

5-6 MECHANICAL SYSTEM DESIGN

5-6-1 Mechanical System Design Policy

- (1) Systems and equipment to be employed shall fully reflect the local climatic and environmental conditions, and require little complicated work for their maintenance, service and operation.
- (2) Considering the operating hours of the equipment employed, a system may be separated from the central system if such a system is more efficient when operated locally.
- (3) The installation of ducts and pipes shall be kept at a minimum to maintain ease and simplicity of work.
- (4) In selecting the various systems and equipment, due consideration shall be paid to system planning and operating efficiency from an energy conservation viewpoint.
- (5) Standard types of equipment shall be employed so as to facilitate easy replacement.

5-6-2 Air Conditioning System

Air-source heat pump chillers will be provided as heat sources for air-conditioning. The main hall (auditorium), small hall and stages will be air-conditioned by these heat pumps and air-handling units. Conditioned air in hall will be supplied from diffusers on the ceiling and drawn out through air returns located below the seating. For the restaurant and offices, air-cooled heat pump packaged air-conditioners will be provided separately. Dressing rooms, classrooms, etc. will be naturally ventilated and electric heater will be provided for heating.

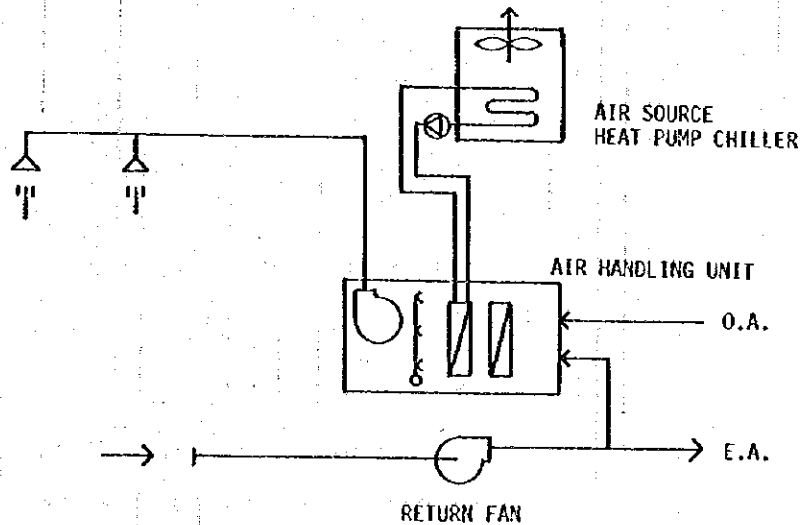


Fig. 5-6-1 Air-conditioning System Diagram for Halls

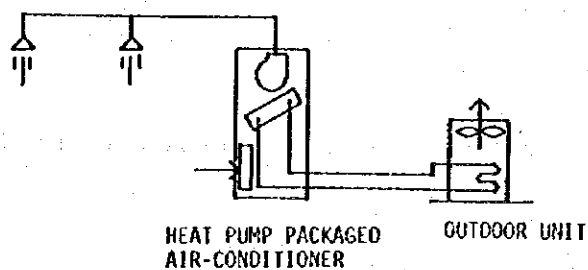


Fig. 5-6-2 Air-Conditioning System Diagram for Restaurant

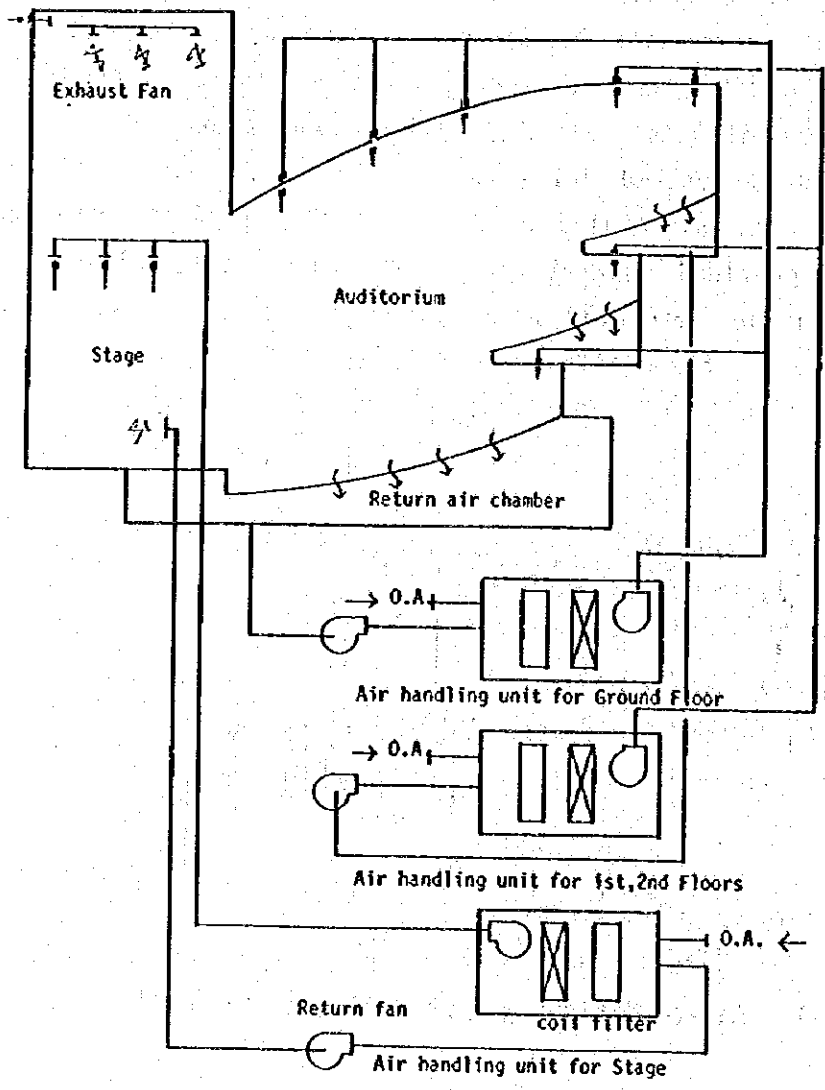


Fig. 5-6-3 Air-conditioning system diagram for the Main Hall

5-6-3 Ventilation

Lavatories, shower rooms, kitchenettes, machine rooms, etc. will be mechanically ventilated. Other rooms except the rooms to be air-conditioned will be naturally ventilated.

5-6-4 Mechanical system application (Table 5-6-1)

Room Name	Air-conditioning	Heating	Ventilation	Remarks
Main hall (auditorium)	<input type="radio"/>			
Stages	<input type="radio"/>			
Small hall	<input type="radio"/>			
Restaurant	<input type="radio"/>			
Offices (not all)	<input type="radio"/>			
Artists' rooms	<input type="radio"/>			
Foyers		<input type="radio"/>	<input type="radio"/>	
Dressing rooms		<input type="radio"/>	<input type="radio"/>	
Machine rooms			<input type="radio"/>	
Entrance lobby			<input type="radio"/>	
Lavatories			<input type="radio"/>	
Storerooms			<input type="radio"/>	
Classrooms		<input type="radio"/>	<input type="radio"/>	
Rehearsal room		<input type="radio"/>	<input type="radio"/>	
Kitchens			<input type="radio"/>	
Projection, Control rooms	<input type="radio"/>		<input type="radio"/>	
Kitchenettes		<input type="radio"/>	<input type="radio"/>	
Spot booths			<input type="radio"/>	

5-6-5 Plumbing System

(1) Water Supply System

City water will be drawn from a branch of the existing city main into the water reservoir.

Water will be pumped up to the elevated tank for gravity-feed distribution.

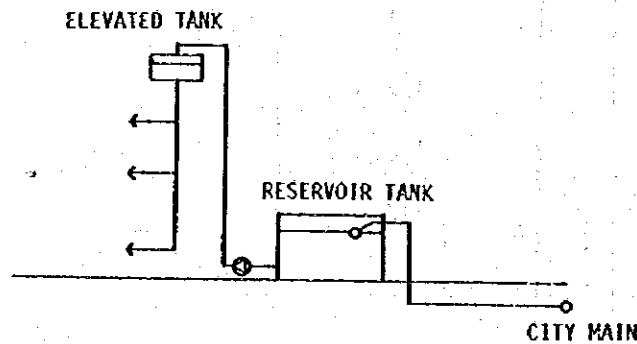


Fig. 5-6-4 Water Supply System Diagram

- 1) The amount of water that will be consumed in the Center is estimated as follows:

a)	Main hall	1300 x 15 =	19,500
b)	Small hall	400 x 15 =	6,000
c)	Classrooms	240 x 20 =	4,800
d)	Stages	500 x 100 =	50,000
e)	Restaurant	500 x 20 =	10,000
f)	Offices	77 x 100 =	7,700
Total			98,000

lit/day (Max.)

2) The capacities of the water reservoir and elevated tanks will be as follows:

- a) Reservoir tank 40 m³
- b) Elevated tank 10 m³

(2) Hot Water Supply System

At the necessary locations - e.g., in shower rooms, kitchenettes, etc., electric hot water equipment will be installed to provide a local hot water supply. In the kitchen, an instantaneous butane gas heater will be installed.

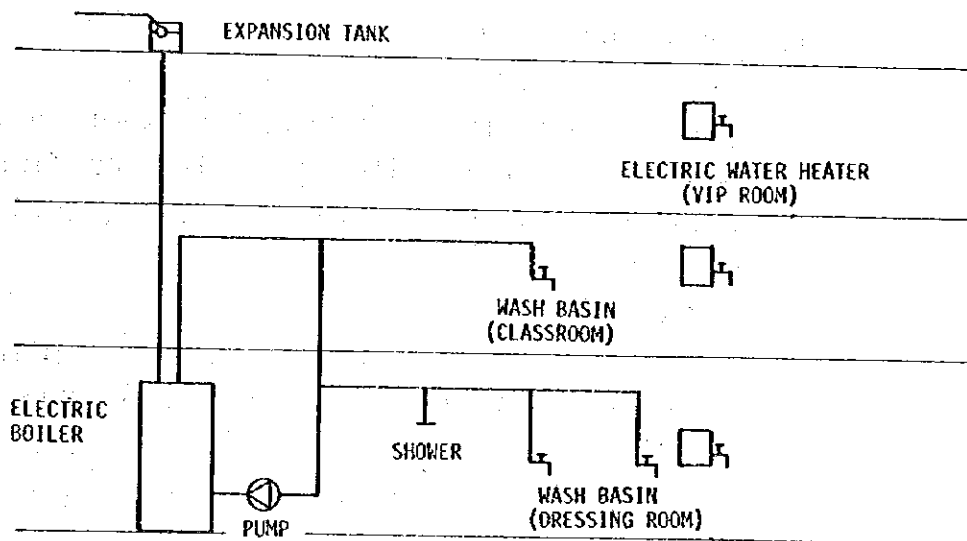


Fig. 5-6-5 Hot Water Supply System Diagram

(3) Sanitary Equipment

The sanitary fixtures best suited to the Center's facilities will be selected and installed.

(4) Drainage System

Drainage will be divided into three separate systems, namely, the storm water system, the soil water system and the waste water system. Storm water will be discharged into the existing drainage pipes. Soil water and waste water will be combined outdoors and discharged into the existing drainage pipes on the site.

(5) Gas Supply System

Butane gas (cylinder) will be used as the heat source for the restaurant kitchen.

(6) Fire-Fighting System

Fire hydrants will be installed on each floor of the Center. The water will be supplied by fire-fighting pumps installed in machine room.

(7) Kitchen Equipment

Kitchen equipment best suited for the Restaurant will be installed.

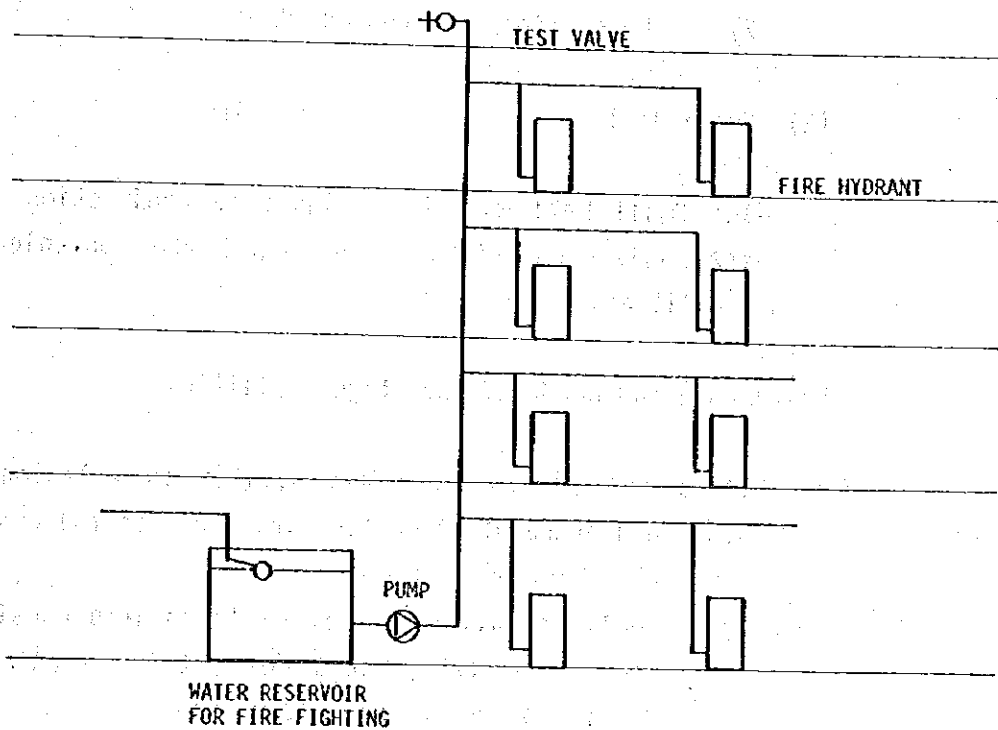


Fig. 5-6-6 Fire Fighting System Diagram

5-7 SYSTEM DESIGN OF STAGE FACILITIES

5-7-1 Stage Facilities System Design Policy

(1) Main Hall

The Main Hall will be designed for multi-purpose use and will be provided with the stage facilities necessary to the following performances:

- 1) Opera, operetta and ballet
- 2) Concerts and recitals
- 3) Folk music and dance
- 4) Drama and folklore
- 5) Cinema

- 6) Lectures
- 7) Ceremonies and congregations

(2) Small Hall

The Small Hall will be designed in conjunction with the stage size and fitted with simple and convenient stage facilities.

(3) Scale and Grade of the Stage Facilities

Items to be considered and studied in relation to the scale and grade of stage facilities are as follows:

- 1) Only installation will be taken into consideration for important items of stage machinery and equipment which are seldom used.
- 2) Simple and easy operation
- 3) Minimal maintenance cost
- 4) Safety
- 5) Durability
- 6) Well-balanced budget allocation of construction and maintenance costs

5-7-2 Stage Machinery

(1) Variable Proscenium (Portal)

- 1) Portal towers: 1 pair; adjustable proscenium opening width (16m to 12m)
 - a) Concerts: 16m
 - b) Opera, ballet, dramas, etc.: 14m - 12m

The portal towers will be moved by hand and have perches for lighting.

2) Portal bridge: 1

Adjustable proscenium opening height (8m to minimum height).

- a) Concerts: 8m
- b) Opera, ballet, dramas, etc.: 8m - 5m
- c) Maintenance, etc.: approx. 0.5m
(minimum height)

The portal bridge will have a light bridge with flood lights and spotlights. It will be flied by a powered counter-weighted fly system.

(2) House Draw Curtains: 1 set

This curtain will be opened and closed by electric motor or by hand, using the curtain operating line. The curtain rail will be fixed to a batten suspended under the grid.

The curtain material will be of a non-flammable type (velveteen).

(3) Stage Draw Curtains: 2 sets

The curtain will be opened and closed by electric motor pulling on the curtain operating line. The curtain rail will be fixed to a counter-weighted batten system and will be flied by manual operation.

The material of the curtain will be of a non-flammable type (velveteen).

(4) Top Masking Curtains (border curtain): 3 sets

The Curtain will be fitted with a counter-weighted batten system and will be flied by manual operation.

The curtain material will be of a non-flammable type (velveteen).

(5) Cyclorama Curtain: 1 set

This curtain will be fitted with a counter-weighted batten system and will be flied by manual operation.

The curtain material will be canvas.

(6) Other Curtains

Top masking curtains (1 set), side masking curtains (2 sets) for supplementary use.

(7) Fire Curtain: 1 set

The fire curtain drops slowly by gravity activated with a starting lever.

The dropping speed will be mechanically controlled without electric motors.

(8) Scenery Battens: 23 sets

A counter-weighted batten system (powered winch system) for scenery, drops, supplementary curtains, etc.

(9) Panorama Battens: 3 sets

A counter weighted batten system (powered which system) located both at the side of and behind the main stage.

(10) Backstage Battens: 4 sets

Manual winch batten system for scenery, lighting, etc.

(11) Light Batten

- 1) Flood light battens: 2 sets
Counterweighted batten system (manual drive) for the floodlights.
- 2) Suspension spotlight battens: 3 sets
Powered winch system for the suspension spotlights.
- 3) Cyclorama light battens: 1 set
Powered winch system for the cyclorama lights.

(12) Cinema Screen

Suspended cinema screen for 35 or 16 mm film. Top masking and side masking adjusts projection size.

Maximum projection size will be about 5m x 10m.

The Screen will be flied by powered winch system.

(13) Orchestra Sound Reflector

Steel framed wagons (manual drive) with plywood panels enclose both side and back of orchestra.

The scale of the reflector may be adjusted according to the number of performers.

Above the stage, reflection panels will be suspended from the scenery battens.

(14) Stage Machinery Control Panel

Portal bridge and powered winch batten systems will be operated from a control panel. The Control panel will stand on the stage floor near the portal tower. (Stage right)

5-7-3 Stage Lighting System

(1) Stage Lighting Equipment and Number of Circuits

- 1) Portal Bridge lights:
 - a) Floodlight
(Border Lights):
200w lamp x 56: 4 circuits
 - b) Spotlights:
1,000w spotlight x 32: 16 circuits
- 2) Portal tower lights:
1,000w spotlight x 12 x both side 6 x 2 circuits
- 3) Floodlights (Border lights):
200w lamp x 80 x 2 sets: 8 x 2 circuits
- 4) Suspension spotlights:
1,000 spotlight x 24 x 3 sets: 16 x 3 circuits
- 5) Fly gallery lights:
1,500w x spotlight x 18: 18 circuits
- 6) Cyclorama lights:
500w flood light x 144: 12 circuits
- 7) Footlights:
60w lamp x 96: 4 circuits
- 8) Floor pockets:
16 boxes (each box with 2 outlets): 16 circuits

9)	Horizontal lights (Lower cyclorama lights):	12 circuits
8)	Floor pockets: 3 boxes (each box with 4 outlets)	
10)	Backstage floodlights: 200w lamps x 63 x 2 sets:	4 x 2 circuits
11)	Front-side spotlights: 1,000w spotlight x 20 x both sides	10 x 2 circuits
12)	Ceiling spotlights: 1,000w spotlight x 32:	16 circuits
<hr/>		
	Total	12 Circuits

13) Follow spotlights:
2,000w Xenon spotlight x 4 sets

- 14) Portable stage lighting equipment:
- a) Spotlights 60
 - b) Striplights 8-lamp or 4-lamp 10
 - c) Extension cord 60
 - d) Effect machines 10
 - e) Spare hangers 50
 - f) Spotlight stands 30
 - g) Safety chains 50

(2) Stage Lighting Control System

- 1) Lighting control console
- a) Cues, electronic patches between control channels (up to 250) and dimmers, intensity levels and other control information will be stored in the memory.

- b) Actual lighting will be done by playback of the stored memory. Channel intensity levels will be set with the keyboard or the solid-state encoder.
- c) For submasters, group faders, cross-faders, etc., manual operation or memory control will be available.
- d) A black-and-white display monitor system will be provided to display the control information.
- e) These operations will be controlled by microprocessor.
The operating program will be studied at the Detailed Design Stage.
- f) The lighting control room will be located at the rear of the auditorium.

2) Dimmers

- a) The lighting control console controls 202 dimmers and house light dimmers.
- b) 3- or 6-kW dimmer units will be connected to each circuit in conjunction with the load.
- c) A 400 KVA transformer supplies 3-phase 4-wire, 380-220V power to all dimmers.
- d) The dimmer room will be located in the upper part of the side stage.

5-7-4 Stage Sound System

(1) Sound Reinforcement

- 1) Speech and performances will be reinforced if necessary. However, for classical music and opera performances, no sound reinforcement will ordinarily be employed.
- 2) Main speaker system: Installed near the stage on the side wall of the auditorium.
- 3) Fold-back loudspeaker system: To enable speakers or performers on the stage to hear and be heard easily.
- 4) Stage speaker system: For playback of audio tapes or records and of cinema sound tracks.

(2) Sound Control System

- 1) The sound control console will be equipped with the following:
 - a) Input: 20 channels
 - b) Output: 12-16 channels
 - c) Input, group and output fader, mixing matrix
 - d) Frequency equalizer (tone control)
 - e) Level meters, etc.
- 2) The sound control room will be at the rear of the auditorium.

(3) Recording and Playback

- 1) Tape recorder (open reel and cassette) and record player: 2 of each

- 2) Microphone circuits between stage and sound control room: 40 circuits
- 3) Suspension microphone system: suspended by 2 steel wires and 1 microphone cable for stereo recording.
- 4) Microphones (various types): total 30.
- 5) Microphone cords (various lengths): total 30.

(4) Stage Sound Monitor

Small loudspeakers will be provided for the stage sound monitor in the foyer, dressing rooms stage technicians' rooms and offices.

5-7-5 Small Hall Stage Facilities

(1) Curtains

1) House draw curtains:

The same as in the Main Hall, but the curtain rail will be fixed to the roof structure.

2) Top masking curtains, side masking curtains:

The curtains will be put to the fixed batten. The material of the curtains will be of the same kind as those in the Main Hall.

3) Back draw curtains:

Same as house draw curtains in small hall.

(2) Sound Reflectors

Plywood sound reflection panels for recitals or chamber music

(3) Stage Lighting Equipments

- a) Floodlights and spotlights: hung from the fixed batten above the forestage and stage.
- b) Some floor-standing spotlights: provided as front lights or follow spotlights.

(4) Dimmer System

Simple and easy-to-operate dimmer control system.

(5) Stage Sound System

- 1) Small-scale, simple sound reinforcement and record/playback system.
- 2) A few microphones, microphone stands, etc.

5-7-6 Outdoor Stage Lighting and Sound Equipment

Portable stage lighting and sound equipment similar in scale to those in the small hall. Some of this equipment will be shared with the small hall stage.

5-8 EQUIPMENT AND FURNITURE

The major items of equipment and furniture to be provided by the Government of Japan are listed below:

5-8-1 Stage Equipment

(1) Main Hall

- 1) Speech or lecture desk
- 2) Conductor podium
- 3) Platform for orchestra
- 4) Folding table
- 5) National flag panels (Egypt, Japan)
- 6) Cinema projectors (35mm/16mm film projector)

(2) Small Hall

- 1) Lecture desk
- 2) Stacking chairs (for orchestra members)
- 3) Folding tables
- 4) Projection screen
- 5) 16mm film projector
- 6) 35mm slide projector

5-8-2 Furniture

(1) Main Hall

- 1) Theater chairs (audience seats)
- 2) Stacking chairs (for orchestra members)

(2) Small Hall

- 1) Movable stage set
- 2) Folding chairs

(3) Foyer, lobby

- 1) Lobby chairs
- 2) Lobby tables

(4) Classrooms

- 1) Folding chairs
- 2) Desks
- 3) Blackboards

(5) Library, Music library

- 1) Tables
- 2) Chairs
- 3) Book shelves

(6) Theatre museum

- 1) Display panels
- 2) Display windows

(7) Offices

- 1) Desks
- 2) Chairs
- 3) Filing cabinets
- 4) Lockers

(8) VIP room

- 1) Tables**
- 2) Chairs**

(9) Artist, Dressing, Make-up and Hairdressing rooms

- 1) Tables**
- 2) Chairs**
- 3) Lockers**

(10) Rehearsal and Training rooms

- 1) Folding chairs**

(11) Storages

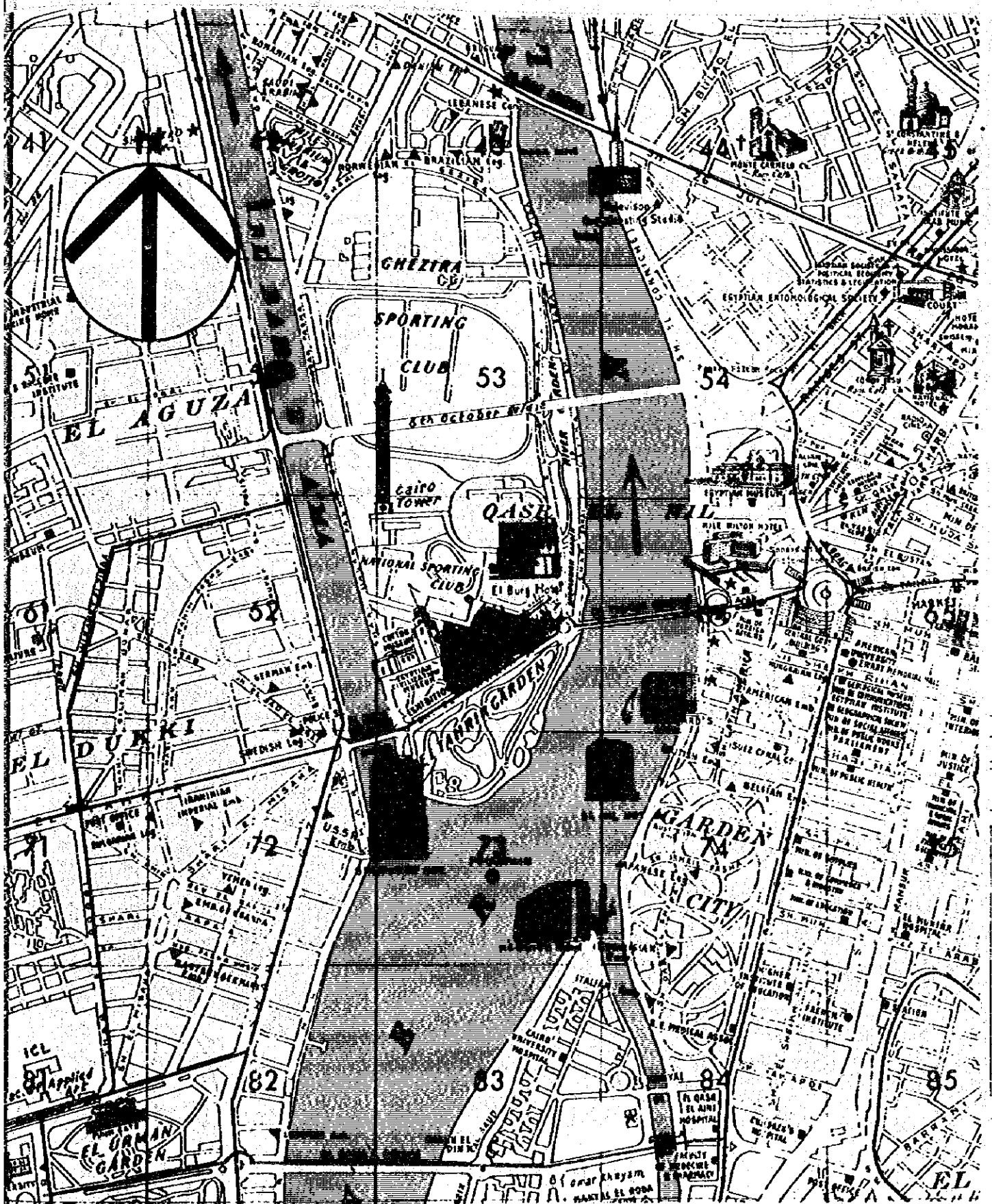
- 1) Shelves**

(12) Restaurant

- 1) Tables**
- 2) Chairs**

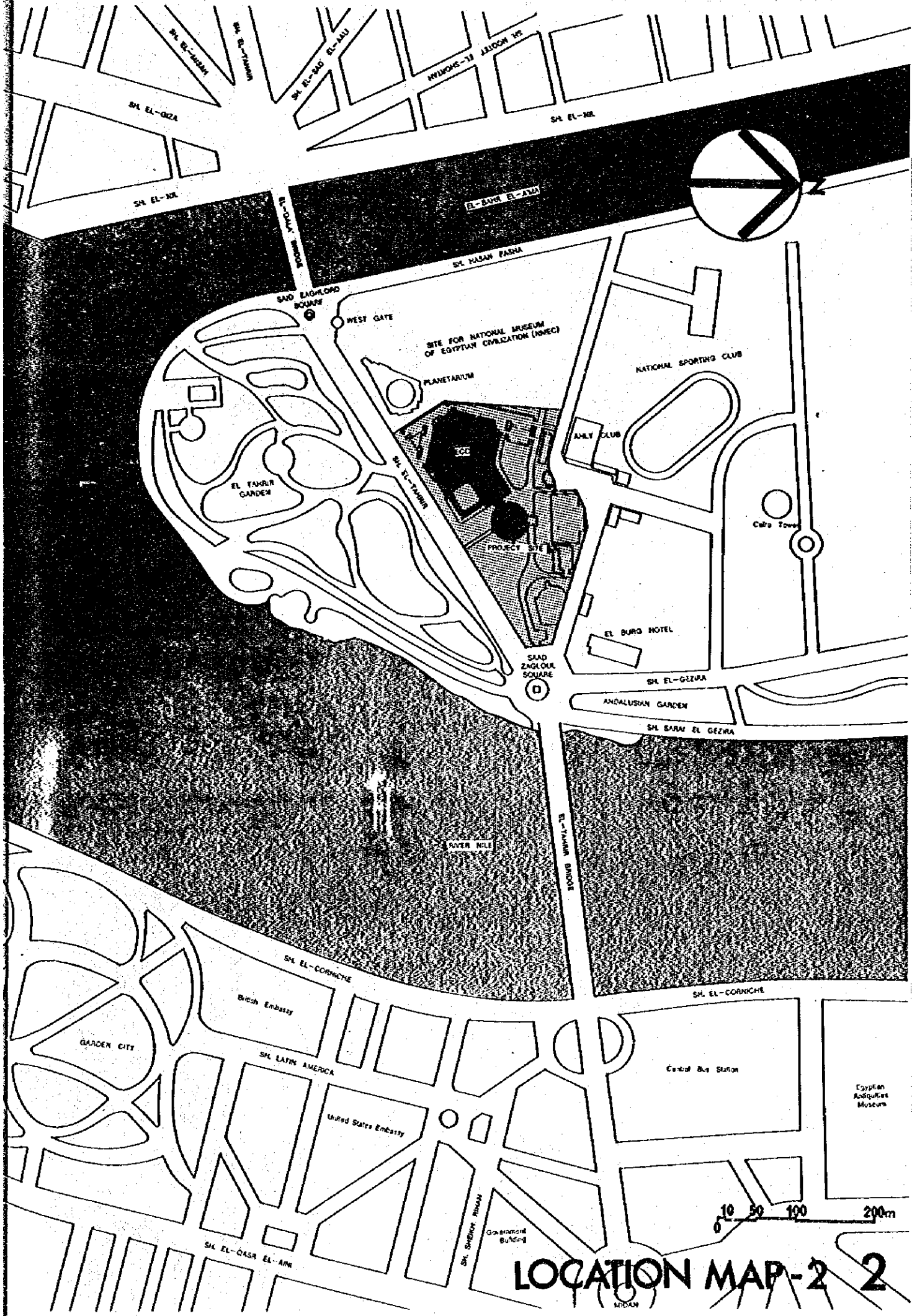
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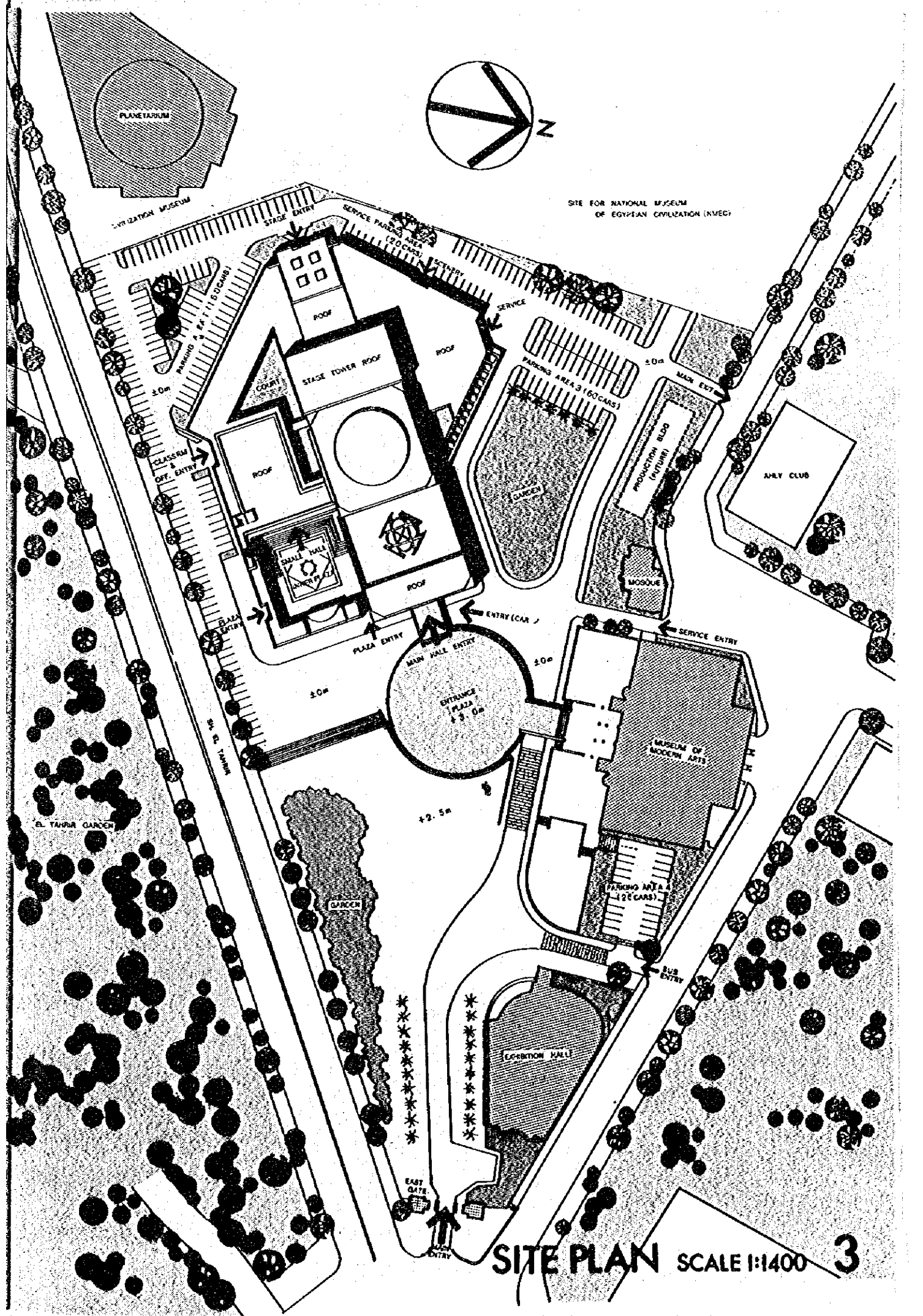


ABBREVIATIONS

ADM:	Administration	LAV.:	Lavatory	RH:	Room
COR.:	Corridor	L. CONT:	Lighting Control	S. CONT:	Sound Control
DIRECT:	Director Room	MED.:	Medical	SEC.:	Secretary
DS:	Duct Space	OFF.:	Office	SPOT B.:	Spot Booth
K.:	Kitchen	ORCH. PIT:	Orchestra Pit	ST.:	Storage
		PROJ:	Projection	U. P. O.:	Upper Part Of

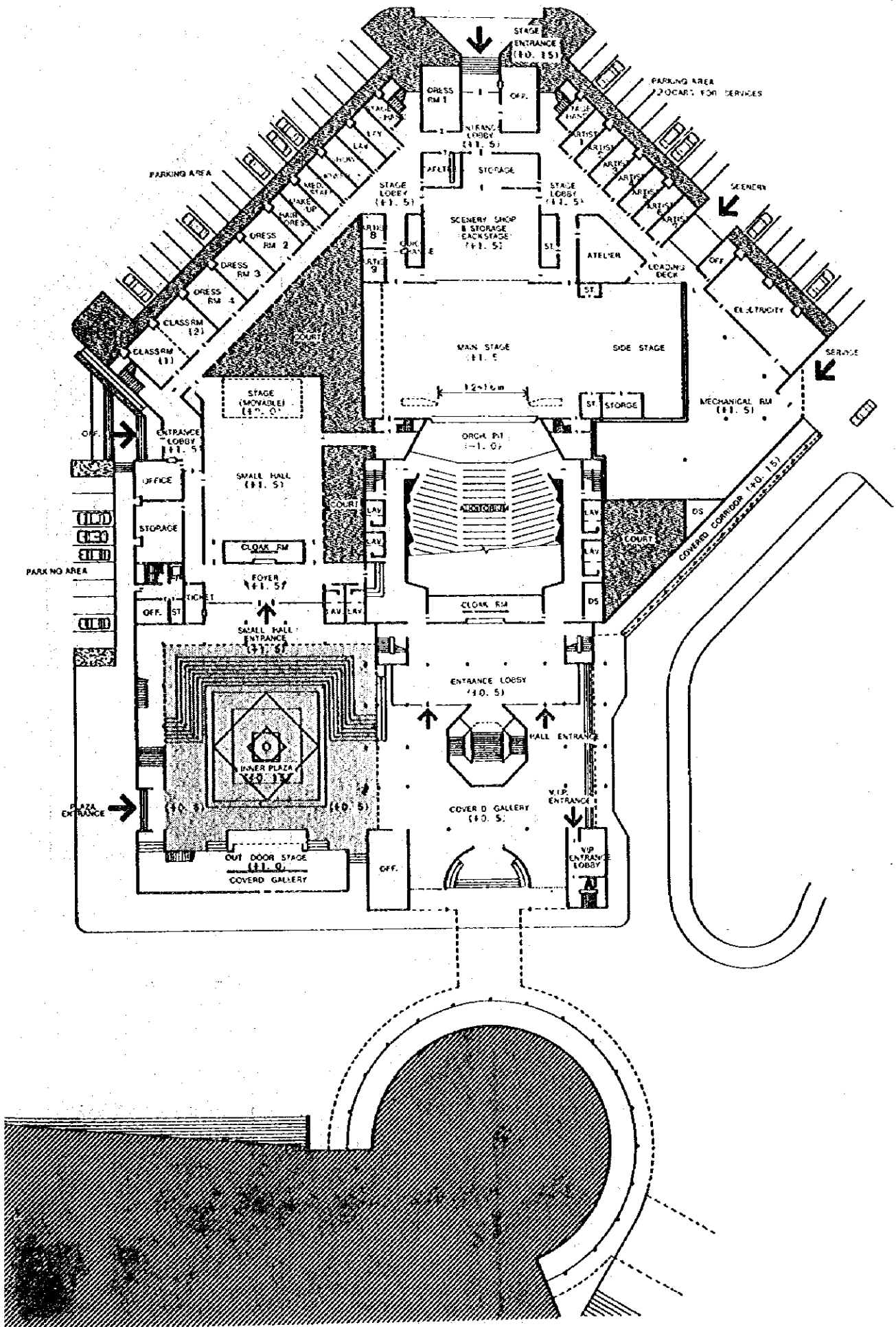


LOCATION MAP-2 2

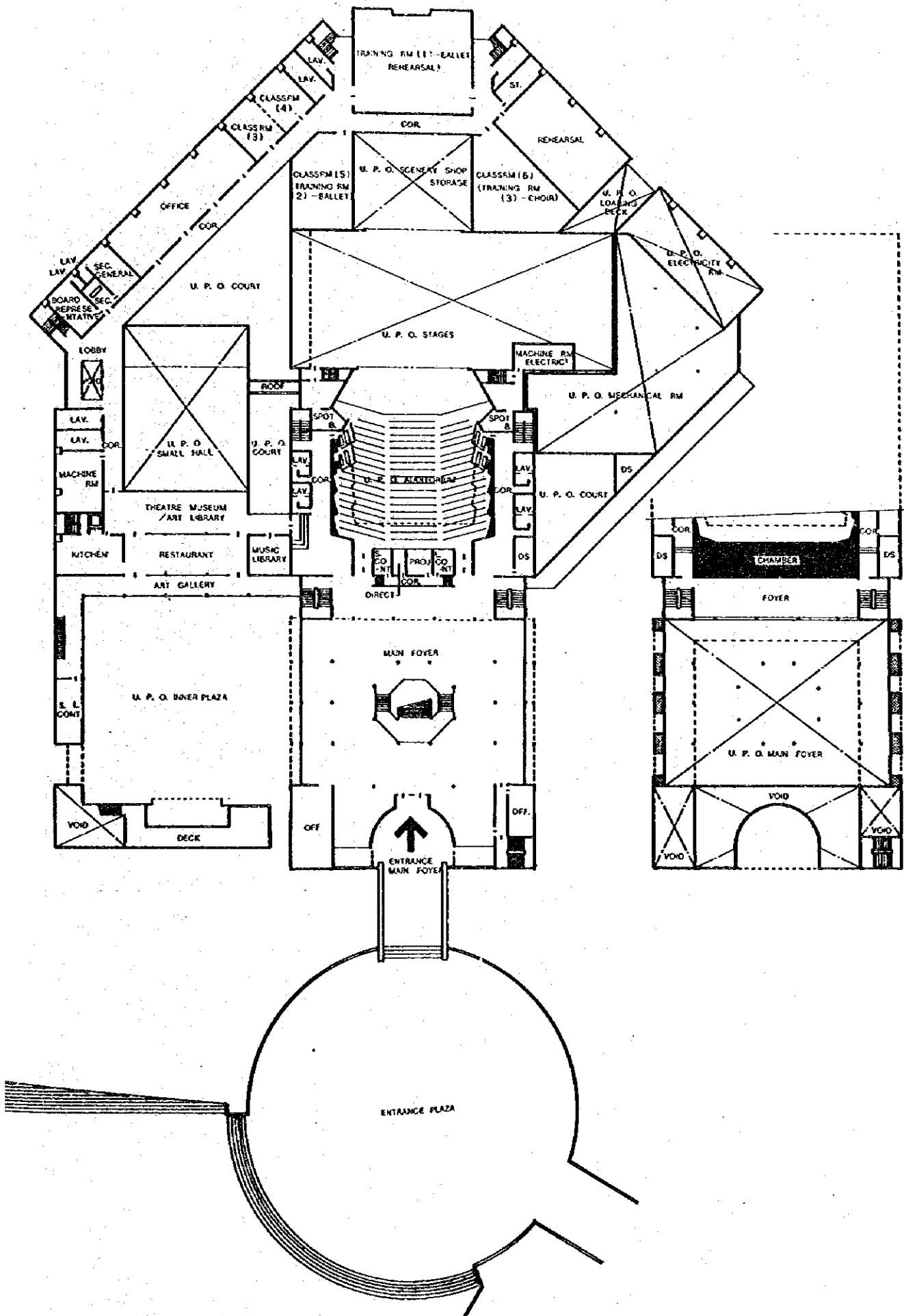


SITE FOR NATIONAL MUSEUM
OF EGYPTIAN CIVILIZATION (NMEC)

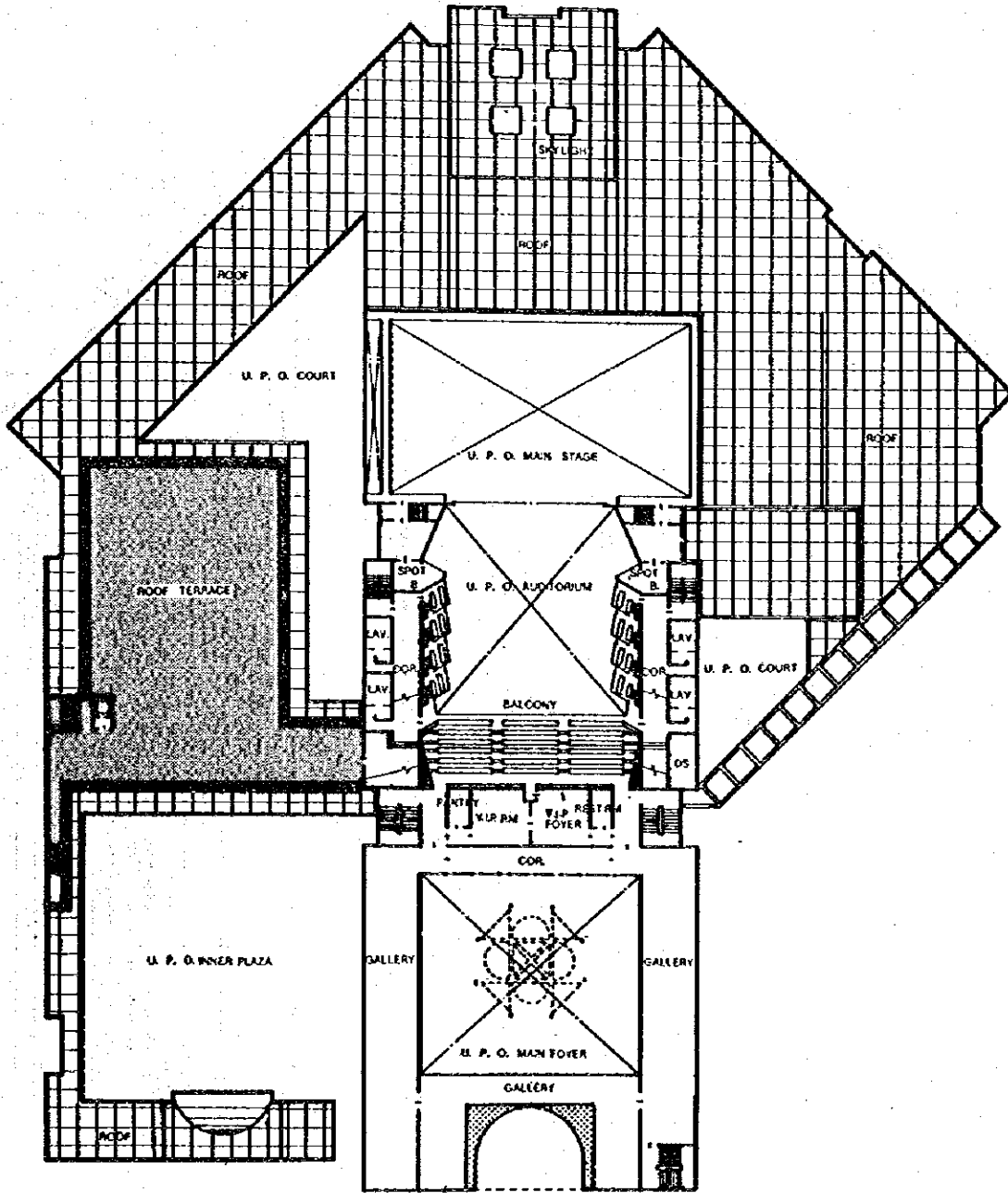
SITE PLAN SCALE 1:1400 **3**



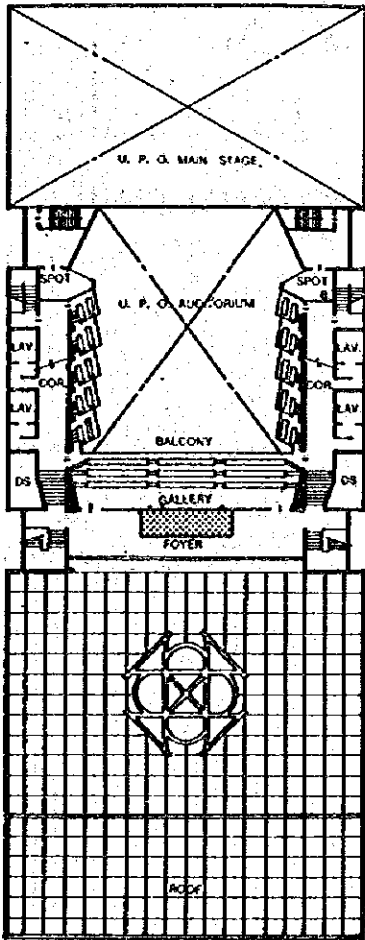
GROUND FLOOR PLAN SCALE 1:700



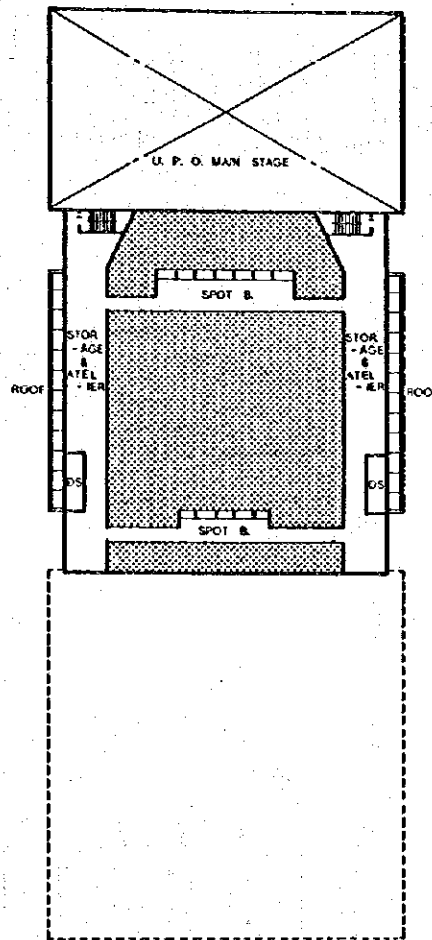
1ST & MEZZANINE FLOOR PLANS SCALE 1:700 **5**



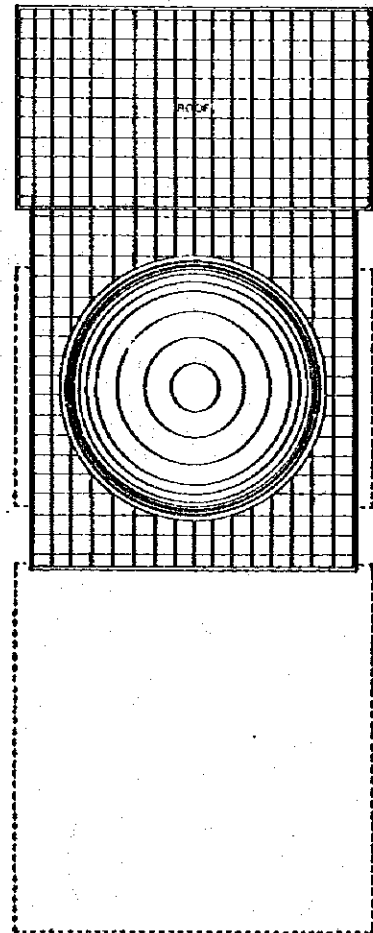
2ND FLOOR PLAN SCALE 1:700 6



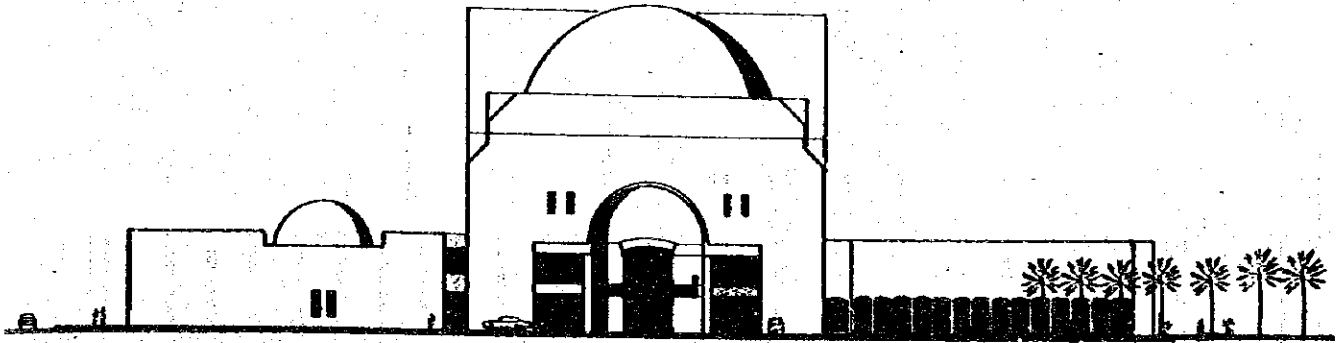
3RD FLOOR PLAN



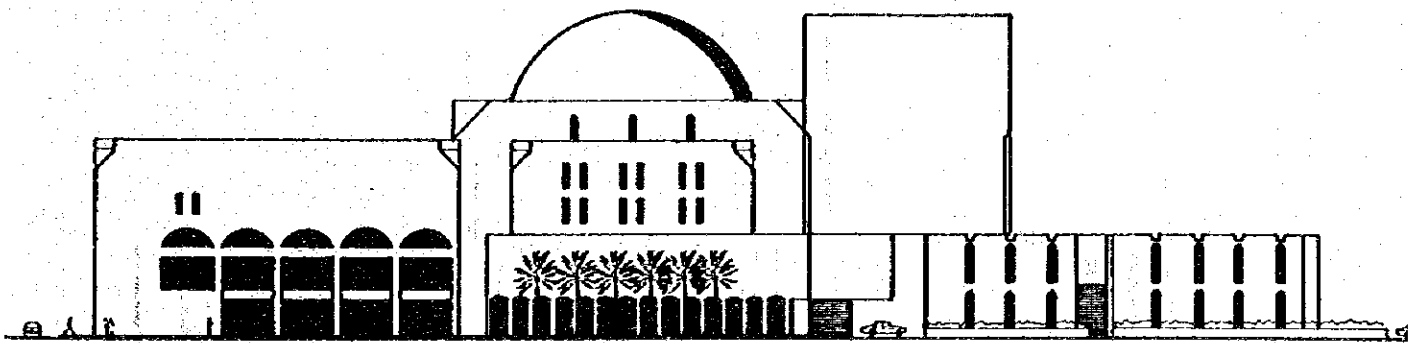
4TH FLOOR PLAN



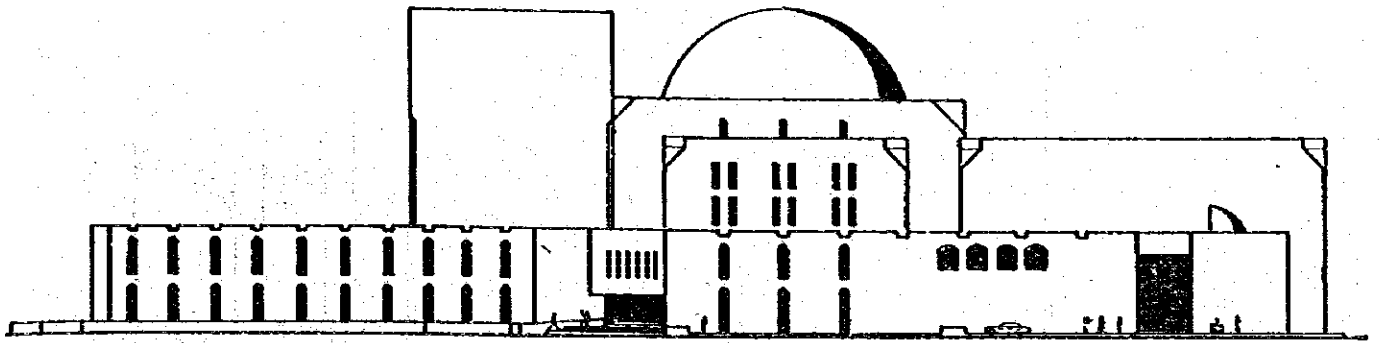
ROOF PLAN



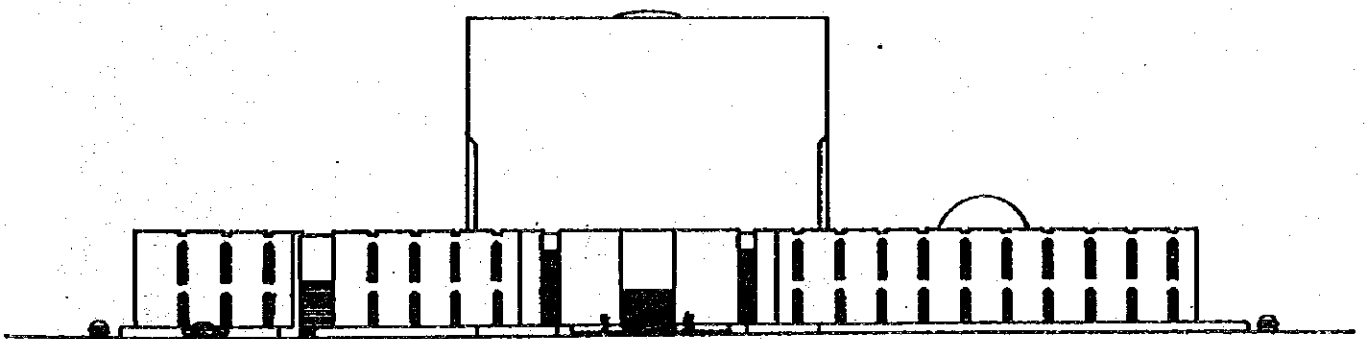
EAST ELEVATION



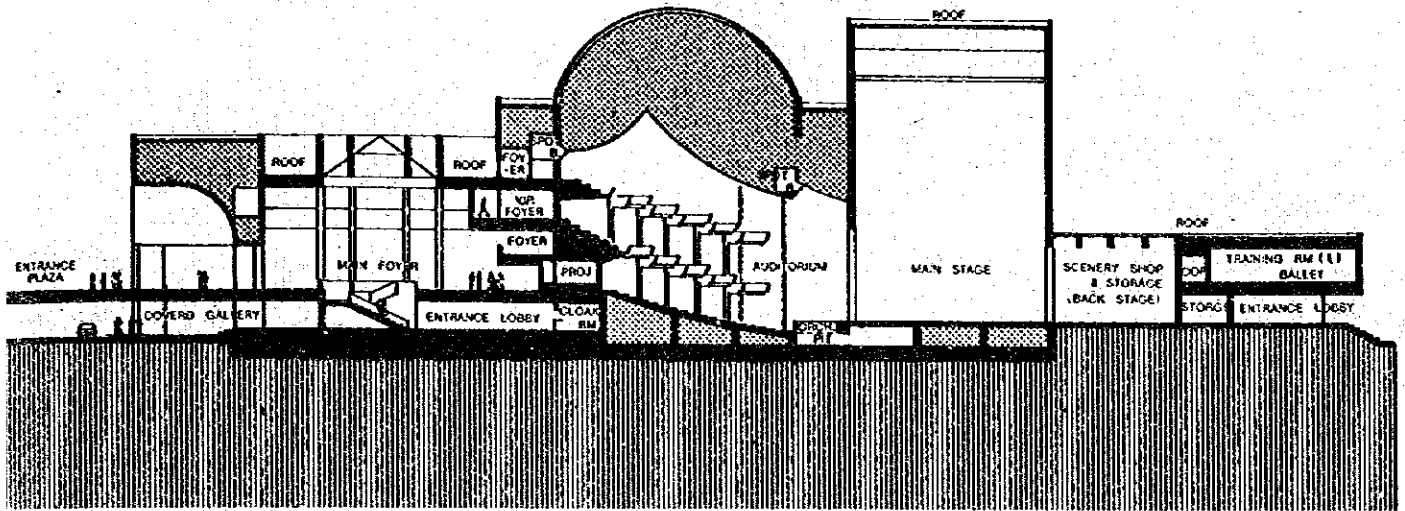
NORTH ELEVATION



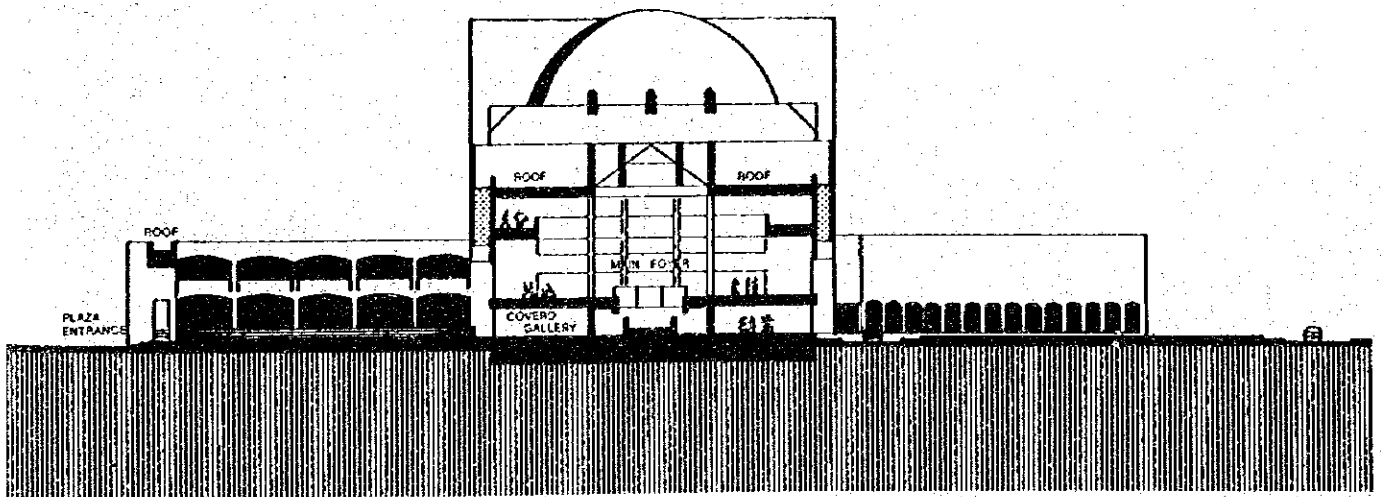
SOUTH ELEVATION



WEST ELEVATION



A-A SECTION



B-B SECTION

CHAPTER 6: PROJECT IMPLEMENTATION

CHAPTER 6: PROJECT IMPLEMENTATION

It is anticipated that this Construction Project will be implemented under Japanese Grant Aid in accordance with the framework laid down by the Japanese Government.

Certain items of the work must be carried out by the Egyptian side in parallel with the work to be performed under Grant Aid so that both the Egyptian and the Japanese sections of the project can be smoothly coordinated. The overall tasks to be performed by the Egyptian side are outlined in this report, but their details will be determined through discussion as the implementation of the project progresses.

6-1 SCOPE OF WORK

The budget for detailed design, construction supervision, construction of the Center facilities and indispensable equipment and furniture will be provided under the Grant Aid Program of the Government of Japan.

The Government of Egypt will be responsible for provision of furniture and equipment and for the execution of certain items of the works, including site preparation, provision of the necessary infrastructure, and - after the completion of construction - the management, operation and maintenance of the Center.

The allotment of the work is shown below:

6-1-1 Major tasks to be undertaken by the Government of Japan

- (1) Construction of the buildings and their incident facilities.

(2) Provision of the following facilities:

- 1) Power supply: Power supply system within the Center building
- 2) Water supply: Receiving tank and supply system within the Center building
- 3) Drainage (waste and rain water):
Drainage system within the Center building and final catch basin to be provided about 2m away from the Center building
- 4) Gas system: Piping within the Center building
- 5) Telephone system:
MDF and extension line installation from the frame panel in the Center building
- 6) TV and Radio:
Receiving antennas, cabling and wiring within the Center building

(3) Provision of furniture and stage equipment

- (4) Construction of the parking space for service use (20 cars)
- (5) provision of marine (or air) and internal transportation of the products from Japan and other countries to the project site
- (6) Provision of detailed drawings, specifications, tender documents for the works and construction supervision

6-1-2. Major tasks to be undertaken by the Government of Egypt:

- (1) Securing of the site
- (2) Demolishment and removal of the existing structures and underground structures on the project site as indicated in Fig. 6-1-1.
- (3) Clearing, leveling and reclamation of the site after demolition and removal of existing structures.
- (4) Construction of the gates and fences around the site.
- (5) Construction of the parking spaces, but excluding that for service use
- (6) Construction of paved roads and sidewalks
- (7) Provision of plants and gardening
- (8) Provision of the following facilities:
 - 1) Power supply: Distribution line to the transformer of the Center building
 - 2) Water supply:
City water distribution main to the Center building
 - 3) Drainage: City drainage main (waste water and rain water) to the final catch basin of the Center building
- (9) Provision of furniture and equipment except the items listed in Section 6-1-1.

- (10) The bearing of advising commission of authorization to pay and payment commission to the Japanese foreign exchange bank for the banking services based upon the banking arrangements
- (11) To ensuring of prompt unloading, customs clearance and tax exemption of the products intended for the Project at the port of unloading in Egypt, and of prompt internal transportation therein of products purchased under the Grant Aid.
- (12) Accordance to Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract, of such facilities as may be necessary for their entry into Egypt and their stay therein for the performance of their work
- (13) Proper and effective use and maintenance of the facilities constructed and equipment purchased under the Grant Aid
- (14) The bearing of all the expenses other than those to be borne by the Grant Aid, necessary for construction of the facilities and the installation of the equipment

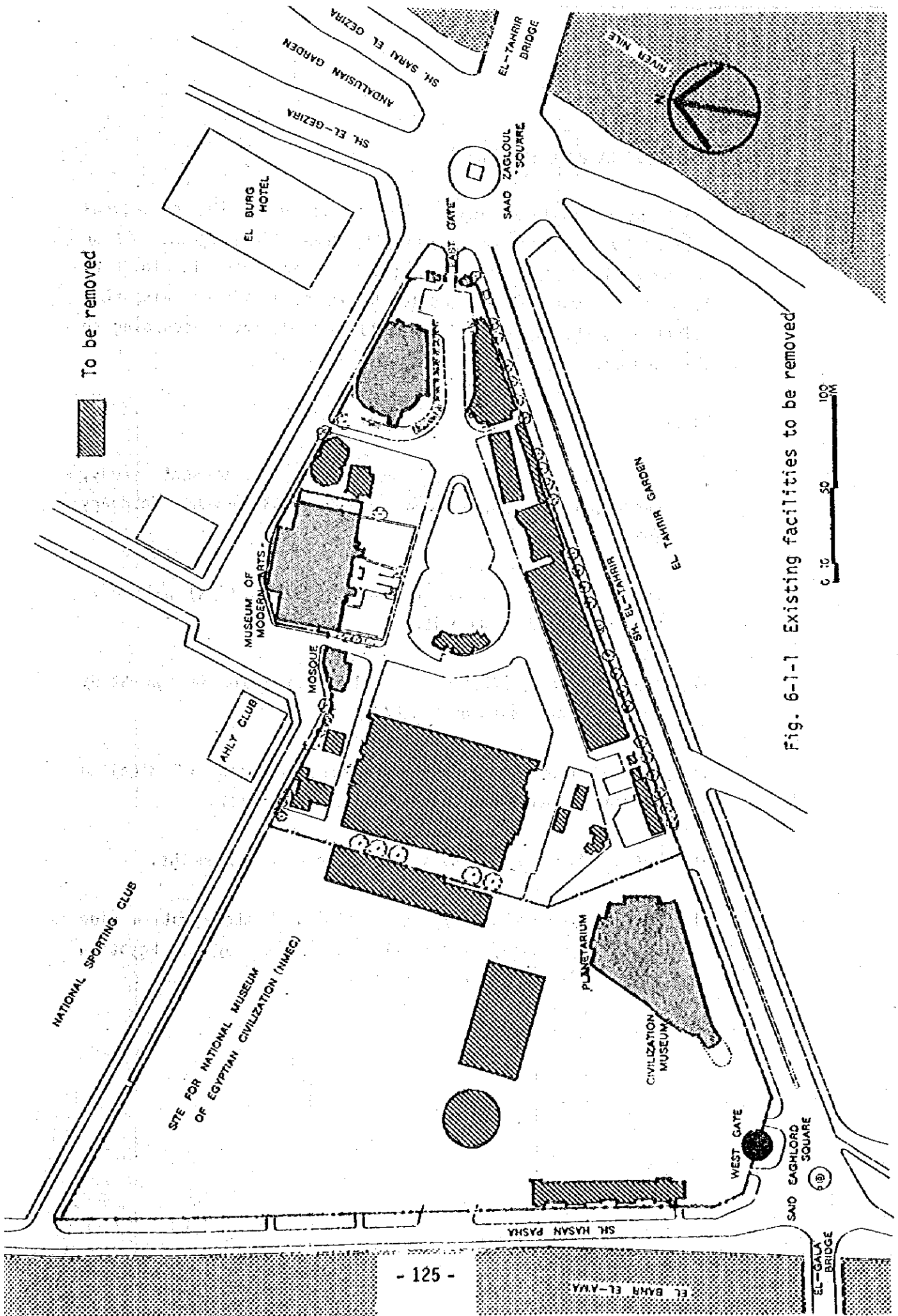


Fig. 6-1-1 Existing facilities to be removed

6-2 TENTATIVE OVERALL SCHEDULE

The project will be implemented according to the procedures defined by the Japanese Government's Grant Aid program, and so the overall schedule of work should be as indicated in Fig. 6-2-1. Not only the work allotted to the Japanese side but also that allotted to the Egyptian side should be implemented according to this schedule.

Notes:

- 1) The Basic Design Study refers to the present study, conducted by JICA. (From August 1983 through February 1984)
- 2) It is assumed that the Exchange of Notes (E/N) will have been concluded by June 1984.
- 3) The detailed design will follow the Basic Design Study prior to conclusion of the E/N.
- 4) The detailed design includes the preparation of detailed drawings, specifications and tender documents.
- 5) The construction period is estimated to be 39 months.
- 6) Further discussions will be needed with the Egyptian side on the scheduling of the work to be done by the Egyptian side as the project progresses.

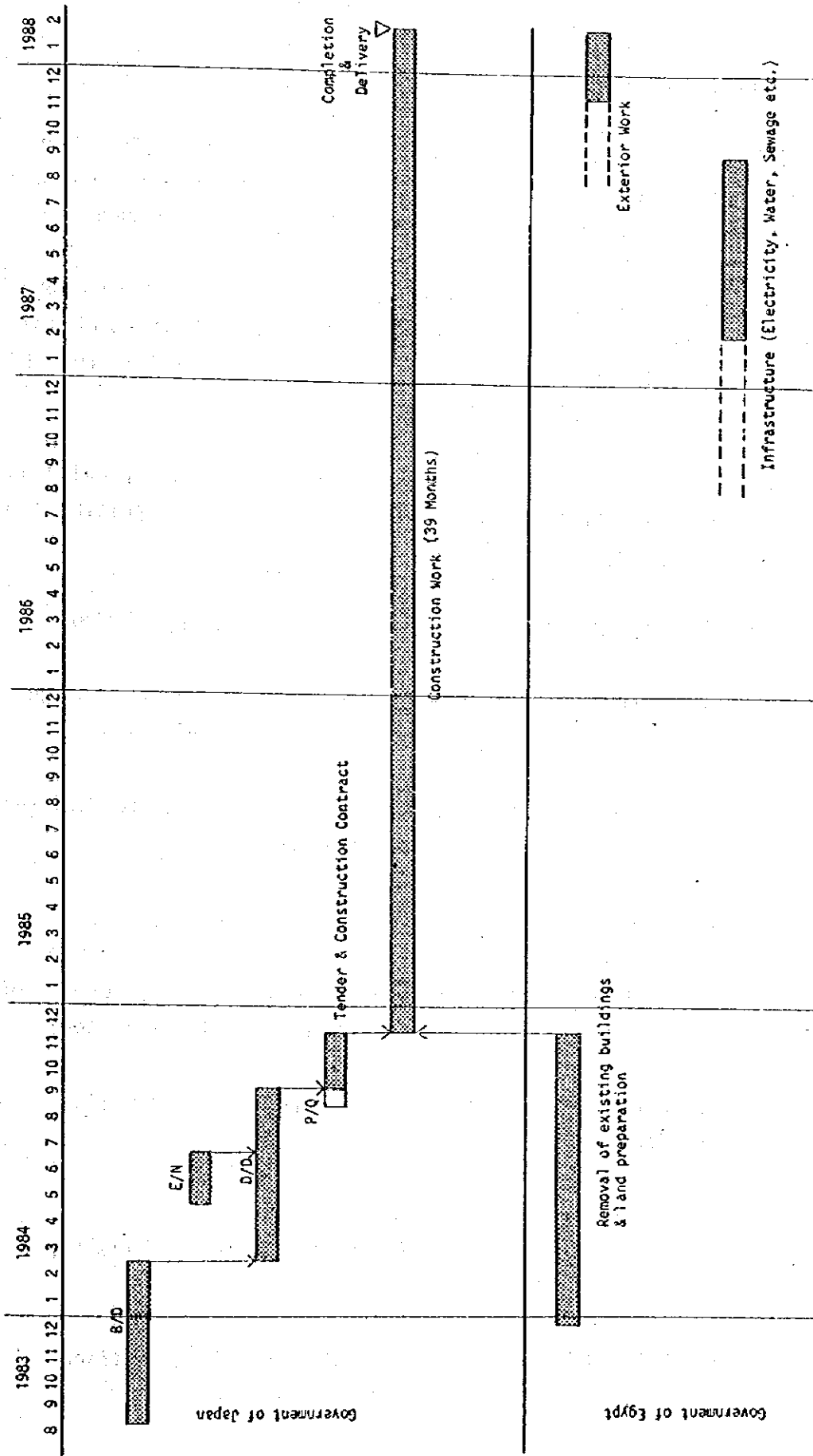


Fig. 6-2-1 Tentative Overall Schedule

6-3 EXECUTING AGENCY

- (1) The construction, maintenance and administration of the Center will be undertaken by the Higher Council for Culture (HCC) presided over by the State Minister for Culture.

The Ministry of Investment Affairs and International Cooperation is the agency of the Government of Egypt that is responsible for the conclusion of the Agreement for the Japanese Grant Aid Program.

- (2) The project will be implemented by the Committee, which is representative of the HCC for this project, comprising the following members:

- 1) Gamal Hamza First Under-secretary of State
- 2) Dr.(Eng.) Ahmed Kamal Abd-El-Fattah Chairman, Arab Bureau for Design and Technical Consultation
- 3) Mohamed Youssef Counsellor for the State Minister of Culture
- 4) Saleh Abdoun Advisor
- 5) Youssef El-Sissi Under-secretary of State of Culture (Opera & Music Sector)
- 6) Dr. Mostafa Abdel-Motty Under-secretary for the Arts
- 7) Zarif Aziz Architect;
Director-General, Projects Dept.
Cinema Sector
- 8) Mohamed Nasser General Director, Office of Minister of Culture

- 9) Eng. Joseph Zaky General Manager of Egyptian Antiquities Organization (E.A.O.)
- 10) Eng. Ahmed Gabre Director of Islamic Engineering Dept., (E.A.O.)
- 11) Eng. Ismail Tollba Architect
- 12) Mohamed Mahaba Secretary of the Committee
- 13) Dr. Sami Pafi Professor of the Academy of Fine Arts
- 14) Faik Hanna Electrical engineer

6-4 OPERATION AND MAINTENANCE

6-4-1 Operational Policies and Organization

- (1) Upon the completion and handing-over of the Center to the Government of Egypt, its operation and maintenance will be the responsibility of the Higher Council for Culture (HCC) under the authority of the State Minister for Culture. The administrative range of the HCC is indicated in Fig. 6-4-1.

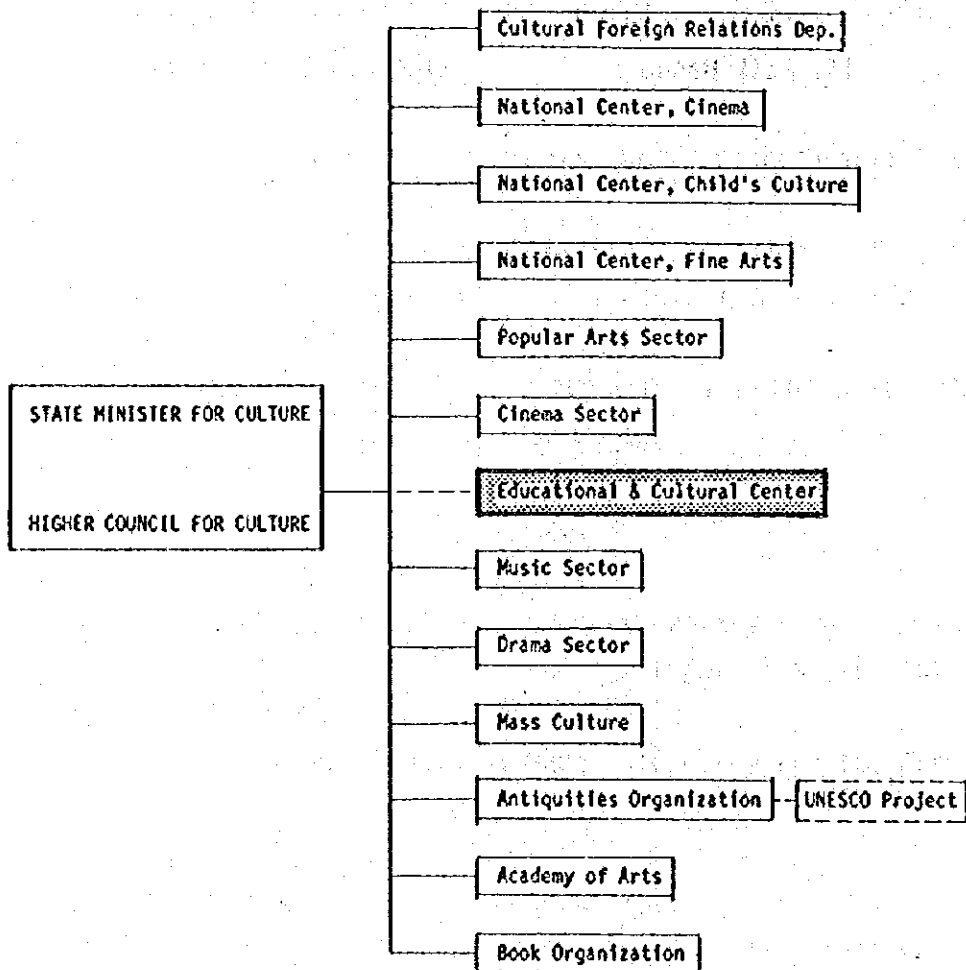


Fig. 6-4-1 Administrative Range of HCC

(2) Center Organization

- 1) The details of the organization of the Educational and Culture Center are shown in Fig. 6-4-2.

The Center consists of 3 Departments, 1 Sector and an Administration Office, all of which are supervised by the Board of the Center.

The Board of the Center is headed by the Board Representative and is affiliated with the Board Office.

- 2) The Center will adhere strictly to the policy of not carrying orchestra companies or troupes under its organizational arm, only providing a place for their activities. For this reason, the outside organizations responsible for ballet, choir and orchestra performances in the Music Sector, and the Production Division of Technical Department will not be part of the Center in terms of organization and facilities, although they will come under the supervision of the Center.

The Music Sector, however, will have a section charged with the coordination of the presentations given at the Center by outside organizations. The Technical Department will have, under its Stage Division, a section responsible for the management and supervision of the production organizations which present performances at the Center, and for the maintenance of the facilities related thereto.

The Center will lease out its restaurant to an outside catering service wholly responsible for its management.

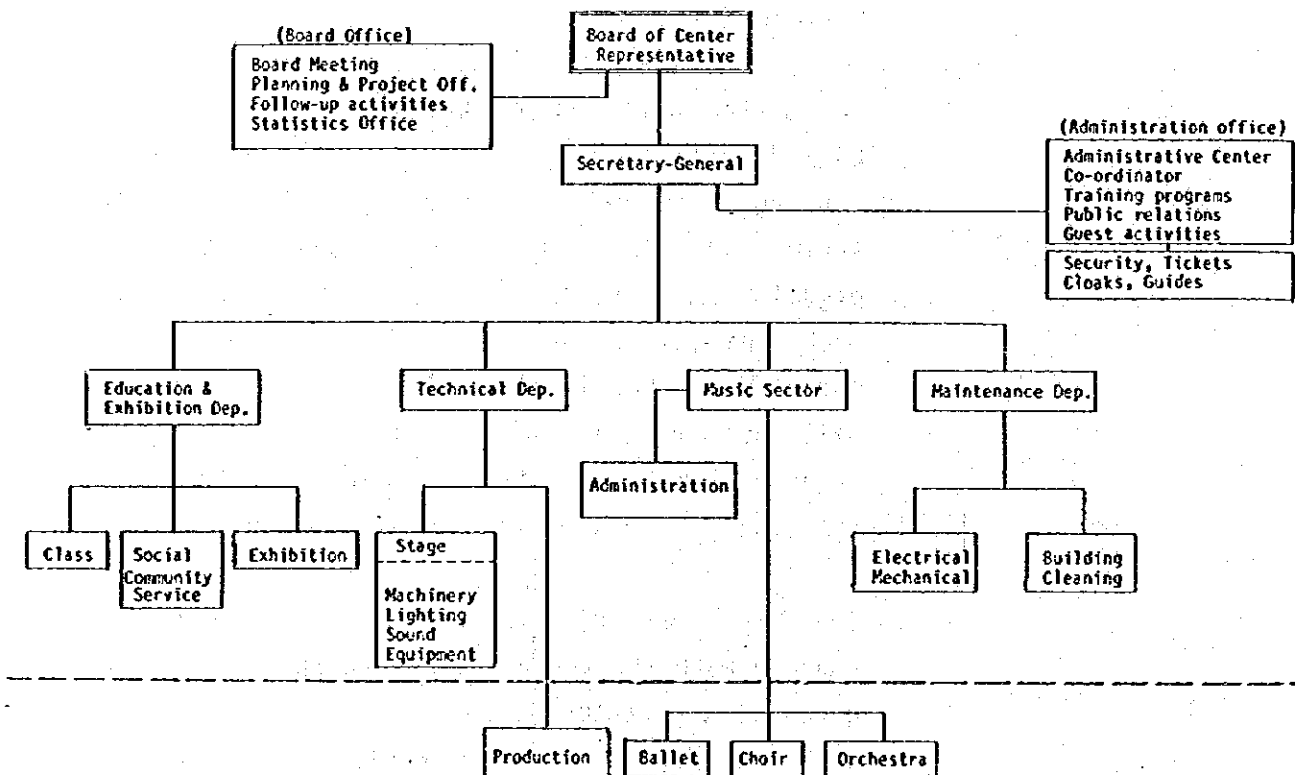


Fig. 6-4-2 Organization of the Center

6-4-2 Operational Programme

(1) The management of the various activities will be conducted in three forms depending on the nature, content, purpose, etc., of the activity concerned, classified as follows:

- 1) Cases where the Center is fully responsible for planning, management and execution.
For example:
 - a) Classrooms
 - b) Small-scale performances
 - c) Cinema shows
 - d) Fairs, exhibitions, etc.
 - e) Others
- 2) Cases where the Center is involved only in the planning phase, and outside organizations are responsible for the management and execution. For example:
 - a) Large-scale performances
 - b) Fairs, exhibition, etc.
 - c) Others
- 3) Cases where outside organizations are responsible for planning, management and execution. Here, the Center merely provides the facilities necessary for the planned activities, although, when it is deemed necessary, the Center will take charge of the operation of essential facilities, and supervise the facilities used and the activities conducted by the outside organizations.
 - a) Large-scale performances
 - b) Fairs, exhibitions, bazaars, etc.
 - c) Activities sponsored by schools (contests, etc.)

**d) Activities related to social education
(campaigns, etc.)**

**(2) An example of an annual plan for the Center's facilities
is given in Table 6-4-1 and 6-4-2.**

Table 6-4-1 Annual Operational Plan (1)

Location	Activities	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Main Hall	Seasonal and periodic events	Opera season		Symphony season	Symphony season	Arab music season	Arab music season	Arab music season	Arab comedy season	Arab comedy season	Symphony season	Symphony season	Opera
	Opera, Operetta	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Symphony, Concert, Recital	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Ballet, Western dance	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Choir, Choir contest	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Arabic music, Singer recital	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Comedy	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Arabic folk dance	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Cinema	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Educatin Drama, Speech contest	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Small Hall	International Cultural Coop.	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Meeting, Symposium, Conference	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Concert, Recital	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Choir	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Arabic music, folk song	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Drama, Puppet show, Pantomime	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Arabic folk dance, Dance	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Cinema	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Speech contest	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	International Cultural Coop.	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Performance	Meeting, Extension Lecture	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Parties	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Charity bazaar, Fair, Exhibition	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
	Rest room for opera, orchestra	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
Dressing room for Ballet	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -	

Table 6-4-2 Annual Operational Plan (2)

Location	Activities	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Seasonal and periodic events	Opera season	Opera season		Symphony season	Symphony season		Arabic music season	Arabic music season	Comedy season	Symphony season	Symphony season	Opera season	Opera season
	Charity bazaar				Japanese/Cairo Music Festival		Arabic Music/Cairo Festival	Festival Film No event during mid-summer season		Cairo Comedy Festival			Cairo Opera Festival
Plaza	Outdoor concert												
	International fair, Book fair												
Exhibition Hall & Foyer	Photo exhibition												
	Handicraft, Pottery, Tapestry												
	Student picture and other works												
	Fine arts, Plastic arts												
	International Cultural Coop.												
	Book fair												
Art Gallery	Permanent exhibitions												
Classrooms	Social Community Activities	(Temporary)											
	Continuing Education (2 courses/day)				(2 days/week each, no class on Friday)								
	Continuing Education (2 courses/day)												
	Continuing Education (2 courses/day)												
	Student Classes (2 courses/day)												
	Social Education (2 courses/day)												

6-4-3 Personnel Plan

- (1) Taking into account the activities and organizations planned, the personnel requirements of the Center should be approximately as shown in Table 6-4-3.
- (2) In order to achieve its objectives to efficiently carry out its various activities, it will be most important for the Center to secure these personnel.

Particularly since the recruitment of planning section personnel and of operation and maintenance engineers and technicians is expected to be difficult, it will be necessary for the Center to have an organized and systematic plan for training recruits to meet its required standards.

Table 6-4-3 Proposed personnel Plan

	Manager	Administrator and Engineer	Staff	Total
1. Board Representative	1			1
2. Secretary General	1			1
3. Board Office	Planning & Project	1	1	2
	Follow-up activities		1	1
	Statistics	1	1	2
	Total	3	3	6
4. Administration Office	General Manager	1		1
	Financial affairs		1	2
	Co-ordinator		1	3
	Training Programs		1	2
	Public Relations		1	2
	Guest Activities		1	1
	Security		1	4
	Procurement		1	2
	Ticket		1	2
	Guide		1	5
	Cloak			4
	Others			9
	Total	1	9	37
5. Education & Exhibition Dept.	Manager	1		1
	Class			2
	Social Community Service			1
	Exhibition			2
	Total	1		5
6. Technical Dept.	Manager	1		1
	Machinery		1	5
	Lighting		1	8
	Sound		1	3
	Equipment		1	4
	Projection		1	1
	Dressing Room		1	3
	Production		1	
	Total	1	7	24
7. Music Sector	Manager	1		1
	Administration			3
	Total	1	3	4
8. Maintenance Dept.	Manager	1		1
	Electrical, Telephone		3	4
	Mechanical work		2	2
	Building			1
	Cleaning		1	7
	Total	1	6	14
Grand Total	7	28	83	118

6-4-4 Operation and Maintenance Costs

In this section, the costs involved in the operation, maintenance and management are calculated on the basis of the proposed activities, operational policies, management structure, personnel planning and annual facility usage planning.

(1) Personnel Costs

	Numbers	Monthly Salary (LE)	Yearly (LE)
a) Board Representative	1	300 x 1	3,600
b) Secretary-General	1	250 x 1	3,000
c) Managers	5	200 x 5	12,000
d) Directors	28	150 x 28	50,400
e) Senior staff	43	120 x 43	61,920
f) Junior staff	40	60 x 40	28,800
<hr/>			
Total	118	LE 12,550 Approx.	LE 159,720 160,000 LE/year

(2) Energy Costs

	LE Electricity (Consumption)	LE City water (Consumption)	LE Gas (Consumption)
Main Hall (incl. Foyer, Dress. Rms)	10,436 (260,900KWH)	120 (600m ³)	
Small Hall	1,200 (30,000KWH)	34 (1,700m ³)	
Class Rms., exhibitions, restaurant, etc.	2,608 (65,200KWH)	86 (9,000m ³)	3,800 (84,000m ³)
Offices, machine rms. etc.	3,600 (90,000KWH)	72 (3,600m ³)	
Sub-total	LE 17,844 (426,900KWH)	LE 406 (20,300m ³)	LE 3,800 (84,000m ³)

Total

Approx. 22,000 LE/Year

(3) Maintenance Costs

Year (after completion)		0 - 1	1 - 2	2 - 3	4 -
Maintenance	Buildings, Plant	0	22,000 LE	22,000 LE	22,000 LE
	Stage machinery, equipment	0	22,000 LE	22,000 LE	22,000 LE
Repairs		0	11,000 LE	22,000 LE	44,000 LE
Total cost		0	55,000 LE	66,000 LE	88,000 LE

Total cost (4 years after completion)

88,000 LE/Year

(4) Total Operational and Maintenance Cost

1) Personnel cost	160,000 LE/Year
2) Energy cost	22,000 LE/Year
3) Maintenance cost	88,000 LE/Year
<hr/>	
Total	270,000 LE/Year

6-4-5 Study of Annual Income

(1) Entrance Fees

The standard entrance fees for various types of performances in the Center's facilities have been set, with reference to the entrance fees for similar facilities in Cairo, at the following levels:

1) Main Hall (capacity: 1300)	Entrance Fee per person
a) Operas, operettas	10 LE
b) Symphonies, ballet, choral works, dramas, other music	5 LE
c) Cinema	2 LE
d) International cultural exchange programs	3 LE
e) Conferences, symposiums	1 LE
2) Small Hall (average capacity: 400)	
a) Concerts, recitals, choral works, plays, dancing	3 LE
b) Cinema, conferences, seminars	1 LE
c) Parties	2 LE
3) Cultural activities (in classrooms)	
a) Career education courses (max. attendance: 60)	1 LE
b) School courses (max. att.: 60)	0.5 LE
c) Social education events	Free

(2) Planned Annual Income

The following annual incomes have been estimated on the basis of the annual operational plan shown in 6-4-2:

Facility	No. of Uses per year	Annual Income in LE			Remarks
		Percentage of Capacity			
		50%	75%	100%	
Main Hall (cap. 1300)	142	448,500	672,750	897,000	Annual usage rate: 40%
Small Hall (Cap. 400)	137	39,200	58,800	78,400	Annual usage rate: 40%
Classrooms (4x30 stud.)	225	10,126	15,188	20,250	Usage for 9 mo. per year
Total	-	497,800	746,700	995,600	

Thus, assuming that the activities are patronized to 100% of capacity, an annual income of 995,600 LE (290 million yen) can be expected.

6-4-6 Study of Annual Expenditure

The expenses of the Center will be of four main types: Personnel costs, energy costs, maintenance costs, and planning and management costs for activities and events. The last of these is difficult to estimate clearly, because it will vary greatly according to the type of function concerned, the number and level of performers, and so on, but it could be arranged that the costs are all covered by the fees demanded. In public events conducted in public or community halls in Japan, 70 - 80% of the income from entrance fees is usually used to cover the costs of the planning and management of those events --including performers' fees, costs of the use of the facilities

themselves and of the stage equipment, publicity expenses, etc. -- and 20 - 30% of it for the personnel expenses and overheads of the sponsors or promoters. Economic conditions in Egypt and Japan, however, are different, and in Japan many halls have a capacity of 2,000 or more. Since the Center's Main Hall will have a capacity of only 1,300, the take will be small, but this could be made up for by employing mostly Egyptian musicians, who are in general, public servants and do not therefore require high fees, and if this were done, the above percentages would not differ greatly from feasible figures.

Accordingly, if we consider the planning and management costs to be 75% of the annual income from fees for 100% - attended events (995,600 LE), we have:

$$995,600 \text{ LE} \times 75\% = 746,700 \text{ LE}$$

On this basis, the annual expenditure of the Center would be in total as follows (with reference to 6-4-4, (4)):

Personnel cost	160,000 LE
Energy cost	22,000 LE
Maintenance cost	88,000 LE
Event planning & management cost	747,700 LE
<hr/>	
TOTAL	1,016,700 LE

6-4-7 Study of Annual Budgeting

As a result of the above examination of the income and expenditure for a year's operation of the Center, the following deficits can be expected when income and expenditure are compared.

Attendance	Expenditure (LE)	Income (LE)	Subsidy Required (LE)
Case 1: 100% of capacity	1,016,700	995,600	21,100
Case 2: 75% of capacity	1,016,700	746,700	270,000
Case 3: 50% of capacity	1,016,700	497,800	518,900

As shown in Case 1, if the events at the Center are always filled to capacity, the Center's budget will almost be balanced, and very little subsidy will be required from the Egyptian Government. However, if the percentage attendance drops below this level, the deficit will grow, so that with 50% attendance (Case 3), a subsidy of 518,900 LE (about 150 million yen) will be necessary.

The above calculations have been made on the presumption that the artists will be mainly domestic performers, but when performers' fees are high, for example in the case of artists from other countries, or when many performers are required, as in opera or ballet, or again, when large or elaborate stage equipment is necessary for the performance, expenditure is naturally much higher.

Moreover, if grand opera were to be performed, especially by a foreign opera company, or if the headquarters of an operatic,

orchestral or similar body were to be set up within the Center, a vast increase of the subsidy would become necessary.

As a matter of interest, many of the opera houses in West Germany, as shown in Table 6-4-4, are subsidized to the extent of over 4 times their incomes from entrance fees.

Table 6-4-4 Operating Budgets of Some West German Public Theaters

(Unit: 1,000 DM)

Name of Theater	Total Number of Public Performances	Capacity	Expenditure	Income	Subsidy Required
Bayern State Opera House	217	2,101	62,586	18,643	43,943 (4.4 billion yen)
Berlin German Opera House	238	1,885	53,862	8,655	45,207 (4.5 billion yen)
Cologne Municipal Theater	183	1,387	52,281	7,110	45,171 (4.5 billion yen)
Wurttemberg State Theater	197	1,422	58,013	10,790	47,223 (4.7 billion yen)
Dortmund Municipal Theater	95	1,160	29,493	3,698	25,795 (2.5 billion yen)
Baden State Theater	127	1,002	30,455	4,299	26,156 (2.6 billion yen)
Hessen State Theater	113	953	24,895	3,079	21,816 (2.1 billion yen)
Darmstadt State Theater	137	956	24,221	3,720	20,501 (2.0 billion yen)
Aachen Municipal Theater	102	919	16,180	3,662	12,518 (1.2 billion yen)
Ulm Municipal Theater	83	815	11,227	2,050	9,177 (0.9 billion yen)

(From: Friends of Music (Ongaku no Tomo) Co.'s monthly magazine "Opera Houses")

CHAPTER 7: PROJECT APPRAISAL

CHAPTER 7: PROJECT APPRAISAL

7-1 EVALUATION OF THE PROJECT

- (1) The project is intended to meet the national need identified by the Government of Egypt to "strengthen social education and cultural activities", and is expected to contribute to raising the levels of education, culture and welfare of the Egyptian people.
- (2) The grade and scale of the facilities are considered appropriate in view of the purpose and function of the Center, its location, and the situation of the present facilities.
- (3) It is considered appropriate that the Main Hall has not been planned as a theater exclusively for opera, although adequate provision will be made for the effective performance of operas. The Main Hall is intended as a multi-purpose hall which will contribute to maximizing the usefulness, and usage, of the Center's facilities as a whole.

7-2 SUGGESTIONS

- (1) The Government of Egypt should not only take responsibility for the execution of the works to be undertaken by the Egyptian side but also pay special attention to smooth progress of the project.
- (2) It should be pointed out that a success of the present project hinges primarily upon how the facility is managed after the completion of the construction. Proper management will make the most out of what the Center has to offer, and will result in high usage of the facilities. To achieve this, the Center should not serve merely the convenience of one small part of the society, but rather, should be open to anybody so as to serve the needs of as wide a range of people as possible.
- (3) The operation and maintenance of the various types of equipment in the completed facility are expected to pose considerable difficulties for the Center. To obviate the inconvenience imposed by such difficulties, it is recommended that the Government of Egypt take well-planned precautions at the earliest opportunity by securing and training the necessary personnel as well as by taking relevant budgetary steps on a continuous basis.