

HOUSE OF ARTS AND CULTURE - BEIRUT

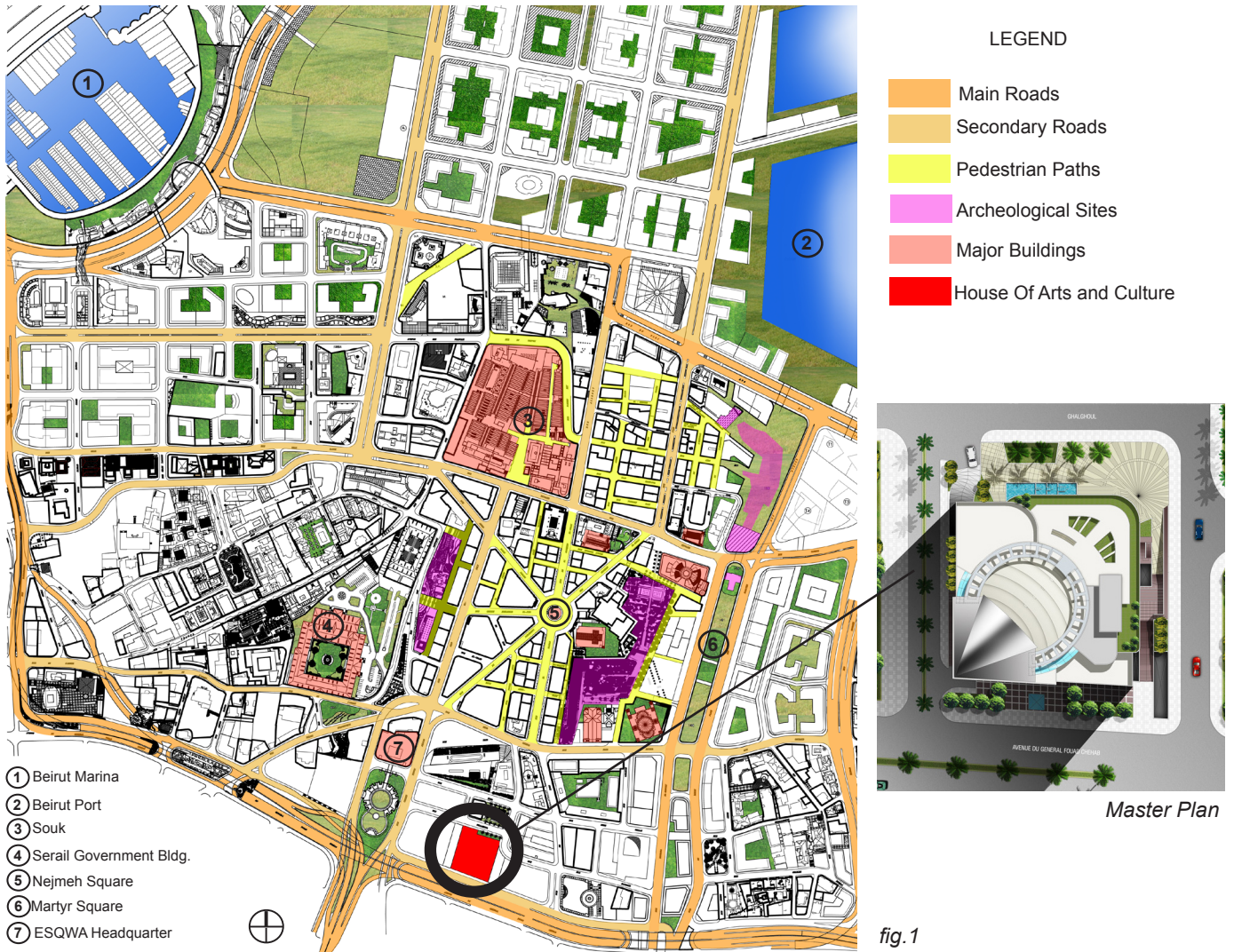


fig.1

Context

Lot 128-4, located on the south entrance of the downtown is limited by two major axis:

- 1- The "Ring" Fouad Chehab Avenue that crosses the capital from east to west.
 - 2- The main artery coming from the south from the south entrance towards the north edge of the downtown.
- (fig.1)

Landscaping and Building accessibility:

- A National Cultural Building requires an open urban space. Setting back the building from the surrounding roads and providing huge open spaces at the cross point of axis and monumental entrance from the north east elevation fulfill the urban requirement.

- Emphasizing the shape of the building from different points, level and roads, in order to be a symbolic land mark building. (fig.1/6)

- At upper street entrance level (south orientation), a landscape area was introduced in front of the cafeteria, bookshop and boutiques with monumental skylight penetrating the daylight to the main circulation museum spine at lower level. Daylight effect from the main entrance, south entrance and the secondary entrances (east and west) will emphasize the importance of the central part of the building (atrium). (fig.6/7)



fig.2

The Project's Evolution

Many options were examined for the main function location within the site (exhibition, main entrance, performance Halls) in addition to accessibility from the upper street level, to fulfill day and night utilization.

The following options were examined deeply:

Option 1: To locate a multi main performance hall (rectangular shape) on east and west axis in order to provide areas for other important functions. (fig. 3)

Several problems were noticed. Difficulties to match the main program (seats number) in performance Hall or the flexibility needed to reflect different functions within the same enclosures: cinema, conference, activities, opera, theatre, etc....

Option 2: Based on the same shape and area for multipurpose Hall in option 1, locating the performance hall on the north and south axis. Same defects mentioned in Option 1 were observed in Option 2. (fig. 4)

Option 3: It looks that a circular shape for the multipurpose hall on the diagonal axis north east south west will fulfill the following:

- No. of seats and flexible design for the main performance hall.
- Efficient circulation (vertical and horizontal) minimizing the circulation area. (fig. 5)
- Efficient outdoor sitting area in the roof + the upper roof level (amphitheatre) created a proper day and night use.
- The form of the mass + elevation finishing reflect Beirut center atmosphere as a landmark design for the important cultural center having monumental external entrance area, monumental triple volume entrance lobby, efficient penetration for the daylight from different points and axis for the building, main circulation, area in lower and upper levels. (fig. 5/6)

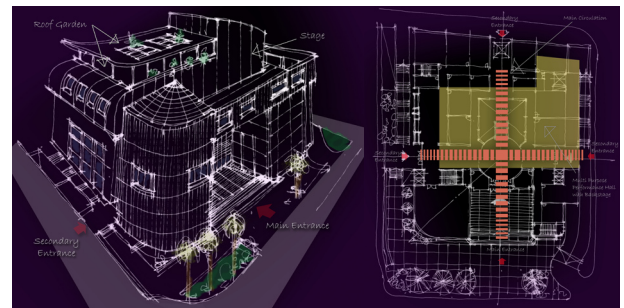


fig.3

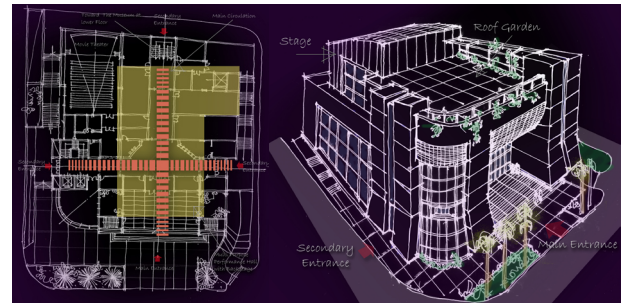


fig.4

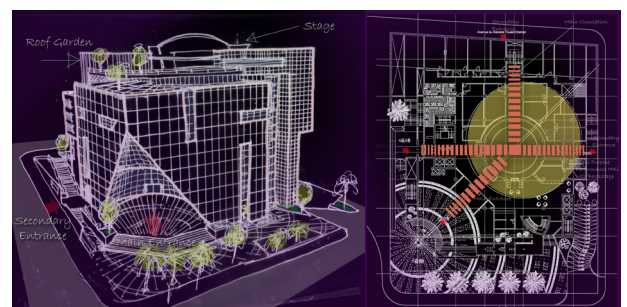


fig.5

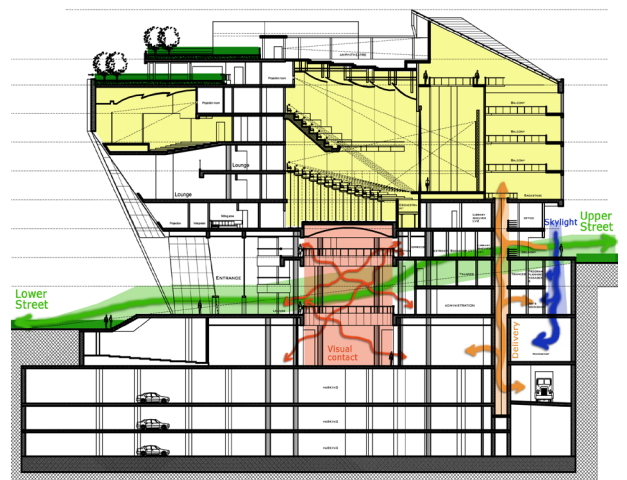


fig.6

Design parameters considered in the Project

A- Form

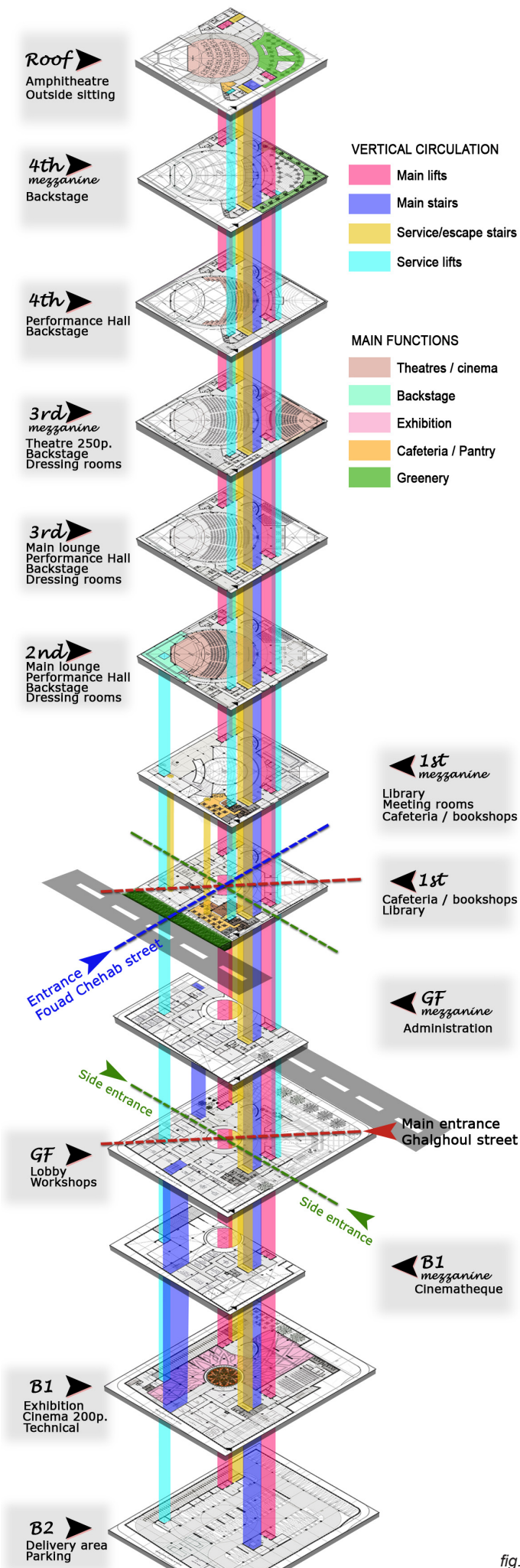
- To arrange the buildings mass in accordance to accessibility and recognition from neighborhood district.
- To design local symbol and landmark as symbolic space.
- To create indoor and outdoor spaces at entrance level and top roof that can effectively communicate with surrounding.

B- Entrance Circulation (Horizontal and Vertical)

- To create different entrances and exits to fulfill functional requirements for visitors at entrance level, top roof outdoor sitting area and amphitheatre, technical staff, main delivery area, performance hall, main lounge, external delivery entrance, external entrance to cafeteria and shops.



fig.7



- To create a huge entrance triple volume lobby rotated around a common atrium allowing the visitors to view the volume from one floor to the next (up & down), supported by efficient vertical circulation cores and monumental staircases providing informal rest and rapid inter connections between the functions, efficient evacuation in case of fire or emergency. (fig.6/7)

- To create a huge cargo lift in the south west orientation of the project serving directly by delivery area from basement levels and first floor levels (upper street) that can serve easily all the main functional rooms: main stores, main performance hall backstage, exhibition workshops, library shelves, training rooms workshop, in addition to furniture transportation between lower and upper levels. (fig. 8)

C- Main Function design

- Examining different shapes for the main performance hall (square, rectangle and circle) in different locations and levels to fulfill program requirements without any intersection between the main functions emphasizing smooth visitors flow in different levels.

- Retractable seat systems for main performance hall were considered to create maximum utilization for the large performance and conference hall (music, dance, cinema, conference and opera) and supported by additional general stores at upper level to accommodate different functional use, in addition to the possibility of expanding the main stage area by adding the orchestra pit void to create large stage area.

International suppliers for retractable seats were contacted for their support in order to end up with an efficient system and reasonable price.

- Design the main exhibition area in Basement 1 level with direct access from the main lobby through the monumental staircases and efficient vertical cores circulation. Providing maximum flexibility for the volume by dividing the exhibition areas in different zones with the possibility of expansion by adding around 120 sq. m (atrium lower plaza); utilized for external exhibition with wall display with the opportunity to over look the external exhibition area from the main entrance lobby.

fig.8

D- Day and Night Activities

- Emphasizing the day and night use of the building, utilizing the top roof levels as amphitheatre, green outdoor sitting and dining areas with different pantries providing efficient service lifts connected directly to the main cafeteria and main lounge at performance Hall level.
- To reflect day and night activities, huge LCD screens are located in the south west walls corner of the project

E- Elevation Materials

- Using traditional stone facing finishing for the external elevations matching Beirut center atmosphere, metal cladding, and modern glazing system to reflect a new architectural sign. (fig. 2)

F- Technical Room

- Locating the main technical room in the south east corner at basement 1 level with external yard having independent entrance for the technical staff taking into consideration that the boiler chimney & cafeteria exhaust system will penetrate to upper roof level.

Electro-mechanical concept design

MEP system will be designed to meet international codes and regulations covering safety and reliability.

- The power plant will be located on the south east side, Basement 1 floor level.
- Power Distribution: The MV switchboard and MV/LV transformers will be housed within a sub-station. Stand-by power generation will be provided for the full building load. The generators will be connected in parallel.
- Ventilation required for the sub-station and the Generator is granted via the void and the court yard. Final branch Panel boards 380/220V will be located on each floor.
- A UPS system will be provided to supply the critical and sensitive loads (Computers, Security systems...).
- Lighting System: The lighting technologies will be designed to create a luxurious environment. The external lighting will be to enhance the space. Digital Dimming/Switching system with control light fitting.
- Communication Systems: The networking comprising the fiber optic backbone the horizontal distribution of Cat6 will allow the use of IP telephony, LAN, IPTV, etc...
- Security / Access Control: A security and access control system will be provided to monitor and control pedestrian and vehicular entry to and from the building.
- Audiovisual Systems: professional installation of audio visual equipment, video conferencing systems, and projection systems will be provided.
- HVAC: The Chillers installed at roof level and the boilers in basement floor level. The four pipes system will be applied. Each zone will have dedicated air handling units. Pressurization fans will protect all the fire staircases.
- Plumbing: Water treatment will be designed in order to feed all the building with soft cold and hot water.
- Irrigation system: Dedicated pressure pumping system will be provided for irrigation system.
- Drainage: The sewage and rain water systems will be discharged directly to the public networks by gravity or sump pumps.
- Fire fighting: Fire hose cabinets and sprinkler system will be applied in parking area and where applicable.

Structural Concept Design

- Building structure is a reinforced concrete with pre stressed slab in order to minimize thickness and weight of the structure.
- Lateral stability will be guaranteed by the vertical service cores on both wings of the main entrance lobby and shear walls at lower levels.
- 1st mezzanine slab is considered as a transfer slab in order to implant the ring columns supporting the main performance Hall structure at upper floor.
- Main performance Hall roof design is based on double box steel girders with metal deck system to support the floors of the amphitheatre areas at roof level.
- Stage and backstage area will depend on composite structure with steel cladding.