

## Chapter 3 Design of Sub-project

The detailed design of each sub-project was developed after the studies and discussions with respective agencies responsible through the definitive design as well as preliminary design confirming the scope of work, development and planning/design policy, design concept, design criteria, etc. The following are the description of the design of each sub-project.

### 3.1. Amman Downtown Tourist Zone

#### 3.1.1. Design Concept

(1) Tourist Trails and View Terraces

All the tourist trails eventually lead the way up to the Citadel from King Talal and Al-Hashemi Streets, part of the tourist street. In spite of the current dry character, the design aims to realize the different potential identity of each trail.

A major design effort is tackled at the beginning of each trail, to declare its importance and establish an attractive visual link with the city's streets and trails. A certain theme for each stair is envisaged by integrating the pavement, lighting and special landscape features (planters, pergolas, seating, etc.) in harmony as a whole.

The design of the view terraces is dealt with in a way to enhance each location's unique character such as the top of a stair, the meeting of two stairs and beside the ancient Citadel wall. Each view terrace is treated as an integral part of its surroundings. The careful analysis of the present form of the Tourist Trails and their own characteristics opens the way to create unique design solutions.

The following are the planning policy on each trail and view terrace:

#### Upper part of the East Access (Salama Bin Al Akwa' Stairway)

The stair at the higher part of the east access is already interesting with its changing geometry and the interception of the shade of the "berry tree".

The enhancement and beautification of the beginning of this trail was found to be very important. A special treatment of the corner building, namely by adding a wooden canopy to the upper windows, to make a new visual point of interest, and to install a "Sabeel" -public drinking fountain- at the foot of the stair which will be of interest and benefit to tourists and locals alike, are introduced.

#### Lower part of the East Access (Farwah Al Jothami Stairway)

The stair at the lower part of the east access looks somewhat dry, though in good shape. Here, in order to enrich the experience of the urban space as a whole, the design suggests to add a small coffee shop; a terrace covered by a wooden pergola, allowing more interaction between local citizens and tourists, and giving this trail a strong sense of identity from Al -Hashemi Street.

#### View Terraces in front of the Roman Theatre (Central View Terrace)

Lower part of the East Access gradually turns to the right until it meets another trail at a wide landing space, which is exactly facing to the centre of the Roman Theatre. The design proposes to make this platform as one of the View Terraces. A Stone Arcade is provided on this important landing spot to highlight and greatly enhance this event.

The roof of this arcade is designed at the same level as the upper street (tourist trails). This

---

will allow tourists to use it as an upper view terrace, and a wooden pergola complements this arch to give shade and some colour to the ambience.

#### Lower Part of the East Access (Al Hashmi Stairway-3)

It is characterized by the white entry platforms attached to the two façades of the buildings along the stairs. The idea is to add wooden pergolas with hanging green vines (grapes) to each landing. This, in addition to varied pavement patterns, will soften the atmosphere and give the required interest and identity.

#### Raghadan Access (Al -Hashemi Stairway-9)

Raghadan Access is strategically selected for leading tourists from Raghadan Bus Terminal to the Citadel through a view terrace situated along the way.

At the upper end of this stairs, the design proposes to locate a View Terrace. Since the stairs are very steep and lack enough landings for rest, the design proposes to stretch the length of the stairs to ease the slope by extending the trail to the right side, and make it pass through different level of terraces with coloured planting and benches, which will offer tourists and locals a pleasant resting space as well as an interesting viewing spot.

### (2) Tourist Street

From the planning point of view, the major focal and nodal points (features) along King Talal Street, such as Al-Husainai Mosque Plaza and the Old Municipality Plaza, are highlighted and enhanced for their locations along the tourist street. Also traditional stone buildings with an important architectural value border a certain portion of the street, and these hidden stone façades are enhanced and highlighted by the change of pavement patterns and introduction of street furniture, so that tourists may pause along the way.

The design suggests architectural treatment of some chosen focal points of visual interest along the tourist street, treatment of lighting and patterns of pavement will contribute to the general atmosphere in accentuating the theme of a series of events and discoveries along the way.

There are also several alleys and stairs that connect with King Talal Street. The design solution is to introduce certain treatments of some of those connection points through the introduction of landscape features and special tiling patterns on the pavement.

The aim of this component is to establish a strong axis of tourist flows through the middle of Downtown Amman between the Roman Theatre adjacent to the old Municipality building and the new National Museum in Amman City Plaza. The design aims at maintaining the vitality of King Talal Street and makes it more attractive and appealing to the pedestrian tourist. The Street is a major link between:

- The National Museum and Circular Court Plaza of Ras Al - Ein zone.
- King Husaini Mosque zone
- The Roman Theatre and the Old Municipality zone.

By realising and enhancing the urban character of this Tourist Street as a model for urban continuity in Downtown Amman, the tourism sector of Jordan will be developed accordingly.

#### Layout of King Talal Street

Based on the analysis of the form and features of King Talal Street, the Street is composed of three (3) main sectors. The first: starting at the new Municipality Circular Plaza (adjacent to the new National Museum) to the vegetable market zone. The second; continues to the

Husaini Mosque Plaza. The third: stretches to the Old Municipality Plaza.

These (3) sectors connect a series of architectural and urban events and spaces. The main urban spaces are the Husaini Mosque Plaza and the Old Municipality Plaza. Other features include some stone buildings and entry points to neighbouring specialised markets such as the vegetable market, and public stairs. The basic concept is to design stone archways to enhance the urban atmosphere and interest of King Talal Street.

The layout map of King Talal Street is shown in Figure 3.1.1.

#### Husaini Mosque Plaza

The Husaini Mosque Plaza is a major gathering space for local people in Downtown Amman, in addition to its very important symbolic significance to the citizens of Amman. It constitutes the intersection point of several main streets like King Talal, Faisal (Al – Saa’da), Basman and Al-Hashemi Streets. The rich stone façade of the Mosque is unique in Jordan with its pedestrian plaza in the front containing a small attractive structure called “Sabeel” or public drinking fountain (a typical water feature of traditional arab-islamic cities for refreshment and purification).

It is noticed that during special religious occasions, rows of worshipers extend out of the mosque in to the plaza and even along the neighbouring streets. In order to enrich and highlight this experience, the design solution is to pave the front plaza and immediate neighbouring streets with a special pavement pattern of lines that are parallel to the Mecca direction. This will enhance the diversity of sequential experiences in the Tourist Street, and give more character to this important urban space.

In addition, a big shade tree and a special tiling pattern on the pavement around this little cube (Sabeel) are provided. Also a special pattern is suggested in front of the main gateway to the mosque, in order to add a sense of courtyard space. Two groups of trees near the corners of the mosque, below the two minarets, will beautify the space and add to the sense of enclosure.

#### Old Municipality Plaza

The site is a very important connecting zone between King Talal Street and the Roman Theatre area; an important station for tourists on their trip in Downtown Amman.

#### Safety Measures

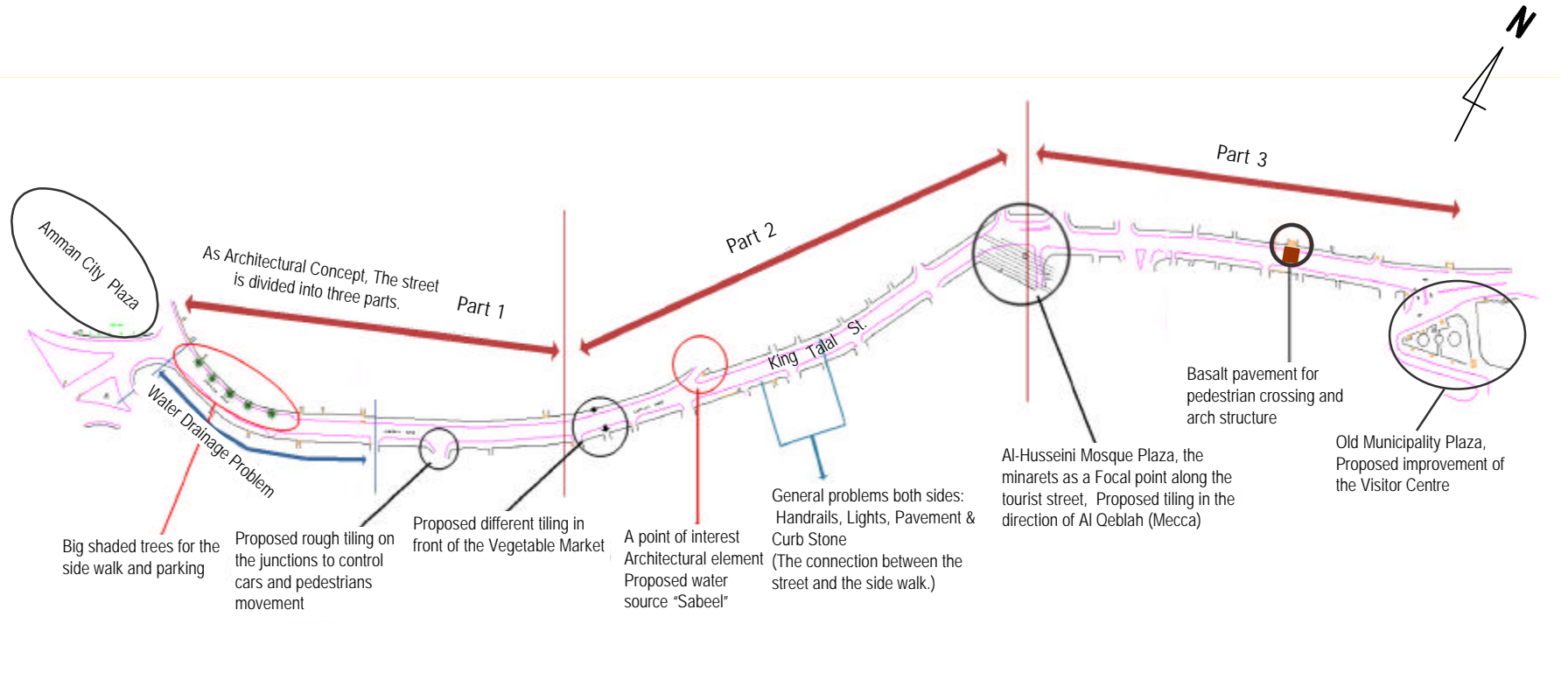
Some parts of the Tourist Street are currently provided with handrails. Although the existing handrails are not visually appealing to the tourist, the handrails are needed in order to avoid any dangerous crossing of the road by pedestrians.

Some introduction of planter boxes to substitute with the handrails was considered during the conceptual stage. However, because the section of the street is heavily populated by pedestrians, spaces to introduce any planting materials or planter boxes, benches or drinking fountains are not available except in public plazas or extended pedestrian strips.

Depending upon the future traffic volume on this street, widening of the pedestrian strips or prohibiting vehicles from this street should be seriously discussed and studied in order to secure the healthy flow of pedestrians and to achieve the final goal of the tourist street.

Some street curbs are too high for pedestrians, in particular for children and elderly people, therefore, some adjustment and improvement are made.

Figure 3.1.1 Layout Map of Tourist Street (King Talal Street)

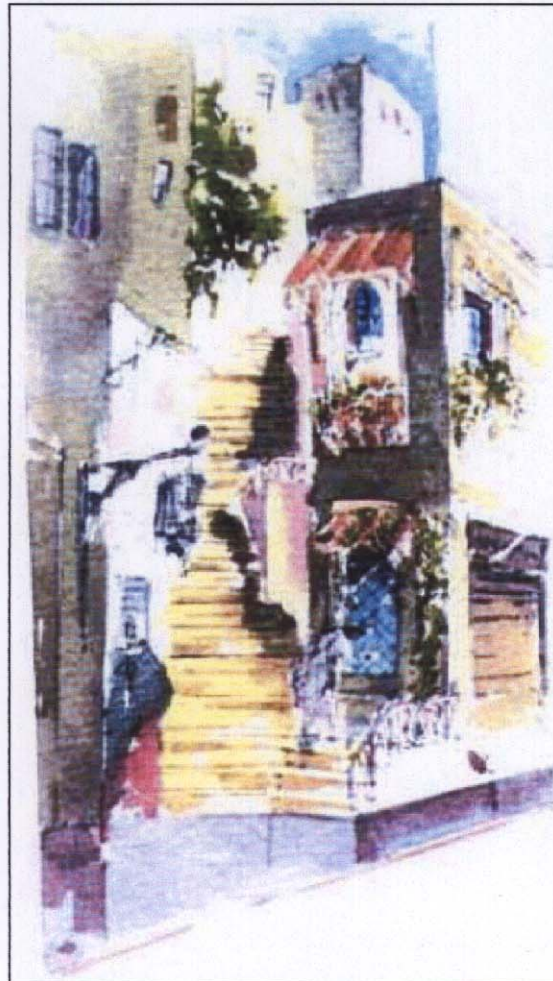


Source: JICA Study Team

### 3.1.2. Perspective View and List of Sub-projects

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 3-1-2 (1) (2), and a list of the project outlines is shown in Table 3-1-1.

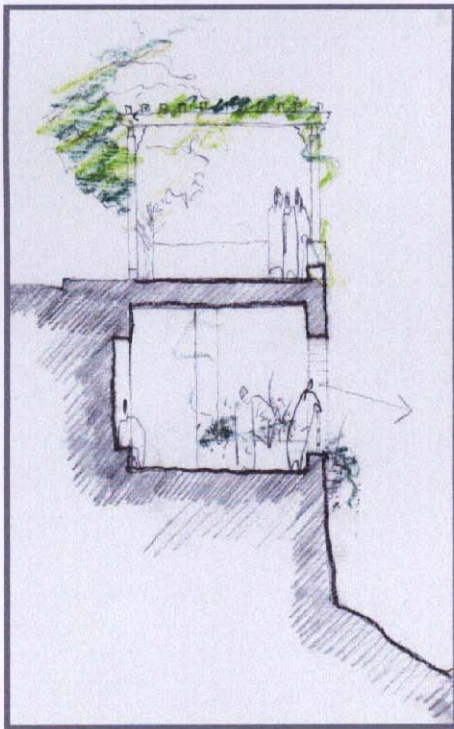
Figure 3.1.2 (1) Perspective view, sketches (Tourist Trails)



Source: JICA Study Team

Figure 3.1.2 (2)

Perspective view, sketches (View Terraces)



Source: JICA Study Team

Table 3.1.1 List of Sub-project outlines

(1) Tourist Street: King Talal Street from Raghadan Bus Terminal to Amman City Plaza	
1)	Improvement of sidewalk in 1.7 km long with 3.0-4.0 m wide (on both sides) or approximately 13,600 m2 in total
	<ul style="list-style-type: none"> <li>•Improvement of pavement with stone tiles for both sidewalks</li> <li>•Erection of stone elevation</li> <li>•Installation of balustrades</li> <li>•Signs</li> </ul>
2)	Husayni Mosque Plaza of approximately 2,800 m2
	<ul style="list-style-type: none"> <li>•Improvement of pavement with stone tiles and ceramic tiles</li> <li>•Street planting</li> </ul>
(2) Tourist Trails	
1)	Improvement of Trails of 2.5 km long in total with 2.0-3.0 m wide
	<ul style="list-style-type: none"> <li>•Pavement with stone tiles</li> <li>•Retaining walls</li> </ul>
2)	Installation of street furniture and equipment
	<ul style="list-style-type: none"> <li>•Wooden pergola</li> <li>•Stone benches</li> <li>•Plastering and painting on the some walls, platforms, etc.</li> <li>•Stone elevation</li> <li>•Signs</li> </ul>
(3) View Terraces	
	View terraces of new construction for 3 places with 550 m2 in total.
(4) Downtown Visitor Center	
1)	Renovation of existing building of 46.5 m2
2)	Improvement of Old Municipality Building Plaza of 2,500 m2
	<ul style="list-style-type: none"> <li>•Stone Pavement</li> <li>•Build Kiosks</li> </ul>
3)	Kiosks
	<ul style="list-style-type: none"> <li>•General kiosks: 10 nos</li> <li>•Tourist information kiosk: 1 no</li> </ul>

Source: JICA Study Team

### 3.1.3. 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.

There are no particular problems except the following:

- Take care not to disturb the daily activities of the residents and shop owners along the street and trails by the construction,
- To locate temporary facility sites such as material stock yard(s) and site office in an area that will not disturb the daily activities of residents,
- Take care not to disturb the pedestrian and vehicle traffic,
- To take safety and security measures since the work site is in a crowded area, especially the Tourist Street.

#### Environmental considerations

Environmental considerations should be taken into account in preparing the construction plan. Table 3.1.2 shows the results of the environmental study made on the sub-project.

**Table 3.1.2 Potential Impacts and Proposed Mitigation Measures**

Impacts	Caused by	Mitigation measures
Air Pollution: - cause nuisance to the neighbouring residents by dust	- renovation works of the visitor centre and tourist street and trails	- provide sheets for dust control - watering for dust control
Noise & Vibration Pollution: - nuisance and disturbance of the neighbouring residents	- renovation works of the tourist street and trails	- use low noise and vibration equipment - restrict working hours - shorten construction period
Waste Pollution: - construction debris clogs drain pipes - generate large volume of construction waste	- earthworks of the tourist street and view terraces	- secure disposal sites - enhance recycling of the waste
Existing Infrastructure: - Effect the existing signage, sewage and electric lines etc.	- renovation works of the visitor centre and tourist street and trails	- alleviate effects on the existing infrastructure by clarifying the existing conditions and scope of works
Traffic & Safety: - increase conflict between vehicles and visitors	- construction works of tourist street and trails	- conduct traffic control - secure detour (if necessary) - avoid rush hours

Source: JICA Study Team

#### Construction method and schedule

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



## 3.2. Raghadan Bus Terminal

### 3.2.1. Design Concept

#### (1) Planning and Design Policy

The following general policy is taken for the planning and design of the Raghadan Bus Terminal:

- To maintain the existing function of the terminal shown below and increase effectiveness and efficiency
  - White taxi terminal
  - Mini bus terminal
  - Large bus terminal
  - Shopping and entertainment
  - Mosque for passengers as well as residents nearby
  - Tourist bus park as additional function
- To take into consideration the most effective land use and better utilisation of the limited land
- To realise more safe, effective and easy traffic flows in and surrounding the terminal for both vehicles and pedestrians such as passengers, worshipers, students, staff of shops and offices, bus and taxi drivers, and passers-by, without interfering with each other
- To introduce measures in planning and design of the terminal in order to make it a new landmark of the downtown area and a new tourism asset as an urban amenity
- To design the terminal building/tourist deck to minimise the construction cost as well as maintenance and operation costs while achieving the improvement of the terminal and facilities
- To respect the local customs and practice in the new facilities (e.g. toilets, and praying areas)
- To take into account environmental considerations and safety conditions in the design of facilities and selection of equipment.

#### (2) Conceptual Plan

One of the most significant urban and heritage conservation considerations is the respect of pedestrian movement patterns within the downtown. Therefore, the design is reflected onto the major spine of the tourist deck as a pedestrian space for both public and tourist use (shops, restaurants, and terraced gardens), which is linked to the following urban nodes:

- Hashimiyah Plaza: through an overpass bridge
- Citadel Hill: through an overpass bridge over Hashimi St.
- The new Mosque Plaza (*Sahn al Masjid*)

The following are the major aspects to be introduced:

---

### Site Plan

- The terminal/parking area of the white taxis, mini buses and large buses as well as the tourist buses should be clearly separated in the site.
- A greenbelt is allocated in the middle of the parking area in order to act as a visual and environmental buffer. The large size of the terminal area is sub-divided into two major terminal zones by the greenbelt.
- Provision of tourist bus lanes at the centre of the Terminal; beside the greenbelt.

### Building layout and design

- The architectural design of the Terminal is regulated by the provision of 3 major axes:
  - A major spine connecting the Terminal with the Hashimiya Plaza (most of the pedestrian flow is expected to follow this line.)
  - An intersecting spine connecting the opposites hills of Joufeh and Qalaa (Citadel). These two axes meet at a significant intersection point representing a knot between tourists and locals.
  - A religious axis directed to Mecca for the mosque.
- The terminal building/tourist deck is to be located at the northern end along Al Hashmi street where there are no residents, in order:
  - to avoid disturbance to the residents by the gathering visitors,
  - to emphasize visual effects and to express stronger expression of the basic type of building
- It is important to consider scenery and harmonization with the surrounding buildings. As the building is visible from the roads as well as the north and south slope, the view from those points should be considered in order to improve the city landscape as a whole.
- The new facilities should be designed giving considerations to the local weather conditions (rain, sun and wind). Natural ventilation and lighting should be considered in order to minimize running costs of electrical lighting, air-conditioning and mechanical ventilation.

### Tourist Deck/Terminal Building

- The tourist deck with its overpass bridge links the Terminal to the tourist trails at the lower slopes of the Citadel Hill. The slope creates an open dialogue with the opposite panoramic lookout and tourist trails, hence giving the overall Amman Downtown Tourist Zone Sub-project harmony and unity.
- The tourist deck should create joyful outdoor and indoor spaces, which permit meetings and contact among the visitors to the terminal deck; international and domestic tourists, residents as well as the passengers. The indoor spaces are to be allocated in a cluster system along the pedestrian paths and plazas.
- Outdoor furniture includes seating and canopies for the waiting lines of the buses and taxis. In addition, the upper deck includes outdoor furniture suitable for the outdoor restaurants and coffee shops provided by the project.

### Corner Towers

- A tower type building is allocated at each of the 4 corners of the bus/taxi terminal area to reflect remnants of the Citadel in order to emphasize the identity of Downtown Amman as

an ancient city and giving expression as a landmark. The buildings accommodate necessary public service functions for the operation and management of the terminal such as police station and fire station.

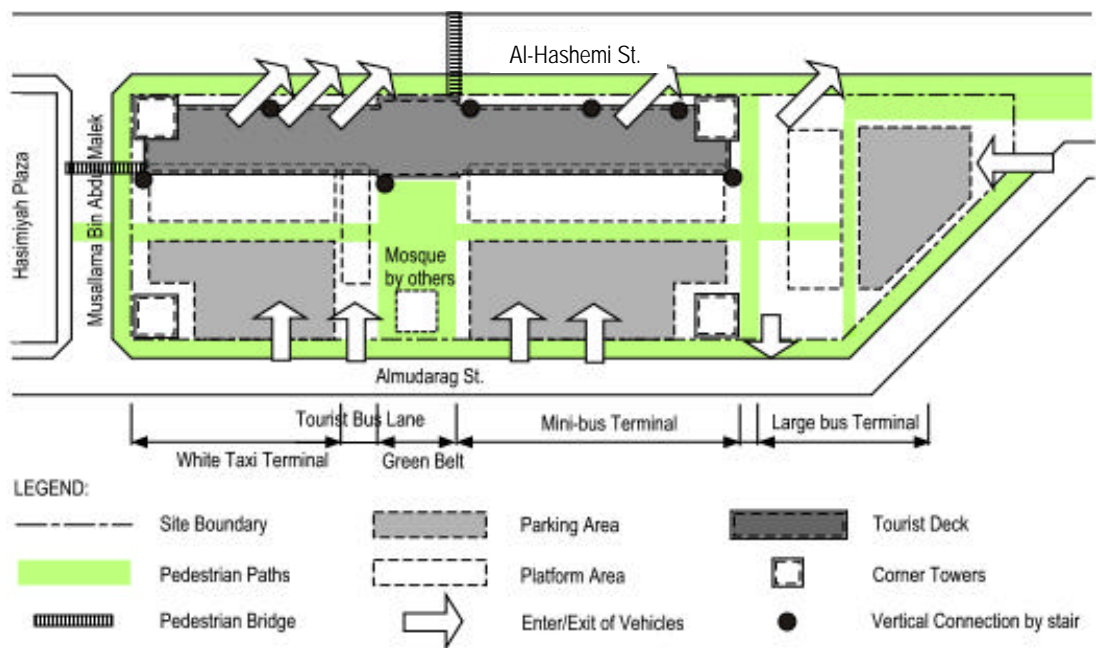
For the future expansion of the tourist deck, if required, the 2 southern tower type buildings could be utilised for structural anchoring of the expanded deck.

### 3.2.2. Design Solutions

#### (1) General Plan

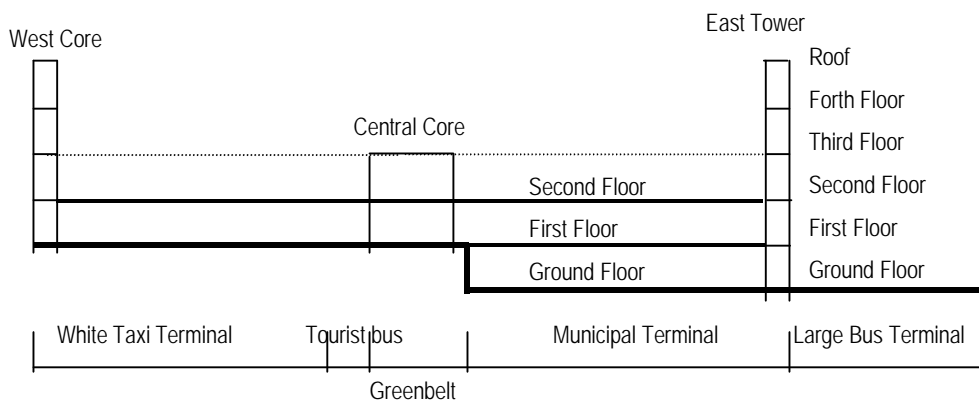
Figure 3.2.1 shows a general plan and Figure 3.2.2 shows a section through the Raghadan Bus Terminal.

Figure 3.2.1 Layout of Raghadan Bus Terminal Sub-project



Source: JICA Study Team

Figure 3.2.2 Section (Floor level diagram)



Source: JICA Study Team

(2) Number of buses, taxis

The designed number of vehicles and lanes to be accommodated in the parking area are summarized in Table 3.2.1.

Table 3.2.1 Number of Taxis and Buses, and Lanes

Type of vehicle	No. of parked vehicles		Number of lanes		Remarks
	Required	Designed	Required	Designed	
White Taxi	365 (25)	293 (20)	28	28	36 out of 293 are located in the Large bus terminal
Mini Bus	124 (25)	177 (35)	27	27	
Large Bus	28 (25)	31 (28)	12	12	
Tourist Bus	8	8	4	4	2 buses for each lane

Note: Figure in ( ) shows percentage of registered vehicles

Source: JICA Study Team

(3) Shops and restaurants

Table 3.2.2 shows the number of shops and restaurants in the terminal including those on the tourist deck. Some shops will be used for the food and drink business such as restaurant and cafeteria.

Table 3.2.2 Number of Shops and Restaurants

Location	Western deck	Central core	Eastern deck	Total
Shops				
Ground Fl.	-	24	6	30
1st Fl.	-	4	30	34
2nd Fl.	11	6	29	46
Total	11	34	65	110
Restaurants				
Ground Fl.	-	-	-	-
1st Fl.	-	-	-	-
2nd Fl.	3 (90)	-	-	3 (90)
Total	3 (90)	-	-	3 (90)

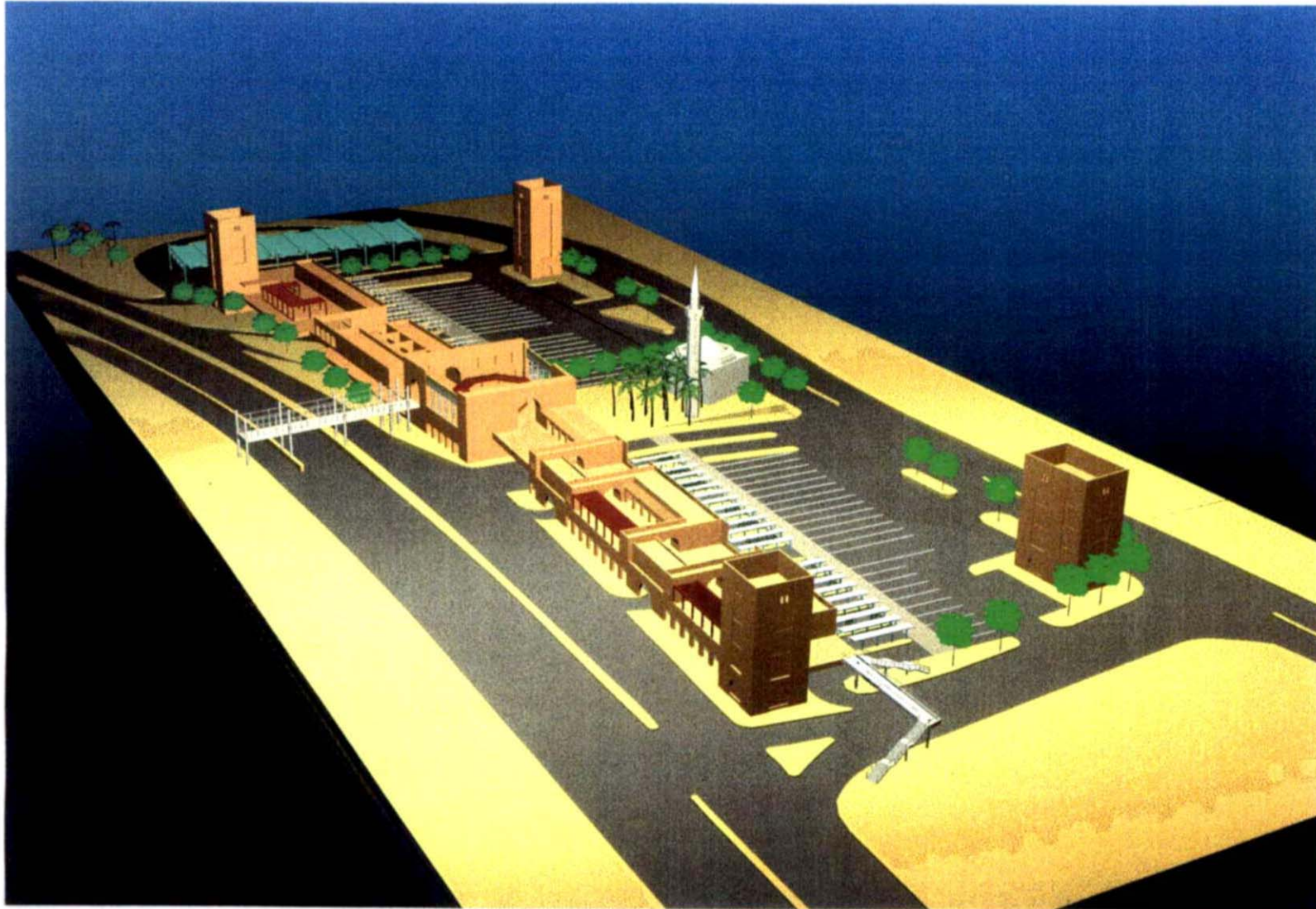
Note: Figure in ( ) shows the proposed number of seats.

Source: JICA Study Team

(4) Perspective View and List of Sub-projects

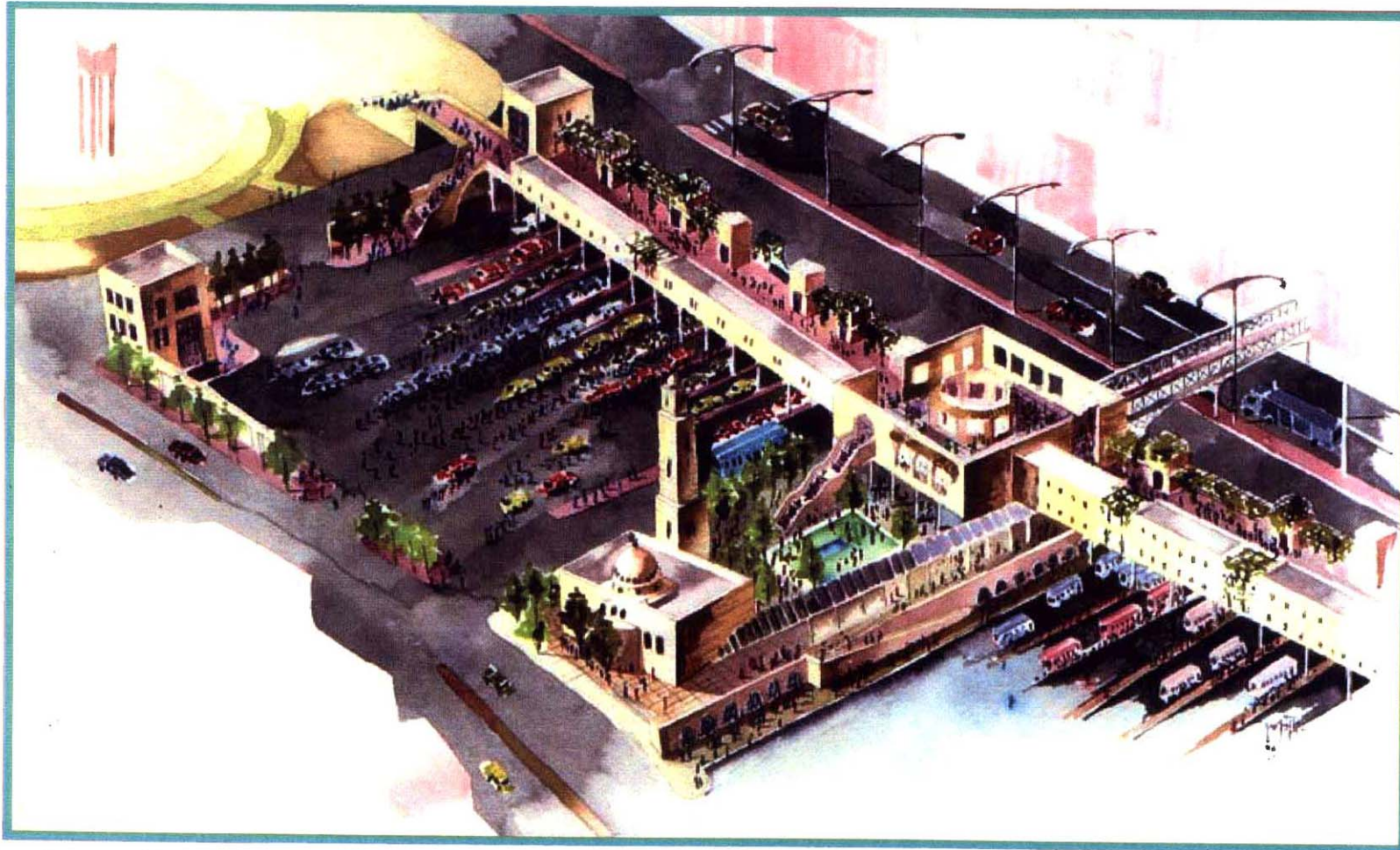
As for the results of the design developed according to the planning and design policy and design concept, perspective view and/or sketches are shown in Figure 3.2.3 (1) (2).

Figure 3.2.3 (1) Perspective View, Sketches (outside view)



Source: JICA Study Team

Figure 3.2.3 (2) Perspective View, Sketches (outside view)



Source: JICA Study Team

### 3.2.3. 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.

There are no particular problems except the following:

- To take care not to disturb the daily activities of the residents and shop owners along Al Mudarag street,
- To prepare the construction plan by taking into consideration that construction should be implemented in 2 phases, since GAM may find a site half the size of the existing terminal for a temporary site during construction.
- To ensure safety of the passengers and take security measures for the construction materials and tools since half of the terminal is always in operation during the construction period.

#### Environmental considerations

Environmental considerations should be taken into considerations for preparing the construction plan. Table 3.2.3 shows the results of the environmental study made on the sub-project.

**Table 3.2.3 Potential Impacts and Proposed Mitigation Measures**

Predicted Impacts	Caused by	Mitigation measures
<b>Air Pollution:</b> - affect the neighbouring residents by dust - disturb economic activities	- construction work	- provide sheets for dust control - watering for dust control
<b>Water Pollution:</b> - wastewater may cause water pollution	- construction work	- wastewater treatment system and monitoring - avoid rainy season
<b>Noise &amp; Vibration Pollution:</b> - cause nuisance and disturbance to the neighbouring residents	- construction work with equipment	- provide noise protection sheets - restrict working hours
<b>Waste Pollution:</b> - construction debris clogs drain pipes - generate huge volume of construction wastes	- construction work	- secure disposal sites and transportation - enhance recycling of the waste
<b>Traffic &amp; Safety:</b> - increase traffic conflict - increase conflict between pedestrians and vehicles	- construction work and transportation	- conduct traffic control - avoid rush hours

Source: JICA Study Team

#### Construction method and schedule

The construction schedule should be prepared taking into consideration 1) Phasing construction and 2) Construction of foundation; mat concrete foundation with soil improvement, which requires time for the compaction of backfill.

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