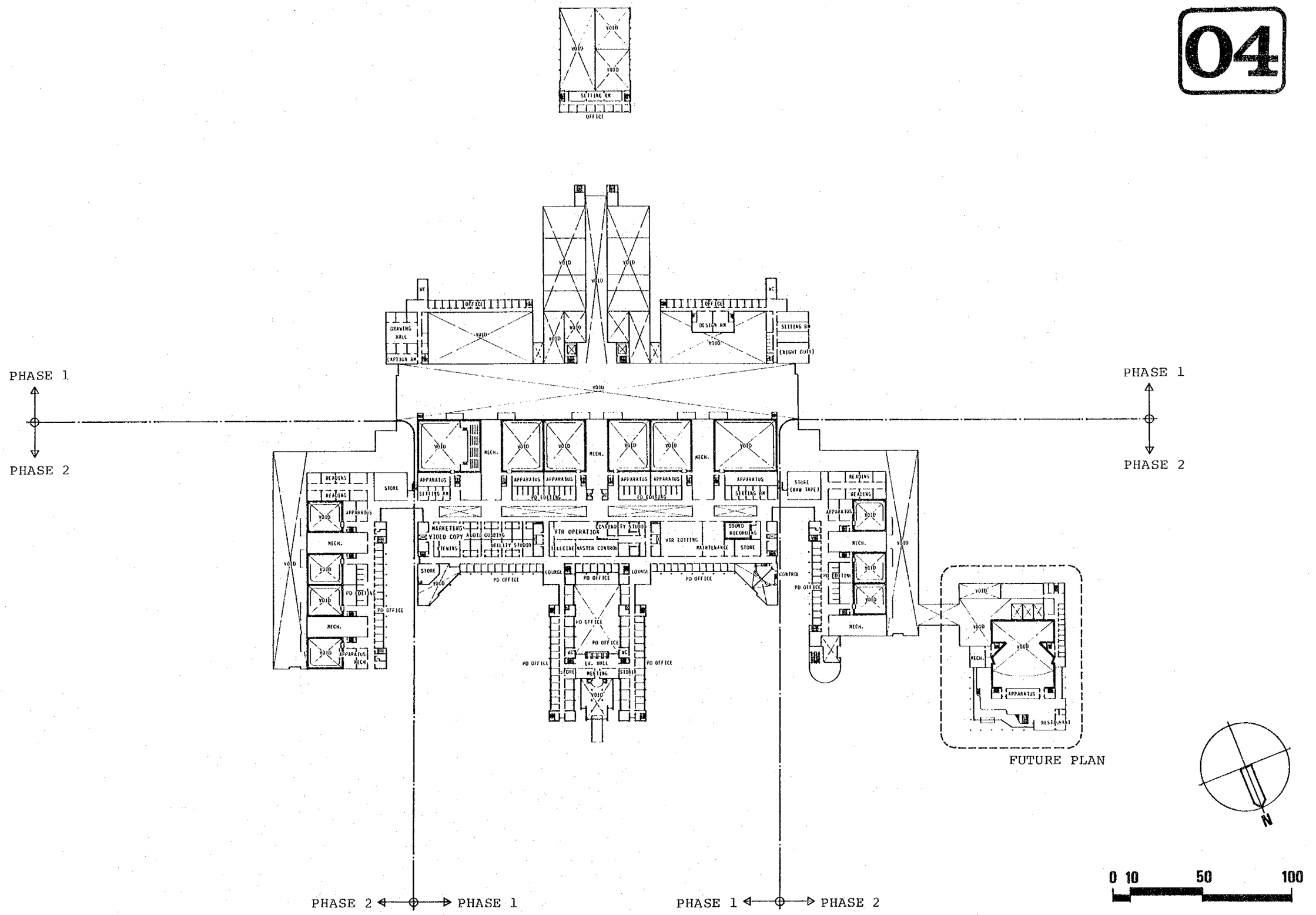
GROUND FLOOR PLAN



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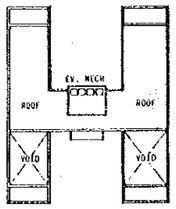
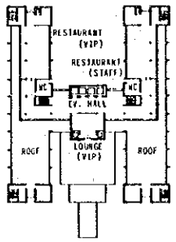
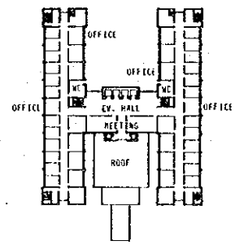
1ST FLOOR PLAN



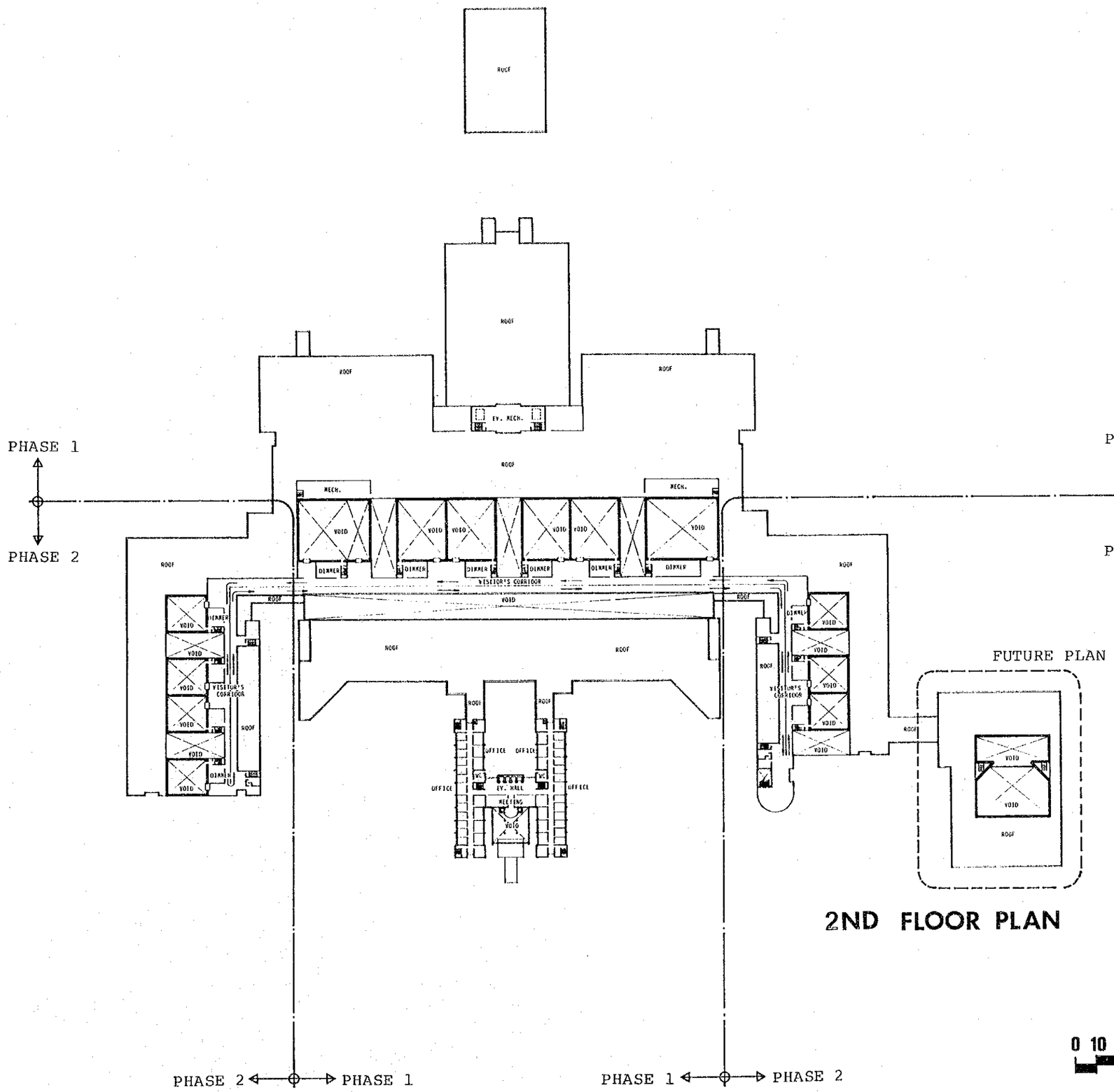
ROOF PLAN



5TH FLOOR PLAN



3RD • 4TH FLOOR PLAN



FUTURE PLAN

2ND FLOOR PLAN

N

0 10 50 100

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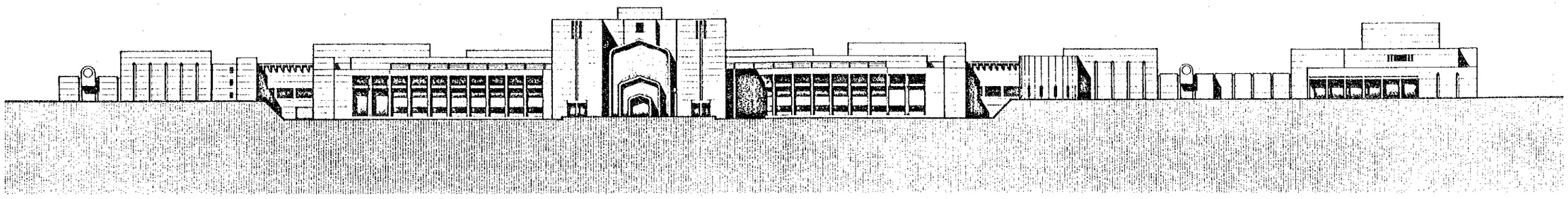
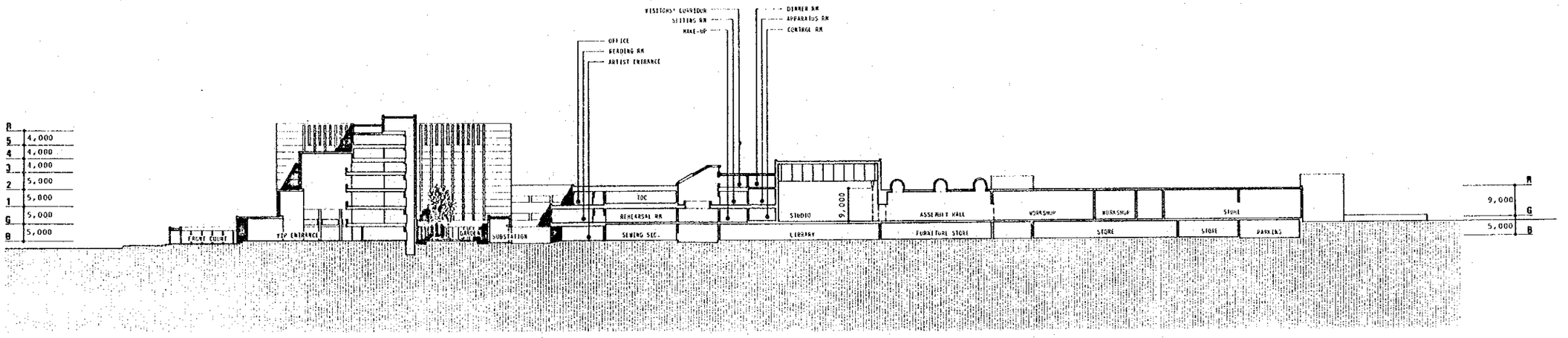
5-148 2ND~ROOF FLOOR PLAN

06





0 10 50 100

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ELEVATION • SECTION

A N N E X

A N N E X 5-1

S P A C E P R O G R A M

BLOCK ADMINISTRATION 1

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
A. CHAIRMAN	OFFICE	80	1	80	1					80	1	80	1
	SITTING RM	20	1	20	-					20	1	20	-
	SECRETARY's RM	20	1	20	2					20	1	20	-
	MEETING RM	40	1	40	-					40	1	40	-
				160	3							160	3
B. PROGRAM PRODUCTION DIVISION	OFFICE (DIV. HEAD)	60	1	60	1					60	1	60	1
	SECRETARY's RM	20	1	20	2					20	1	20	2
				80	3							80	3
1. PRODUCTION COORDINATE DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2
	(COORDINATE SECTION)												
	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	2	40	4	20	1	20	2	20	3	60	6
	" (STAFF)	20	3	60	10	20	1	20	3	20	4	80	13
				120	15			40	5			160	20
	(BUDGETARY AFFAIRS SECTION)												
	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	2	40	3					20	1	40	3
	" (STAFF)	20	2	40	6					20	2	40	6
				100	10							100	10
	(PROGRAM REVIEW SECTION)												
	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)					20	1	20	1	20	1	20	1
	" (STAFF)	20	1	20	4	20	1	20	4	20	2	40	8
				40	5			40	5			80	10
	(GENERAL AFFAIRs)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	" (STAFF)	20	2	40	8					20	2	40	8
				60	10							60	10
2. DRAMA PRODUCTION DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2
3. GENERAL PROGRAM PRODUCTION DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2

BLOCK ADMINISTRATION 2

DEPARTMENT	ROOM NAME	1st PHASE				2nd PHASE				TOTAL			
		ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O
4. PRODUCTION SUPPORT (TECH.) DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2
5. PRODUCTION SUPPORT (ARTIST) DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2
C. ENGINEERING DIVISION	OFFICE (DIV. HEAD)	60	1	60	1					60	1	60	1
	SECRETERY's RM	20	1	20	1					20	1	20	1
				80	2							80	2
1. ENGINEERING PLANNING DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2
	(PLANNING SECTION)												
	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	1	20	5					20	1	20	5
				80	10							80	10
	(MAINTENANCE SECTION)												
	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	1	20	5					20	1	20	5
				80	10							80	10
	(BUILDING SECTION)												
	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	1	20	5					20	1	20	5
				80	10							80	10
	(GENERAL AFFAIRS)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (STAFF)	20	1	20	4					20	1	20	4
				40	5							40	5
2. BUILDING OPERATION & MAINTENANCE DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
				60	2							60	2
	(ELECTRICAL POWER)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	" (ASSTT. ENR.)	20	1	20	4	20	1	20	4	20	2	40	8
	SITTING RM (WORKER)				9				9				18
				40	15			20	15			60	15

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BLOCK ADMINISTRATION 3

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
	(TELEPHONE & COMMUNICATION)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	" (ASSTT. ENR.)	20	1	20	4					20	1	20	4
	SITTING RM (OPERATOR)	30	1	30	14	30	1	30	18	30	2	60	32
				70	20			30	18			100	38
	(AIR CONDITIONING)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (ASSTT. ENR.)	20	1	20	3	20	1	20	3	20	2	40	6
	SITTING RM (WORKER)				11				4				15
				40	15			20	7			60	22
	(PLUMBING)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (ASSTT. ENR)	20	1	20	3					20	1	20	3
	SITTING RM (WORKER)				5				4				9
				40	9				4			40	13
	(OFFICIAL CAR)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM (DRIVER)				28				20				48
				20	30				20			20	50
	(GENERAL AFFIRS)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (STAFF)	20	1	20	5	20	1	20	4	20	2	40	9
				40	6			20	4			60	10
D. ADMINISTRATION DIVITION	OFFICE (DIV. HEAD)	60	1	60	1					60	1	60	1
	SECRATARY's RM	20	1	20	1					20	1	20	1
				80	2							80	2
1. SECRETARIAT OFFICE DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
	OFFICE (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	1	20	5					20	1	20	5
				120	10							120	10
2. FINANCE MANAGING DEPARTMENT	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
	OFFICE (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	1	20	5					20	1	20	5
				120	10							120	10
3. PROGRAM MARKETING OFFICE	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
	OFFICE (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	4	80	15					20	4	80	15
				180	20							180	20

BLOCK ADMINISTRATION 4

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
4. OPEN-AREA OFFICE	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
	OFFICE (MANAGER)	20	2	40	3					20	2	40	3
	" (STAFF)	20	2	40	6					20	2	40	6
				140	10							140	10
5. GENERAL AFFAIRS OFFICE	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
	OFFICE (MANAGER)	20	2	40	4					20	2	40	4
	" (STAFF)	20	3	60	10					20	3	60	10
				160	15							160	15
	(SUB-TOTAL (1))			2,470	259			170	52			2,640	311
	(CLINIC)												
	RECEPTION	20	1	20	1					20	1	20	1
	PATIET WAITING RM	20	1	20	-					20	1	20	-
	CONSULTING RM	20	2	40	2					20	2	40	2
	DOCTORS' RM	20	1	20	2					20	1	20	2
	NURSES' RM	20	1	20	4					20	1	20	4
				120	9							120	9
	TELEPHONE EXCHANGE RM	150	1	150	-					150	1	150	-
				150	-							150	-
	SUPERVISING RM	150	1	150	-					150	1	150	-
				150								150	-
	(FIRE STATION)												
	OFFICE (CHIEF)	20	1	20	1					20	1	20	1
	SITTING RM (STAFF)	30	2	60	20					30	2	60	20
				80	21							80	21
	(SECURITY STATION)												
	OFFICE (CHIEF)	20	1	20	-					20	1	20	-
	SITTING RM (STAFF)	30	2	60	-					30	2	60	-
				80								80	
	(MEETING)												
	MEETING RM (LARGE)	60	1	60	-	60	1	60	-	60	2	120	-
	" (MEDIUM)	40	2	80	-	40	1	40	-	40	3	120	-
				140				100				240	
	GENERAL STORE	60	6	360	-					60	6	360	-
				360								360	

BLOCK ADMINISTRATION 5

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
	(RESTAURANT)												
	RESTAURANT (VIP)	200	1	200	-					200	1	200	
	" (STAFF)	330	1	330	-					220	1	330	
	" (TECHNICIAN & ARTIST (LOW CLASS))	330	1	330	-					330	1	330	
				860								860	
	(ENTRANCE HALL)												
	WAITING RM (VISITOR)	50	1	50						50	1	50	
	SECRITY C'K COUNTER	20	1	20						20	1	20	
	SECURITY OFFICE	30	1	30						30	1	30	
	RECEPTION HALL	100	1	100						100	1	100	
				200								200	
	(SUB TOTAL (2))			2,140	30	100						2,240	30
	TOTAL: (A)=(1)+(2)			4,610	289	270			52			4,880	341
	COMMON SPACE (A)x0.35			1,610		90						1,700	
	GRAND TOTAL			6,220	289	360			52			6,580	341

BLOCK STUDIO 1

DEPARTMENT	ROOM NAME	1st PHASE				2nd PHASE				TOTAL			
		ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O
TV STUDIO (900) (1 Studio)	STUDIO	1000	1	1000						1000	1	1000	
	STUDIO CONTROL RM	150	1	150						150	1	150	
	APPARATUS RM	150	1	150						150	1	150	
	LIGHTING DIMMER RM	60	1	60						60	1	60	
	MAINTENANCE RM	40	1	40						40	1	40	
	STORE (CAMERA)	60	1	60						60	1	60	
	" (LIGHTING EQUIP)	60	1	60						60	1	60	
	" (MICROPHONE)	30	1	30						30	1	30	
	" (ACCESSORY)	30	1	30						30	1	30	
	" (PAINT)	10	1	10						10	1	10	
	MAKE-UP RM (LARGE)	40	1	40						40	1	40	
	" (SMALL)	15	4	60						15	4	60	
	CHANGING RM	15	2	30						15	2	30	
	SHOWER RM	5	2	10						5	2	10	
	WAITING RM (ARTIST)	20	3	60						20	3	60	
	" (TECHNICIAN)	20	1	20						20	1	20	
	A/C MECHANICAL RM	200	1	200						200	1	200	
	SUB-TOTAL (1)			2,010								2,010	
TV STUDIO (600) (5 Studios)	STUDIO	660	5	3,300						660	5	3,300	
	STUDIO CONTROL RM	120	5	600						120	5	600	
	APPARATUS RM	120	5	600						120	5	600	
	LIGHTING DIMMER RM	40	5	200						40	5	200	
	STORE (CAMERA)	40	5	200						40	5	200	
	" (LIGHTING EQUIP)	40	5	200						40	5	200	
	" (MICROPHONE)	30	5	150						30	5	150	
	" (ACCESSORY)	30	5	150						30	5	150	
	" (PAINT)	10	5	50						10	5	50	
	MAKE-UP RM (LARGE)	30	5	150						30	5	150	
	" (SMALL)	10	20	200						10	200	200	
	CHANGING RM	15	10	150						15	10	150	
	SHOWER RM	5	10	50						5	10	50	
	WAITING RM (ARTIST)	20	15	300						20	15	300	
	" (TECHNICIAN)	20	5	100						20	5	100	
	STORE (FOR CHILDREN's PROGRAM)	100	1	100						100	1	100	
	SEATs (FOR CHILDRE's PROGRAM)	150	1	150						150	1	150	
	A/C MECHANICAL RM	150	5	750						150	5	750	
	SUB-TOTAL (2)			7,400								7,400	

BLOCK STUDIO 2

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
TV STUDIO (300) (7 Studios)	STUDIO					330	7	2,310		330	7	2,310	
	STUDIO CONTROL RM					100	7	700		100	7	700	
	APPARATUS RM					100	7	700		100	7	700	
	LIGHTING DIMMER RM					40	7	280		40	7	280	
	STORE (CAMERA)					20	7	140		20	7	140	
	" (LIGHTING EQUIP)					20	7	140		20	7	140	
	" (MICROPHONE)					30	7	210		30	7	210	
	" (ACCESSORY)					20	7	140		20	7	140	
	" (PAINT)					10	7	70		10	7	70	
	" (DOLLS)					120	1	120		120	1	120	
	PREPARATION RM (COOKING)					20	1	20		20	1	20	
	" (CHAMICAL)					20	1	20		20	1	20	
	MAKE-UP RM (LARGE)					30	7	210		30	7	210	
	" (SMALL)					10	28	280		10	28	280	
	CHANGING RM					15	14	210		10	14	210	
	SHOWER RM					5	14	70		5	14	70	
	WAITING RM (ARTIST)					20	21	420		20	21	420	
	" (TECHNICIAN)					20	7	140		20	7	140	
	A/C MECHANICAL RM					120	7	840		120	7	840	
	SUB-TOTAL (3)							7,020				7,020	
	STORE (STUDIO EQUIP)					500	2	1,000		500	2	1,000	
	" (MECHANICAL SPARE-PARTS)					200	2	400		200	2	400	
	SUB-TOTAL (4)							1,400				1,400	
	TOTAL (A), (1) - (4)			9,410				8,420					
	COMMON SPACE (A)x0.35			3,290				2,950					
	GRAND TOTAL			12,700				11,370				24,070	

BLOCK DECOR 1

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
OFFICE	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	2	40	4	20	3	60	5	20	5	100	9
	SITTING RM (WORKER)	30	10	300	185	30	10	300	205	30	20	600	390
	OFFICE(DETAIL DRAWING	20	2	40						20	2	40	
	" (PROCUREMENT)	20	1	20						20	1	20	
	" (ARCHIVE)	40	1	40						40	1	40	
	" (DESIGN ARCHIVE)	40	1	40						40	1	40	
	" (TYPE & COPY)	20	1	20						20	1	20	
	" (FOR CH.1)	20	6	120						20	6	120	
	" (FOR CH.2)	20	6	120						20	6	120	
	" (FOR CH.3)	20	2	40						20	2	40	
	MEETING RM	40	1	40						40	1	40	
	LIBRARY	40	1	40						40	1	40	
	CAFETERIA	150	1	150						150	1	150	
	RECEPTION RM	40	1	40						40	1	40	
	SITTING RM for Night Duty	150	1	150						150	1	150	
	PRAY RM	40	1	40						40	1	40	
				1,260	190			360	210			1,620	400
WORKSHOP	CARPENTRY												
	MACHINE	750	1	750						750	1	750	
	ASSEMBLY	750	1	750						750	1	750	
	MAINTENANCE	200	1	200						200	1	200	
	BLACKSMITH	300	1	300						300	1	300	
	GYPSUM	300	1	300						300	1	300	
	POLYESTER	250	1	250						200	1	200	
	FURNITURE	200	1	200						200	1	200	
	PLASTIC	200	1	200						200	1	200	
	PAINTING w/PREPARATION	100	1	100						100	1	100	
	CURTAIN	200	1	200						200	1	200	
	SCULPTURE & CERAMIC												
	DESIGN RM	100	2	200						100	2	200	
	MODEL MAKING RM	300	2	600						300	2	600	
	FURNACE	300	1	300						300	1	300	
	STORE (GLAZE)	100	1	100						100	1	100	
	ZINK	20	1	20						20	1	20	
	LOCKER	30	1	30						30	1	30	
	STORE(CERAMIC)	250	1	250						250	1	250	
	SCULPTURE WORKSHOP	400	1	400						400	1	400	
	STORE (MATERIAL)	100	1	100						100	1	100	
	ZINK	20	1	20						20	1	20	
	LOCKER	30	1	30						30	1	30	
	STORE (PRODUCTs)	700	1	700						700	1	700	
				6,000								6,000	

5-157

BLOCK DECOR 2

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
MATERIAL	RAW MATERIALs												
STORE	WOOD	500	1	500						500	1	500	
	STEEL, PAINT ETC.	500	1	500						500	1	500	
	FABRIC	75	1	75						75	1	75	
	GLASS	75	1	75						75	1	75	
	SCRAP MATERIALs	100	1	100						100	1	100	
				1,250								1,250	
ACCESSORIES	HEAVY ACCSS.	1,000	1	1,000						1,000	1	1,000	
STORE	MEDIUM SIZE ACCSS.	500	1	500						500	1	500	
	LIGHT ACCSS.	300	1	300						300	1	300	
	CURTAIN	200	1	200						200	1	200	
	FURNITURE (SMALL)	200	1	200						200	1	200	
	FURNITURE (LARGE)	800	1	800						800	1	800	
	PANEL	1,000	1	1,000						1,000	1	1,000	
				4,000								4,000	
ASSEMBLY HALL	ASSEMBLY HALL												
	STUDIO 900	1,800	1	1,800						1,800	1	1,800	
	STUDIO 600	1,200	5	6,000						1,200	5	6,000	
	STUDIO 300					450	7	3,150		450	7	3,150	
				7,800				3,150				10,950	
SCENERY DESIGN	OFFICE (SEC. HEAD)	20	1	20	1					20	1	20	1
	" (MANAGER)	20	1	20	2	20	1	20	2	20	2	40	4
	SITTING RM (STAFF)	30	2	60	37	30	3	90	48	30	5	150	85
	DRAWING RM	200	1	200						200	1	200	
	STORE	25	1	25						25	1	25	
	PHOTOGRAPHY RM	25	1	25						25	1	25	
	CAPTION &	100	1	100						100	1	100	
	LETTERING RM												
	STORE &	20	1	20						20	1	20	
	PHOTOGRAPHY												
	STAINED GLASS	40	1	40						40	1	40	
	w/STORE												
	WALL DRAWING	40	1	40						40	1	40	
	w/STORE												
	EXECUTION RM	40	1	40						40	1	40	
	w/STORE												
				590	40			110	50			700	90
	TOTAL (A)			20,900				3,620					
	COMMON SPACE (A)x0.35			7,320				1,270					
	GRAND TOTAL			28,220				4,890				33,110	

5-158

BLOCK TECHNICAL OPERATION CENTER 1

DEPARTMENT	ROOM NAME	1st PHASE				2nd PHASE				TOTAL			
		ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O
T.O.C.	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20	1					20	1	20	1
	(VTR)												
	VTR OPERATION	200	1	200						200	1	200	
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM (STAFF)	30	1	30	18	30	1	30	10	30	2	60	28
				250	20			30	10			280	30
	(TELECINE)												
	TELECINE CENTER	200	1	200						200	1	200	
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM (STAFF)	30	1	30	8			-	10	30	1	30	18
				250	10							250	20
	(MASTER CONTROL)												
	MASTER CONTROL RM	250	1	250						250	1	250	
	CONTINUITY STUDIO	100	3	300						100	3	300	
	OFFICE (MANAGER)	20	1	20	2					20	1	20	
	SITTING RM (STAFF)	30	2	60	28					30	2	60	28
				630	30							630	30
	(MARKETING VTR)												
	VTR COPY RM	80	1	80						80	1	80	
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	SITTING RM (STAFF)	30	1	30	19	30	1	30	10	30	2	60	29
				130	20			30	10			160	30
	(VTR EDITING)												
	VTR EDITING RM	450	1	450						450	1	450	
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	SITTING RM (STAFF)	30	1	30	19	30	1	30	10	30	2	60	29
				500	20			30	10			630	30
	(UTILITY STUDIO)												
	UTILITY STUDIO	60	5	300						60	5	300	
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM (STAFF)	30	2	60	28	30	1	30	20	30	3	90	48
				380	30			30	20			410	50
	(AUDIO DUBBING)												
	AUDIO DUBBING STUDIO	60	8	480						60	8	480	
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	" (STAFF)	30	2	60	33	30	2	60	30	30	4	120	63
				560	35			60	30			620	65

BLOCK TECHNICAL OPERATION CENTER 2

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
	SOUND STUDIO	250	2	500						250	2	500	
	SOUND EFFECT STUDIO	200	1	200						200	1	200	
	MUSIC INSTRUMENT STORE	200	1	200						200	1	200	
	ANIMATION STUDIO	50	1	50						50	1	50	
	MAINTENANCE RM	100	1	100						100	1	100	
	OFFICE	20	2	40						20	2	40	
	STORE (SPARE-PARTs)					200	2	400		200	2	400	
	" (RAW TAPE)					100	2	200		100	2	200	
				1,090				600				1,690	
	(GENERAL AFFAIRS)												
	OFFICE (MANAGER)	20	2	40	3	20	1	20	2	20	3	60	5
	" (STAFF)	20	6	120	22	20	2	40	8	20	8	160	30
				160	25			60	10			220	35
	TOTAL (A)			4,010	190			840	100				290
	COMMON SPACE (A)x0.35			1,400				290					
	TOTAL			5,410				1,130				6,540	290

5-160

BLOCK PD OFFICE 1

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
DRAMA PRODUCTION DEP.	(MORNING SERIAL DRAMA) PD OFFICE (1 PD + 3 ASSTT PD + 2 SECRETARY)	30	10	300	60					30	10	300	60
				300	60							300	60
	(EVENING SERIAL DRAMA) PD OFFICE (1PD + 3 ASSTT PD + 2 SECRETARY)					30	13	390	80	30	13	390	80
								390	80			390	80
	(SPECIAL DRAMA) PD OFFICE (1 PD + 3 ASSTT PD + 2 SECRETARY)	30	6	180	40	30	7	210	40	30	13	390	80
				180	40			210	40			390	80
	(GENERAL AFFIARs) OFFICE (MANAGER)	20	1	20	1	20	1	20	2	20	2	40	3
	" (STAFF)	20	2	40	9	20	2	40	8	20	4	80	17
				60	10			60	10			120	20
	SUB-TOTAL (1)			540	110			660	130			1,200	240
GENERAL PROGRAM PRODUCTION	(SCHOOL EDUCATION) PD OFFICE (1 PD + 1 ASSTT PD + 1 SECRETARY)	20	13	260	40	20	13	260	40	20	26	520	80
				260	40			260	40			520	80
	(TEACHER's & ADULT EDUCATION) PD OFFICE (1 PD + 1 ASSTT PD + 1 SECRETARY)	20	6	120	20					20	6	120	20
				120	20							120	20
	(OPEN UNIVERISTY) PD OFFICE (1PD + 1 ASSTT PD + 1 SECRETARY)					20	13	260	40	20	13	260	40
								260	40			260	40
	(CHILDREN's EDUCATION) PD OFFICE (1 PD + 1 ASSTT PD + 1 SECRETARY)					20	6	120	20	20	6	120	20
								120	20			120	20

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BLOCK PD OFFICE 2

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
	(SOPHISTICATED CULTURAL PROGRAN)												
	PD OFFICE (1 PD + 1 ASSIT PD + 1 SECRETARY)	20	6	120	20					20	6	120	20
				120	20							120	20
	(COMMERCIAL SPOT)												
	PD OFFICE (1 PD + 1 ASSIT PD + 1 SECRETARY)	20	10	200	30					20	10	200	30
				200	30							200	30
	(GENERAL AFFAIRS)												
	OFFICE (MANAGER)	20	1	20	1	20	1	20	2	20	2	40	3
	" (STAFF)	20	2	40	9	20	2	40	8	20	4	80	17
				60	10			60	10			120	20
	SUB-TOTAL (2)			760	120			700	110			1,360	230
	PD EDITING RM (3)	10	24	240		10	16	160		10	40	400	
	TOTAL (A) (1)+(2)+(3)			1,540	230			1,520	240				
	COMMON SPACE (A)x0.35			540				530					
	GRAND TOTAL			2,080	230			2,050	240			4,130	470

5-162

BLOCK PROGRAM PRODUCTION 1

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL AREA	TOTAL N/O
PRODUCTION SUPPORT (TECHNICAL)	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
				60	1							60	1
	(CAMERA)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM	30	2	60	43	30	2	60	45	30	4	120	88
	(TECHNICIAN)			80	45			60	45			140	90
	(VISION MIX)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM	30	1	30	14	30	1	30	20	30	2	60	34
	(TECHNICIAN)			50	16			30	20			80	36
	(LIGHT)												
	OFFICE (MANAGER)	20	1	20	2	20	1	20	1	20	2	40	3
	SITTING RM	30	2	60	48	30	2	60	41	30	4	120	89
	(TECHNICIAN)			80	50			80	42			160	92
	(AUDIO MIX)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM	30	2	60	38	30	2	60	50	30	4	120	88
	(TECHNICIAN)			80	40			60	50			140	90
	(VTR TAPE STORE)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	SITTING RM	20	1	20	4			-	5	20	1	20	9
	(TECHNICIAN)			40	5			-	5			40	10
	(GENERAL AFFIARs)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (STAFF)	20	2	40	9	20	2	40	5	20	4	80	14
				60	10			40	5			100	15
	SUB-TOTAL (1)			450	166			270	167			720	333
PRODUCTION SUPPORT (ARTIST)	OFFICE (DEPT. HEAD)	40	1	40	1					40	1	40	1
	SECRETARY's RM	20	1	20						20	1	20	
				60								60	
	(ANNOUNCER)												
	OFFICE (MANAGER)	20	1	20	2	20	2	40	3	20	3	60	5
	" (STAFF)	20	2	40	8	20	2	40	7	20	4	80	15
				60	10			80	10			140	20

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BLOCK PROGRAM PRODUCTION 2

DEPARTMENT	ROOM NAME	1st PHASE				2nd PHASE				TOTAL			
		ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O	ROOM AREA	ROOM NOS.	TOTAL AREA	N/O
	(SCENERY DESIGN)				40				50				90
	(LIBRARY)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (STAFF)	20	2	40	9	20	2	40	5	20	4	80	14
	STORE	2,500	1	2,500						2500	1	2,500	
	READING RM	40	1	40						40	1	40	
	MONITERING BOOTH	5	4	20						5	4	20	
				2,620	10			40	5			2,680	15
	(PRINTING)												
	OFFICE (MANAGER)	20	1	20	2					20	1	20	2
	SITTING RM (STAFF)	30	1	30	18	30	1	30	15	30	2	60	33
	PRINTING RM	80	1	80						80	1	80	
	STORE	20	1	20						20	1	20	
				150	20			30	15			180	35
	(DECOR)				190				210				400
	(GENERAL AFFAIRs)												
	OFFICE (MANAGER)	20	1	20	1					20	1	20	1
	" (STAFF)	20	2	40	9	20	3	60	10	20	5	100	19
				60	10			60	10			120	20
	SUB-TOTAL (2)			2,950	280			210	300			3,160	580
	TOTAL (A) ((1)+(2))			3,400				480				3,880	
	COMMON SPACE (A)x0.35			1,190				170					
	GRAND TOTAL			4,590				650				5,240	

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BLOCK ARTIST 1

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL TOTAL AREA
MAKE-UP	OFFICE (SEC. HEAD)	20	1	20				20	1	20
	" (MANAGER)	20	1	20				20	1	20
	SITTING RM (STAFF)	30	1	30				30	1	30
	WORKSHOP	30	1	30				30	1	30
	STORE (MATERIAL)	20	1	20				20	1	20
				120						120
WARDROBE	OFFICE (HEAD)	20	1	20				20	1	20
	(DESIGN)									
	OFFICE (MANAGER)	20	1	20				20	1	20
	SITTING RM (STAFF)	30	1	30				30	1	30
	DESIGN RM	75	1	75				75	1	75
				125						125
	(SEWING No.1)									
	OFFICE (MANAGER)	20	1	20				20	1	20
	OFFICE FOR PROCUREMENT	20	1	20				20	1	20
	WORKSHOP w/SITTIGNG RM	900	1	900				900	1	900
	FITTING RM	5	2	10				5	2	10
				950						950
	(SEWING No.2)									
	OFFICE (MANAGER)	20	1	20				20	1	20
	OFFICE FOR PROCUREMENT	20	1	20				20	1	20
	WORKSHOP w/SITTING RM	900	1	900				900	1	900
	FITTING RM	5	2	10				5	2	10
				950						950
	(STORE)									
	OFFICE (MANAGER)	20	1	20				20	1	20
	" (STAFF)	20	2	40				20	2	40
	STORE (CLOTH)	400	2	800				400	2	800
	" (LEATHER CLOTH)	50	2	100				50	2	100
	" (HAT)	50	2	100				50	2	100
	LAUNDRY	100	1	100				100	1	100
				1,160						1,160
	SUB-TOTAL (1)			3,325						3,325
REHEARSAL	REHEARSAL RM (LARGE)	400	6	2,400				400	6	2,400
	" (MEDIUM)	200	6	1,200				200	6	1,200
	READING RM (DRAMA)	40	4	160				40	4	160
	"	60	2	120				60	2	120
	" (GENERAL)				50	14	700	50	14	700
				3,880			700			4,580

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BLOCK ARTIST 2

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL TOTAL AREA	TOTAL N/O
OTHERs	LOUNGE	100	1	100						100	1	100	
	CAFETERIA w/KITCHEN			100								100	
	SUB-TOTAL (2)			3,980				700				4,680	
	TOTAL (A) ((1)+(2))			7,300				700				8,000	
	COMMON SPACE (A)x0.35			2,560				250					
	GRAND TOTAL			9,860				950				10,810	

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BLOCK POWER HOUSE 1

DEPARTMENT	ROOM NAME	1st PHASE ROOM AREA	1st PHASE ROOM NOS.	1st PHASE TOTAL AREA	1st PHASE N/O	2nd PHASE ROOM AREA	2nd PHASE ROOM NOS.	2nd PHASE TOTAL AREA	2nd PHASE N/O	TOTAL ROOM AREA	TOTAL ROOM NOS.	TOTAL TOTAL AREA	TOTAL N/O
	OFFICE	20	2	40									
	SITTING RM (WORKER)												
	ELECTRICAL POWER	20	2	40	9	-			9	20	2	40	18
	AIR-CONDITIONING	30	1	30	11	-			4	30	1	30	15
	PLUMBING	20	1	20	5	-			4	20	1	20	9
	SUB-STATION	400	1	400						400	1	400	
	GENERATOR RM	1,000	1	1,000						1,000	1	1,000	
	HEAT SOURCE MECH. RM	1,500	1	1,500						1,500	1	1,500	
	SUPERVISORY RM	120	1	120						120	1	120	
	MAIN SWITCHING	300	1	300						300	1	300	
	TOTAL (A)			3,450								3,450	
	COMMON SPACE (A)x0.2			690								690	
	GRAND TOTAL			4,140								4,140	
	STATION												

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ANNEX 5-2

CONSTRUCTION MATERIALs

CONSTRUCTION MATERIALS

Material	Availability	Quality	Quantity	Result
* Sand	A	A	A	L
* Gravel	A	A	A	L
* Cement	A	A	B	L
* R- Bar	B	X	B	I
* Brick	A	A	A	L
* Conc. Block	A	A	A	L
* Terrazzo Tile	A	A	A	L
* Vinyl Tile	A	A	A	L
* Linoleum Sheet	X	-	-	I
* Marble	A	A	A	L
* Aluminum Sash	B	B	X	I
* Steel Door	B	X	X	I
* Steel Luver	B	X	X	I
* Steel Rolling Shutter	X	-	-	I
* Sound Proof Door	X	-	-	I
* Hardwares for Door & Window	B	X	X	I
* Glass	A	A	A	L

Material	Availability	Quality	Quantity	Result
* Mineral Acoustic Board	X	-	-	I
* Gypsum Board	X	-	-	I
* Calcium Silicated Board	X	-	-	I
* Wall Tile	A	A	A	L
* Glass Wool	X	-	-	I
* Waterproofing Membranes	A	A	A	L
* Roof Tile	A	A	A	L
* Paint	A	B	B	L(50%) I(50%)
* Electric Wire	A	B	A	L
* Cable	A	X	X	I
* Conduit Pipe (steel)	X	-	-	I
* Conduit Pipe (PVC)	A	A	B	I(70%) L(30%)
* Socket outlet and Plug	A	X	B	I
* Switch for Lighting	A	X	B	I
* Pull Box (steel)	A	B	A	I(70%) L(30%)
* Lighting Fixture	B	B	B	I
* Telephone Exchange	X	-	-	I
* Intercom	X	-	-	I

Material	Availability	Quality	Quantity	Result
* Public Address	X	-	-	I
* Fire Alarm	X	-	-	I
* Medium Tension Switch Gear Panel	X	-	-	I
* Low Tension Switch Gear Panel	B	X	B	I
* Transformer (Oil)	X	-	-	I
* Medium Voltage Circuit Breaker	X	-	-	I
* Low Voltage Circuit Breaker	X	-	-	I
* Wall Type distribution Board	B	B	B	I(70%) L(30%)
* Emergency Generator	X	-	-	I
* UPS & CVCF	X	-	-	I
* Galvanized Steel Pipe	A	X	B	I
* Cast Iron Pipe	A	X	B	I
* Copper Pipe	X	-	-	I
* PVC Pipe	X	-	-	I
* Lead Pipe	A	B	B	L
* Conc. Pipe	A	B	B	L
* Western Water Closet	A	B	X	I
* Wash Basin	A	B	X	I

Material	Availability	Quality	Quantity	Result
* Faucet	A	X	B	I
* Sill Cock	A	X	B	I
* Urinal	A	B	X	I
* Accessary for Sanitary Fixture	X	-	-	I
* Valve	B	X	B	I
* Colling Tower	X	-	-	I
* Packege Unit	A	B	B	L
* Duct	A	X	B	I
* Air Handling Unit	A	X	B	I
* Fan Coil Unit	A	B	B	L
* Air Inlet & Outlet	A	X	B	I
* Window Unit	A	B	B	L
* Portable Fire Extiguisher	A	A	B	L
* Nozzle for Fire Hydrant	A	X	B	I
* Laundry Equip.	B	B	X	I
* Kitchen Equip.	B	B	X	I
* Centrifugal Refrigerating	X	-	-	I
* Electric Boiler	A	B	B	L

Material	Availability	Quality	Quantity	Result
* CO2 Extinguisher	A	B	B	L
* Drinking Water Cooler	A	A	B	L
* Damper	X	-	-	I
* Insulation (glass wool)	X	-	-	I
* Duct Heater	X	-	-	I

LEGEND:

A : GOOD
B : FAIR
X : FAILURE
L : LOCAL MATERIALS
I : IMPORTED MATERIALS

PART 6

IMPLEMENTATION PLAN OF THE PROJECT

6. IMPLEMENTATION PLAN OF THE PROJECT

6-1 Personnel plan of the project

In order to make the personnel plan of the New TV Center, it is necessary to be based on the operational organization which should be compact, productive and effective.

The organizational chart and the required number of the staff are shown in Table 6 - 1 and 6 - 2 respectively.

6-1-1 The basic concept of the organization

Under the director (chairman) of the New TV Center the essential functions to operate consist of following divisions.

* Program production Div. 1,498 (769)*
  * (at the end of Phase I)

  Group of program directors and their assistant producers and the supporting staff with its special skill directly for the program production.

* Engineering Div. 466 (318)

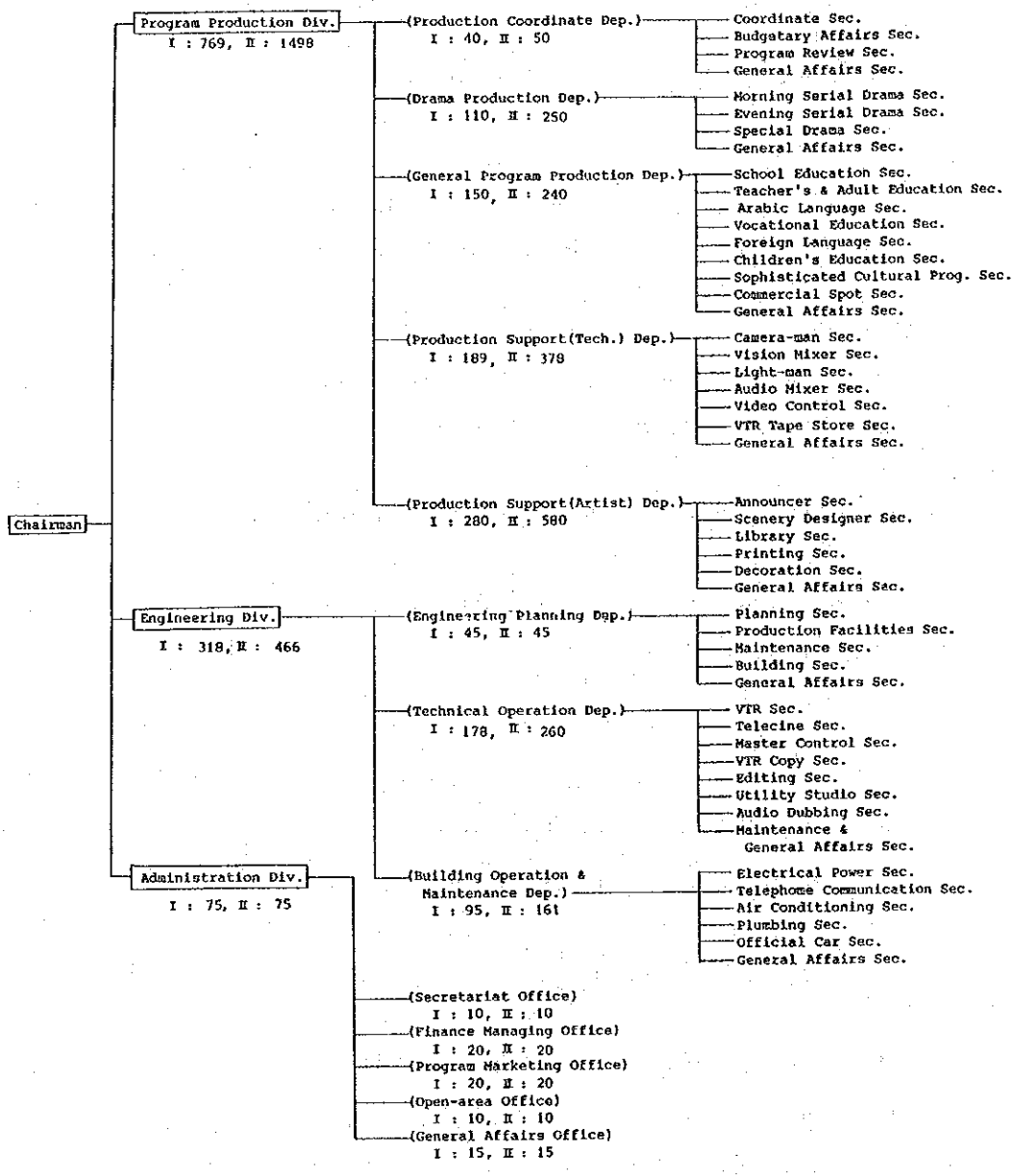
  Group of engineers and technicians who will support the program production from the side of engineering as well as technical operation, such as VTR, TOC control, maintenance and so forth.

* Administration Div. 75 (75)

  Group of the clerical staff such as personnel, accounting, program marketing and so forth.

ORGANIZATION CHART OF NEW TV CENTER

Table 6-1.



NUMBERS OF PERSONNEL OF NEW TV CENTER

Table 6-2

Division	Department	Section	Phase		Classification		Salary Basis		Part-Timer	Performer	Visitor
			I	II	Superv.	Employee	Fixed	Contract			
Program Production Ph. I : 769 Ph. II : 1498	Production Coordinate	Coordinate	15	20	7	13	20	0			
		Budgetary Affairs	10	10	4	6	10	0			
		Program Review	5	10	2	8	10	0			
		General Affairs	10	10	2	8	10	0			
			(40)	(50)	15	35	50	0			≒ 10
	Drama Production	Morning Serial Drama	30	30	6	24	15	15			
		Evening Serial Drama	0	80	16	64	40	40			
		Special Drama	70	120	24	96	60	60			
		General Affairs	10	20	3	17	20	0			
			(110)	(250)	49	201	135	115		≒ 180	≒ 100
	General Program Production	School Education	40	80	16	64	80	0			
		Teacher's & Adult Education	20	20	4	16	20	0			
		Language & Vocational Education	40	60	12	48	60	0			
		Children's Education	10	10	2	8	10	0			
		Sophisticated Cultural Program	0	20	4	16	20	0			
		Commercial Spot	30	30	4	26	5	25			
		General Affairs	10	20	3	17	20	0			
			(150)	(240)	45	195	215	25		≒ 70	≒ 70
	Production Support (Technical)	Camera-man	45	90	2	88	55	35			
		Vision Mixer	16	36	2	34	31	5			
		Light-man	50	92	3	89	92	0			
		Audio Mixer	40	90	2	88	90	0			
		Video Control	23	45	2	43	45	0			
		VTR Tape Store	5	10	1	9	10	0			
		General Affairs	10	15	1	14	15	0			
			(189)	(378)	13	365	338	40			

Division	Department	Section	Phase		Classification		Salary Basis		Part-Timer	Performer	Visitor
			I	II	Superv.	Employee	Fixed	Contract			
Program Production	Production Support (Artist)	Announcer	10	20	5	15	20	0			
		Scenary Designer	40	90	5	85	85	5			
		Library	10	15	1	14	15	0			
		Printing	20	35	2	33	35	0			
		Decoration	190	400	10	390	400	0			
		General Affairs	10	20	1	19	20	0			
			(280)	(580)	24	556	575	5			≒ 30
Engineering Ph. I : 318 Ph. II : 466	Engineering Planning	Planning	10	10	5	5	10	0			
		Production Facilities	10	10	5	5	10	0			
		Maintenance	10	10	5	5	10	0			
		Building	10	10	5	5	10	0			
		General Affairs	5	5	1	4	5	0			
			(45)	(45)	21	24	45	0			≒ 5
	Techinical Operation	VTR	20	30	2	28	30	0			
		Telecini	10	20	2	18	20	0			
		Master Control	30	30	2	28	30	0			
		VTR Copy	20	30	1	29	30	0			
		Editing	20	30	2	28	30	0			
		Utility Studio	20	30	2	28	30	0			
		Audio Dubbing	33	55	2	53	55	0			
		Maintenance & General Affairs	25	35	5	30	35	0			
			(178)	(260)	18	242	260	0			≒ 15
	Building Operation & Maintenance	Electrical Power	15	28	10	18	28	0			
		Telephone & Communication	20	38	6	32	18	20			
		Air Conditioning	15	22	7	15	22	0			
		Plumbing	9	13	4	9	13	0			
		Official Car	30	50	2	48	50	0			
		General Affairs	6	10	1	9	10	0			
			(95)	(161)	30	131	141	20			≒ 10

Division	Department	Section	Phase		Classification		Salary Basis		Part-Timer	Performer	Visitor
			I	II	Superv.	Employee	Fixed	Contract			
Administration Ph. I : 75 Ph. II : 75	Secretariat Office		10	10	5	5	10	0			
	Finance Managing Off.		20	20	10	10	20	0			
	Program Marketing Off.		20	20	5	15	20	0			
	Open-area Office		10	10	4	6	10	0			
	General Affairs Office		15	15	5	10	15	0			
			(75)	(75)	29	46	75	0			≒ 10
	TOTAL		1,162	2,039	244	1,795	1,834	205		≒ 250	≒ 250

6-1-2 Production coordinate Dep. 50 (40)

This Dep. is in charge of the smooth and effective production as a whole, in other words, to coordinate each various program production's requirement, annually, and daily, together with functioning as the staff of the division director.

The head of this Dep. is positioned superior than the other Deps, so that he can coordinate or adjust conflictions arisen annually and daily among various kind of program productions in the division.

This Dep. consists of the following sections.

(1) Coordinate Sec. 20 (15)

Annual plan making of the program production (what program, in what period, by what studio etc.) daily coordination of allocating production facilities such as common VTRs or EFP-Vans etc.
The staff of this Sec. should be well experienced so that be able to judge and adjust problems among the various types of program production.
The number of the staff of this Sec. are tentatively assumed about 20 including:
chief: 1, staff: 15, secretaries: 4.

(2) Budgetary affairs Sec. 10 (10)

As the staff of the Division's Director, this section deals with annual budget allocation to each series of program and check the expenditure afterwards.
The estimated number of the staff will be
chief: 1, staff: 7, secretaries: 2.

(3) Program Review Sec. 10 (5)

As is being operated in Cairo Center, this kind of review and check function after program completed is anyhow necessary, but unless it is properly carried

out, it might be some obstacles to make smooth and effective program production.
The supposed number of the staff will be about 10.

(4) General Affairs Sec. 10 (10)

In charge of personnel affairs within the Division, supply of stationary goods, circulating necessary note among the Division, taking care of guests for the Division etc., etc.

6-1-3 Drama Production Dep. 250 (110)

This Dep. will consist of each drama series Sec. regarding the number of the Program Director and his assistant producer, as it is described in Item 3-4-2 in this report, here supposing that each Program Director will have his own secretary and the assistant producers have shared one, the total number of the staff are calculated as follows.

(1) Morning Serial Drama Sec. 30 (30)

Each production team: 6
Program Director: 1, secretary: 1
Assistant Producer: 3, secretary: 1
Required number of the team: 3
(4 PD + 2 sec.) x 3 teams x 1.6* = 28 → 30

* here the ratio $1.6 = \frac{\text{Studio work day/y (350)}}{\text{Staff work day/y (220)}}$

(2) Evening Serial Drama Sec. 80 (0)

According to the aforesaid program production plan, this series of drama will start from 2nd phase.
Regarding the number of this section is calculated likewise the morning serial drama section.

Each production team: 6
(Program Director: 1, secretary: 1)
(Assistant Producer: 3, Secretary: 1)
Required number of the team: 8
(4 teams for one studio, using 2 studio)
(4 PD + 2 sec.) x 4 teams x 2 studios x 1.6
= 77 80

(3) Special Drama or Variety Sec. 120 (70)

About half of the production will start from the beginning (Ph I) and the rest including variety show will be added.
Required number of the staff is calculated as the same way.

(4 PD + 2 Sec.) x 4 teams x 3 studios x 1.6 = 115 120

(4) General Affairs Sec. 20 (10)

Taking care of personnel affairs and miscellaneous matters within the Dept. presumable number of the staff will be

3 supervisors + 12 clerks + 5 secretaries = 20

6-1-4 General Program Production Dept. 240 (150)

This Dep. produces various kind of educational and cultural programs in addition to commercial spot programs as before mentioned in Item 3-7.

(1) School Education Sec. 80 (40)

This Sec. is in charge of school education program production in addition to the existing school education programs which are now being produced in Cairo TV Center.

The required number of the staff will be calculated as follows.

Each production team consists of Program Director: 1
Assistant producer: 1 and secretary: 1 totaled: 3
Rotating team's number: 8
Using studio: 2
(2 PD + 1 Sec.) x 8 team x 2 studios x 1.6 = 77 80
Half of them will start from the 2nd Phase, so that in 1st Phase required the half. (40)

(2) Teacher's and Adult Education Sec. 20 (20)

These two programs can be shared by one group consisted of 4 teams.

(2 PD + 1 sec.) x 4 teams x 1.6 = 19 20
Starting from 1st Phase.

(3) Language and Vacational Sec. 60 (40)

There are 3 programs to be produced by this Sec.'s staff.
Each program is supposed to be made by 4 teams of (2PD + 1 sec.), so that the required number is
(2PD + 1 sec.) x 4 teams x 1.6 = 20
Therefore total is 20 x 3 = 60

(4) Children Education Sec. 10 (10)

Starting from the 1st Phase.
Calculated number of the staff
(2 PD + 1 sec.) x 2 teams x 1.6 = 9 10

(5) Sophisticated Cultural Program Sec. 20 (0)

(2 PD + 1 Sec.) x 4 teams x 1.6 = 19 20

(6) Commercial Spot Sec. 30 (30)

The number of staff will be depend upon the contents of the spot which is required by the sponsor. Some one might be very simple and some very sophisticated and elaborate.

So that the required production facilities together with the number of the production staff will be also varied much.

But this kind of affairs always tends to larger demand. Taking this into consideration, here, the study team estimates the required staff tentatively as follows.

To make one commercial spot, supposing that 2 producers take 8 days as one team.

Supposed working day: 250 days/8 days = 31 spots/team

The required spot number per year 400 spots.

400 spots/31 spots = 13 teams.

2 PD x 13 team = 26 PDs

There might be some secretaries needed.

Supposing 4. The total is 26 PD + 4 sec. = 30

(7) General Affairs Sec. 20 (10)

Taking care of personnel affairs and others, provisional number of the staff will be 20.

6-1-5 Production Support (Technical) Dep. 378 (189)

This Dep. is composed of the following technical sections.

(1) Camera-man Sec. 90 (45)

Although in the daily practical operation, especially for drama production, the camera-men are almost fixed for some particular studio since they are involved in some certain drama production which occupies the camera-men for fairly long period.

But they are grouped in this Section under the supervision of the chief, those camera-men can be shared for another studio production such as general educational program production, when it is possible. Some drama camera-men will be the staff on contracted basis.

The required number of camera-men is calculated as follows, supposing that:

Each drama production needs 4 camera-men, and each general production needs 3 camera-men.

Drama studio 6, general studio 7

(4 camera-men x 6 studios + 3 camera-men x 7) x 1.6 = 72

Besides, some camera-men are supposed to go outside VTR location, the number estimated 8.

So that total required camera-men = 72 + 8 = 80

In addition to 3 supervisors and 3 secretaries.

The total staff number will be 86 90

For 1st Phase, in the same way calculated:

(4 camera-men x 3 studios + 3 camera-men x 4 studios) x 1.6 = 38 40

Plus 2 supervisors and 3 secretaries totaled = 45

(2) Vision Mixer Sec. 36 (16)

Usually, in drama production, the vision mixer should closely cooperate with the drama producer, so that he might be on the contracted basis. However, in the general education program production some vision mixers can cover various types of production and might be the staff of the Center on fixed salary basis.

Moreover Vision Mixer is in charge of the Technical Director (T.D.) function who takes care of whole the technical crew's activities as well as assuming the responsibility for the technical problems during the production and also he replies to the technical consultation with the program producer.

Therefore, grouping those vision mixers into the section as one of the supporting function for the program production.

The required number of vision mixers are calculated as follows.

1 vision mix x 6 drama studios x 1.6 = 15

1 vision mix x 7 general studios x 1.6 = 17
Supervisor x 2 + secretary = 4
For the 1st Phase
3 drama studios and 4 general studios need
7 vision mix x 1.6 = 12 plus 2 supervisors and 2 secretaries which total is 16.

(3) Light man Sec. 92 (50)

Likewise the Vision Mixers Sec. this Sec. includes all light men working in the studio complex.

To calculate the number of light man, supposing each drama studio need 5 (LD x 1 + LO 4) light men and each general studio 3 (LD x 1 + LO 2) light men, so that the total number of staff required is calculated as following.

(5 x 6 (drama st.) + 3 x 7 general st.)) x 1.6 + supervisor 3 + secretary 3 + 4 (out door location) = 92

Some of them, probably working for drama might be contract basis staff.

(4) Audio Mixer Sec. 90 (40)

This Sec. also a group of Audio Mixers, counted that each drama studio need 4 (AD x 1 + AO x 3) and each general studio need 2 (AD x 1 + AO x 1) and each audio studio (AP x 1)

Then the total number of the staff is

(4 x 6(drama) + 2 x 7(general) + 3(aduio) + 5(dubbing)) x 1.6 + supervisor 2 + secretary 2 + out door 12 = 90

Since audio Mixing requires special skills to operate especially on synphony orchestra recording and other traditional music, some would be on the contract basis.

(5) Video Control Sec. 45 (23)

This Sec. consists of camera control man and VTR operator for the adjustment of Camera Control units and VTR's which are installed in each studio control room. The required number of the staff will be

(2 Video control men x 13 studios) x 1.6 + α = 45
here α = Sperviser 2 + secretary 1 = 3

(6) VTR Tape Store Sec. 10 (5)

This Sec. is in charge of storage of raw VTR tapes including various kind of tapes such as 1 inch, 3/4 inch, 1/2 inch cassette tapes and also completed program tapes produced in the Center, and in addition that, some film storage for archive usage together with audio disks and audio tapes with the reproducing equipment.

For the time being the number of the staff will be assumed about 10.

(7) General Affairs Sec. 15 (10)

It takes care of the Dep.'s personnel affairs and other miscellaneous affairs.
The number of the staff will be about 3% of the total staff that is 500 x 0.03 = 15

6-1-6 Production Support (Artist) Dep. 580 (280)

In parallel aforesaid Prod. Sup. (Technical) Dep., this Dep. supports the program production from the side of artistic fields, which are announcer, scenery designer, librarian, printing and decoration sections.

(1) Announcer Sec. 20 (10)

Group of announcer. Supposed number is about 20 which include commentator.

(2) Scenery Designer Sec. 90 (40)

Assuming that senery designer are required corresponding to the Program Director, for drama 44 (20 at 1st Ph) + for general 45 (20 at 1st Ph) = 90 (40 at 1st Ph)

Some of them might be contract basis staff relating to the program directors.

(3) Library Sec. 15 (10)

To make a such like intercultural TV programs, a library service to each producer with the stored many books, magazines and so forth should be accommodated. And to operate it, some certain number of staff are needed, provisionally assumed about 5.

(4) Printing Sec. 35 (20)

In order to make TV program, copies of each program's cinario are needed for the performers and the production crew, so that quick and confidential printing function for that purpose is necessary within the New TV Center.

And of course, in addition, this section will serve for the circulating printed matters in the Center.
The presumed number of the staff will be about 35, of which major part are printing workers.

(5) Decoration Sec. 400 (190)

Since almost scenery sets are necessary to be prepared within the Center, the number of the staff belonged to this Sec. is fairly large including scenery work shop, accessary and make up (with hair dress) staff.
The required number of the each staff are calculated as follows.

Scenery work shop
Drama production
Leader: 1, Carpenter: 5, Asst. Carpenter: 3,

Painter: 4, Asst. Painter: 2, Porter: 3,
total 18
18 x 1.6 = 30 30 x 6 studios = 180 (90 1 Ph)
General production
Leader: 1, Carp.: 3, Asst. C.: 2, Painter: 3,
Asst. P: 1, Porter: 2, total 12
Accessary: for drama 3 x 1.6 x 6 studios = 30
(15 at 1 Ph)
for general 2 x 1.6 x 7 studios = 23
(12 at 1 Ph)

So that the total is 180 + 140 + 30 + 23 + 2 = 400
(190 at 1st Phase)
= 10 supervisors + 10 secretaries + 7 others

(6) General Affairs Sec. 20 (10)

It takes care of the Dep.'s personnel affairs and other miscellaneous affairs. The number of the staff will be about 3% of the total staff that is 600 x 0.03 = 20

6-1-7 Engineering Division 466 (318)
Engineering Planning Dep. 45 (45)

This Dep. is in charge of maintenance of the facilities both of daily and future planning, and at the same time, during the implementation works of the New TV Center through the 1st and 2nd Phase, a well organized planning related to the construction and the installation should be made.

Therefore the planning Sec. Production Facilities Sec., Maintenance Sec. and Building Planning Sec. are necessary to consist of. Majority part of this Dep.'s staff are engineers graduated from unviersity and their secretaries.

(1) Planning Sec. 10 (10)

It mainly deals with future planning of engineering affairs of the Center. The provisional number of the staff will be 5 plus their 5 secretaries.

(2) Production Facilities Sec. 10 (10)

Since the development of TV production equipment is very rapid, and accordingly the production method is also improved year after year. This Sec. is responsible to cope with the affairs and at the same time, to fix the engineering problems arisen during the daily operation regarding the production facilities. The presumable number of the staff will be 5 engineers and their 5 secretaries totaled 10.

(3) Maintenance Sec. 10 (10)

Likewise the above said Sec., the staff number will be 10 including 5 engineers and their secretaries.

(4) Building Sec. 10 (10)

Similar to the above Sections, this Sec. is in charge of building matters together with whole site buildings and its infrastructure.

(5) General Affairs Sec. 5 (5)

Taking care of personnel affairs and miscellaneous matters within the Dep.

6-1-8 Technical Operation Dep. 260 (178)

Although this Dep. is involved in the daily program production by operating VTRs, Telecines, Master control room and so on, it is better that this Dep. is belonged to Engineering Div. rather than to Program Production Div., because this kind of jobs requires engineering

knowledge and close connection between the Engineering Dep. will benefit each other.

Some of the staff in this Dep. will be engineers (probably fresh graduates from university) and majority are technicians.

(1) VTR Sec. 30 (20)

8 x 2 shift x 1.6 + 2 = 30

= supervising engineers 2 + secretaries 2 = 4

Here one thing has to be noticed that in a studio production technical crew there are two VEs who operate the CCU and the VTRs attached to the studio. So that even though operating same job of VTR they have to be divided into different Div. and different Dep.

However, this is not so problem because studio VTR operators are almost engaged with operation itself while TOC VTR operators are much more engineering operation with the maintenance mind, so that TOC staff have to take care of the all VTRs including TV studios regarding the maintenance.

(2) Telecine Sec. 20 (10)

5 x 2 shift x 1.6 + 2 = 20

= supervising engineers 2 + secretaries 2 = 4

Although the 4 needs for telecines are in a decreasing tendency, the above described number of the staff will be considered to be still needed.

(3) Master Control Sec. 30 (30)

This Sec. is in charge of the continuity studio operation in addition to the master control operation.

The calculated staff number will be

Continuity studio (Vision Mix 1, Camera 1, A. Mix 1, Light 1, total 4)

Master control (4 taking care of - wave link between Cairo HQ etc.)

8 x 2 shift x 1.6 + α = 30

α = 2 supervisory engineers + 2 secretaries + 4

(4) Marketing Video Copy Sec. 30 (20)

This Sec. operates dubbing operation from an original 1 inch tape to number of cassette tapes for market distribution.

The number of staff is

8 x 2 shift x 1.6 + (1 supervisory engineers + 1 secretary) = 30

(5) Editing Sec. 30 (20)

This Sec. operates VTR copy operation to make the work tape (usually 1 inch to 1/2 inch cassette tape) for the producer's off-line editing purpose, and ECS (Editing Control System using Micro Computer) editing operation.

VTRs consist of 12 chaines and also multi track sound transferring operation after finishing the complete sound making in audio dubbing studio is done.

The estimate number of this Sec. will be

8 x 2 shift x 1.6 + (2 supervisory engineers + 2 secretarties) = 30

(6) Utility Studio Sec. 30 (20)

After an editing of VTR tape finished, super-imposing subtitles on the picture adding beginning and ending titles to the edited program with some background music and some narration are usually done in this utility studio.

Their operations are called post production. Suppose that there are 3 utility studio needed, the number of the operating staff are

Vision Mix x 1, Asst. V.M. x 1, Audio Mix x 1

Total 3 x 2 shift x 1.6 = 10 x 3 st = 30

(7) Audio Dubbing Sec. 55 (33)

As one of the post-production operation, after VTR editing finished of which recorded sound is still uncompleted yet, so that in this audio dubbing studio, to make after recording of performer's talks, effect sounds and background music are done usually. The required number of the staff will be

Audio Mix x 1, Asst. A. Mix x 1, Video Operator x 1

Total 3 x 2 shift x 1.6 = 10 x 5 st + α = 55

(8) Maintenance and General Affairs Sec. 35 (25)

Although each Sec. has responsibility on its own operating equipment daily, this Sec. takes care of an arrangement for whole equipment maintenance such as preparation of spare units, maintenance guidance and so forth in addition to general affairs and the other miscellaneous matters. This Sec.'s staff will be composed of 10 engineers well experienced in the maintenance and their secretaries 5 plus clerks 20 including the supervisor and his secretary, so that total will be 35.

6-1-9 Building Operation and Maintenance Dep. 161 (95)

This Dep. is in charge of the building operation such as electric power supply, air conditioning illumination of the building and the maintenance affairs of those facilities in addition to the telephone communication operation.

Besides, the facilities out-side of the studio complex such as performer's Hotel, staff residence houses and etc. together with plantation of the whole side area, security guard and firemen.

The composing Sections and the required number of the staff will be as follows.

(1) Electrical Power Sec. 28 (15)

6 chief engineers, 4 asst. engineers, 9 technicians, and 9 workers total 28

(2) Telephone Communication Sec. 38 (20)

6 engineers, 20 telephone operators, 6 technicians, and 6 workers total 38

(3) Air Condition Sec. 22 (15)

6 engineers, 1 asst. engineer, 10 technicians, 5 workers total 22

(4) Plumbing Sec. 13 (9)

3 engineers, 1 asst. engineer, 6 technicians, 3 workers total 13

(5) Official Car Sec. 50 (30)

This Sec. is in charge of operation and maintenance of the official cars which are belonged to the Center such as OB vans, EFP vans and VIP's cars.

In this Sec. about 40 car-drivers are included together with their supervisors and the secretaries totaled about 50.

(6) General Affairs Sec. 10 (6)

Including 4 administration staff under the head of the Dep. with the secretaries.

6-1-10 Administration Div. 75 (75)

Since this Division is playing the very important clerical works of the New TV Center conducting the staff of the chairman, although the number of the staff are relatively small. Therefore, each function composing the Div. would be called "office" positioned at the

same level of the Department.

(1) Secretarial Office 10 (10)

It conducts various kind of secretarial jobs relating to the Chairman of the New TV Center. The number of the staff is presumably about 10 consisted by 1 director level officer and his assistants 9 including their secretaries.

(2) Finance Managing Office 20 (20)

It conducts daily and annual budgetary affairs of the Center and is composed of about 10 staff including 1 director level officer and his assistants 9 including their secretaries.

(3) Program Marketing Office 20 (20)

Since program marketing business is very important for the financial condition of the New TV Center, this affairs should be operated independently from the Cairo Headquarters.

The staff of this office will be supposed that 3 director level officers and their assistants 12 and their secretaries 5, so that total will be about 20.

(4) Open-area Office 10 (10)

Taking care of facilities in the open area, this office is in charge of the managements. The staff will be supposed about 10 including 2 director level officers and their assistants 4 and the secretaries 4.

(5) General Affairs Office 15 (15)

Being responsible for the other affairs which are not related to any Department of the Center. The number of the staff will be supposed 2 director level officers and their assistants 8 and 5 secretaries, totaled 15.

6-2 Staff Recruiting Plan and Personnel Training Plan

6-2-1 Staff Recruiting Plan

In Table 6-1, the required number of the new TV Center's staff are shown. It is roughly estimated that, among them, about 1/2 will be moved staff from Cairo TV Center and another 1/4 will be already skilled persons from various Egypt program production organizations and foreign countries productions, and the rest 1/4 will be newly recruited staff but having enough educational background and required talents.

As the following, the required personnel carriers and skills for those composing staff of the New TV Center and from where those staff will be furnished are proposed, each by each Department.

(1) Production Coordinate Dep.

Coordinate Sec.

Since the role of this Sec. is very important to realize an effective program production of the new TV center, the staff of this Sec. should be familier with various program production affairs in ERTU as well as be capable of proper decision making on smooth and effective allocation of the studio facilities, therefore, the staff have to be not only well experienced with long years engagement in ERTU but also be familier with the operation of the new program production facilities in the new TV center.
Accordingly, most of the staff will be from the program production Sector of Cairo TV Center.

Budgetary Affairs, Program Review Secs.

Most of the staff will be composed of the moved staff from ERTU Cairo TV Center, but some would be better to

be recruited from outside companies.

(2) Drama Production Dep.

The required number of the drama producers is 100 for 1st Phase and 230 for 2nd Phase, among which about the half will be from the outside production organizations including foreign countries and the rest half will be composed by the moved staff from ERTU Cairo TV Center and some new recruited staff.

About half of the drama producers will be supposed to be contract basis staff of the new TV center.

(3) General Program Production Dep.

The required number of the producers is 120 for 1st Phase and 220 for 2nd Phase, including 30 of commercial spot producers.

Educational and cultural Program producers are considered to be almost fix-basis staff by their nature but the commercial spot producers are almost from outside productions so that most of them are supposed to be contract basis staff.

The majority of the general program producers are supposed to be some from ERTU's Cairo TV Center and some from other educational and cultural organizations plus some new freshman producers.

(4) Production Support (Technical) Dep.

The staff of this Dep. are to support program productions from each specific technical job such as camera and VTR operations, therefore, each staff has to have enough skill and the necessary technical background.

Most of them are composed of the staff from ERTU Cairo TV Center and staff from outside productions including foreign countries broadcasting organizations but some new freshman-staff also be necessary.

(5) Production Support (Artist) Dep.

Likewise the above (Technical) Dep. each staff has to have enough experience and skill in each specific artistic job, so that almost staff are spposed to be the staff from ERTU Cairo TV Center as well as newly recruited staff from outside production organizations including overseas. Some will be freshman staff included but the number is limited.

(6) Engineering Planning Dep.

Majority staff of this Dep. consist of university graduate level engineers and conduct a guiding role regarding introduction of new technology and maintenance planning of the new TV center.

Therefore, the staff will be composed of moved engineers from ERTU Cairo TV Center and experts from outside organizations plus some new freshman engineers.

(7) Technical Operation Dep.

The staff of this Dep. contribute program productions with the higher technical knowledges and skills concerning VTR and other centrized equipment.

As the staff should be enough skilled in terms fo video and audio technical operation, it is necessary to consist of experts from ERTU Cairo TV Center as well as outside broadcasting organizations abroad, but some new freshman staff also be included after the required training course.

Building Operation and Maintenance Dep.

As far as concerned with the staff of this Dep., new recruitment from outside building maintenance engineers would be possible.

(8) Administration Div.

Since the staff are almost clerical staff, it will be composed of some from ERTU's Cairo TV Center and experienced men from outside.

6-2-2 Personnel Training Planning

(1) Training in Foreign Countries

a. Executive management course

Anually one executive staff is to have a course of effective management in abroad for about 2 - 3 weeks, and there he look by his own eyes the updated and economized daily production operation so that he can reflect his experience abroad to the New TV Center's effective operation system.

b. Collective Course

(i) Program Producer's Training
One or two producers are to participate a collective training course twice a year, for two months, and succeedingly to have an individual on the Job training (for about 2 months) regarding new program production methods such as Off-line-editing and appliance of computer graphic system to the new program production.

(ii) Production Engineer's Training
Likewise the above producer's training, one or two production engineers are to participate a collective training course for two months, twice a year, and then have an individual on-the-job course

for 2 month training regarding new production techniques.

c. Maintenance Training at the time of Factory Inspection

Studio Program Production Facilities

1st phase 15 engineering staff for about 2 months

2nd phase 15 engineering staff for about 2 months

Building Electric Facilities

1st phase 3 engineers for about 2 months

2nd phase 2 engineers for about 2 months

(2) Collective Training Courses in ERTU

The following various training courses are to be conducted by utilizing the existing training staff and facilities in Cairo Head quarters in order to train the staff assigned to the New TV center.

a. General training course for the newly recruited staff

For the newly recruited staff including clerical staff, program producers and engineering staff, a preparatory training course will be given regarding the effective organization and administrative operation as well as the basic economic mind of the New TV Center.

b. Program Production Training

The necessary daily operating procedures required for program producers according to the New TV centers specific regulations regarding how to prepare and write production cinario, preparatory ording notices, studio program production procedures including outdoor (EFP) production, post-production and various reporting after program production, etc. are lectured at the course.

c. Production Engineering Training

The following specific technological courses based on the general program production system are to be given

to the related technical staff in order to deepen their experties together with the new daily operational procedures.

- TV camera-man course
  (Function and operation of TV camera including handy camera)
- TV studio lighting course
  (Lighting system and the operation)
- Audio man course
  (Arranging of microphone, mixing audio console and recording technics)
- VTR operating course
  (Function of VTR and the operation including editing procedures)
- Studio control man course
  (Function of Studio control room and the operation including utility studio)
- Artistic designer course
- Anouncer course
- Building maintenance engineer course

(3) On-the-Job Training using actual Studio Facilities

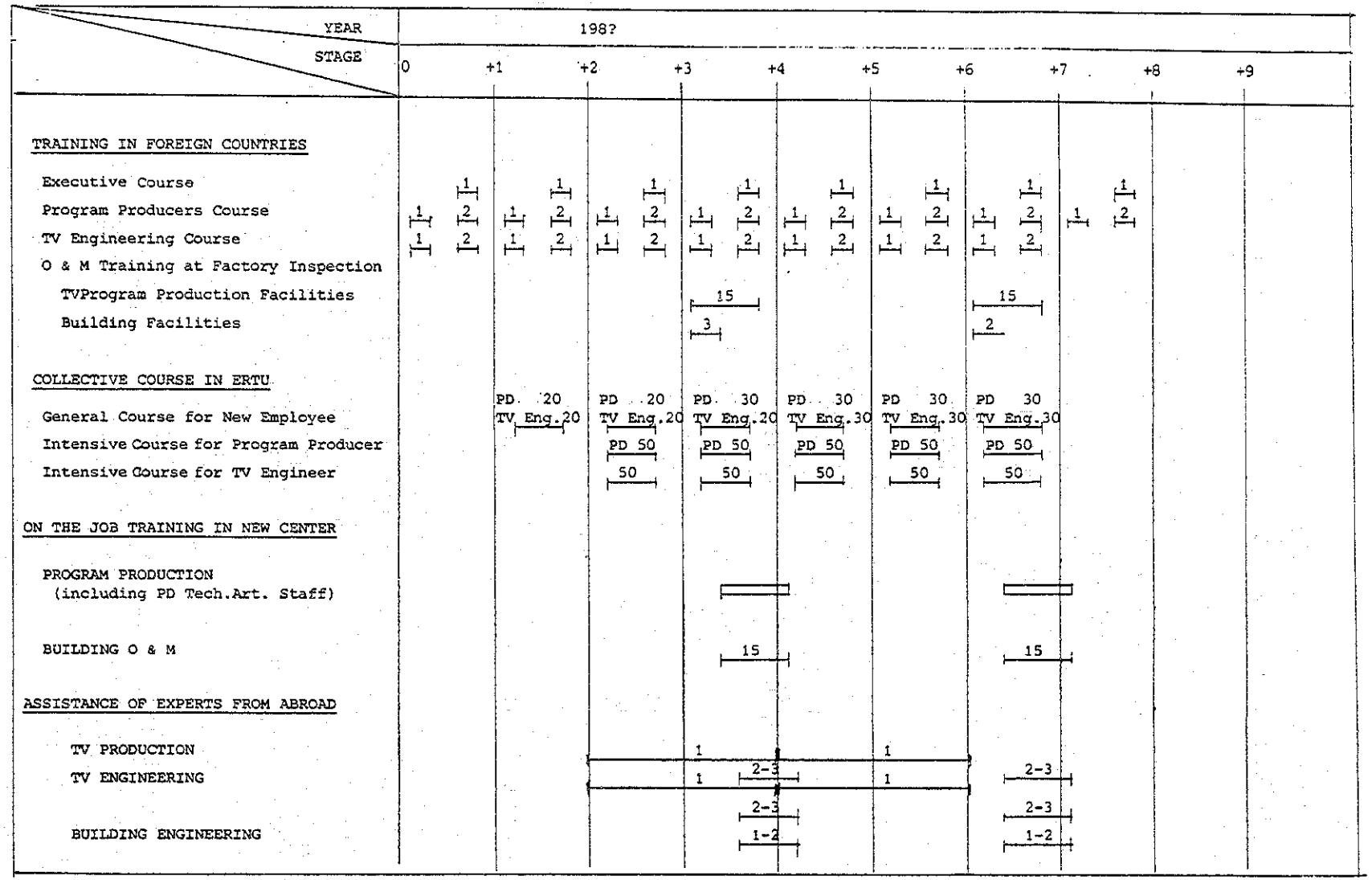
After the completion of the studio facilities installation, on-the-Job training of practical program production by using those newly installed equipment for the actual production staff of the New TV Center is to be conducted by the above said staff already trained in abroad and some experts from oversea's country.

(4) Acceptance of Experts from oversea's country

- Program Production (P.D.) 1-2 2 years/each
- Production Engineer (T.D.) 1-2 2 years/each
- Building Engineer

Summerizing above mentioned, Table 6-3 is shown on the next page.

Table 6-3. PERSONNEL TRAINING PLAN



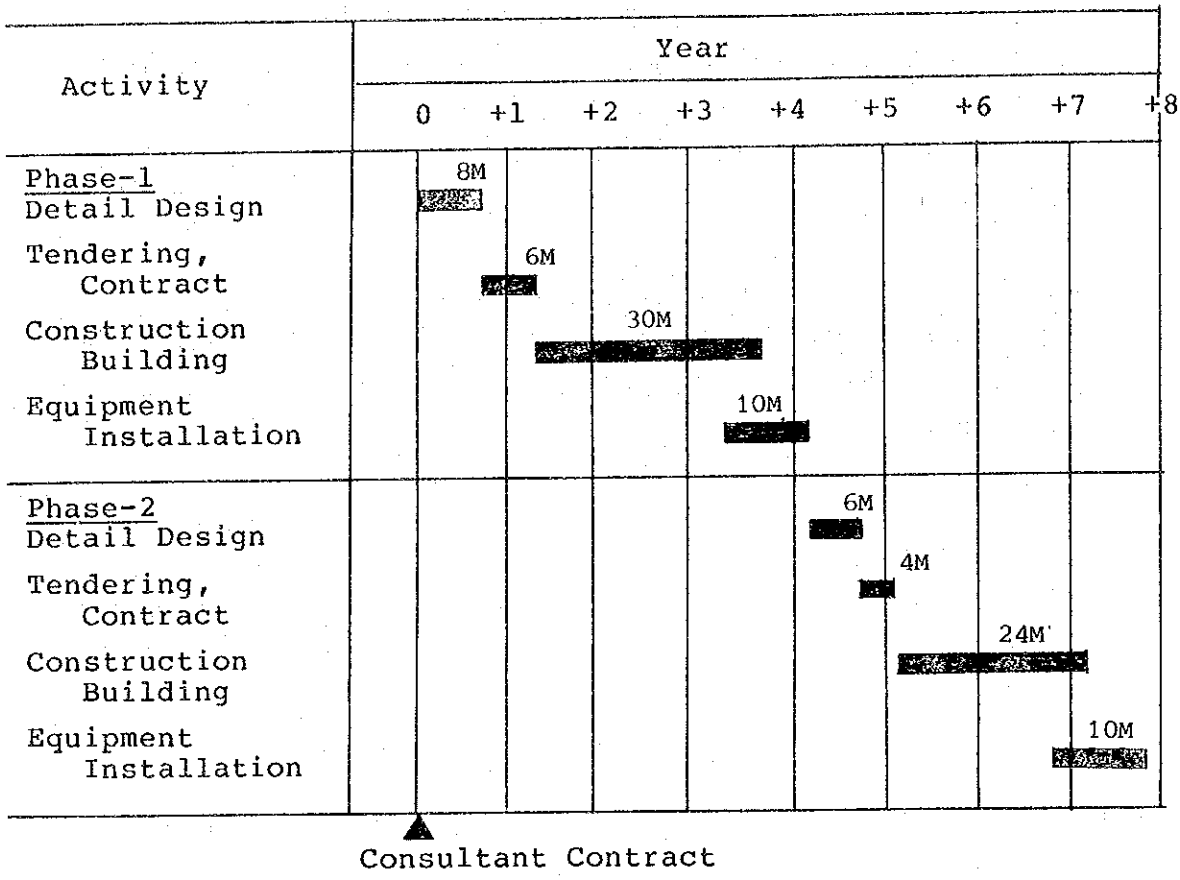
(5) Training Cost

Every training course above mentioned, of course, accompanies some certain expenditure, however, since, among those courses, some courses might be borne by other budgetary system such as foreign countrie's government running course and besides there are many unknown factors exist at this study period, to estimate of the training cost is difficult at the moment.

Therefore, it is necessary to estimate and include it into the whole project cost when the practical conditions for the calculation of the training cost become known.

6-3 Construction Schedule

Expected time schedule is as follows:



The implementation schedule proposed here consists of the following:

- Detail Design: The schedule covering detail design and tender documents preparation for phase 1 and 2 both for building and equipment.
- Tendering, Contract : The schedule covering prequalification, tender and negotiation stage.
- Construction : Construction covering the period from award of construction contract to completion of construction including installation of equipment.

6-4 Cost Estimate of Construction

Here the cost table is shown in Table 6 - 4 including the consultant fee and the contingency budget.

According the mutual understandings between ERTU side and JICA Team after an intensive discussion on item by item relating to the construction cost.

JICA Team estimated the total cost severely from an international point of view which is shown as follows.

1 US$ = 200 Yen = 1.3 LE as of Jan. 1986

Following items are not included in the total construciton cost shown in Table 6-4.

1. General Furniture --- office furniture, shelf etc.
2. Fixture and Fitting --- curtain, blind, ashtray etc.
3. Decor Machine --- lathe, sawing machine etc.
4. Out-door works --- plantation, lawn.
5. Construction of incoming power lines (four 20 kV power lines) to the power receiving station in the site. Miscellaneous charges for the above construction such as application fee.
6. Construction of telephone lines (COL) to the trank terminal board (TTB) in the telephone exchange room. Miscellaneous charges for the above construction such as application fee.
7. Special decorative lighting fixtures such as chandeliers, garden light, etc.
8. Telex and facsimile facilities, etc.

9. City water and raw water supply piping work from 6th October City to the site.
10. Drainage piping work from 6th October City to the site.
11. Water meters.
12. Refuse disposal equipment.
13. City water treatment equipment.

Table 6-4

FC: Foreign Currency in Thousand US$
LC: Local Currency in Thousand LE

BUILDING	Phase I		Phase II		Final	
Item	FC	LC	FC	LC	FC	LC
1. Building Work	30,938	30,025	9,099	7,867	40,037	37,892
2. External Work	674	8,026	418	1,764	1,092	9,790
3. General Temporary Work	980	4,267	273	1,186	1,253	5,453
4. General Expense	3,044	3,957	847	1,100	3,891	5,057
5. Site Expense	2,344	910	651	254	2,995	1,164
6. Transportation	3,652	1,117	1,705	498	5,357	6,474
7. Supervisory for Special Work	735	—	345	—	1,080	—
Sub Total 1	42,367	48,302	13,338	12,669	55,705	60,971
Consultant Fee	4,300	153	1,900	58	6,200	211
Sub Total 2	46,667	48,455	15,238	12,727	61,905	61,182
Contingency FC:Sub Total 2 x 5% LC:Sub Total 2 x10%	2,333	4,845	762	1,273	3,095	6,118
Total	49,000	53,300	16,000	14,000	65,000	67,300

PROG PRODUCTION FACILITY	Phase I		Phase II		Final	
Item	FC	LC	FC	LC	FC	LC
1. Equipment	31,410	—	22,623	—	54,033	—
2. Installation Materials & Installation Fee	2,400	364	2,000	286	4,400	650
3. Spare Parts	942	—	679	—	1,621	—
Sub Total 1	34,752	364	25,302	286	60,054	650
Consultant Fee	1,200	—	650	—	1,850	—
Sub Total 2	35,952	364	25,952	286	61,904	650
Contingency FC:Sub Total 2 x 5% LC:Sub Yotal 2 x10%	1,798	36	1,298	28	3,096	64
Total	37,750	400	27,250	314	65,000	714

Grand Total (Building + Prog. Production Facility) FC = 130,000 LC = 68,014

1 US$ = 200Yen = 1.3 EE as of Jan. 1986