3.3. National Museum

3.3.1. Design Concept

(1) Planning and Design Policy

Prior to the development of the building design in the Detail Design Study, the following design concepts were formulated by the JICA Study Team and confirmed by the Jordanian side, with due consideration of the required building functions, environmental and social conditions, construction and procurement conditions, construction cost under OECF loan, etc.

Nation’s Character on Building Design

The National Museum is the Jordan’s central and largest museum and also a landmark building providing visual links to Amman City Hall. Therefore, design and quality of the new museum facilities shall be of a standard which the nation can be proud of as “the National Museum”. The façade and form of the building, especially, shall reflect the nation’s character.

Integration into Surroundings

The main feature of the building design is its urban location. The construction site is situated in a landscaped area, between Fountain Plaza and City Hall in Amman City Plaza, which was newly developed along the valley called Wadi Abdovn. This area is surrounded and overlooked by residential houses extended toward upper hillsides in the north, east and south of the site. As a landmark facility in the Plaza or as an urban monument, the Museum shall integrate well into the surrounding area, with its well designed façade, forms and landscaping.

Easy Access to Exhibition Gallery

The people who visit and enjoy this Museum are diverse; schoolchildren and older people from across the nation, foreign visitors from all over the world, and academic enthusiasts from various fields. This Museum building must cater for those different types of visitors and those diverse visitors will move from gallery to gallery in an unrestrained manner, but which shall be well controlled in order to maintain smooth flows. The layout of galleries in the building, therefore, shall be carefully designed for visitors to easily orient themselves and clearly identify parts of the building without any confusion. It is premised that the main exhibition galleries shall be located on the ground floor level to get easy and clear access for all visitors, including the disabled.

Coordination between Architectural Design and Exhibition Plan

The exhibition objects housed in this Museum belong to different periods of history or to various fields. They are also diverse in material characteristics, texture, colour, form, weight, etc. The permanent galleries shall be detailed enough in background wall and lighting system to demonstrate the great variety and range of objects on view. The temporary gallery shall be flexible enough to coordinate with the changes of collections. The main galleries, especially, are designed in the form of a large auditorium or a TV studio to cope with the varieties of exhibition programs and objects.

Support of Collection Management

There is no doubt that the main function of the Museum is to provide spaces for the exhibition. However, to support the exhibition program, the Museum requires considerable space for storage, conservation and restoration of their collections. Jordan is rich in collections of archaeological, cultural and other materials that are looking for a permanent home. The
National Museum is the most likely facility to provide those valuable collections with space for storage. In this Museum, emphasising the importance of collection management activities, a huge storage space is located on the basement floor together with incidental facilities: workshop, fumigation room, laboratory, etc.

**Security and Protection of Exhibition Objects**

The Museum building is going to receive thousands of visitors daily and will house a large number of valuable exhibition objects. Archaeologically or historically important objects, especially, will be collected from all over the nation and exhibited in the Museum. Not only to ensure the security and safety of the visitors but also to protect those objects from damage, loss, theft, destruction and so on, necessary measures in security plan, lighting plan, fire-protection plan, air-conditioning plan, seismic plan, etc. shall be taken.

**Generation of Income**

This project is scheduled to be implemented under the loan from the Government of Japan. In this sense, the Museum must generate a wide range of benefits or incomes through its linkage of operation. The main expected revenue is generated by the assumed admission fee to the Museum as calculated in the SAPROF Study. In this project, moreover, to enhance the generation of additional income, restaurant, museum shop, seminar room, etc. are located in the site out of the exhibition area so as to be accessible by the public or passers-by, even at the time when the Museum is closed.

**Utilisation of Local Materials**

The construction industrial base is well developed in and around Jordan. There is no problem with local procurement of building materials, which are locally manufactured or imported. Therefore, local construction materials/equipment and local construction methods are employed so as to minimise not only initial costs but also long-term recurrent costs.

**Maintenance Free**

To ensure due operation of the Museum, it is essential to alleviate the financial burden imposed on the operation body of the Museum by minimising the maintenance cost of the facilities. The building plan for the Museum, in the above sense, is to be developed to be “Maintenance Free”. Materials, which are highly durable, are not easily soiled and can be locally repaired, are to be used. Facility machines and equipment, which can be locally maintained and managed, are to be selected.

(2) Conceptual Plan

A Conceptual plan, as shown in Figure 3.3.1, was determined through the study of 3 alternatives. The Advisory Committee of the National Museum chaired by the Mayor of Greater Amman Municipality held selection procedures, and selected one plan from among the 3 alternatives. The selected plan is summarised below:

- The site is sub-divided into 2 areas; northern and southern, since a huge underground culvert is running through the centre of the site in the east-west direction.
- The main building houses the main functions of the museum, such as exhibition galleries, research and study and storage and is located in the northern area, which is the largest area in the site. An annex building, which consists of restaurant, cafeteria and seminar room, is in the southern area.
- The main building has three (3) floors and one (1) basement floor, while the annex building has one (1) floor.
- In-between the two buildings open spaces are located along the centre axis of Amman City Plaza connecting Fountain Plaza, Museum, Mosque and City hall/Municipal Office.

- The main pedestrian access is considered to be from Ali Bin Abi Talih Street from the east and west through the Plaza axis.

Figure 3.3.1 Conceptual Plan

Source: JICA Study Team

3.3.2. Design Solutions

(1) Site layout and outdoor works

The site layout of the Museum facilities is made according to the planning and design policy and design concept shown above. For the design of outdoor works the following are taken into consideration:

- Grade of museum site is elevated around 1.0 meter from the existing ground level, since the Amman City Plaza could have a flood risk. The level differences with the adjacent areas are adjusted with smooth slopes basically and some steps.

- Rainwater drainage is connected to the ditches along the streets running along the north and south sides of the site. For areas where it is difficult to get adequate slopes, open ditches with grating cover are applied for easier water flow and maintenance.
(2) Architectural design

Exhibition Space

Exhibition space is divided into two galleries;

1) Main Exhibition Gallery

Main Exhibition Gallery accommodates history, culture and royal exhibition fields. The above fields are combined in one huge space in historical order to tell Jordan’s long story of their successive civilisations.

The interior of this gallery is designed by means of close engagement with the exhibition plan. As far as finishing materials are concerned, massive rocks, polished white stones, etc. are used as a background wall for stone objects. This gallery is laid out on the ground floor for easy access of the visitors. The floor area is 2,800m² with mezzanine deck, and 12 m ceiling height.

Outdoor exhibition/demonstration gallery is attached to this gallery.

2) Temporary Gallery

This gallery provides space for temporary, special or changing exhibitions of various fields and objects. To support changing exhibitions constantly within this gallery, various light, prefabricated internal structures and suspended grid-pipe ceiling are utilised. In addition, an individual access to this gallery is prepared for use when a special exhibition is held separately from the permanent exhibition area with own admission ticket. A preparation room, for unpacking or assembling, is attached.

Visitor Services

Visitor service facilities, entrance hall, ticket station, cloak room and information counter are located placed on the ground floor of the main building.

In the annex building, visitor service facilities, restaurant and museum shops, are located to express their public nature. These visitor service facilities can be utilised not only by visitors to the Museum but also by passers-by, even when the Museum is closed.

Collection and Research

In response to the importance of collection management in the Museum, large spaces for storage are provided in the basement under the exhibition galleries. Several types of storage are provided to store collections economically and efficiently according to their type.

The research function in this Museum is limited only to supporting activities necessary for the exhibition program.

Museum Management

To support operation and management activities for the Museum, the following facilities are required.

- for administrative staff: Administration Office, Director’s Office, Meeting Room, Pantry, Copy Room, etc.
- for supporting staff: Security Office, Rest Room, Locker Room, etc.
- for building utilities: Mechanical Room, Electrical Room, etc.

The above facilities shall be located in an area separate from the visitor’s flow.
(3) Elevation and Section

Based on the design codes applied only for the buildings constructed in the eastern area of the Amman City Plaza, the building height is limited to less than the maximum height of City Hall, which is 22 m. Other legal restrictions are not applicable for elevation and section design. Outline contents of elevation and section design are summarised as follows:

- The building has 2-storeys and 1-basement, with a building height of 15 m (maximum height 21 m).
- The exhibition space requires keeping suitable interior height for the display of tall stone objects. The centre part of the gallery is designed to have 2-storey interior height. Culture Gallery and Entrance Hall also have a high ceiling.
- Bottom of basement structure is 7m below ground level, which is higher than the normal underground water table depth.
- Design parapet height is 3m, for the purpose of concealing machines laid out on the roof from exposure to the public.
- The ground floor level is set at 1.0 meter above the existing ground level to respond to the flood risk around the site.

Figure 3.3.2 shows the Spatial Diagram of the Museum.

Figure 3.3.2  Spatial Diagram of National Museum

Source: JICA Study Team

(4) Exhibition plan of main exhibition gallery

Main Exhibition Gallery consists of four (4) exhibition fields, namely orientation, history, culture, and royal exhibition.

Orientation Exhibition

At the entrance hall of the main exhibition gallery this exhibition provides the overall information on Jordan to foreigners who visit Jordan for the first time and local school children.
Executive Summary

History Exhibition
This exhibition is planned to introduce the history of Jordan by displaying typical historic sites chronologically, from Ancient Stone Age to the nation’s future, divided into 4 zones. This field also introduces the history of cultural exchanges with its neighbouring countries at various times in the past.

1) Zone-1: The very beginning of life
   This zone is located in the corner close to the orientation exhibition area. The exhibition of this zone consists of the following three (3) groups.
   - Hunters and Gatherers
   - Transition to Food Production
   - Early farming Communities

2) Zone-2: The City-State and Kingdoms
   This zone exhibits detail of eras in Pastoral, City-States and Kingdoms or Chiefdoms featuring city development.

3) Zone-3: Orient and Occident
   This zone is a highlight of the gallery, where dynamic and attractive displays of Nabataean kingdom, Decapolise, Early Christianity and Byzantine are set up with full-sized objects, stone mock up and huge screen.

4) Zone-4: The Islamic Period
   This zone exhibits the artifacts collected from eras of Early, Middle and Late Islamic periods.

Royal Exhibition
The royal exhibition zone introduces the modern history of the nation after the Great Arab Revolution, introducing achievements made by Kings of the Hashemite Kingdom of Jordan from King Sheriff Hussein of Mecca to King Abdullah II, in parallel with introduction of foreign affairs.

This exhibition area consists of two (2) zones as follows.

1) Zone-1: Political Affairs
   This zone introduces the political events in which Kings of the Hashemite Kingdom of Jordan have participated. The main issues to be introduced in this field are as follows.
   - The Great Revolution
   - Trans Jordan
   - The British Mandate
   - Independence
   - War and Peace

2) Zone-2: Modernization and Future of the People
   This zone shows the modernisation of the people’s lives in the following aspects with images of the expected future.
Culture Exhibition

The culture exhibitions introduce traditional cultures, climates and the Arab heritage in the nation’s life in desert, village and city. Visitors to this gallery will understand the diversity of the nation’s life style and changes of culture in the future.

The culture exhibition area is located in the space between the Islamic Periods and the Hashemite Kingdom of Jordan. This area consists of three (3) zones of 1) Desert, 2) Village and 3) City, with an “Event Corner” for demonstration attractions. The main artifacts of this exhibition field are materials, which are used in traditional life.

The outdoor exhibition garden is also utilised for culture exhibitions and demonstrations.

(5) Perspective View and List of Sub-project

As for the results of the design developed according to the planning and design policy and design concept, perspective view and/or sketches are shown in Figure 3.3.3 (1) (2).
3.3.3. **Construction Plan**

Since the site of the sub-project is in downtown Amman, the construction plan should be carefully established by the contractor, and accepted by PMU and agencies concerned. The following are major points to be taken into considerations in the construction plan. The site for the temporary facilities can be obtained in the sub-project site and all necessary utilities such as electricity, water supply, telephone, etc. are available in this area. Therefore, there are no particular problems except the following:

- To take care regarding the pedestrian traffic around the site, since the site is in Amman City Plaza with the Municipality Office nearby which is receiving many citizens every day.

- To take care regarding the vehicle traffic also, since the two streets running along the south and north boundaries of the site are the arterial roads of Amman having heavy traffic, which can not be disturbed.

- To take safety and security measures since the area is heavily trafficked.

**Environmental considerations**

Environmental considerations should be taken into considerations for preparing the construction plan. Table 3.3.1 shows the results of the environmental study made on the sub-project.

<table>
<thead>
<tr>
<th>Impacts</th>
<th>Caused by</th>
<th>Mitigation measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Pollution:</strong></td>
<td>- construction work</td>
<td>- provide sheets for dust control</td>
</tr>
<tr>
<td>- cause nuisance to the neighbouring residents by dust</td>
<td></td>
<td>- watering for dust control</td>
</tr>
<tr>
<td><strong>Water Pollution:</strong></td>
<td>- construction work</td>
<td>- secure reliable and regular inspection</td>
</tr>
<tr>
<td>- wastewater may degrade water quality</td>
<td></td>
<td>- provide wastewater management facility</td>
</tr>
<tr>
<td><strong>Noise &amp; Vibration Pollution:</strong></td>
<td>- construction work</td>
<td>- provide noise protection sheets</td>
</tr>
<tr>
<td>- cause nuisance to the neighbouring residents</td>
<td></td>
<td>- restrict working hours</td>
</tr>
<tr>
<td><strong>Traffic &amp; Safety:</strong></td>
<td>- construction work and transportation</td>
<td>- conduct traffic control</td>
</tr>
<tr>
<td>- cause pedestrian disturbance</td>
<td></td>
<td>- secure detour (if necessary)</td>
</tr>
<tr>
<td>- increase traffic jams</td>
<td></td>
<td>- avoid rush hours</td>
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<tr>
<td><strong>Waste Pollution:</strong></td>
<td>- construction work</td>
<td>- ensure disposal sites and transportation for construction waste</td>
</tr>
<tr>
<td>- construction debris clogs drain pipes</td>
<td></td>
<td>- enhance recycling of the waste</td>
</tr>
<tr>
<td>- generate huge volume of construction waste</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: JICA Study Team

**Construction method and schedule**

The construction schedule should be prepared taking into consideration 1) Construction of foundation; mat concrete foundation with soil improvement, which requires time for the compaction of backfill, and 2) maintaining safety of the existing culvert in safe; temporary excavation of the southern side to avoid damage to the culvert caused by imbalance of soil pressure by excavation of the northern side for the basement floor of the main building.

A construction schedule indicating major work items, proposed by the Study Team as an option, is shown in Figure 4.1 in Chapter 4.