No.

Japan International Cooperation Agency (JICA)
Ministry of Tourism and Antiquities
Ministry of Planning
The Hashemite Kingdom of Jordan

Detailed Design for Tourism Sector Development Project in the Hashemite Kingdom of Jordan

Final Report

Main Report

Volume 7MR

Historic Old Salt Development Sub-project

August 2000

Pacific Consultants International
Yamashita Sekkei Inc.

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PREFACE

In response to a request from the Government of the Hashemite Kingdom of Jordan, the Government of Japan decided to conduct the Detailed Design Study on Tourism Sector Development Projects in Jordan and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Takahide Fujihira of Pacific Consultants International and consist of Pacific Consultants and Yamashita Sekkei Inc. to Jordan, three times between March 1999 and July 2000.

The team held discussions with the officials concerned of the Government of Jordan and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the implementation of the Project and to the enhancement of friendly relations between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Jordan for their close cooperation extended to the Study Team.

August 2000

Kimio Fujita

President

Japan International Cooperation Agency

August 2000

Mr. Kimio Fujita
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the Final Report and tender documents of "The Detailed Design Study on Tourism Sector Development Project in the Hashemite Kingdom of Jordan." Which is composed of 7 sub-projects.

This report compiles the results of the Study including planning, design and tender documents (draft) of each sub-project.

During the study period we had been assisted by many people for the accomplishment of the Study, and we would like to express our sincere gratitude and appreciation to all those who extended their kind assistance and cooperation to the Study Team, in particular, the Ministry of Tourism and Antiquities who acted as the counterpart agency.

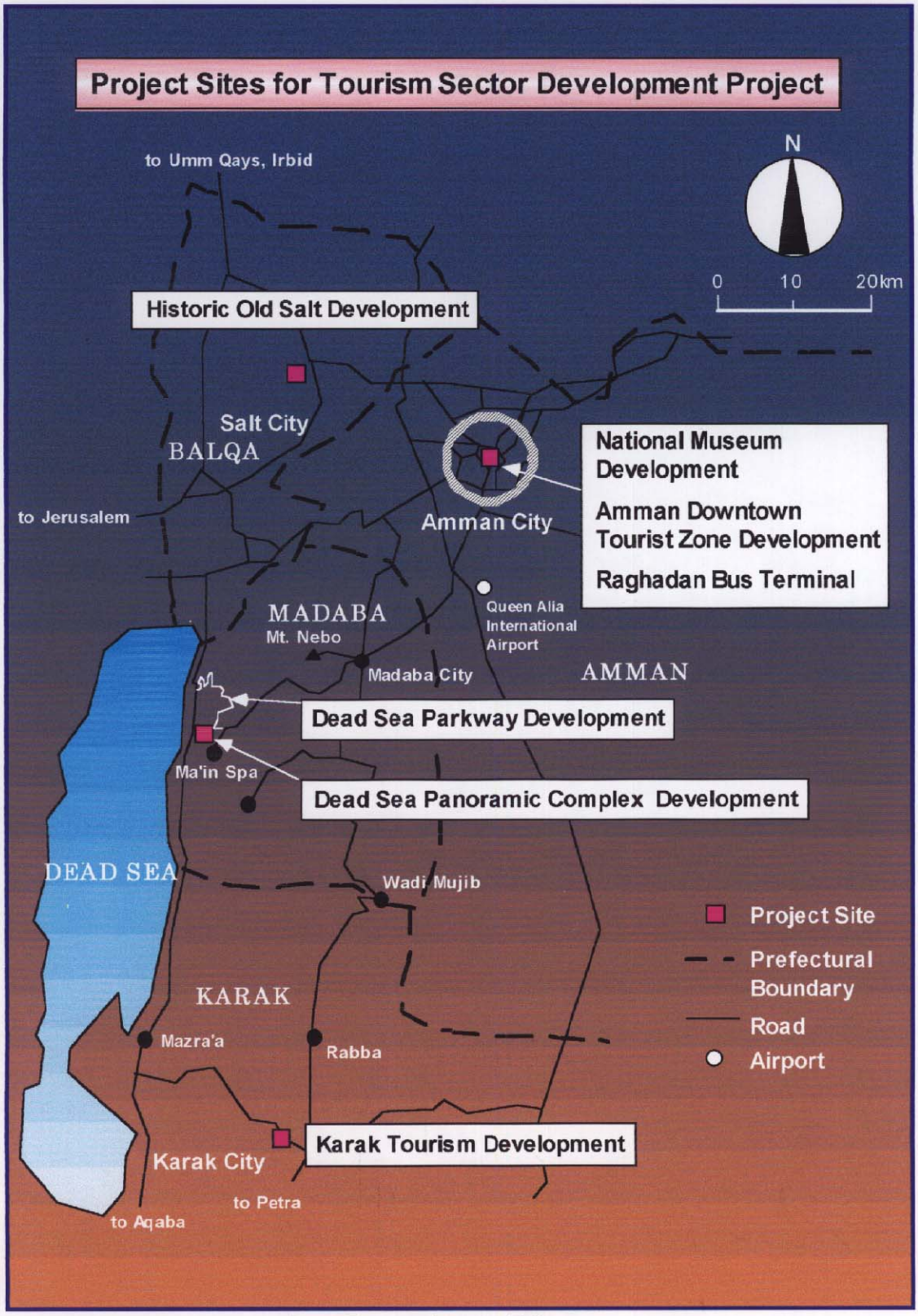
Also, we acknowledge the effective assistance by all the officials of your Agency and the Embassy of Japan in Jordan.

We hope that the report will be able to contribute to the implementation of Project and to the further development of Jordan through the completion of the Project.

Very truly yours,

藤平卓英

Takahide Fujihira
Team Leader,
The Study Team for
the Detailed Design Study on
Tourism Sector Development Project in
the Hashemite Kingdom of Jordan



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Abbreviations

ADTZ	:	Amman Downtown Tourist Zone
B/D	:	Basic Design
CDD	:	Civil Defence Directorate
CERM	:	Cultural Environment Resources Management
D/D	:	Detailed Design
DOA	:	Department of Antiquities (of MOTA)
DOE	:	Department of Environment (of MMRAE)
DSPC	:	Dead Sea Panoramic Complex
DSPW	:	Dead Sea Parkway
EIA	:	Environmental Impact Assessment
GAM	:	Greater Amman Municipality
GCEP	:	General Corporation for Environmental Protection
GDP	:	Gross Domestic Product
GEC	:	General Environment Corporation
GOJ	:	Government of Japan
HOSD	:	Historic Old Salt Development
ICB	:	International Competitive Bidding
IEE	:	Initial Environmental Examination
I/P	:	Implementation Program
JAM	:	Jordan Archaeological Museum
JBIC	:	Japan Bank for International Cooperation
JD	:	Jordan Dinar(s)
JICA	:	Japan International Cooperation Agency
JST	:	JICA Study Team
JVA	:	Jordan Valley Authority
JY	:	Japanese Yen
KDC	:	Karak Development Corporation
KM	:	Karak Municipality
KTD	:	Karak Tourism Development
LB	:	Local Bidding
LCB	:	Local Competitive Bidding
MMRAE	:	Ministry of Municipal, Rural Affairs and Environment
MOP	:	Ministry of Planning
MOT	:	Ministry of Transport
MOTA	:	Ministry of Tourism and Antiquities
MP	:	Master Plan
MPWH	:	Ministry of Public Works and Housing
NGO	:	Non-Governmental Organisation
NIC	:	National Information Center
NM	:	National Museum
OECF	:	Overseas Economic Cooperation Fund of Japan
PMU	:	Project Management Unit
PSC	:	Project Steering Committee
RBT	:	Raghadan Bus Terminal
RSCN	:	Royal Society for the Conservation of Nature
SAPROF	:	Special Assistance for Project Formation
SDC	:	Salt Development Corporation
SM	:	Salt Municipality
S/V	:	Supervision (of Works)
TCC	:	Telecommunications Corporation
TD	:	Tender Documents
TOR	:	Terms of Reference
T/P	:	Tender Package
UNESCO	:	United Nations Educational Scientific and Cultural Organization
USAID	:	United States Agency for International Development
WB	:	World Bank

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- **National Museum**

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Chapter 1 Introduction

The Golden Age of Salt, was rather an inevitable phenomenon in history, started to grow after the late Ottoman period when the Governorate was established in Salt in 1866. Salt had great potential its nature and location, primarily due to its fertile land, abundance of water features, mild climate and as an important trading link to Nablus, Jerusalem, the Mediterranean and Damascus since the Stone Age.

The landscape of Salt still retains reminders of this prosperous period, in the form of architectural and structural details such as highly decorative carved details on façades, and complicated vaults and domes created by master craftsmen from Nablus.

1.1. Background of Sub-project

An old capital of Jordan, Salt city is located approximately 25 km northwest of the current capital, Amman and included in the one-day tourism zone from Amman. The promotion and encouragement of tourism in Salt will largely affect Amman tourism. The city centre is surrounded by hills and its township is unique, synchronising the townscape, people's life and the traditional culture of the city; forming an "Eco-Museum". Improvement of the tourism of the city will promote the assets for Amman tourism.

The proposed Historic Old Salt Museum and the Visitor Centre will form the starting point for the locals, tourists, or visitors prior to experiencing the real thing. The participants would then experience the whole city with its tourist trails, plazas and public spaces, panorama lookouts, and designated adapted houses for tourist or other public usage.

The concept of the city as an exhibit would adhere to the theme of the Eco-Museum. The Eco-Museum is a new concept which rose to the surface after conservation of spatial modules started addressing not only the conservation of isolated monuments, but also whole areas and neighbourhoods as well such as historic streets, districts, and historic city cores. This opened the way for a new type of heritage conservation (integrated conservation) where the Eco-Museum concept could be fully integrated.

In the case of Salt, the historic core (Jathr al Balad in Arabic) would be transformed into an Eco-museum with its streets, steps, old historic buildings, plazas, and activities. It will be a type of museum dedicated not only for tourists, but also for the locals to explore their own community, tradition, history, and culture.

Notes:

The study depended on several previous architectural and literary works done by other institutions. These include:

- Salt Heritage Volume / Royal Scientific Society
- Salt: A Plan for Action Vol. I, II, & III / Royal Scientific Society / 1990
- Dr. Raouf Abu Jaber / The Abu Jaber Building in Salt City (Translated from Arabic) / 1988
- Dr. George Tareef / Salt and its Surroundings (Title Translated from Arabic)
- Dr. Mohammad Khuraisat / Salt: An Architectural Anthropological Study through Courts Historic Records 1881-1926 (Translated from Arabic) / Dirasat Vol. 13, No. 4, University of Jordan Press, 1986
- Dar al Handasah Consultants (Shaer and Partners / Salt Master Plan (1981-2010) / Beirut, 1981

1.2. Study Objectives

The study objectives are summarised as below:

1) Review and reassessment of previous studies of the Project such as JICA Master Plan Report (February 1996) and SAPROF Report (March 1997);

2) Conduct supplemental site investigations, existing building condition survey and topographic surveys.

3) Establishment of the definitive plan including preliminary design and provisional cost estimates in consideration with of the amount of construction cost allocated in JBIC loan agreed with HKJ;

4) Preparation of the detailed design of the facilities to be constructed under the Project including construction plan and cost estimates in consideration of the amount of construction cost allocated in JBIC loan agreed with HKJ;

5) Preparation of the tender documents of the Tourism Sector Development Project;

6) Preparation of the study report to conclude the overall study; and

7) Pursuing technology transfer to Jordanian counterpart personnel in the course of the Study.

1.3. Study Area

The study area of the panorama lookouts has been changed from the SAPROF Study by the JICA Master Plan Study in coordination with the Technical Committee of Salt. The location of the respective work-components are situated in Old Salt, except the panorama lookouts such as Kamalal Shaer Panorama Lookout and Salt High School Panorama Lookout situated the perimeter of Old Salt.

1.4. Study Area and Scope of the Study

The main objectives of the sub-project aim to create and foster the new tourist attraction to enhance the existing tourism in Salt that will give an opportunity for tourists travelling in Balqa region and on one day trips from Amman, providing model tourist trails, panorama lookouts and the Historic Old Salt Museum with a visitor centre.

The major components included in this sub-project are as follows:

1) To enhance development of an Eco-Museum in Historic Old Salt.

2) To encourage conservation of heritage assets in Salt.

3) To improve tourism services along the pedestrian circulation as a model project.

4) To serve for:

   - Providing convenience to the tourists and people in Salt; and
   - Revitalising community development and participation in Salt.

(1) Historic Old Salt Museum and Visitor centre

1) Renovation and adaptation of the Abu Jaber Building into a museum

   - Restoration and cleaning of the building for Museum use and;
   - Provision of exhibition equipment and furniture.

2) Providing Visitor Centre in the museum:

- Provision of interior design and tourism promotion equipment

(2) Tourist Trails and Public Spaces

1) Signage for tourists

Provision of interpretation boards and direction signs.

2) Improvement and development of small paths as a Model tourist trail with:

Heritage conservation and enhancement of the existing tourist trails by provision of new pavement and street furniture.

3) Provision of 4 Lookouts

Provision of pavement, benches and shelter in different parts of the city, but mainly in the historic city core.

4) Improvement of 4 Public Spaces in As Sa'aha, Baladia plaza, Maydan Plaza and Hammam Plaza with:

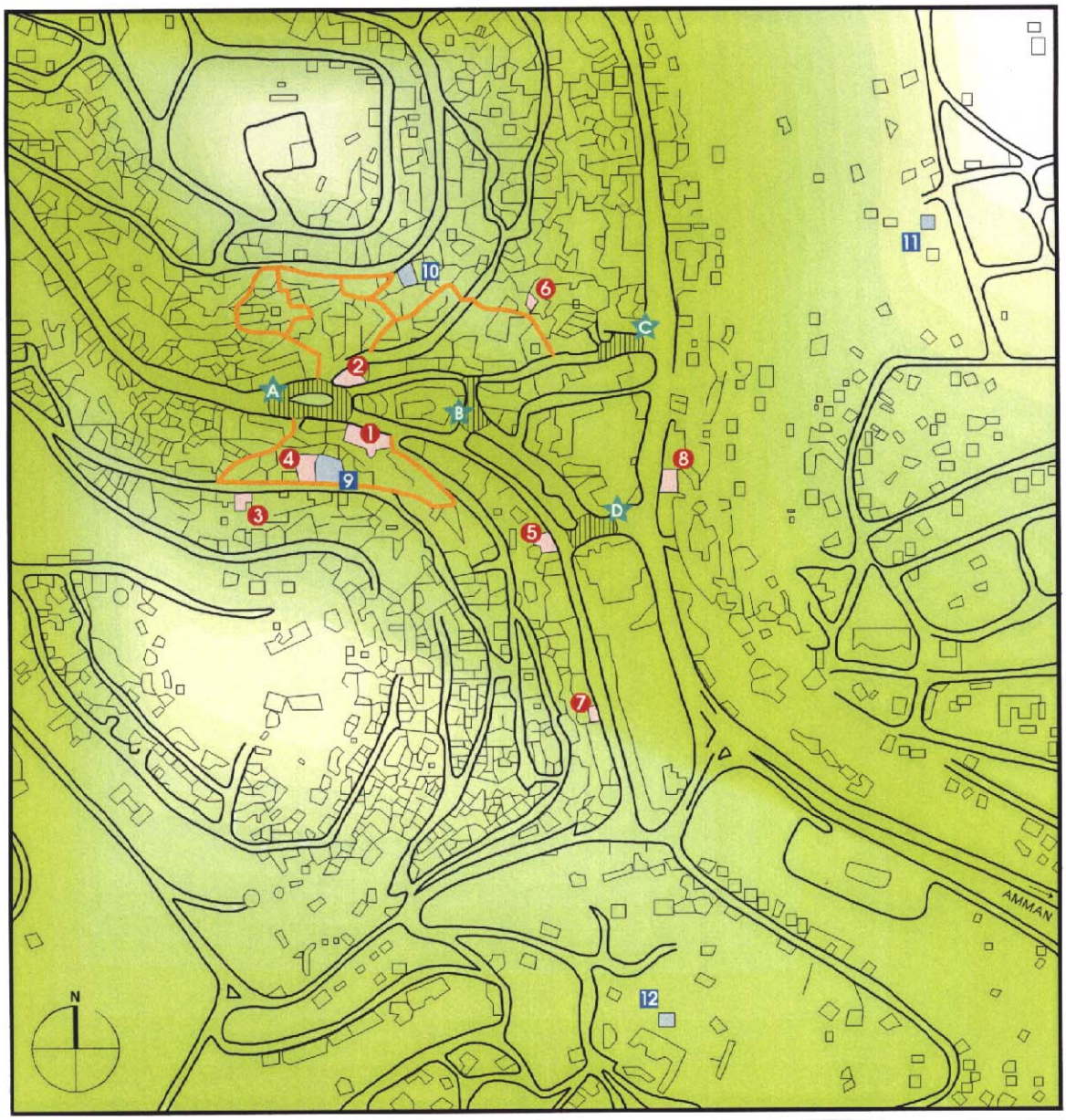
Improvement of pavement, planting, street furniture and car parking connecting the major tourist trails in the historic city core.

5) Enhancement Measure (Selected Historic Houses)

Provision of guideline recommendations to adapt and enhance five selected historic houses within the historic city core and in close geographic relationship with the tourist trails.

The location of the components included in this sub-project is shown in Figure 1.1.

Figure 1.1 Location Map of Historic Old Salt Development



Source: JICA Study Team

1.5. Responsible Agencies

The following are the relevant agencies responsible for coordination of the Historic Old Salt Development:

Responsible Agencies

- Salt Municipality (SM) for Renovation of Abu Jaber Building, Tourist Trails and Public Spaces
- Ministry of Tourism and Antiquities (MOTA) for Visitor Centre

Chapter 2 Renovation of Abu Jaber Building

2.1. Existing Conditions

2.1.1. Location and Historic Background

The Abu Jaber Building is located in the old sector of the city of Salt occupying a commanding position overlooking the Ain Plaza (Figure 2.1 Historic House Plaza Relationship). The house is considered the most significant landmark overlooking this main city Plaza.

The history of the house dates to the late 19th century when in 1887, Saleh al Naser Abu Jaber bought a piece of land located near al Ain Bridge next to the main Salt Plaza. He demolished existing buildings prior to erecting the ground floor of Abu Jaber building. The first floor was built in 1896 followed by the second floor in 1905. One of the master builders of Salt (Abd al Rahman al Akrouq) contributed significantly to mastering the cross vaults and stone details of the house, and he is attributed to building the first and second floors of the house. Abd al Rahman Al Akrouq divided the first floor into 3 sections (west, central, and east) each housing one of the sons of Saleh al Naser. The ground floor was then used for guests and for food storage. After the introduction of the second floor (which was also divided into 3 sections), the three sons moved to it leaving the first floor to be used for receiving guests and feasts. After the harsh conditions of WWI, the owners had to sell the 4 shops located at the western corner of the building in the ground floor.

The second floor was intended to be the last floor, this is evident from the structural system used (wooden trusses and pitched roof), the thinner walls, and the accommodation of 3 courtyards at the upper level, each serving one of the 3 apartments. The Abu Jaber Building is associated with many significant events and persons, which adds to its associative values and to its significance in general. The Ottoman leader Jamal Pasa al Sagheer stayed in the house for several months in 1917. The British mandate over Jordan was declared in Salt next to Abu Jaber Building in 1920. In addition, His Royal Highness the late al Ameer Abdullah stayed in the house after the temporarily relocation of the Amiri Headquarters to Salt in 1923.

2.1.2. Site and Building Conditions

An initial inspection was conducted which addressed issues of architectural analysis, structural stability of the house, inspection of existing circulation system, and inspection of existing infrastructure and utilities such as water, drainage and other types of utilities.

A busy street surrounds the site of the house from its north side (front elevation), this busy street comprises part of Sahat al Ain (Historical public plaza situates a prominent nodal spot in Salt). The east side boarders a steep street leading to Said al Bahra street in al Jad'a area. The West Side borders a narrow alley, a historic house, and 5 storey governmental buildings. Finally, the south side borders a sloping vacant land, which is not part of the property of Abu Jaber Building.

(1) Structural Conditions

At the exit end, some settlement is evident due to cracks on the external wall. However, it seems stable and shows no signs of worsening. If overall structural renovation was applied, extensive and comprehensive structural investigations would be needed beforehand, which may be expensive.

(2) Roof Structure

All of the roof structure has a certain level of damage and some parts have fallen down. The whole roof structure should be re-build.

(3) Internal Finish

All internal finish such as floor tile, plastering on walls and ceilings, and suspension ceiling system have been damaged, therefore, some renovation is required.

(4) Utility Services

Utility services such as water supply, drainage/sewerage, electrical supply, telecommunication systems are damaged and old-fashioned, and these systems should be renewed.

(5) External Finish

The external facades have become dirty and damaged. They should be cleaned.

2.1.3. Constraints

The Abu Jaber Building has the following constraints to be resolved in order to become a tourist spot.

(1) Traffic and accessibility

The Abu Jaber Building is currently difficult to access by cars or buses due to the very congested and busy location of the building, and there is no decent parking space near the building except illegal parking on the road.

Because of the very congested and busy location of the building, the traffic may interfere with the conservation works.

(2) Ownership and inhabitants

Although the building was recently procured by the Municipality, some inhabitants on the first and second floors and tenants of shops on the ground floor are still residing in the building. During the construction phase, those people must be relocated.

(3) Structure of the building

The structure of the building comprises barrel and cross vaults that, sometimes, work together in each floor, making changes or major alterations to the structural system undesirable causing potential structural threats to the building.

(4) Small size of rooms

The repetitive spatial module (the room) could place certain restrictions and constraints on the adaptation, because of its relatively small size. In particular, the number of visitors will be restricted.

2.1.4. Opportunities

The Abu Jaber Building possesses great significance due to its many historic, architectural, associative, and spatial values and assets. The following is a discussion of some of the values inherent or assigned to Abu Jaber Building:

(1) Architectural Values

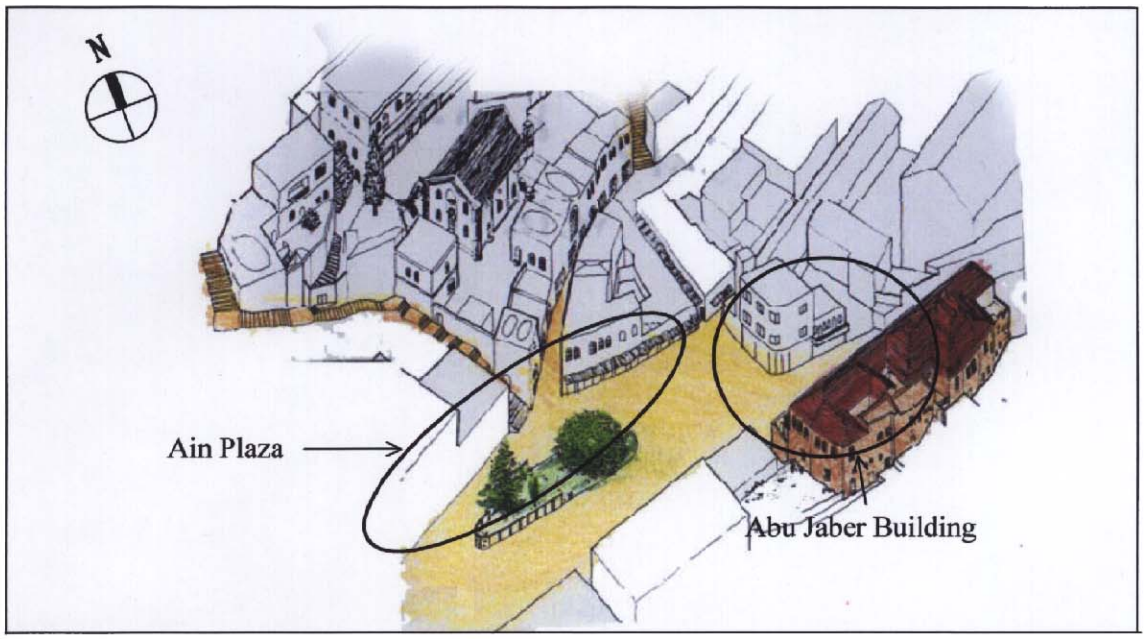
The house is famous for its high-quality architectural style representing rich family residents at the turn of the century in Salt. The front elevation is full of intricate stone details of windows, motifs, and other significant details. The interiors of the house comprises impressive barrel and

cross vaulting systems, in addition, beautiful and skilful stencilling work adorn the false ceilings in the second floor.

(2) Contribution to a Sense of Place

This impressive historic house is associated with the memory of the Ain Plaza, which contributes significantly to the sense of place in the Saha acting not only as a land mark but also as a major feature in the historic city core. The relationship between the Abu Jaber Building and the Ain Plaza is shown in the following isometric sketch, Figure 2.1.

Figure 2.1 Historic House-Plaza Relationship



Source: JICA Study Team

(3) Informative Values

The House sheds information on the cultural and history of Salt during the Golden Age era.

(4) Associative Values and Contribution to Collective Memory of Salt Citizens

The House is associated with significant people (H. E. the Late al Amir Abdullah) and events that occurred in the history of the nation in general and Salt in particular. The House forms an important part of the memory of each Salt resident.

One of the most important assets of the House is its high authenticity since the house was not significantly altered since it was first built about a century ago (its period of significance).

The Abu Jaber building is intended to be adapted into the Museum and Visitor Centre. The Abu Jaber Building will serve as the focal point (the core) in the overall Historic Old Salt Development. It is worth mentioning that the National Museum in Amman would be dedicated for the whole country, therefore, local city museums, such as this one in Salt would have the opportunity to concentrate on local contexts (e.g., Salt).

The Museum and the Visitor Centre (Visitor Centre and Historic Old Salt Museum) will form the starting point for the locals, tourists, and visitors prior to experiencing the real thing. The participant would then experience the whole city with its tourist trails, plazas and public spaces, panorama lookouts, and designated adapted houses for tourist and other public usage. The concept of the city as an exhibit would adhere to the theme of the Eco-Museum. The Eco-Museum is a new concept which rose to the surface after conservation of spatial modules started addressing not only the conservation of isolated monuments but also whole areas and neighbourhoods as well such as historic streets, districts, and historic city cores. This opened the way for a new type of heritage conservation (integrated conservation) where the Eco-Museum concept could be fully integrated.

In the case of Salt, the historic core (Jathr al Balad in Arabic) would be transformed into an Eco-museum with its streets, steps, old historic buildings, plazas, and activities. It will be a type of museum dedicated not only for tourists but also for the locals to explore their own community, tradition, history, and culture. The development of the Eco-Museum will include the rehabilitation of tourist trails and public gathering spaces (Sahat), the design of panorama lookouts, and the adaptive reuse of several historic houses in addition to the major conservation work (adaptation of Abu Jaber Building into the Visitor Centre and Museum). This type of museum will entail historic site interpretation and genuine public participation of which Abu Jaber building (the core) will be the pivot or starting point for the overall experience. They will be adapted according to the main philosophies of historic house museums where the building itself becomes part of the exhibit.

2.2. Scope of Work

In the SAPROF Study, it is specified that this component consists of the following works:

1) Restoration of the building and renovation into the Historic Old Salt Museum with appropriate museum equipment, furniture and visitor facilities;

2) Procurement of necessary exhibition equipment and creation of the display materials (panels and models, etc.) based on the exhibition scenario.

2.2.1. Comparison of Scope

Based on a series of discussions with the Technical Committee representing Salt Municipality and PMU, MOTA, as well as various site investigations, the scope of the Renovation of Abu Jaber Building and Visitor Centre work-component was reviewed and confirmed with the Jordan side.

Table 2.1 shows a comparison with the major items in the scope of works between the SAPROF Study and the final results of the detailed design study of JICA.

Table 2.1 Comparison of Scope between SAPROF and this Study

SAPROF Study	JICA D/D Study
1) Restoration of the Abu Jaber Building and renovation into the Historic Old Salt Museum with appropriate museum equipment, furniture and visitor facilities	1) Renovation of the Abu Jaber Building into the Historic Old Salt Museum. - Total floor area of 1,500m^2 of the Abu Jaber Building to be restored. - Basically, the structure of the building shall not be altered in order to maintain the uniqueness of the original architectural features and the structural stability of the existing building. - The façade of the building shall not be altered, except restoration and cleaning of the finishing, windows, walls, roofs and verandas which have been damaged or wrongly altered from their original state.
2) Procurement of necessary exhibition equipment and creation of the display materials (panels and models, etc.) based on the exhibition scenario planned by the experts referring to the existing SDC's study reports on the history and culture of Salt	2) Procurement of necessary exhibition equipment and creation of the display materials (panels and models, etc.) based on the exhibition scenario
3) Providing Visitor Centre with appropriate information and material of town visit in the same restored building as Historic Old Salt Museum - appropriate tourism promotion equipment and material will be provided	3) Visitor Centre will be situated inside of the proposed museum - interior design and exhibition plan - promotion equipment plan for tourists

Source: JICA Study Team

As shown in the above table, the major changes in the scope of the work are as follows:

2.2.2. Major Changes from the SAPROF Study

(1) Evacuation of the residents in the building

It has been confirmed that the existing shops operated in the ground floor will continue operation after the renovation but the residents in the first and 2nd floors will be evacuated and the floors used for the Museum and Visitor Centre.

(2) No major structural change

Original plan has proposed some major structural modifications of the existing building in order to secure enough exhibition space. As a result of the existing building survey and discussions with the Technical Committee, however, it was found that the structural stability as well as the uniqueness of the architectural features of the existing building should be maintained intact, as much as possible.

The importance of heritage conservation of the existing building was emphasised by adapting the existing building as a significant historic house museum where the building itself becomes a part of the exhibits.

(3) Encouragement of community participation

In order to implement the project successfully as well as to maintain sustainability of the project, community participation will be encouraged. PMU, MOTA in coordination with Salt Municipality will execute the opinion survey and hold awareness meetings with the local community of Salt.

2.2.3. Scope of the Component

(1) Historic Old Salt Museum

(2) Building and associated facilities

Renovation of the Abu Jaber Building, and to utilise it as a museum and visitor centre.

1) Renovation of the building
2) All interior finishing including mechanical and electrical works
3) Exhibition works
4) Other related works

The floor area and use of the floor is as follows:

Total floor area: 1,242.0 m^2

- Ground Floor 387.0 m^2 (Information and Visitor Centre and shops)
- 1st Floor 404.0 m^2 (Museum: - History of Salt
  - Administration
  - Coffee shop and Video room)
- 2nd Floor 451.0 m^2 (Museum: - Culture of Salt)

2.3. Design Framework

The framework study was conducted to review the scale of utility services, but not for development size, since the size is limited within the existing building.

2.3.1. Study of Design Occupancy

The number of visitors to Historic Old Salt Museum and Visitor Centre is studied separately into two categories, international and domestic tourists and local residents, according to the data and information facilitated by MOTA. The study is shown below:

(1) International Tourists (According to the tourist statistics in 1998)

1) No. of tourists per year in package tour to Amman Area: 228,306 and Balqa Area (including Dead Sea, Jerash, Madaba and Ajlun): 3,892 Total 232,198.
2) Bed-nights of Item 1) above: 624,987
3) Average length of stay of Item 1) above: 2.69 days
4) Bed-nights of total tourists including package tour: 1,510,518
5) Bed-nights of tourists per year to Amman Area and Balqa Area without package tour: (1,510,518-624,987 =) 885,531

6) Assumed average length of stay of Item 5) above: 3.2 days

7) No. of tourists of Item 5) above: (885,531 bed-nights/3.2 days =) 276,728.

8) Total number of tourist per year to Amman and Balqa Areas: (232,198+276,728 =) 508,926.

9) Assumed ratio of tourist who will visit to Museum & Visitor Centre: 12%

10) Number of visitors per year to Museum & Visitor Centre: (508,926 nos. x 12% =) 61,071.

11) Number of visitors in 2010 with 15% of growth ratio: (61,071 x 15%/year=) 326,746. (the growth ratio is from 1997 to 1998)

(2) Local Residents in Amman City and Balqa Region

According to the population statistics in 1997, the following assumption for the numbers of visitors to the Museum & Visitor Centre in 2010 can be made:

1) Total population of Amman City in 1997: 1,751,680nos. & Balqa region in 1996: 301,300.

2) Assumed the growth ration of the population: 3.3% per annum

3) Total population in 2010: (1,751,680 x 1.525 =)2,671,523 + (301,300 x 1.575=) 474,683.

4) Assumed ratio to visit Museum & Visitor Centre per year: 0.5% of total population from Amman and 3% of total population from Balqa region.

5) The number of visitors in 2010 (2,671,523nos x 0.5% + 474,683 x 3%=) 27,598.

(3) Summary of Design Occupancy

Potential number of visitors to Museum & Visitor Centre is summarised as shown in Table 2.2.

Table 2.2 Potential Number of Visitors to the Museum & Visitor Centre

	Tourists	Local residents	Total
Total number of visitors in 2010	326,746	27,598	354,344
Average monthly visitors	27,229	2,300	29,529
Visitors in peak month	39,210	3,312	42,522
Average daily visitors in peak month	1,307	110	1,417
Visitor in Peak day in peak month	1,699	144	1,843
Average hourly visitors	212	18	230
Visitors in peak hour in peak day	276	23	299

Source: JICA Study Team

2.3.2. Study on Size of Facilities

(1) Exhibition Space

Gross minimum area per visitor for keeping comfortable situation for the exhibition space is considered as follows:

1.5 m wide (without touching adjacent visitors) x 5.0m (3.0m for average exhibition depth + 2.0 m for circulation space) + 20% of total area (unused safety space)= 9.38 sq.m

According to the above the circulation space required the in peak hour in the peak day is (299 visitors x 9.38 sq.m/visitor =) 2,804 sq.m

However, the size of the facility should be reduced to around one third in order to avoid over investment. The exhibition space should be 2,804/3= **935 sq.m** in total. (Actual area of the proposed Museum & Visitor Centre is 917 sq.m)

(2) Cafeteria

As for the cafeteria in the case that it takes a turn over ratio as 1/4 (once a 1/4 hour: a guest stays on average 1/4 hour for taking a drink), 299 x 1/4 = 75 seats are required in the peak hour in the peak day.

However, most visitors to the cafeteria in Old Salt Museum & Visitor Centre are taking tea and sandwich only, and do not stay a long time. Therefore, number of seats provided will be 50% from the total number of visitors which is (75 x 50%=) **37 seats**.

2.4. Design Standard and Planning and Design Criteria

2.4.1. Site Development

(1) Excavation and Grading

Some debris, solid waste and ruined building wall are accumulated at the back of the Abu Jaber Building.

Thus, the excavation and grading of the back (the south side) of the Abu Jaber Building is necessary in order to properly protect the slope and prevent the surface water from seeping into the Building.

2.4.2. Mechanical Design

(1) Design Standards

The design of the mechanical work shall be generally in accordance with the following standards, codes, and regulations where applicable:

BSS: British Standards Specifications.

ASHRAE: American Society of Heating, Refrigeration and Air Conditioning Engineers.

LPC: Loss Prevention Council.

CIBSE: The Chartered Institution of Building Services Engineers-U.K

Plumbing Engineering Services Design Guide

(2) Design Criteria

1) Water Supply

The following criteria should be applied for the study of demand of water supply:

- Museum/Office staff 100liters
- Restaurant staff 25liters
- Restaurant guest 25liters
- Visitors to the Complex 10liters

The pipes for the water supply should be galvanised steel pipe for both cold and hot water

supply

2) Air conditioning systems

Air conditioning systems will be designed in accordance with the following design parameters:

Location: SALT - Jordan Latitude: 32 N Altitude: 800m above sea level

Average daily temperature range: 14◦C

3) Outside Design Conditions:

Table 2.3: Outside Design Temperature

Season	Dry bulb (C)	Relative humidity (%)
Summer	38	45
Winter	0	80

Source: JICA Study Team

4) Inside Design Conditions:

Inside design temperature in the heating season shall be 20Vdegrees C.

5) Sewerage

Volume of soiled water
The estimated volume of soiled water is applied with the following criteria, which is 80% of water supply demand criteria.

Staff	80liters/person
Cafe staff	20liters/person
Café guest	10liters/person

6) Solid Waste disposal

Volume of solid waste should be estimated with the following criteria:

Office	0.75kg/person
Visitors	0.25kg/person
Café	0.50kg/person

2.4.3. Electrical Design

(1) Design Codes and Standards

Design is mainly based on the following standards and should be carried out accordingly:

- The local Jordanian codes and standards.
- The British standards and codes of practice.
- The National Electrical Code (NEC).

- The International Electrical and Electronics Engineers Association regulations (IEEE).
- The National Fire Protection code (NFPA).
- The local requirements of Jordan Civil Defence Department.
  The local Jordan telecommunication corporation requirements.
- Any other standards and/or regulations and/or codes of practice and norms issued by institutes and/or authorities of other countries such as Japan and Europe, provided they are found applicable and acceptable to perform the job.

(2) Design Criteria and Conditions

Electrical design is developed under the following conditions.

Low voltage: 0.4 kV, 3 ph., 5 wire, 50 Hz.

(3) Design illumination level

Provide lighting track system and attachable track mounted spotlight to preserve the original condition of the building. Target illumination level will be 100 to 300 lx, which depends on exhibition object.

2.4.4. Telecommunications

Provide telephone outlet(s) at museum, coffee shops, library and in each office.

Required number of telephone lines is set with the following criteria.
The minimum requirement of city-office lines is listed in Table 2.4:

Table 2.4 Minimum number of telephone lines

Room	City-office line
Offices	Telephone x 4, facsimile x 1
Coffee shop	Telephone x 2
Library	Telephone x 1
Museum shops	Telephone x 2
Total	10 lines

Source: JICA Study Team

Based on this table, extension line for internal use will need another 10 lines.

2.4.5. Remarks to be taken into account for the Design

The following are specifically taken into consideration in the design of the Abu Jaber Building as the design premises:

(1) Design solution on the back yard of Abu Jaber Building

Concerning the design solution for the land attached to the back of Abu Jaber Building, the Technical Committee of Salt Municipality has instructed to the Study Team as follows:

- The existing house attached to the Abu Jaber Building should be kept as it is.
- The vacant land could be purchased by the Municipality, if necessary. The design and specification should consider cleaning of debris at the back of the Abu Jaber Building: in the case of finding a stable slope or an existing wall after the cleaning of debris, it is not necessary to construct a retaining wall; but in the case of finding an unstable slope or a

degraded and unstable existing wall, necessary to consolidate the wall or to construct a new retaining wall; in either case rainwater should be prevented from flowing on a natural slope.

2.5. Detailed Design

2.5.1. Design Concept

New interventions will carry contemporary stamp in order not to confuse the historic reading of the house for future generations. This will be determined through a judgement call by the heritage conservation specialist. The differentiation between old and new will abide by the design philosophy of the historic house museum.

Proper masonry cleaning methods will be utilised for the cleaning of mainly the front façade and other facades as well. No sandblasting will be used under any circumstances because it inflicts adverse effects on the masonry especially in Salt where the sandstone is relatively fragile. This is a very important criteria because the JST consultants noticed the use of sandblasting in some of other conservation projects (e.g., Toukan House, Al Rae' al Saleh Church).

Retentin of existing building features as much as possible: The heritage conservation of the house will attempt to retain the authentic architectural features as much as possible (e.g., door frames, iron work, window frames, floor tiling, roof tiles). This will increase the authenticity of the material of the house. Repairs will attempt to replace only extremely deteriorated features.

Vertical opening and holes in the existing floors will be avoided as much as possible because existing floors at the first and second floors are composed of barrel and cross vaults. Instead, lateral openings for utilities (e.g., electricity, water, and drainage) will be used.

2.5.2. Planning and Design Policy

(1) Philosophy - Concept of the Historic House Museum

In the case of Salt, the historic core (*Jathr al Balad* in Arabic) would be transformed into an Eco-museum with its streets, steps, old historic buildings, plazas, and activities. It will be a type of museum dedicated not only for tourists but also for the locals to explore their own community, tradition, history, and culture. The development of the Eco-Museum will include the rehabilitation of tourist trails and public gathering spaces (Sahat), the design of panorama lookouts, and the adaptive reuse of several historic houses in addition to the major conservation work (adaptation of Abu Jaber Building into the Visitor Centre and Museum). This type of museum will entail historic site interpretation and genuine public participation of which Abu Jaber building (the core) will be the pivot or starting point for the overall experience. It will be adapted according to the main philosophies of historic house museums where the building itself becomes part of the exhibits. This will affect conservation philosophies and spatial and zoning issues in terms of accommodation of change and differentiation between old and new.

(2) Period - Emphasis on the Golden Age

The Museum will be dedicated to exhibit the history and culture in Salt during the "Golden Age" period (19th and early 20th centuries: 1847-1918). Most political, social, and urban development took place during that era (e.g., Mahalat al Qutaishat (1879) and Hammam Street (1881-1884), Small Mosque (1906), English Hospital (1875), Salt High School (1918)). This era will be displayed, exhibited, and interpreted in this Historic House Museum. Little attention will be given to archaeology (only one room will be allocated to exhibit archaeological remains and information) since other museums in Salt are fully dedicated to archaeology.

(3) Understanding of the Architecture - Understanding and Respecting the Architecture of Abu Jaber Building as a Basis for Heritage conservation Design for the Historic House Museum

Prior to embarking on the detailed design of the adaptation of Abu Jaber Building, one needs to fully understand the evolution and the significance of this important resource. This understanding will form the basis for the heritage conservation design. Certain points are to be taken into consideration such as:

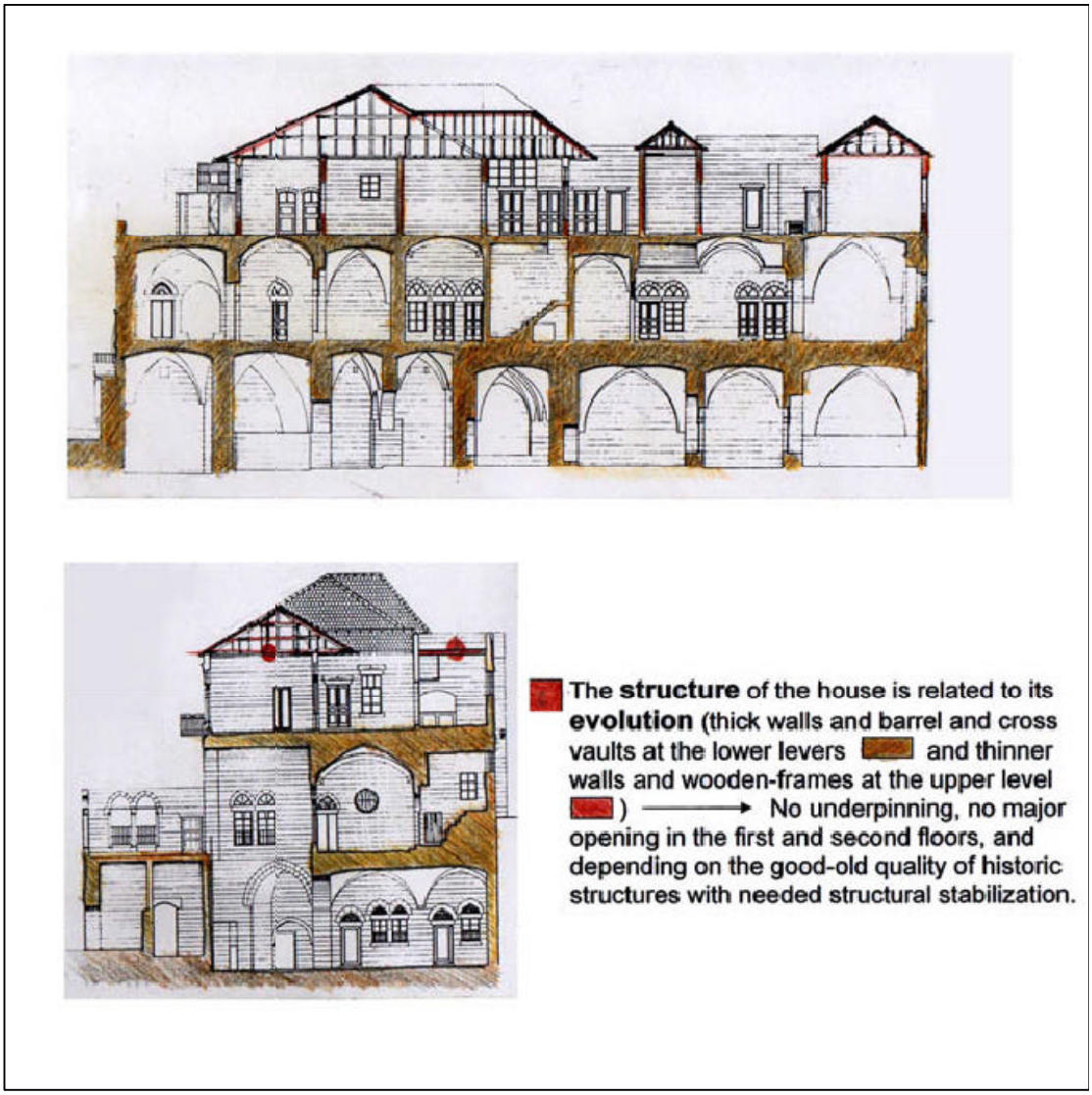
The nature of the barrel and cross vaulted shops and storage areas in the ground floor with their extremely thick walls that are structurally significant to the stability of the house. Evolution of the House and its division into three apartments in the second floor each housing one main barrel vaulted gallery leading to other cross vaulted rooms. This reality would affect how the adaptation of the house will be carried out and how the major zoning will be laid out as shown in following sections.

The last floor is intended to be incorporating the three courtyards and the wooden-framed roof. These courtyards will form significant outdoor areas that are going to accommodate citizen performance and affect the planning and zoning of the adaptation at the second floor. The significace of the cantilevered porches are reflected on the concept of the city as an exhibit.

(4) Structure Stability - Significance of the Structural Stability of the Existing Building:

The structure of the house is related to its evolution and history in addition to its contribution to the stability of the building. The house comprises thick walls and barrel vaults at the lower levels and thinner walls and wooden trusses at the upper levels (Figure 2.2 The Structure of the House). Therefore, and as much as possible, no underpinning should be inflicted on the building, and the stability of the house should depend on the good quality of historic structures with needed structural stabilisation trying to avoid mechanisms that might have an adverse effect on the structural stability of the building. Structural stabilisation might include reinforcement in needed areas such as door lintels, balconies, and walls.

Figure 2.2 The Structure of the House



Source: JICA Study Team

(5) Avoidance of Gentrification – Citizens are the Most Important Resource and Avoidance of Gentrification

Abiding with basic human rights charters and with the philosophy of the Eco-Museum, citizens of Salt become the most important resource. The heritage conservation philosophy will attempt to avoid gentrification as much as possible especially at the ground floor and among shop owners. No permanent relocation of shop owners will be enforced. A strategy plan for the temporary relocation of shop owners during conservation work will be researched and implemented in a way not to affect their businesses.

(6) Community Participation - Salt Citizen Participation

The project adopts a local participatory approach by encouraging Salt citizen participation at different levels:

Training: The project allocated funds for training, where local Salt citizens would be trained in museum curatorial or other related issues.

Interpretation and Performance: Salt citizens are expected to run the museum in terms of guided tours, display and interpretation, and performance in the museum facilities.

Donations: Salt citizens are welcomed to donate exhibits to the museum either to be part of the display or to make replicas for display.

2.5.3. Zoning Plan

The design of the project zoning took into consideration the nature of the house. The project is divided into two main sections: The Visitor Centre and the Historic Museum. The following is the general zoning of the building after the adaptation:

Ground Floor:	Visitor Centre and Temporary Exhibition (233.5 m^2)
	Shop area for tenant (153.5 m^2)
First Floor:	HISTORY of Salt / Administration (404 m^2)
Second Floor:	CULTURE of Salt, divided into the following sections (451 m^2):

Material Culture
Children's Section
Domestic Life

This zoning also took into consideration the flexibility in the design, within each sub section; future changes could be implemented to the suit nature of exhibits and future developments. In general, the adaptation attempted to use existing circulation systems and added an elevator (circulation will be discussed in detail in following sections).

The following is the building adaptation program:

(1) Visitor Centre (Ground Floor)

(2) Historic Museum (First and Second Floors)

- Administration (First Floor):
- Public Services (First and Second Floors)
  Reception (First and Second Floors)
- History Section (First Floor)
- Culture Section (Second Floor)
  Material Culture
  The Late King Abdullah Historic Room
  Children

2.5.4. Circulation System

In general, the adaptation attempted to use existing circulation systems and added an elevator in a way not to inflict adverse effects on this historic house.

The main entrance of the building was incorporated in the project (as the Museum entrance) for its significance and importance. In addition, another entrance on the ground floor for the Visitor Centre is incorporated. This entrance also leads to the elevator, which will take the visitor upstairs to the Museum.

The study attempted to capitalise on the inherent historic assets, values, and potentials of the house. This included sustaining its structural stability. Such a philosophy affected the installation of the elevator:

(1) First, the implemented circulation system depended on existing circulation systems.

(2) Second, there was a need to install an elevator for the following reasons:

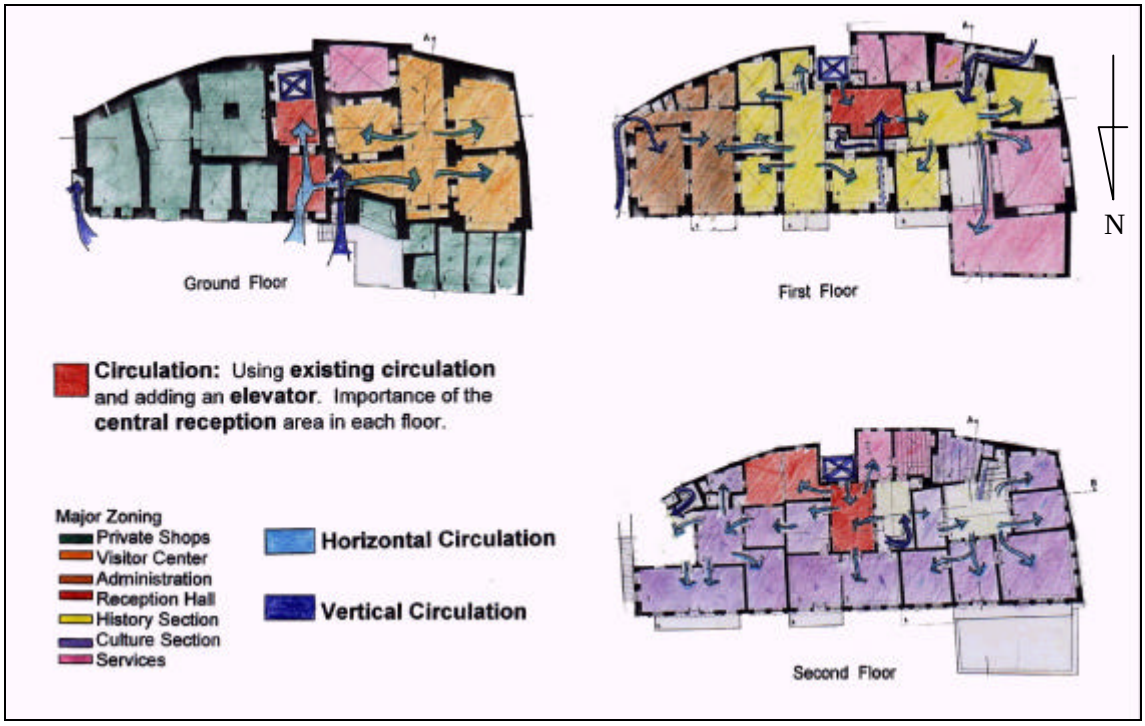
- Handicapped accessibility,
- Special needs for the elderly, and
- Museum exhibit services.

The location of the elevator installation was chosen in a manner to inflict the least damage possible to the historic cross vaults (e.g., only one cross vault will be removed to house the elevator).

The exit of the Museum leads to a narrow alley at the back of the Historic House. In addition, the design utilises the existing staircase at the East Side elevation for administration and employees entrance. Each floor (1st and 2nd) includes a central reception accessible from the main existing circulation system. This central reception serves as a main organiser of movement and for control.

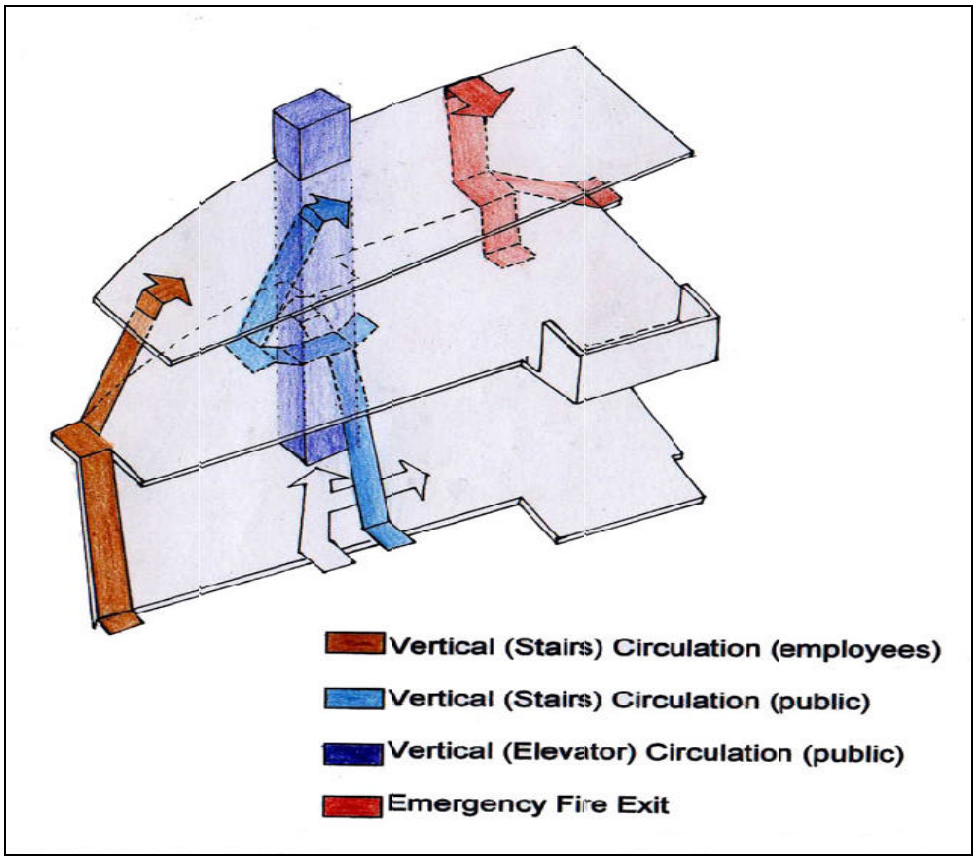
The horizontal circulation system in conjunction with the major zoning of the proposed Museum and Visitor Centre is shown in Figure 2.3, and the vertical circulation in conjunction with the floors is shown in Figure 2.4.

Figure 2.3 Major Zoning and Circulation



Source: JICA Study Team

Figure 2.4 Vertical Circulation System of Abu Jaber Building



Source: JICA Study Team

2.5.5. Renovation and Conservation Plan

The use of Abu Jaber Building should be changed from residential to a Museum and Visitor Centre for promotion of tourism of Salt City. However the historical value should be retained with better conservation in accordance with the history of the building.

Therefore during the renovation and renewal works related to the change in building use, changes from the original structure, appearance, ornamental works, etc. especially for the external works.

Internal finish may be changed due to the change of use.

The existing structural system cannot be changed due to the masonry system of stone blocks. In order to maintain comfort of the visitors, the utilities should be modernised and renewed.

2.6. Exhibition

The museum introduces history and culture for visitors and local citizens of Salt. Through emphasis on the Golden Age and participation and interpretation from the local citizens, the Museum will also form a research unit for scholars interested in local heritage and history.

The Visitor Centre (Ground Floor) offers information and services for tourists to understand the character of the city and provide information about attractions prior to their visit. Tourism and Museum information will be provided through exhibition of models, maps, brochures, audio-visual equipment and computers (hypermedia).

Local or foreign artists and researchers use the temporary exhibition for special exhibitions. In addition, the space can be used for lectures and seminars.

In the History section on the first floor, the prevailing theme would be the Golden Age depicting major political, social, urban, and spatial transformations and features in Salt during that era. This would include exhibition rooms dedicated for the history of the Salt Municipality, genealogy, medical history, educational history, architecture and master builders, and other related issues to the Golden Age of Salt: the period when Salt was the centre of political, economic, business, and cultural events. It will also include a traditional coffee shop with an extension over the large terrace on the first floor overlooking the city. This coffee shop (Hakawati coffee shop) would include a traditional storyteller.

The Culture section is divided into several zones each around an open courtyard that will be acquiring the flavour of that zone (Second Floor). The three major zones include:

Material Culture (around the Folk Dance and Cloths Courtyard): adaptive historic rooms would include Cloths and Weaving, Festival (Wedding and Religious), Musical Instruments and Games, Pottery and Glass, Jewellery and Carpet, and Industrial Arts. One room within this section is dedicated to exhibit the living tradition of the Late King Abdullah labelled King Abdullah Historic Room.

Children's Section: Distributed around the children's Performance Courtyard, this section includes Karakouz Iwaz and Box of Wonders room and the Hakawati Room. This section is in proximity to the central reception hall for easy control and surveillance.

Domestic Life: the purpose of this section is to demonstrate, through several historic rooms, the traditional living quarters and features of domestic life in Salt during the Golden Age period. The section includes: Significance Houses: a room to demonstrate, by drawings and model, significant dwellings in Salt, Mouneh (food Storage) Exhibit, Bedroom, Cooking, Family Room, Madafa, and "Housh" Courtyard Living which is an open courtyard for traditional bread and other traditional demonstrations.

2.6.1. List of Exhibition Materials

Table 2.5 List of Major Exhibition Materials for Historic Old Salt Museum

Theme & Sub-theme		Exhibition Subject (Major Items)	Media	Amount	Exhibition Type
1.	Balqa' Region Show room	Model for the region of Balqa'	model	1	stage/open
2.	Geography of Salt	Model of city of Salt	model	1	open
3.	Architecture & Master Builders	Sectional model of Abu Jaber	model	1	open
		model of significant historic urban areas	model	3	case
		A tribute to a "Salti" Master builder(Abd al Rahman Al Aqrouq)	model	1	panel
4.	Reception/Golden Age Hall	Chair used in Congress	original		case
		Historical document of Golden Age	original		case
5.	Educational History	Wooden-window of Salt highschool	replica	1	open
		Black & white collage of view of Salt from Salt highschool	photo	1	panel
		Historic curriculum books	original	4	case
6.	Archaeology	Early Salti houses on caves with arches	reconstruction	1	open
		Peasant "Fallahi" houses with arch	reconstruction	1	open
		"Kawayer"	reconstruction	1	open
7.	Historic documents & photographs	Historic photographs with historic frames	original	12	open
8.	Municipality History	Map of Balqa' region	map/model	1	open
9.	Religious & Wedding Festivals	Human figures in a 'sugoud' position	human figure	2	open
		Model of scene of wedding(Sukkar house)	model	1	open
10.	Traditional Clothing & Weaving	Traditional cabinet of clothes	original	2	open
		Traditional carpets	original	3	open
11.	Silver, Pottery & Glass	Metal & silver	original	10	case
		Glass & silver	original	10	case
		Historic pottery	original	6	stage/open
12.	Musical Instrument & Games	Table for traditional games	original	1	open
		Table for traditional game "Sigeh"	original	1	open
		Antique table with antique Gramophone	original	1	open
		Traditional musical instruments	original	5	open
		Old music record & tape	original	10	open
		Old magazines	original	10	open
13.	Children's Museum	Peasant house	model	1	open
14.	Bedroom	Historic Mirror	original	1	case
		Historic iron bed	original	1	case
		Historic trunk	original	1	case
		Historic cupboard	original	1	case
15.	Portrait of Significant Houses	Sukkar & Khatib area	model	1	stage/open

Source: JICA Study Team

2.7. Engineering

2.7.1. Structural Design

(1) Objective

The objective of the structural design shall be to achieve required safety at the maximum practicable economy.

(2) Safety

Safety shall be defined according to the requirements of the National Building Codes of Jordan and British Codes of Practice.

(3) Economy

Economy shall be achieved through the use of the most practicable structural system permitted by the architectural design, which yields the simplest form and the minimum dead loads.

(4) Features of the proposed building:

The building was built 100 years ago. It consists of three stories. The ground floor is used now for commercial shops. The other two storeys are used for private residence. The total built up area is around 600 m^2.

(5) Observation and Remedy Measures

The site was visited and investigated by the structural engineer in the team working together and in coordination with the team of architects and surveyors. The building was carefully observed, photographed and studied from the point of view of structural stability and need for retrofitting. The cost of any intervention is approximate at this stage and is given for the sole purpose of aiding in defining the scope for the upcoming stages of study to be conducted by JST.

The general structural condition of the building was generally sound. The building main structural elements are thick bearing stone walls (1.0 meters on street level) and vaults and cross vaults. No major deficiencies or cracks were observed in these elements. However, some cracks were observed on the stone elevation of the Eastern – Northern corner and near the southwest corner. These cracks are expected to be the result of foundation settlement. These two corners need future remedy measures, which could include concrete injection near the footings of these places to stop and prevent future additional settlements. This measurement may require removing the soil adjacent to the Southern elevation, which implies the construction of a retaining wall.

- It was observed that the concrete of the balconies is in bad condition and should be completely removed and reconstructed.
- The wooden roof of the building holding the clay tiles was deteriorated in several places and needs reconstruction with steel elements.
- The issue of proper surface drainage in the Southern land adjacent to the building should be addressed and solved in the proper manner.

(6) Modification Due to Architectural Requirements

No major modification is required by the new architectural and functional plan except for some openings in the walls required for access on the second floor. Also, an opening in the Southern

vault in the ground floor only is required for the installation of the elevator. These openings pose no major effect onto the structural system of the building.

2.7.2. Mechanical Design

(1) HVAC Services

Packaged heat pump air handling units and split-heat pump units are proposed for the HVAC of this project. Heating will be accomplished by heat pump version. Packaged air handing units will be selected to match internal design conditions for each zone. Location of packaged air handling units will be coordinated with the architects.

(2) Water Supply System

1) Potable water

A ground water reservoir will be provided and located in the ground floor behind the building. The ground water reservoir will be supplied with potable water from city water main running along the road in front of the building.

The mechanical room located adjacent to the water reservoir will include water pumps.

The water supply services will comprise the following:

- Cold water pressure pump unit
- Water reservoir tank
- Local Electric water heaters
- Pipe work

The projected water consumption is summarised in Table 2.6 as follows:

Table 2.6 Water Consumption Calculation Sheet

Historic Old Salt Museum					
Name	Assumption of number of people	Circulation (times)	Total number of people/day	Water consumption/person	Total water consumption/day
Museum staff	10 staff + 9 temporary staff = 19	1	19	50 liters	0.95 ton
Cafe (guest)	40 seats	3	120	25 liters	3 ton
Café (staff)	10	1	10	50 liters	0.5 ton
Visitor	100	1	100	10 liters	1 ton
Total water consumption/day					5.45 ton
Total water consumption/week					38.15 ton

Source: JICA Study Team

2) Cold water pressure pump

The pump unit will transfer the water from the water reservoir through direct connection to each faucet and to be controlled by pressure switches located in the unit. The pump unit will be located in the mechanical room.

3) Water reservoir tank

Two water reservoir tanks will have a capacity for the consumption of the appropriate period of time. The water reservoir tank will be located in the area behind the building.

4) Electric water heater

Electric water heaters will be provided for the generation of domestic hot water at a temperature of 65◦C to be used for sanitary appliances and kitchen.

5) Piping works

All pipe work will be with galvanised steel.

(3) Drainage System

The drainage services shall comprise waste and soil drainage. The pipe work used for all drainage services will be UPVC drainage pipes. All joints will be made with the solvent cement method. Inspection manholes will be provided where necessary for maintenance purposes. Waste and soil drainage will be collected by gravity and a submersible pump will be installed to connect to the main line sewer running along the road in front of the building.

2.7.3. Electrical Design

(1) Electrical Power Supply:

Network

The electrical power supply available in Jordan is 230/400 volts 4 wire (star) system from the existing distribution overhead lines network running along the road in front of the building.

Main Power Distribution

The Project shall be fed through Main Distribution Board (MDB). The final distribution boards shall be connected to MDB by wires drawn in conduits.

(2) Lighting Fixtures:

The lighting will be achieved by using lighting track and halogen spotlights to avoid using fluorescent lighting. In the area where historical objects need to be protected from (UV) rays, some rooms will be served by pendent candles or fluorescent strips.

(3) Power Outlets

Single and duplex receptacles are installed throughout the building for showcase and general power. Outlets for video equipment projector and screens are also provided, where needed.

(4) Telephone System

Network

The main telephone service cabling is provided by the Jordan Telecommunication Company (JTC) in underground PVC conduit which is furnished by the contractor. The main service cabling shall originate at the property line and ends at the main distribution frame (MDF) located in the utility room in the building.

PABX

PABX with 10 lines external / 30 internal lines is installed.

(5) Fire Detection and Alarm System:

The fire detection and alarm system will be installed and approved by the Civil Defence Department and it comprises main fire alarm control cabinet detectors (heat, smoke or photo

optical) and manual call unit. The stand-by power supply will be part of the equipment. This service will cover Abu Jabber house.

2.8. Design Drawings

2.8.1. General Drawings

The following general drawing are shown in the end of this report.

1)	Proposed Condition Site Plan	Plan (1-100)
2)	Proposed Condition Ground Floor Plan	Plan (1-100)
3)	Proposed Condition First Floor Plan	Plan (1-100)
4)	Proposed Condition Second Floor Plan	Plan (1-100)
5)	Proposed Condition North Elevation	Elevation (1-100)
6)	Proposed Condition South Elevation	Elevation (1-100)
7)	Proposed Condition East Elevation	Elevation (1-100)
8)	Proposed Condition Section 1	Section (1-100)
9)	Proposed Condition Section 2	Section (1-100)